

# **School Leader Survey Report – IMaT**

**Kristin Vikan Sjurgard**

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Senter for Profesjonsstudier

**OSLO METROPOLITAN UNIVERSITY**  
STORBYUNIVERSITETET





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***Rapporten er kvalitetssikret av Karl Ingar Kittelsen Røberg***

***Godkjent av Håvard Helland, Senter for Profesjonsstudier***

# School Leader Survey Report – IMaT

This report presents the results from a survey of Norwegian school leaders that was conducted as part of the research project “Inclusive Mathematics Teaching: Understanding and developing school and classroom strategies for raising attainment” (IMaT). This project, on mathematics teaching in Norwegian primary and lower secondary schools, is funded by the Norwegian Research Council. The project consists of five work packages, and the data described in this report were collected for a work package with the objective of mapping current practice in adapted education in Norwegian primary and lower secondary schools and assess the impact of practice on pupil achievement and wellbeing.

The survey was sent out by e-mail in October 2019, by way of an online survey. The survey period ended in January 2020, and during this period, three reminders to participate were sent out to the principals. The potential responders consisted of school leaders/principals of municipal primary and lower secondary schools with more than 20 pupils in each grade. This cut off was made because the questionnaire *inter alia* consists of questions about pupil grouping (e.g., ability grouping), and we assumed the thinking about grouping would differ from such thinking on larger schools if the school size was smaller than 20 pupils in each grade. The sample size comprised the leaders of 1658 schools. 269 of these principals responded to the survey, with 149 primary schools (grade 1-7), 87 lower secondary schools (grade 8-10) and 33 a combination of the two (grade 1-10). Thus, the response rate was only 16.2 percent. As this is a quite small group, and the participants are self-selected, generalizing the findings could be problematic. Therefore, to make it clear how many observations the results presented are based on, the findings are mainly reported in frequencies.

This report is a documentation of the survey and presentation of how the participating school leaders have answered, by way of simple frequency tables. It should work as a reader guide and works as a combination between a technical documentation and description of the data, not a comparison or analysis of them.

The survey data presented in this report was matched at the school level with individual level register data from Statistics Norway, on pupils' background and grades. Further, the survey was also connected to school level data from skoleporten.no on school average scores on national standardized tests, average scores from the pupil survey and several resource indicators. In order to give an impression of how atypical the responding schools are, the report starts with comparisons between these schools and the national picture of such school averages from skoleporten.no. Further on, only findings from the IMaT-project's survey, conducted on principals in Norwegian municipal primary and lower secondary schools, are presented.

This documentation report is written by Kristin Vikan Sjørgard. Håvard Helland leads the work package in IMaT that collected these data, and Karl Ingar Kittelsen Røberg has assured the quality of the report by reading and commenting on a previous draft.

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# 1 Comparison of the Sample and Population

As mentioned, this survey has quite a low response rate with self-selected participants. There could therefore be reason to believe that these schools differ from other schools in some way. That is, that the sample selection is not representative of the whole population of school leaders. To investigate this, the report starts with a comparison between the participating schools (who participated in the survey) and the other potential respondents who were contacted and did not participate. Table 1 shows the results of some selected measures from the national Pupil Survey (Elevundersøkelsen). Table 2 presents the average test scores on National Tests in English, reading and numeracy. The findings of these comparisons work as an indicator on whether the schools with leaders participating in this survey differ from other schools in some ways.

## 1.1 The Pupil Survey (Elevundersøkelsen)

The Pupil Survey is conducted in all Norwegian schools, from 5<sup>th</sup> grade until they finish upper secondary school. It is an annual and obligatory survey, in which the pupils can express their opinion about learning and well-being at school. One of the questions concerns how well the pupils are thriving in school, to what degree they are getting enough challenges at school and whether teachers are talking to the pupil about what they can do to improve. This information is available for most schools' pupils in 7<sup>th</sup> and 10<sup>th</sup> grade combined, for the school years 2017/18, 2018/19 and 2019/20. 7<sup>th</sup> and 10<sup>th</sup> grade is chosen because 7<sup>th</sup> grade it is the final grade for primary school, and 10<sup>th</sup> grade for lower secondary school in Norway. Table 1 below presents the results of two groups. Column (1) shows the average results of the schools with leaders participating in the IMaT survey. Column (2) shows the average results of the "other schools" – with leaders who were contacted but chose to not participate in the IMaT survey.

**Table 1: Results of the Pupil Survey (Elevundersøkelsen)**

	(1) Participating schools	<i>N</i>	(2) Other schools	<i>N</i>
<b>How well are you thriving at school? *</b>				
<i>2017-2018</i>	4.24	250	4.23	1508
<i>2018-2019</i>	4.24	262	4.23	1587
<i>2019-2020</i>	4.22	257	4.20	1589
<b>Are you getting enough challenges? **</b>				
<i>2017-2018</i>	4.16	250	4.16	1258
<i>2018-2019</i>	4.17	262	4.16	1326
<i>2019-2020</i>	4.16	257	4.15	1232
<b>Are the teachers talking to you about what you should do to improve your performance in the subjects? **</b>				
<i>2017-2018</i>	3.74	250	3.37	1257
<i>2018-2019</i>	3.74	261	3.37	1326
<i>2019-2020</i>	3.71	257	3.69	1330

\* The pupils could choose between five options; Thrives very well (5) – Thrives well (4) – Thrives a little (3) – Do not thrive much (2) – Do not thrive at all (1). \*\* The pupils could choose between five options; In all or most subjects (5) – In many subjects (4) – In some subjects (3) – In very few subjects (2) – Not in any subjects (1).

Using Table 1, it is possible to compare the average scores of the schools with leaders who participated in this survey to the average scores of schools who chose not to participate. The table shows the average score for “thriving”, “enough challenges” and “talking about improvement” for all schools we have data for. The table shows negligible differences between the average scores for pupils in the selection sample and the general population in most of these questions. They seem to thrive as well and be equally challenged, regardless of attending a school with a leader who participated in this survey or not. The only question with some differences is the last one, for the first two school years in the table (2017-2018 and 2018-2019). There is a larger difference in how many subjects the teachers talk to them about

how they can improve. In the last year (2019-2020) however, there is again close to no difference between the participating and non-participating schools.

## 1.2 National Tests (Nasjonale prøver)

National tests are compulsory tests that aim to provide schools with information about their pupil's basic skills in reading, numeracy and English. This forms the basis for assessment and quality development at all levels in the Norwegian schools. The 2014 average scores (2016 for reading) have been set to 50, with a standard deviation of 10, and all future test results are then converted to this scale. These test results are available on individual level, not school average as above, making the N much higher. The scaled tests scores for English are available for 5<sup>th</sup> and 8<sup>th</sup> graders, while for reading and numeracy, the test scores are available for 5<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> graders. Column (1) shows the scores of the pupils in schools with leaders participating in the IMaT survey, while column (2) shows the scores of the pupils in the other schools that did not participate in the survey.

**Table 2: Scaled Scores on the National Tests**

	(1)		(2)	
	Participating schools	N	Other schools	N
<b>ENGLISH</b>				
<i>5<sup>th</sup> grade</i>	48.6	36,530	48.3	224,469
<i>8<sup>th</sup> grade</i>	50.0	40,118	49.6	170,461
<b>READING</b>				
<i>5<sup>th</sup> grade</i>	48.4	36,389	48.1	224,300
<i>8<sup>th</sup> grade</i>	49.9	40,186	49.5	170,886
<i>9<sup>th</sup> grade</i>	54.1	29,576	53.6	125,784
<b>NUMERACY</b>				
<i>5<sup>th</sup> grade</i>	48.7	36,647	48.6	225,407
<i>8<sup>th</sup> grade</i>	50.0	40,285	49.5	171,201
<i>9<sup>th</sup> grade</i>	54.0	29,621	53.5	125,947

Table 2 shows that there is a general tendency of a higher score for the pupils in the participating schools. The difference, however, is not very large, and both groups have average scores close to the national set average of 50. As can be seen from the table, there are larger differences between the grades (5<sup>th</sup> and 9<sup>th</sup>) than between the schools participating and non-participating leaders. On a scale where the standard deviation is 10, a difference of 0.5 (the largest difference) may be interpreted as quite a small difference. Continuing from here, starting with Table 3A, all tables present how the participating school leaders answered in the IMaT-survey.

## 2 Descriptive Statistics – The School Leaders

1. Are you a...? (Woman or man)
2. How old are you?

**Table 3: Age and Gender**

	<b>30 or less</b>	<b>31-40</b>	<b>41-50</b>	<b>51-60</b>	<b>60 or older</b>	<b>Total</b>
Woman		7	60	76	29	172
Man		6	38	33	20	97
<i>N</i>		13	98	109	49	269

As apparent from Table 3, there were 269 participants in the survey. The largest age group is 51-60 years, closely followed by 41-50. 49 of them are over the age of 60, while only 13 are aged 31-40. None of the participants are 30 or younger. There are fewer men than women in all age groups, and in total, there are 172 women and 97 men participating in the survey.

**Table 4: Age and Gender, by School Type**

	<b>31-40</b>	<b>41-50</b>	<b>51-60</b>	<b>60 or older</b>	<b>Total</b>
<b>PRIMARY SCHOOLS</b>					
Woman	3	42	44	13	102
Man	4	17	19	7	47
<i>N</i>	7	59	63	20	149
<b>LOWER SECONDARY SCHOOLS</b>					
Woman	3	13	22	12	50
Man	2	17	9	9	37
<i>N</i>	5	30	31	21	87
<b>COMBINED SCHOOLS</b>					
Woman	1	5	10	4	20
Man		4	5	4	13
<i>N</i>	1	9	15	8	33

Table 4 shows age and gender in primary schools, lower secondary schools, and in the combination of the two. The largest age group in all three school types is 51-60, closely followed by 41-50 and then 60 and older. In total, and in close to all age groups, there are fewer men than women. There are, however, three exceptions; primary school leaders aged 31-40 (one more man than woman), lower secondary school leaders aged 41-50 (four more men), and school leaders in the combined primary and lower secondary schools aged 60 or older (the same number of men and women).

3.

a) *For how many years have you been a principal?*

b) *For how many years have you been a leader at your current school?*

**Table 5: Years Worked as a Principal**

	Mean	Min	Max	N
Years as principal	8.49	0	29	269
Years as principal here	6.68	0	29	268

From Table 5, we can see that the average number of years they have been a principal is 8.5 years in total, and close to 7 years at the school where they are currently working. The number of years in their current occupation varies from zero years, up to a maximum of 29 years, both in total and at that school. All participating principals answered question 3 a), and all but one answered question 3 b).

4.

a) *Have you previously worked as a teacher?*

b) *If so, for how many years (in mathematics and in other subjects)?*

**Table 6: Years Worked as a Teacher**

a)	Frequency			
Worked as a teacher	267			
Never worked as a teacher	2			

  

b)	Frequency	Mean	Min	Max
<i>Out of those who have worked as a teacher before:</i>				
In mathematics	199	12.5	1	40
In other subjects	259	14.3	2	39

Table 6 shows that two of the principals have never worked as a teacher, while 267 of them were teachers before becoming a principal. Out of those who have worked as a teacher, 25 said that they taught mathematics for 0 years, and 45 left that question unanswered. Assuming none of these 70 respondents have taught



mathematics, a total of 199 principals were mathematics teachers previously. 259 of the 269 principals have worked as a teacher in other subjects before. The shortest time-period that a principal has taught mathematics is one year, while the longest is 40. For principals who have taught mathematics before, the average length of time is 12.5. For teaching other subjects, the shortest time-period is two years, the longest is 39, with an average of just above 14 years.

**Table 7: Years Worked as a Teacher, by School Type**

a)	Frequency		
	Primary schools	Lower secondary schools	Combined schools
Worked as a teacher	147	87	33
Never worked as a teacher	2		

b)	Frequency	Mean	Min	Max
<i>Out of those who have worked as a teacher before:</i>				
<b>PRIMARY SCHOOLS</b>				
In mathematics	121	11.8	1	30
In other subjects	145	13.3	2	38
<b>LOWER SECONDARY SCHOOLS</b>				
In mathematics	54	14.2	1	40
In other subjects	82	15.8	2	39
<b>COMBINED SCHOOLS</b>				
In mathematics	24	12.0	2	25
In other subjects	32	14.8	5	30

Table 7 separates between the three different school types and shows that the two principals who have never worked as a teacher before work at a primary school. Furthermore, the table also shows that the average number of years of teaching

earlier, both mathematics and other subjects, is somewhat higher among those who are now principals at a lower secondary school.

5. *What kind of teacher training or other education have you completed? (Tick as many boxes as necessary).*

**Table 8: Education**

Education type	Frequency (N=269)
General teacher training	204
Education as principal	144
Master in school leadership	102
Practical pedagogical education	42
Special pedagogical education	39
Teacher, from a university	38
Vocational teacher training	29
Other master education	29
Preschool teacher	8
Ph.D. degree	
Other (please specify)	49

Table 8 is sorted from highest to lowest number of principals with a given education. Most principals, 204 of the 269, have general teacher training. 144 are educated as a principal, while 102 have a master’s degree in school leadership. About 40 have either a practical pedagogical education, an education in special pedagogics or are educated as a teacher from a university. 29 of the principals have a vocational teacher education, 29 another master’s education, while 8 are educated as a preschool teacher. None of the respondents have a Ph.D.-degree.

As well as these ten alternatives, the respondents were able to tick an “Other”-box in the questionnaire. 49 of them did that, and 47 also specified what other education they have. A complete list of these elaborations can be found in Table A1 in the Appendix. Summed up, there is a large predominance of leadership or management

related educations, mentioned by about twenty of the principals. Credits in pedagogics also recur amongst quite a few of the respondents. Others have credits in mathematics, economy or business, law, IT, language and science. Several other education courses with varying length, and perhaps relevance to their current occupation as school leaders, are also reported.

6. *How many credits do you have in mathematics and/or mathematical didactics?*

**Table 9: Credits**

<b>Credits</b>	<b>Frequency</b>
0	52
5	4
10	4
15	57
17	1
25	1
30	78
40	1
45	11
50	1
60	41
75	5
90	7
105	1
135	1
225	1
240	1
<i>N</i>	267

As apparent from Table 9, 52 of the participating principals have zero credits in mathematics and only four of them more than 100. The range is from a minimum of zero to a maximum of 240 credits. The average for those who responded is 30 credits in mathematics or mathematical didactics, which corresponds to one semester worth of credits. 267 of the 269 principals answered this question.

**Table 10: Credits, by School Type**

Credits	Frequency		
	Primary schools	Lower secondary schools	Combined schools
0	28	21	3
5	2	1	1
10	1	3	
15	31	15	11
17	1		
25		1	
30	50	20	8
40		1	
45	7	3	1
50	1		
60	18	16	7
75	3	2	
90	5	1	1
105			1
135	1		
225		1	
240		1	
<i>N</i>	148	86	33

Table 10 separates between the school types and shows that the two principals with the highest number of credits in mathematics and/or mathematical didactics are now leaders of a lower secondary school. As mentioned, the average number of credits is 30 for all the participating leaders. When separating between school types, the average number of credits remain about 30, regardless of school type. It is, however, somewhat higher for leaders of the lower secondary and combined schools, as there is a lower share of principals with 0 credits in mathematics among those who lead the primary schools.

### 3 Work Tasks

7. Rank the following work tasks from 1 to 9, by how much time you as a school leader devote to them.

**Table 11: Ranking of Time Spent**

	Mean	Min	Max	N
Administrative tasks	1.68	1	8	254
Personnel management	2.44	1	8	253
School development (e.g., The subject renewal (fagfornyelsen), curriculum work)	3.50	1	8	258
Conversation with pupils	4.81	1	8	255
Meetings at the municipal level	5.09	1	9	258
Analyses, interpretation and processing of pupil results	5.59	1	9	258
Conversations with parents	5.79	1	9	257
Classroom observation	6.62	1	9	259
My own teaching	8.34	1	9	208

The principals were asked to rank nine work tasks from most (1) to least (9) amount of time spent on them. As can be seen from Table 8, not all principals ranked all tasks, but over 200 of them ranked each task. The above table is sorted from how high they are ranked on average, showing that these principals spend on average most time on administrative tasks and least on their own teaching. There is, however, some dispersion, as some respondents ranked administrative tasks low (ranked 8), while others ranked their own teaching highest (ranked 1).

8. *Prioritization of work tasks (tick one box for each statement).*

**Table 12: Prioritization of Work Tasks**

	<b>Strongly disagree</b>	<b>Partially disagree</b>	<b>Neither ... nor</b>	<b>Partially agree</b>	<b>Strongly agree</b>	<b>N</b>
I encourage the teachers to introduce new ideas of how we can further develop our school	2		6	105	155	268
I encourage the teachers to develop their teaching methods	1	5	13	98	149	266
I make sure that the teachers work in accordance with the school's objectives		1	5	123	138	267
I use pupil results to develop the school's objectives for teaching	1	3	12	115	138	269
I am personally engaged in the teacher's professional development	1	1	20	118	127	267
I encourage teachers to develop common assessment criteria	2	9	35	107	113	266
I make sure that guidelines from the Directorate for Education are followed		2	8	99	106	269

	<b>Strongly disagree</b>	<b>Partially disagree</b>	<b>Neither ... nor</b>	<b>Partially agree</b>	<b>Strongly agree</b>	<b>N</b>
I make sure that the personnel's teaching skills constantly improve		3	14	152	97	266
I work on increasing the parents' participation and involvement		5	62	135	66	268
I make sure that the school's teachers are updated on relevant research	1	3	41	166	57	268
I make sure to secure that the school's teachers employ teaching methods with well documented positive results	1	7	22	182	53	265
I make sure that teachers are held accountable for the school's goal attainment	3	19	47	148	49	266
I know what happens in the classrooms	1	12	49	163	42	267
I prioritize mathematics higher than other subjects	26	35	139	54	13	267

Table 12 is sorted by how many “strongly agree” with each statement. Most principals ticked a box for each statement, between 265 and all 269 responses to each statement. As the table shows, they generally agree, strongly or partially, with all fourteen statements presented in the questionnaire. What stands out is how they feel about prioritizing mathematics higher than other subjects, as half of the principals ticked “neither nor agree” to this statement.

9. *To what extent do you encourage the mathematics teachers to do the following? (Tick one box for each task).*

**Table 13: Encouragement of the Mathematics Teachers**

	<b>Not at all</b>	<b>Very little</b>	<b>To some extent</b>	<b>Large extent</b>	<b>A lot</b>	<b>N</b>
Give pupils with good results more advanced assignments	1	6	66	137	56	266
Analyze the pupil`s mathematical competence based on test results	2	7	84	130	41	264
Offer adapted teaching in groups with mixed skill levels	3	20	60	124	57	264
Make sure that the pupils know the learning objectives for each lesson	2	9	57	123	76	267
Prioritize mathematical competence over numeracy skills	1	23	79	113	51	267



	<b>Not at all</b>	<b>Very little</b>	<b>To some extent</b>	<b>Large extent</b>	<b>A lot</b>	<b>N</b>
Use the evaluation of mathematical competence to set learning objectives	0	20	116	103	27	266
Accommodate for quick improvement of results	1	20	116	100	29	266
Analyze the pupil`s mathematical competence based on activity in class	3	42	105	92	24	266
Follow the same approach as their colleagues	10	48	106	85	16	265
Facilitate self-regulated learning	10	42	135	65	13	265
Group pupils by skill level for more adapted teaching	28	97	87	42	11	265

Table 13 is sorted by how many ticked the “to a large extent”-box, as this is the most popular alternative in total. Most agree, to some or a large extent, that they encourage these exemplified tasks. As can be seen from this table, using evaluation of mathematical competence to set learning objectives stands out as being the only example where none answered “not at all”. The example that the principals to the least extent encourage their teachers to do, is grouping pupils by skill level for more adapted teaching. Most principals answered each question, between 264 and 267, but as can be seen, there are some missing answers to each example.

10. To what extent does each of the following issues give rise to concern at your school? (Tick one for each statement).

**Table 14: Causes of Concern**

	<b>Not at all</b>	<b>Very little</b>	<b>To some extent</b>	<b>A lot</b>	<b>N</b>
Pupils that have been poorly prepared in earlier years	8	67	135	54	264
Teachers not meeting individual pupil's needs	13	130	105	20	268
A large number of pupils with psychosocial issues	14	94	114	46	268
Large number of low or underperforming pupils	19	106	107	35	267
Not enough time to cover topics with appropriate depth	21	78	130	40	269
Disruption of classes by pupils	23	145	88	13	269
Pupils coming unprepared to school	25	144	90	7	266
Pupils bullying other pupils	29	183	43	11	266
Pupils lacking respect for teachers	32	147	75	14	268
Teacher absenteeism	37	144	70	14	265
Lack of parental support for pupil learning	38	134	85	10	267

	<b>Not at all</b>	<b>Very little</b>	<b>To some extent</b>	<b>A lot</b>	<b>N</b>
A large number of pupils from poor resource homes	39	121	88	18	266
Shortage of teachers	45	91	100	33	269
Poor pupil-teacher relations	45	172	31	18	266
Pupils arriving late at school	47	183	28	9	267
Pupil absenteeism	50	130	60	26	266
Too low mathematical competence among teachers	59	120	75	13	267
Large classes	64	119	65	19	267
Shortage or inadequacy of library resources or services	79	115	48	25	267
Poor indoor climate	107	97	46	18	268
Poor condition of buildings	111	89	49	19	268
High staff turnover	145	106	11	4	266
Shortage or inadequacy of computers or computing time	158	61	32	18	269

Table 14 is sorted by how many ticked the “not at all”-box for each issue presented in the questionnaire. Out of the 23 issues, pupils that have received poor preparation in previous years, many pupils with psychosocial issues and too little time to cover

topics in appropriate depth are the three that on average worries these principals the most. The principals are the least worried about scarcity of computers or computer time, closely followed by high staff turnover, as most principals “not at all” are concerned about these issues. As the table also shows, between 264 and all 269 principals ranked each of these 23 issues.

*11. How important do you think the following tasks should be in the teaching at your school? (Please tick one box for each claim).*

**Table 15: Importance of Tasks**

	<b>Not important</b>	<b>Somewhat important</b>	<b>Important</b>	<b>Very important</b>	<b>N</b>
Developing pupil's self-confidence and self-esteem			9	255	264
Equipping pupils with the skills to recognize and solve problems			20	245	265
Teach the pupil to apply their knowledge		1	21	242	264
Developing pupils' capacity to think critically			22	242	264
Challenging pupils to think for themselves			22	241	263
Train the pupil's collaboration ability			25	238	263
Train the pupils ability to learn from own mistakes		1	41	222	264
Ensuring that pupils can connect learning to life		2	56	206	264

	<b>Not important</b>	<b>Somewhat important</b>	<b>Important</b>	<b>Very important</b>	<b>N</b>
Encouraging creativity and originality in pupils		3	67	194	264
Helping pupils master a lot of complex subject-matter		2	68	191	261
Opening pupils' eyes to the major social issues of our times	1	13	116	134	264
Preparing pupils for the world of work and careers	1	20	107	134	262
Preparing pupils for tests and examinations	25	116	103	20	264

Table 15 is sorted by how many principals ranked each task as “very important”, and as the table shows, they regard most of the tasks as important or very important. The highest number of principals, 255, think that developing the pupils’ self-confidence and self-esteem is very important. The one task that stands out as least important, however, is preparing pupils for tests and examinations. 25 of the principals regards that as not important and 116 as only somewhat important. This is not seen for any of the other tasks. Between 261 and 265 of the in total 269 respondents ranked the importance of each of the 13 tasks.

## 4 Class Size and Groupings

12. *What is the average size of classes in your school, in general and in mathematics?*

**Table 16: Average Size of Classes in the School**

	<b>In general</b>	<b>Mathematics</b>
15 or less	4	12
15-20 pupils	68	84
21-25 pupils	131	110
26-30 pupils	61	48
Over 30	2	
<i>N</i>	266	254

Table 16 shows that amongst those who answered this question, it is most common to have an average class size of between 21 and 25 pupils, both in mathematics and in general. It is, however, more common to have fewer pupils in the classroom when teaching mathematics. Looking first at the smaller sized classes, there are eight more schools with 15 pupils or less in mathematics class, and 16 more schools with 15 to 20 pupils. In the larger sized classes, however, there are 21 fewer schools with 21 to 25 pupils in mathematics and 13 fewer schools with 26 to 30 pupils. Also, only two schools have average class sizes with over 30 pupils in general, none have that in mathematics. There are, however, fewer responses to how large their average classes are in mathematics than in general, 266 answered how large the average classes are in general, while only 254 answered how large they are in mathematics.

As can be seen from Table 17, below, where the three types of schools are separated, the two school with the largest average class size of over 30 pupils are both primary schools. Furthermore, the smaller class sizes are more common in mathematics than in general, regardless of school type.

**Table 17: Average Size of Classes in the School, by School Type**

	Primary schools		Lower secondary schools		Combined schools	
	In general	Mathematics	In general	Mathematics	In general	Mathematics
15 or less	1	3	1	7	2	2
15-20	55	62	4	11	9	11
21-25	78	66	34	30	19	14
26-30	13	10	45	35	3	3
Over 30	2					
<i>N</i>	149	141	84	83	33	30

13. How many teachers are there usually in the class, in general and in mathematics?

**Table 18: Number of Teachers in the Class**

	In general	Mathematics
1 teacher	208	140
2 teachers	57	122
<i>N</i>	265	262

As Table 18 shows, it is most common for these schools to have one teacher in a class, both in general and in mathematics. There is, however, a higher number of schools with two teachers in mathematics than in general. Also, three of the principals answered that they usually have 17, 20 or 30 teachers in the class. These responses are not included in the table, as it is reasonable to assume that they misread the question, and rather specified how many pupils there usually are in the class.

**Table 19: Number of Teachers in the Class, by School Type**

	Primary schools		Lower secondary schools		Combined schools	
	In general	Mathematics	In general	Mathematics	In general	Mathematics
1 teacher	106	83	81	42	21	15
2 teachers	40	61	5	44	12	17
<i>N</i>	146	144	86	86	33	32

Table 19 separates between primary, lower secondary and combined schools. As can be seen from this table, in general classes, it is most common to have only one teacher per class, regardless of school type. In mathematics, however, there is a difference between the three types of schools. For primary schools, it is more common to have one teacher also in mathematics, while for lower secondary and combined schools, it is more common to have two teachers in mathematics. The table also shows that regardless of school type, there is a higher number of schools with two teachers in mathematics than in general classes.

*Question 12 and 13, combined answers:*

**Table 20: Cross Tabulation of Pupils and Teachers – in General**

	1 teacher	2 teachers	<i>total</i>
15 or less	3	1	4
15-20 pupils	46	19	65
21-25 pupils	101	30	131
26-30 pupils	54	6	60
Over 30	1	1	2
<i>total</i>	205	57	262

Table 20 shows a combination of the responses to question 12 and 13, thus how class size and number of teachers is related in these schools in general classes. In general classes, it is more common with one than two teachers, regardless of the



average class size. 1 of the 4 schools that usually have two teachers in general classes, and 1 of the in total 2 schools with over 30 pupils have two teachers. The number of teachers does not necessarily increase with the number of students in a class, as only 6 of the in total 60 schools with an average class size of 26 to 30 pupils have two teachers in general, while 30 of the in total 131 schools usually have two teachers in classes with a smaller class of 21 to 25 pupils.

**Table 21: Cross Tabulation of Pupils and Teachers – in Mathematics**

	1 teacher	2 teachers	<i>total</i>
15 or less	2	10	12
15-20 pupils	48	30	78
21-25 pupils	52	58	110
26-30 pupils	32	16	48
<i>total</i>	134	114	248

Table 21 shows how class size and number of teachers is related in mathematics. As can be seen from this table, 16 of the in total 48 schools with 26 to 30 pupils usually have two teachers in mathematics class. For schools with a lower average class size of 21 to 25 pupils, however, 58 of the schools have two teachers in the mathematics class and 52 usually have one. Thus, in contrast to in general classes, there are more schools with this class size who have two teachers in the class. This contrast is also seen in classes with 15 pupils or less, as more schools, 10 of 12, have two teachers in mathematics class.

14. Does your school occasionally take the opportunity given by the Education Act (Opplæringsloven §8-2) to temporarily group the pupils according to achievement level?

**Table 22: Temporarily Organizing Pupils by Achievement Level, §8-2**

Frequency	
Yes	161
No	107
<i>N</i>	268

This act, Opplæringsloven §8-2, gives the school opportunity to temporarily divide pupils by their achievement level. Organizing pupils in this manner on a full-time basis, however, is not allowed and is not what the survey question asks. As displayed in Table 16A, 161 of the participating principals inform that they sometimes group their pupils according to achievement level at their school, while 107 do not. The next questions in the questionnaire are only asked to those who answered yes to this question.

**Table 23: Temporarily Organizing Pupils by Achievement Level, §8-2, by School Type**

Frequency			
	Primary schools	Lower secondary schools	Combined schools
Yes	94	49	18
No	54	38	15
<i>N</i>	148	87	33

Table 23 separates between primary, lower secondary and combined schools. The table shows that it is more common to sometimes group the pupils according to achievement level than to never do it, regardless of school type. The share of principals who said “yes” to this question is higher among the primary school leaders than lower secondary and combined school leaders.

15. If “yes” to question 14:

a) At what academic grades/levels do you occasionally group the pupils by achievement level? (Tick all appropriate boxes).

b) At what academic grade/level do you most often group the pupils by achievement level? (Tick one box only).

**Table 24: Grouping by Achievement Level**

Grade level	a) Occasionally (N=161) <sup>1</sup>	b) Most often (N=152)
1 <sup>st</sup> grade	60	17
2 <sup>nd</sup> grade	64	13
3 <sup>rd</sup> grade	70	5
4 <sup>th</sup> grade	74	8
5 <sup>th</sup> grade	76	13
6 <sup>th</sup> grade	78	14
7 <sup>th</sup> grade	75	24
8 <sup>th</sup> grade	58	12
9 <sup>th</sup> grade	60	13
10 <sup>th</sup> grade	61	33

Table 24 presents the results of both question 15 a) and b) in the questionnaire. Starting with the results of question a), there is a quite even distribution of when it occasionally happens that the pupils are grouped by achievement level. 60 of the schools does so in the 1<sup>st</sup> grade, and 61 in the 10<sup>th</sup>, while between 74 and 78 of the schools does so in 4<sup>th</sup> to 7<sup>th</sup> grade. The findings from question b), as we can see from the table, is that the largest portion of the principals, 24 in total, say that the pupils are most often grouped by achievement level in the 7<sup>th</sup> grade. Thus, in the last year of primary school. All 161 principals who answered yes to question 14 answered question 15 a). In question 15 b), however, there are nine answers missing.

<sup>1</sup> Due to what seems to be an error with the questionnaire, there were 163 answers to question 15 a), where only the 161 principals who answered “yes” to question 14 should have been able to answer. As this was not the intention of the question, the two “extra” answers were excluded from the results presented in table 24.

16. If “yes” to question 14:

a) In what subjects do you occasionally group the pupils by achievement level?

b) In what subjects do you most often group the pupils by achievement level?

**Table 25: Grouping the Pupils – Subject Specific**

<b>Subject</b>	<b>a) Occasionally (N=158)</b>	<b>b) Most often (N=156)</b>
Mathematics	153	84
Norwegian	103	46
English	89	22
Other subjects	20	4

As Table 25 shows, not many schools group their pupils by achievement level in other subjects than mathematics, Norwegian and English. Only 20 of the schools *occasionally* group their pupils by their achievement level in other subjects than mathematics, Norwegian or English, while only 4 of them say that it happens *most often* in another subjects. Among the 158 principals who answered question 16 a), there is a predominance of schools who occasionally group their pupils in mathematics, with 153, followed by 103 schools who group them like that in Norwegian, and 89 schools in English. Furthermore, among the 156 principals who answered question 16 b), the largest portion of the principals, with a total of 84, say that the pupils are most often grouped by achievement level in mathematics. 46 schools most often group them in Norwegian, and 22 schools in English.

Table 26, below, separates between primary, lower secondary and combined schools. As can be seen, there is a predominance of schools who group their pupils in mathematics both occasionally and most often. This is closely followed by Norwegian, then English and lastly other subjects. As this is apparent also in this table it is thus irrespective of school type.

**Table 26: Grouping the Pupils – Subject Specific, by School Type**

	Primary schools		Lower secondary schools		Combined schools	
	a) Occasionally	b) Most often	a) Occasionally	b) Most often	a) Occasionally	b) Most often
Mathematics	89	41	46	34	18	9
Norwegian	63	35	27	5	13	6
English	50	13	31	7	8	2
Other subjects	13	2	4	1	3	1

*17. If “yes” to question 14, how often are the pupils grouped by achievement level in the subject where it happens most often?*

**Table 27: How Often the Pupils Are Grouped by Achievement Level**

	Frequency
Several times a week	51
Once a week	47
A couple of times a month	39
Rarer	19
<i>N</i>	156

How often the pupils are grouped by their achievement level is quite evenly distributed from several times a week to rarer than a couple of times a month. However, Table 27 shows that it is more common among these schools that the pupils are grouped several times a week, and the least common answer is to do it rarer than a couple of times a month. 156 of the in total 161 eligible principals answered this question.

18. Why are the pupils organized into groups by achievement level?

**Table 28: Why Pupils are Organized in Groups**

	<b>Not important</b>	<b>Not so important</b>	<b>More important</b>	<b>Very important</b>	<b>N</b>
For intensive training (intensivoppl�ering)	3	10	42	103	158
Develop the pupil`s self-confidence and self-esteem	2	8	49	99	158
To better adapt the education for “weak” pupils	7	6	63	82	158
To utilize the resources better	8	15	61	75	159
To better adapt the education for “strong” pupils	3	15	70	70	158

Table 28 is sorted by how many principals rated each statement as “very important”. One of the options they could choose from was intensive training, which schools are required to offer when pupils are in risk of falling behind in reading, writing or arithmetic. As the table shows, intensive training is considered very important by the highest number of principals. Overall, each of the five statements are generally regarded as more or very important by most participating principals. Most of these questions were answered by 158 of the 161 eligible principals, while one was answered by 159.

**Table 29: Cross Tabulation of “To Better Adapt the Education for ...”**

To better adapt the education for “strong” pupils					
To better adapt the education for “weak” pupils	<b>Not important</b>	<b>Not so important</b>	<b>More important</b>	<b>Very important</b>	total
<b>Not important</b>	3		1	3	7
<b>Not so important</b>		5	1	0	6
<b>More important</b>		4	53	6	63
<b>Very important</b>		6	15	61	82
total	3	15	70	70	158

Table 29 shows how the answers to two of the questions presented in Table 20A overlap: “To better adapt the education for ‘strong’ pupils” and “To better adapt the education for ‘weak’ pupils”. The overlapping answers are indicated by grey cells in the table. As can be seen, there is much overlap, especially on what they consider more or very important (as most do). There are, however, three principals who regard adapting education for the “weak” pupils as not important, who regard it as very important for the “strong” pupils, and one who regard it as more important. Furthermore, among those who regard it as not so important for the “strong”, 4 see it as more important and 6 as very important for the “weak” pupils.

## 5 High and Low Learning Potential

19. What measure(s) do your school provide for pupils with higher learning potential, in mathematics and in general? (Check both columns. More than one tick is possible).

**Table 30: Measures for Pupils with Higher Learning Potential**

	In mathematics (N=269)	In other subjects (N=269)
Pedagogical differentiation and adaptation in ordinary class	231	165
Targeted means of instruction/ resources	198	131
Accelerated teaching (i.e., follow instruction and curriculum at higher grades/levels)	164	64
Separate short-term groups for high achieving pupils	81	45
No special measures	13	16
Other (please specify)	10	10

Table 30 is sorted by how many schools provide each measure, both columns can be sorted in the same order. All 269 principals answered these questions. As the table shows, more schools provide measures for pupils with higher learning potential in mathematics than in other subjects. Pedagogical differentiation and adaptation in ordinary classes are used most frequently, with 231 schools providing it in mathematics classes and 165 in other subjects. 13 schools do not provide any measures for high-achieving pupils in mathematics, and 16 have no measures for these pupils in other subjects. Ten of the schools provide other measures for the pupils with higher learning potential, both in mathematics and other subjects.

The principals who stated that they provide other measures here were also asked to specify them. These specifications are presented in full in the Appendix, Table A2 for mathematics and Table A3 for other subjects. Nine of the principals chose to elaborate on what other measures they provide in mathematics, seven on the other



measures they have in other subjects.

*20. What measure(s) do your school provide for low performing pupils, in mathematics and in general? (Check both columns. More than one tick is possible).*

**Table 31: Measures for Low Performing Pupils**

	In mathematics (N=269)	In other subjects (N=269)
Pedagogical differentiation and adaptation in ordinary class	260	238
Special instruction	252	232
Discussing facilitation with the municipal pedagogical-psychological service (PPT)	249	229
Targeted means of instruction/resources	242	221
Separate short-term groups for low achieving pupils	216	198
Other (please specify)	11	11
No special measures	2	2

As Table 30, Table 31 is also sorted by how many schools provide each measure. All 269 of the principals answered these questions too. Table 31 shows that there is a higher number of schools who provide measures in mathematics than in other subjects for the low performing pupils. Pedagogical differentiating and adaptation in ordinary classes are most popularly provided as a measure also for low performing pupils. 260 of the schools provide it in mathematics, 238 in other subjects. Short term separation in groups is done by 216 of them in mathematics – 129 of the 149 primary schools, 58 of the 87 lower secondary schools and 29 of the 33 combined schools. In general classes, it is done by 198 of them – 120 of the 149 primary schools, 51 of the 87 lower secondary schools and 27 of the 33 combined schools.

Only two of the schools do not have any measures for low performing pupils, eleven of the schools provide other measures for their low performing pupils, both in

mathematics and in other subjects. Ten of the eleven principals chose to specify what other measures they provide for their low performing pupils, both in mathematics and in other subjects. These specifications are presented in full in the Appendix, Table A4 for other measurements is mathematics and Table A5 for other measurements in other subjects.

## 6 Teachers at the School

*21. Does the school have one or more teacher specialist(s) in mathematics? (Choose only one of the alternatives).*

**Table 32: Teacher Specialists in Mathematics**

	<b>Frequency</b>
Yes	69
No	199
<i>N</i>	268

As Table 32 shows, most schools do not have a teacher specialist in mathematics. 69 of the 268 principals who answered the question, however, do confirm that they have at least one. Only one of the participating principals did not answer this question.

*22. Think about the teachers at your school. To what extent do you agree or disagree with the following statements? (Please tick one box in each row).*

Table 33, below, is sorted by the number of principals who “strongly agree” to each statement. As the table shows, having committed or engaged mathematics teachers is the statement that most principals strongly agree with. Most principals strongly disagree with the statement that it is difficult to keep good teachers, while none strongly disagree and only two disagree with that the mathematics teachers are committed to their subject. Furthermore, only three principals strongly agree that it is

difficult to keep the good teachers and to the statement that it is best if the “contact teacher” teach mathematics. Between 262 and 268 of the principals gave their response to how much they agree with each of these seven alternatives.

**Table 33: Think About the Teachers at Your School**

	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly agree</b>	<b>N</b>
The mathematics teachers are committed		2	126	137	265
They are highly competent in their subject area	3	9	182	74	268
They are willing to try out new ideas	2	11	189	66	268
It is best if there is a teacher specialist that teaches mathematics	10	96	128	28	262
It is difficult to replace staff that quit their job	57	110	83	17	267
We have too many staff set in their ways	10	136	105	16	267
It is difficult to retain good quality teachers	102	141	22	3	268
It is best if the contact teacher (kontaktlæreren) teaches mathematics	57	145	59	3	264

23. How often do the teachers do the following? (Tick one box for each statement).

**Table 34: How Often Do the Teachers Do the Following?**

	Never	Once or twice a year	Monthly	Weekly	Daily	<i>N</i>
Meet as a team or department to plan or organize the lessons		3	17	238	8	266
Collaborate in planning and preparing instructional materials for specific classes		18	73	161	11	263
Go over pupil assessment data with other teachers to make instructional decisions		4	160	90	11	265
Observe other teachers to get ideas for their own instruction	62	162	28	8	5	265
Observe other teachers to offer feedback	105	131	19	5	2	263

Table 34 is sorted by how many principals say the teachers in their school do each of these activities weekly. As can be seen from the table, meeting as a team or department to plan or organize lessons is done frequently by teachers in many of the participating schools. As is collaborating in planning and preparing instructional material for specific classes. 238 of them meet in teams on a weekly basis, 161 develop material for specific classes together. None of the principals answered that

this never happens at their school. On the other hand, most principals say that only once or twice a year, or never, do their teachers observe in another teacher`s class to either get ideas or give feedback. Between 263 and 265 of the in total 269 participating principals gave their response to how often each of these five tasks are done by the teachers.

*24. Do the school's teachers in mathematics meet the new competence requirements (of 30 or 60 credits in the basic subjects they teach)? (Choose only one of the alternatives).*

The Norwegian government require that all teachers in elementary school who teach mathematics, English, Norwegian, Sami and Norwegian sign language must have a specialization in their subject. This requirement was announced in 2015, and the municipalities and counties were given 10 years to make sure that all teachers meet the new competence requirements.

**Table 35: Meeting the New Competence Requirements**

	Frequency
All	87
Most	156
About half	23
Few or none	2
<i>N</i>	268

This question focuses specifically, in line with the purpose of the IMaT project, on the mathematics teachers working at the schools. As Table 35 shows, most schools already have many mathematics teachers who meet the new competence requirements. 156 of the principals say that most of the teachers already meet them and 87 say all teachers do. In 23 of the schools, about half of the teachers meets the new requirements, while only two of the principals lead schools where they are only

met by a few or none of the teachers. One of the in total 269 participating principals did not answer this question.

**Table 36: Meeting the New Competence Requirements, by School Type**

	Frequency		
	Primary schools	Lower secondary schools	Combined schools
All	35	42	10
Most	94	43	19
About half	17	2	4
Few or none	2		
<i>N</i>	148	87	33

Table 36 shows that even if most schools have an overweight of teachers that meet the new competence requirement, it is the primary school's teachers who are lagging behind. The share of schools where only about half, or fewer, teachers meet the new competence requirements is larger among the primary schools. The two schools where few or none of the teachers meet the new requirements are also primary schools. There is, however, a very low share of the lower secondary schools where about half or fewer of the teachers do not meet the new competence requirements.

- 25.
  - a) *If not all, does the municipality have a strategy/plan for how the teachers will meet the new competence requirements?*
  - b) *If not all, does the school have a strategy/plan for how the teachers will meet the new competence requirements?*

From Table 37, below, we see that 160 of the in total 181 schools where not all teachers meet the new competence requirements have a plan or strategy for how the requirements will be met. In 157 cases, so do the municipality. 13 of the

municipalities and 20 of the schools, however, have not planned. Out of those who do not have a municipality with a plan, 7 of them are primary schools, 3 lower secondary schools and 3 combined schools. 11 of the principals are not sure whether the municipality has a plan. Out of them, 10 are primary schools and one is a combined school. Out of the schools who do not have a plan, 16 are primary schools, 3 are lower secondary schools and one is a combined school. It was not possible for the principals to answer “not sure” regarding their own school’s plan, as they are possibly in charge of making the plan. All eligible principals answered question a), while one did not answer question b).

**Table 37: Strategy/Plan to Meet the New Competence Requirements**

	<b>a) The municipality</b>	<b>b) The school</b>
Yes	157	160
No	13	20
Not sure	11	-
<i>N</i>	181	180

**Table 38: Strategy/Plan to Meet the New Competence Requirements, Cross Tabulated**

	The school		
The municipality	<b>Yes</b>	<b>No</b>	<i>total</i>
<b>Yes</b>	146	10	156
<b>No</b>	8	5	13
<b>Not sure</b>	6	5	11
<i>total</i>	160	20	180

Table 38 shows the combination of the answers to question 25 a) and b), thus whether both/neither/only the school (n) or the municipality have a plan or strategy for how the new requirements will be met. Looking first at the in total 20 schools who have not planned, for 10 of them, the municipality has a plan, while 5 principals are not sure whether the municipality has a plan or not. For five of the schools, neither

the school nor the municipality have a plan or strategy to meet the new competence requirements. Furthermore, 8 of the in total 13 schools where the municipality does not have a plan, the school has a plan, and 6 of the in total 11 schools where the principal is not sure whether the municipality has a plan, the schools have one.

*26. In what subjects do the teachers at your school take further education?  
(Choose one fitting answer to each alternative).*

**Table 39: Further Education**

	<b>Mathematics</b>	<b>Norwegian</b>	<b>English</b>
Yes	199	192	158
No	49	44	69
<i>N</i>	248	236	227

Table 39 shows that most schools have at least one teacher participating in further education. Most in mathematics, with 199 schools, followed by Norwegian, with 192 schools, and English, with 158 schools. The table also shows that out of the 269 principals participating in this survey, 21 at the lowest and 42 at the highest did not answer this question.

*27. If “Mathematics” in question 26, has the school made accommodations to ensure that teachers attending further education in mathematics can share what they have learnt with their colleagues?*

**Table 40: Sharing What They Learn in Further Education in Mathematics with Colleagues**

	<b>Frequency</b>
Yes	163
No	35
<i>N</i>	198

Out of the 199 schools where teachers are taking further education in mathematics, 163 of them work at a school where accommodations have been made to ensure that



the teachers can share what they have learnt in further education with their colleagues. 35 of the principals answered that they have not made such accommodations and one did not answer this question.

**Table 41: Sharing from Further Education in Mathematics with Colleagues, by School Type**

	Frequency		
	Primary schools	Lower secondary schools	Combined schools
Yes	107	40	16
No	17	10	8
<i>N</i>	124	50	24

Table 41, which separates between primary, lower secondary and combined schools, shows that a large share of the primary and lower secondary schools has made accommodations. Among the few leaders of combined school who answered this question, however, only two third of them say that the school has made such accommodations.

*28. In your opinion, to what extent have the teachers who have attended further education improved their teaching/practice in the subject that they took further education, in mathematics and in other subjects? (Choose one fitting answer to each alternative).*

As displayed in Table 42, below, very few of the principals think that the improvement from further education is small or very small. This applies both to mathematics and other subjects. Most of the principals think that it has improved the teaching to a large extent, but with a large share that see improvement to some extent or to a very large extent as well. 31 of them are not sure whether it has improved the teaching in mathematics, 19 are not sure regarding other subjects. 261 and 262, respectively, of the 269 participating principals, answered this question.

**Table 42: Improved Teaching or Practice from Further Education**

	<b>Mathematics</b>	<b>In other subjects</b>
Not sure	31	19
To a very small extent	3	2
To a small extent	5	6
To some extent	68	67
To a large extent	96	117
To a very large extent	58	51
<i>N</i>	261	262

## 7 Norm for Teacher Density

The norm for teacher density is a resolution by the Norwegian parliament regarding how many teachers there should be per pupil, which came into force from August 2018. From the fall of 2018, the goal was that there should be one teacher per 16 pupils in 1<sup>st</sup> to 4<sup>th</sup> grade, and one teacher per 21 pupils in 5<sup>th</sup> to 10<sup>th</sup> grade. From the fall of 2019 onwards, the goal was one teacher per 15 pupils in 1<sup>st</sup> to 4<sup>th</sup> grade, and one teacher per 20 pupils in 5<sup>th</sup> to 10<sup>th</sup> grade.

*29. Has the school received extra resources in 2018 as a result of the new norm for teacher density?*

*30. If “yes” to question 29, has the municipality laid down guidelines for how the new resources should be utilized?*

**Table 43: Resources and Guidelines, Following the New Norm for Teacher Density**

		Are there guidelines from the municipality?		
	<b>Frequency</b>	<b>Yes</b>	<b>No</b>	<b>Not sure</b>
No extra resources	121	-	-	-
Extra resources	147	67	77	3
<i>N</i>	268			

Table 43 shows the answers to questions 29 and 30. As can be seen here, 147 of the in total 168 principals who answered this question lead a school that received extra resources as a result of the new norm for teacher density. The principals who confirmed receiving extra resources were then asked whether the municipality has laid down any guidelines for the use of the resources. 67 of them had received guidelines from the municipality, while 77 had not. The remaining three principals were not sure whether the municipality had laid down any guidelines or not.

*31. If “yes” to question 29, how have you chosen to utilize the extra teacher resources at your school? (More than one tick is possible).*

**Table 44: Utilization of the Extra Teacher Resources**

	<b>Frequency</b> (N=147)
By adding the extra teachers into existing groups (two-teacher teaching)	125
By lowering the group size in particular subjects	68
Temporary grouping of pupils by their achievement level	34
By establishing new classes/groups	26
Other ( <i>please specify</i> )	8
No extra resources	

This question was answered by all 147 eligible principals who said that they received extra resources as a result of the new norm of teacher density. Table 44 is sorted by frequency, and shows that most schools, 125 of them, used the extra resources that they received to add extra teachers into existing groups, as a two-teacher scheme, while 68 schools lowered the group size in particular subjects. 34 of the principals say that they have introduced temporary grouping by the pupil’s achievement level and 26 created new classes or groups.

As can be seen from the table, eight of the schools have also utilized the new resources on other measures. Seven of the principals chose to elaborate on what other measures the extra teacher resources were used on. These specifications are presented in full in Table A6 in the Appendix. Furthermore, this question was only

presented to principals who received extra resources in 2018, so that explains why none of them answered that they did not get any resources in this question.

**Table 45: Utilization of the Extra Teacher Resources, by School Type**

	Frequency		
	Primary schools (N=87)	Lower secondary schools (N=45)	Combined schools (N=15)
By adding the extra teachers into existing groups (two-teacher teaching)	77	34	14
By lowering the group size in particular subjects	42	18	8
Temporary grouping of pupils by their achievement level	22	7	5
By establishing new classes/groups	20	6	

Table 45 shows how the 147 principals have answered these same questions, but with a separation of the three different school types. The table can be sorted in the same way as above, as the same utilizations of the extra resources have the same relative popularity regardless of the school type. The number of answers to “Other” and “No extra recourses” were not included in this table. The first is left out because there are few answers, and the elaborations are not presented with what school the principals lead. The latter is not included because it is not a relevant question, as it is already established that they did receive extra resources, and none of the eligible respondents ticked that box.

32. You answered that you have chosen to utilize the extra teacher resources to lower the group size in particular subjects. In what subjects? (Multiple options possible).

**Table 46: Smaller Groups**

<b>Frequency</b>	
(N=68)	
Mathematics	59
Norwegian	56
English	36
Other subjects	23

Table 46 is also sorted by frequency and shows that most schools who have lowered the group sizes in particular subjects have done so in mathematics, closely followed by Norwegian. 59 of the schools have used the new resources to lower the group size in mathematics, 56 in classes where Norwegian is taught. 36 schools have done that in English classes, while less than half of the schools have lowered the group size in other subjects. This last question of the survey was answered by 67 of the 68 principals who stated that they used extra teacher resources to create smaller groups in particular subjects.

**Table 47: Smaller Groups, by School Type**

<b>Frequency</b>			
	<b>Primary schools (N=42)</b>	<b>Lower secondary schools (N=18)</b>	<b>Combined schools (N=7)</b>
Mathematics	39	14	6
Norwegian	37	13	6
English	19	13	4
Other subjects	13	8	2

Table 47 shows that those who use the extra teacher resources to lower the group size have the same preferences when it comes to subject, regards less of school

type. Thus, most do it in mathematics, closely followed by Norwegian, then English and lastly in other subjects. There are, however, only 42 primary school leaders who answered this question, 18 lower secondary school, and 7 combined school leaders.

## 8 Concluding Remarks

All results from this survey of Norwegian school leaders have now been presented in the tables above. The survey is a part of the larger IMaT-project, where the objective was to map current practice in adapted education in Norwegian schools and assess the impact of practice on achievement and wellbeing. In total, the questionnaire consisted of 37 questions, if counting all sub-questions. Some questions, however, were follow-up questions which were only presented to a selection of the participating school leaders, depending on previous answers. The report was organized according to the main topics in the questionnaire, starting with descriptive statistics on the school leaders; followed by their work tasks; then a section about class size and pupil grouping. The next section referred to measures provided for pupils with either high and low learning potential, followed by a section on the teachers at the school and lastly information about the norm for teacher density.

The report started with a presentation of some observable measures from “the pupil survey” and “national test”, to compare the schools with participating and non-participating leaders. This was done to investigate if the low response rate and self-selected participants has made the selection sample skewed. As table 1, and to some extent also table 2, showed, there are not a large difference between the two groups in terms of how they scored on the pupil survey and national tests. Table 2, however, showed a general trend of schools with participating leaders performing better than other schools on the national tests. This could indicate that the participating schools differ from the general population in some way, and that these findings cannot be generalized. The findings from this survey are therefore presented in frequencies and not percent – to underline that what is presented here is the findings from this survey alone and should not be read as an attempt to generalize to a larger population of schools or school leaders.

## 9 Appendix

### 9.1 Elaborations

*What other kind of teacher education or other education do you have? (Part of question 5).*

**Table A1: Specified: What Other Education You Have**

1	Basic subject in folklore from UiB
1	Guidance pedagogy
1	30 credits in working life knowledge, 30 credits 5-10 years of pedagogy
1	Engineer
1	Several subjects from UiO not included in the teacher education: ex.phil, mathematics, physics, meteorology, macroeconomics, informatics, linguistics
1	Further education in mathematics. Public administration and management. Management subject from BI.
1	Master's module in Labor and Student Law
1	Pedagogy and social anthropology from UIO
1	Subjects and management education
1	Chemistry, mathematics and organic chemistry from UIB
1	Various subjects, major, philologist
1	Further education in history and IT
1	15 credits: Implementation of IT
1	Miscellaneous from the university (basic subject and equivalent)
1	60 credits in science, 60 credits in choir pedagogy, 30 credits in German
1	Personnel development and management, school development and management
1	Mathematics, chemistry and literary studies from the university
1	Mentoring and supervision
1	Basic subject in organization and management
1	15 ECTS Supervision and mentoring in the teaching profession, UiO
1	Major
1	Primary school pedagogy and school development and management

1	60 credits in educational management at UiO
1	Administration and management for school and kindergarten 30 points, law for school leaders 15 points
1	Organization and personnel management - 30 ECTS, school environment and management - 15 ECTS
1	Organization and management (1 year, HiH, Rena) + Entrepreneurship, innovation and business development (1 year, HiH).
1	Other management education at master's level, military management education, basic psychology
1	Trainer education
1	Leader education
1	Mentor and supervisor
1	Further education in Norwegian and supervision
1	Primary school pedagogy and interdisciplinary mental health work for children and young people
1	Lots of different in management
1	Bachelor in Information Technology
1	Some school management from BI (30 credits) and the University of Oslo (30 credits)
1	Supervision pedagogics, personnel management
1	Norwegian intermediate subject
1	BI - candidate
1	Leadership
1	15 credits in law
1	Sociology
1	Digitization and management of the school
2	School leader education
3	School environment and management
<b>N=49</b>	



*What other measure(s) do your school provide for pupils with higher learning potential in mathematics? (Part of question 19).*

**Table A2: Specified: Other Measures for Pupils with Higher Learning Potential  
– In Mathematics**

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1	They get to work with problem-solving tasks that include complex possibilities, even though they have not “learned” the algorithms yet.
1	There is a group at municipality level for specially selected pupils who work with science.
1	Own program for some pupils in 7 <sup>th</sup> grade at the Science Center (Vitensenteret) in Trondheim. Together with other pupils from other schools from 7 <sup>th</sup> grade to lower secondary school pupils.
1	Follow teaching in high school (VGS). Use of DVM – the virtual mathematics school.
1	Provide more complex and demanding challenges. In-depth learning through “teaching”.
1	Talents mathematics – Directorate of Education (Udir).
1	Science Factory (Vitenfabrikken) once a week for pupils in 5 <sup>th</sup> -7 <sup>th</sup> grade after school.
1	We have our own creative mathematics course.
1	The virtual school bag (virtuelle skolesekken) in 10 <sup>th</sup> grade.

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**N=9**

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*What other measure(s) do your school provide for pupils with higher learning potential in other subjects? (Part of question 19).*

**Table A3: Specified: Other Measures for Pupils with Higher Learning Potential – In Other Subjects**

---

1	Courses at higher levels, online or attendance.
1	Collaborates with high school (VGS) when needed.
1	At the Science Center (Vitensenteret), there is not only mathematics, but also mathematics and data
1	Language subjects where pupils have a high level of competence. Challenge pupils at high school (VGS) level. Optional subjects - research in practice. 9 <sup>th</sup> grade takes an exam at high school in geography.
1	See previous answer: Provide more complex and demanding challenges. In-depth learning through “teaching”.
1	Optional subjects in 5 <sup>th</sup> , 6 <sup>th</sup> and 7 <sup>th</sup> grade. We see that more of the high achieving pupils chooses programming as optional subject.
1	Creative writing group.

---

**N=7**

---

*What other measure(s) do your school provide for low performing pupils in mathematics? (Part of question 20).*

**Table A4: Specified: Other Measures for Low Performing Pupils – In Mathematics**

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1	Groups with adapted teaching (not special education). Distribute one task at a time (for pupils with ADHD). Profession days (fagdager) divided for all pupils.
1	Frequent courses of 10-15 minutes every day during a period of special education to practice specific skills.
1	Intensive course in reading and arithmetic. Concept groups for pupils with weak language / vocabulary.
1	Organized groups, 6 hours per week in the basic subjects! Level division /TPO/periods with different focus. This is all in teams at school.
1	Subject preparation classes. Reading aloud of assignments - clarification of concepts.
1	Station teaching (Stasjonsundervisning).
1	Adapted assessment methods.
1	We have two teachers in all classes - a two-teacher scheme - which means that the teaching can be adapted to the pupils` needs, including the low-performing pupils.
1	We have a separate special department for pupils with large special educational needs.
1	We guide pupils who have poor performance in the subjects Norwegian, English and mathematics, to choose specialization in these subjects rather than choosing a second foreign language. There we have a high teacher density and great opportunities for differentiation.

---

**N=10**

---

*What other measure(s) do your school provide for low performing pupils in other subjects? (Part of question 20).*

**Table A5: Specified: Other Measures for Low Performing Pupils – In Other Subjects**

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1	Intensive training.
1	Same as previous: Frequent courses of 10-15 minutes every day during a period of special education to practice specific skills.
1	Intensive course in reading and arithmetic. Concept groups for pupils with weak language / vocabulary.
1	Practical teaching.
1	The school has emphasized that ordinary teaching should be of such a nature that all pupils can participate. We have practiced practical, varied and inclusive methodology and use the school's supervisor corps to observe and supervise the teaching of all teachers to ensure the development and improvement of practice. We also use a two-teacher system to strengthen teaching in groups / classes where pupils are struggling. These are resources that the team itself controls. Resources are deployed after careful mapping each school year.
1	Station teaching (Stasjonsundervisning).
1	Subject preparing classes. Language group, clarification of concepts etc.
1	A bit more practical approach.
1	Same as previous: We have a separate special department for pupils with large special educational needs.
1	Adapted assessment methods.

---

**N=10**

---

*How has your school chosen to use the extra teacher resources at your school? (Part of question 31).*

**Table A6: Other Utilizations of the Extra Teacher Resources – Specified**

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1	Higher teacher density evenly across the school! We had 5 teachers too few. Now several classes with smaller groups.
1	Reduced class size in 1 <sup>st</sup> -3 <sup>rd</sup> grade.
1	Resource lessons in basic subjects. Weakly performing pupils receive intensive courses for a short period.
1	Difficult question to answer. With team organization, it is mostly about general teacher density.
1	We have fairly small classes due to small classrooms.
1	We have established a learning center that provides tailored teaching to pupils regardless of class, subject and level.
1	Covers general strengthening in the class.

---

**N=7**

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# 9.2 The Questionnaire

This is an English version of the questionnaire that was sent out to all eligible school leaders. The survey questions are also available in Norwegian and can be shared upon request.

**1. Are you a...?**

- Woman
- Man

**2. How old are you?**

- 30 or younger
- 31-40
- 41-50
- 51-60
- 61 or older

**3a. For how many years have you been a principal?**

**3b. How many years have you been a leader at your current school?**

*(Please write only numbers here)*

**4a. Have you previously worked as a teacher?**

- Yes
- No

**4b. If yes, for how many years? *(Please write only numbers here)***

In mathematics      In other subjects

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**5. What kind of teacher training/ education have you completed?**

*(Tick as many boxes as necessary)*

<input type="checkbox"/>	Preschool teacher
<input type="checkbox"/>	Teacher training (Allmennlærerutdanning)
<input type="checkbox"/>	Vocational teacher training (Faglærerutdanning)
<input type="checkbox"/>	Teacher education from a university (Lærerutdanning fra universitet)
<input type="checkbox"/>	Special pedagogical education
<input type="checkbox"/>	Practical pedagogical education
<input type="checkbox"/>	Master in school leadership
<input type="checkbox"/>	Other master education
<input type="checkbox"/>	Ph.D.
<input type="checkbox"/>	Other, please specify

**6. How many credits do you have in mathematics and/or mathematics didactics?** *(Please write only numbers here)*

**7. Rank the following work tasks from 1 to 9, by how much time you as a school leader devote to them.**

	Administrative tasks
	My own teaching
	Personnel management
	Classroom observation
	Conversations with pupils
	School development (e.g. Fagfornyelsen, curriculum work)
	Analyses, interpretation and processing of pupil results
	Conversations with parents
	Meetings at the municipality level

**8. Prioritization of work tasks**

*(Tick one box for each statement)*

	<b>Strongly disagree</b>	<b>Partly disagree</b>	<b>Neither ... nor</b>	<b>Partly agree</b>	<b>Strongly agree</b>
I make sure to secure that the school's teachers employ teaching methods with well documented positive results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I make sure that the personnel's teaching skills constantly improves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I make sure that teachers are held accountable for the school's goal attainment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I make sure that guidelines from the Directorate for Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



(Utdanningsdirektoratet) are followed					
I make sure that the teachers work in accordance with the school's objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I use pupil results to develop the school's objectives for teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I make sure that the school's teachers are updated on relevant research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I prioritize mathematics higher than other subjects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I encourage the teachers to develop their teaching methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know that happens in the classrooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I encourage teachers to introduce new ideas of how we can further develop our school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am personally engaged in the teacher's professional development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I work on increasing the parents' participation and involvement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I encourage the teachers to develop common assessment criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**9. To what extent do you encourage the mathematical teachers to do the following?**

*(Tick one box for each task)*

	<b>Not at all</b>	<b>Very little</b>	<b>To some extent</b>	<b>To a large extent</b>	<b>A lot</b>
... to make sure that the pupils know the learning objectives for each lesson	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... to accommodate for quick improvement of results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... to offer adapted teaching in groups with mixed skill levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... to analyze the pupil`s mathematical competence based on test results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... to analyze the pupil`s mathematical competence based on activity in class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... to use the evaluation of the pupils mathematical competence to set learning objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... to group pupils by skill level for more adapted teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... to facilitate self-regulated learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... to prioritize mathematical competence over numeracy skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... to follow the same approach as their colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...to give pupils with good results more advanced assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**10. To what extent does each of the following issues give rise to concern at your school? (Set one tick for each issue)**

	<b>Not at all</b>	<b>Very little</b>	<b>To some extent</b>	<b>A lot</b>
Pupils that have been poorly prepared in earlier years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor condition of buildings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Large number of low or underperforming pupils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor indoor climate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortage of teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortage or inadequacy of library resources or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortage or inadequacy of computers or computing time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not enough time to cover topics with appropriate depth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pupil absenteeism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor pupil-teacher relations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A large number of pupils with psychosocial issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High staff turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of parental support for pupil learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disruption of classes by pupils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Teachers not meeting individual pupil's needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teacher absenteeism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A large number of pupils from poor resource homes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pupils lacking respect for teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Too low mathematical competence among the teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pupils bullying other pupils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pupils arriving late at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pupils coming unprepared to school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Large classes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 11. How important is each of the following tasks in teaching?

(Set one tick for each statement)

	<b>Not important</b>	<b>Somewhat important</b>	<b>Important</b>	<b>Very important</b>
Preparing pupils for tests and examinations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensuring that pupils can connect learning to life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipping pupils with the skills to recognize and solve problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Developing pupil's self-confidence and self-esteem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opening pupils' eyes to the major social issues of our times	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helping pupils master a lot of complex subject-matter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Train the pupil's collaboration ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teach the pupil to apply their knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encouraging creativity and originality in pupils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Train the pupils ability to learn from own mistakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preparing pupils for the world of work and careers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Developing pupils' capacity to think critically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Challenging pupils to think for themselves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**16 a. In what subjects do you occasionally group the pupils by achievement level?** (Choose only one of the alternatives)

Mathematics	Norwegian	English	Other subjects
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**16 b. In what subjects do you most often group the pupils by achievement level?** (Choose only one of the alternatives)

Mathematics	Norwegian	English	Other subjects
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**17. How often are the pupils grouped by achievement level in the subject where it happens most often?** (Choose only one of the alternatives)

Several times a week	Once a week	A couple of times a month	Rarer
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**18. Why are the pupils organized into groups by achievement level?**

	Not important	Not so important	More important	Very important
To better adapt the education for "weak" pupils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To better adapt the education for "strong" pupils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To better utilize the resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Develop the pupil's self-confidence and self-esteem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For intensive training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**19. What measure(s) do your school provide for pupils with higher learning potential, in mathematics and in general?**

*(Check both columns. More than one tick is possible).*

	<b>In mathematics</b>	<b>In other subjects</b>
Accelerated teaching (i.e., to follow instruction and curriculum at higher grades/ levels)	<input type="checkbox"/>	<input type="checkbox"/>
Targeted means of instruction/ resources	<input type="checkbox"/>	<input type="checkbox"/>
Pedagogical differentiation and adaptation in ordinary classes	<input type="checkbox"/>	<input type="checkbox"/>
Separate short-term groups for high achieving pupils	<input type="checkbox"/>	<input type="checkbox"/>
No special measures	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>



**20. What measure(s) do your school provide for low performing pupils, in mathematics and in general?**

*(Check both columns. More than one tick is possible).*

	<b>In mathematics</b>	<b>In other subjects</b>
Special instruction	<input type="checkbox"/>	<input type="checkbox"/>
Targeted means of instruction/ resources	<input type="checkbox"/>	<input type="checkbox"/>
Pedagogical differentiation and adaptation in ordinary classes	<input type="checkbox"/>	<input type="checkbox"/>
Separate short-term groups for low achieving pupils	<input type="checkbox"/>	<input type="checkbox"/>
Discussing facilitation with the municipal pedagogical-psychosocial service (PPT)	<input type="checkbox"/>	<input type="checkbox"/>
No special measures	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>

**21. Does the school have one or more teacher specialist in mathematics?**

*(Choose only one of the alternatives)*

Yes    No

**22. Think about the teachers in your school. To what extent do you agree or disagree with the following statements?**

*(Please select one box in each row)*

	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
It is difficult to replace staff that quit their job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are willing to try out new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is difficult to retain good quality teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are highly competent in their subject area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have too many staff set in their ways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is best if there is a teacher specialist that teaches mathematics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is best if the contact teacher (kontaktlæreren) teaches mathematics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The mathematics teachers are committed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**23. How often do the teachers at your school do the following?**

*(Please select one box in each row)*

	Never	Once or twice a year	Monthly	Weekly	Daily
Meet as a team or department to plan or organize the lessons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collaborate in planning and preparing instructional materials for specific classes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Go over pupil assessment data with other teachers to make instructional decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observe other teachers to get ideas for their own instruction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observe other teachers to offer feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**24. Do the school's teachers in mathematics meet the new competence requirements of (30 or 60) credits in the basic subjects they teach?**

*(Choose only one of the alternatives)*

<input type="checkbox"/>	All
<input type="checkbox"/>	Most
<input type="checkbox"/>	About half
<input type="checkbox"/>	Few or none

**25. a. If not all, does the municipality have a strategy/ plan for how to meet these new requirements?**

Yes       No       Not sure

**25.b. If not all, does the school have a strategy/ plan for how to meet these new requirements?**

Yes                       No

**26. In what subjects do the teachers in your school attend further education?**

*(Choose one fitting answer to each alternative).*

	Yes	No
Mathematics	<input type="checkbox"/>	<input type="checkbox"/>
Norwegian	<input type="checkbox"/>	<input type="checkbox"/>
English	<input type="checkbox"/>	<input type="checkbox"/>

**27. Has the school made accommodations to ensure that teachers attending further education in mathematics can share what they have learnt with their colleagues?**

Yes                       No

**28. In your opinion, to what extent have the teachers who have attended further education improved their teaching in the subject they took further education (in mathematics and other subjects)**

*(Choose one fitting answer to each alternative).*

	To a very small extent	To a small extent	To some extent	To a large extent	To a very large extent	Not sure
In mathematics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In other subjects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**29. Has the school received extra resources in 2018 as a result of the new norm for teacher density?**

- Yes                       No

**30. If yes, has the municipality laid down guidelines for how the new resources should be utilized?**

- Yes                       No                       Not sure

**31. How have you chosen to utilize the extra teacher resources at your school?**

*(More than one tick is possible).*

<input type="checkbox"/>	By establishing new classes/ groups
<input type="checkbox"/>	By adding the extra teachers into existing groups (two-teacher teaching)
<input type="checkbox"/>	By lowering the group size in particular subjects
<input type="checkbox"/>	Temporary grouping of pupils by their achievement level
<input type="checkbox"/>	Other, please specify

**32. You answered that you have chosen to utilize the extra teacher resources to lower the group size in particular subjects. What subjects?**

*(More than one tick is possible).*

<input type="checkbox"/>	Norwegian
<input type="checkbox"/>	Mathematics
<input type="checkbox"/>	English
<input type="checkbox"/>	Other subjects

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