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# Research report in the project "Preventing post-COVID Social Exclusion Together"

Remote education and its effects on selected peripheral areas in Hungary



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The project No. 22110213 (Strategic Grant) is co-financed by the Governments of Czechia, Hungary, Poland and Slovakia through Visegrad Grants from International Visegrad Fund. The mission of the fund is to advance ideas for sustainable regional cooperation in Central Europe.

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## 1 Introduction

This document is one of four research reports (from all the V4 partner countries). It is the output of the project titled "Preventing post-COVID Social Exclusion Together" (Strategic Grant No. 22110213). The project is co-financed by the Governments of Czechia, Hungary, Poland and Slovakia through Visegrad Grants from the International Visegrad Fund. The mission of the fund is to advance ideas for sustainable regional cooperation in Central Europe. It is implemented by a transnational Research Team composed of:

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The main goal of this project is to support social integration of young people, and their families, residing in rural areas and small towns in less developed regions of Central and Eastern Europe during periods of epidemic threats. This goal is to be achieved through the development of recommendations for civil society on how to successfully create Local Support Groups - Rapid Response Teams in the local environment. This project aims to help reduce the scale of educational and social inequalities in peripheral areas where the introduction of remote education had far more negative effects than in urbanized areas and metropolises.

Each of the project partners developed a separate report based on completed student survey in the country they represent. The preparation of the documents summarizing the student survey data is a necessary stage for the development of further recommendations in this project.

This document covers the situation in Hungary.

## 1.1 Purpose of the research and research issues

Although research has been conducted on the impact of the COVID-19 pandemic on education and social inclusion of young people, there are very few studies focusing on youth from rural areas, small towns, and less developed regions of the Visegrad Group countries.

Therefore, between June and September of 2021, as part of this project, an analysis was conducted on the effect of the pandemic on teachers, young people, and their families from different groups and backgrounds living in the four Visegrad Group countries using the desk research technique. One of the purposes of the qualitative research was to identify in each country (Poland, the Czech Republic, Slovakia, and Hungary) one administrative region that can be classified as the country's "periphery". Four regions were identified:

- 1) Podkarpackie voivodeship (in Polish – *województwo*), one of 16 administrative regions in Poland
- 2) Eastern Slovakia consisting of Prešov and Košice self-governing regions (in Slovak—*kraj*)
- 3) Ústecký region (in Czech—*kraj*), and
- 4) The Northern Great Plain region (in Hungarian - *régió*).

The main portion of the research was carried out in all four countries using a survey method (the technique of the auditorium survey). The study aimed to provide answers to the following research problems:

- 1) Has remote education (2020-2021) increased inequalities among pupils / students?
- 2) What problems had pupils / students from periphery areas faced?

The research results should help to answer the following questions:

- 3) What should be done to prevent educational and social exclusion of young students during a pandemic?
- 4) How to support students without IT equipment during periods of remote education?

The research provided insight into the students' experiences during the COVID-19 pandemic (in 2020 and 2021) in the areas of:

- level of technical availability of equipment during remote education,
- assessment of the quality of classes during remote education,
- positive and negative features of this form of education,
- mental health problems,
- social support,
- educational aspirations and willingness to stay in stationary school learning.

The structure of this document is determined by the questions and areas listed above.

The first chapter describes the methodology of the completed research including: the research technique used, the research tool, the sample selection, and the method of research organization.

The second chapter characterizes the studied community. This was done through the prism of socio-demographic variables such as inter alia: gender, age, place of residence, and number of siblings.

The third chapter provides information on the psychosocial condition of students. Issues such as psychological well-being, distress experienced by students during distance learning, life satisfaction and social support were taken into account.

Chapter four describes the process of educating students in a peripheral area during the COVID-19 pandemic. Reference is made here to the technical possibilities available to students in the course of distance education, evaluation of distance education, etc. The chapter also provides information on the educational aspirations of students.

The research report ends with a summary, conclusions, and recommendations.

## **1.2 Methodology of the research**

The research was carried out in four Visegrad countries using a survey method (the technique of an auditorium survey). It allowed for the questionnaire to be self-completed in a school room. The time of completion should have not exceeded 40 to 45 minutes (1 school lesson). In each country's "peripheral" region, smaller units of sub-regions were selected in the desk research reports as the areas for the survey research. In Hungary the areas chosen for survey research consisted of Hajdú-Bihar county of the North Great Plain region. Next, the transnational team from all four Visegrad countries developed the questionnaire comprised of 31 items. The team also developed the common research methodology with research guidelines for the chosen research contractors (the contractors could be a person or a company in each country).

The research sample were students (ISCED'97 Level 2) of public schools located in the chosen periphery sub-regions (no less than N = 300 in each country). Other criteria's were: students' grade and their place of residence: in rural areas / settlements of up to 5,000 inhabitants (min. N = 150) and urban areas / more than 5,000, but less than 20,000 inhabitants (min. N = 150).

Before the research begun, a positive opinion of the Ethics Committees was obtained. In Hungary it was: Statement of ethical approval No. 3\_2021.

Purposeful selection of the sample and data collection was realized by the researchers of the Project: Dr. Karolina Eszter Kovács, Dr. Fruzsina Szabó, Katalin Godó and Krisztina Győri. The schools were chosen on basis of regional characteristics of the data provided by the National Assessment of Basic Competencies (NABC) which provides institutional data concerning the schools functioning in Hungary by regions. All of the researchers participating in the project were responsible for contacting schools.

## 2 Characteristics of the sample

### 2.1 Gender

Below is the gender distribution of respondents in the Hungarian sample (Figure 1). Our results show that the gender distribution of respondents is almost the same (51,5% boys and 48,5% girls).

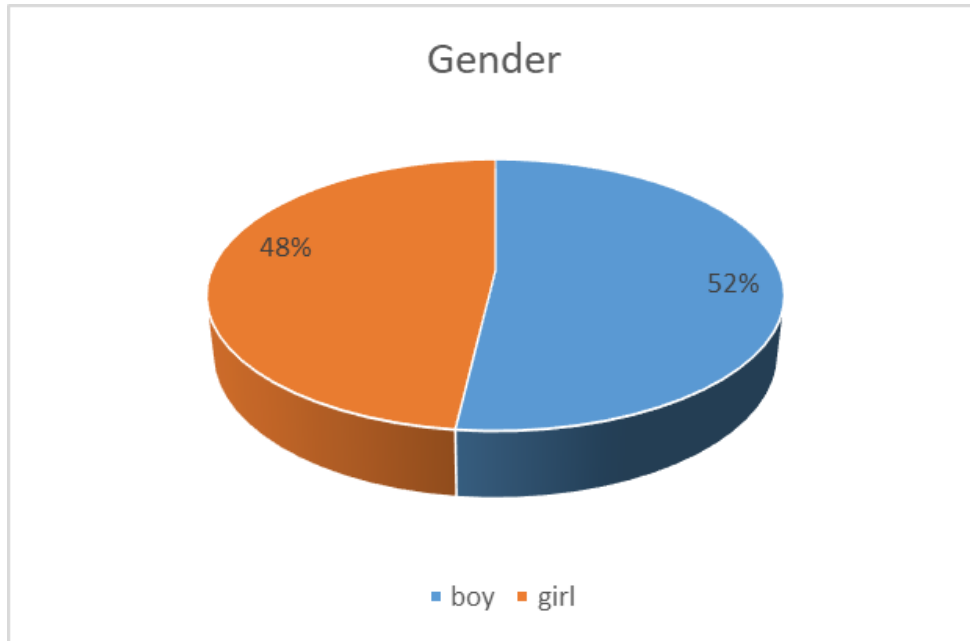


Figure 1. Gender of the respondents (N=301)

### 2.2 Age

We also measured the age of the respondents (Table 1) and found that the average age of the participants was 13,4 years, with the youngest 12, and the oldest 15 years old (one person) (SD=0,745). Overall, our subjects were predominantly between 13-15 years of age, which is in line with the general data for students in grades 7-8 (according to the ISCED 2011 type).

Table 1. Basic descriptive statistics on the age of the respondents

	Number	Mean	Median	Minimum	Maximum	Dev. std	Coefficient of var.
Age	286	13,4	13,0	12	15	0,745	5,56

Source: PCSET 2021

### 2.3 Number of siblings

We also wanted to know what percentage of respondents had siblings (Figure 2), and the number of siblings. We found that the majority of respondents had siblings (89,8%), and only 10,2% of respondents had no siblings.

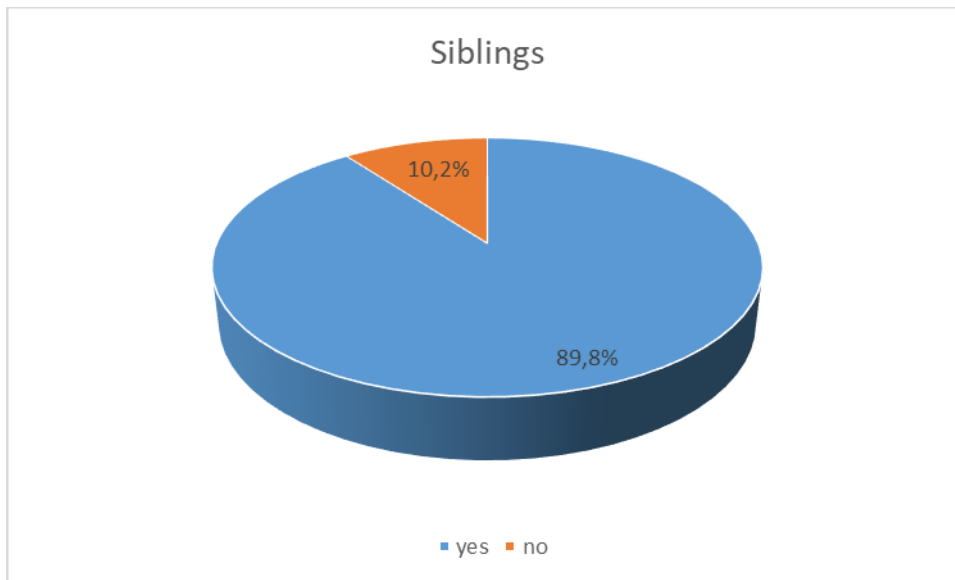


Figure 2. Siblings (N=292)

The following figure shows the number of siblings. The range is wide; it varies from 0 to 10 siblings (2 out of 292 persons, Figure 3).

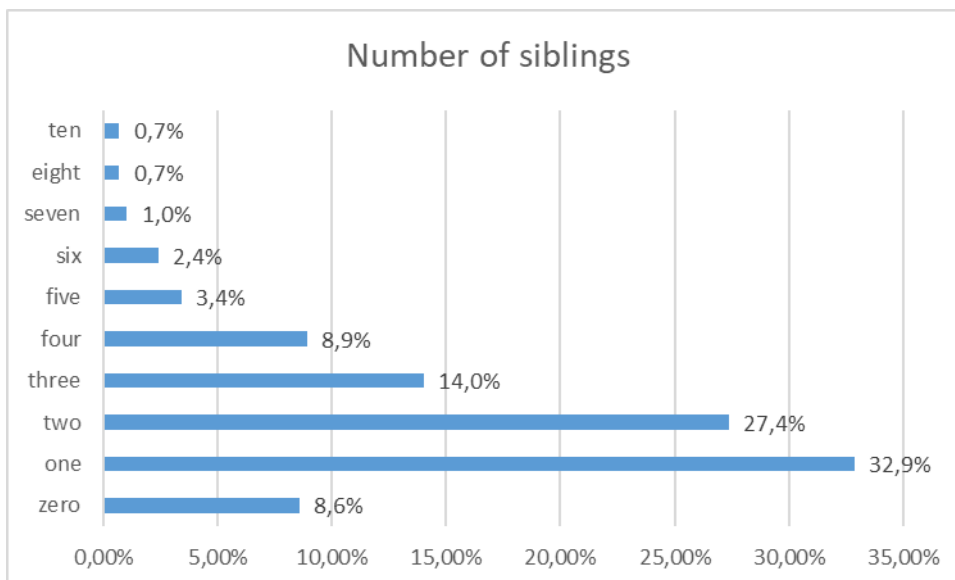


Figure 3. Number of siblings (N=292)

## 2.4 Place of residence

We wanted to know what percentage of respondents live in rural areas (no more than 5000 inhabitants) and urban areas. Depending on the size of the settlement (whether the municipality had more or less than 5000 inhabitants), we classified respondents as living in rural or urban areas. The following municipalities are the source of the completions:

- urban areas: Berettyóújfalu, Hajdúnánás (N=150)
- rural areas: Biharkeresztes, Nyírac nád, Újszentmargita, Zsáka (N=155)

Overall, 57,4% of the respondents come from rural areas and 42,6% from urban areas (Figure 4).



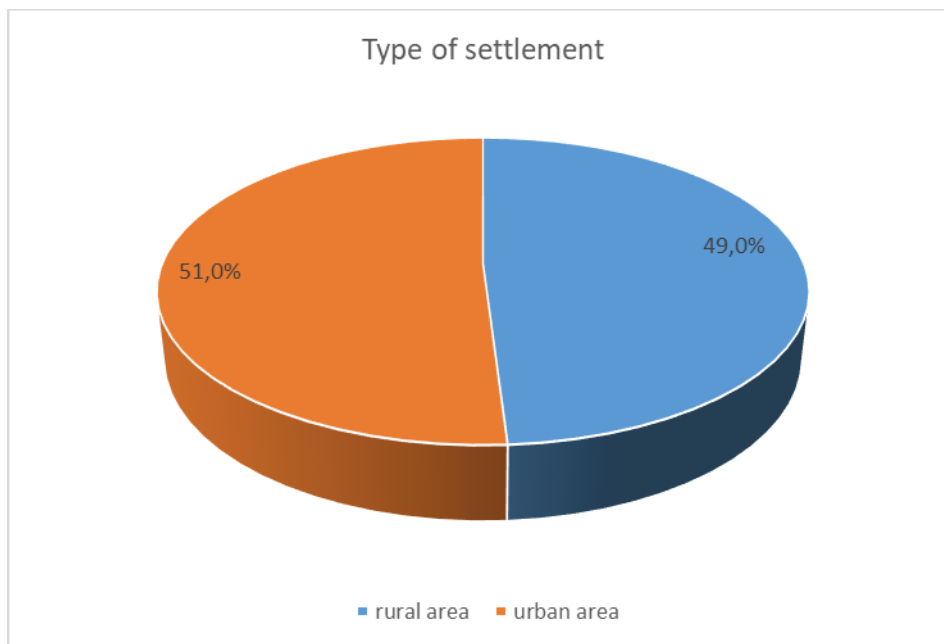


Figure 4. Place of residence (N=296)

### 2.5 Socio-economic status (parental education, professional status)

Regarding the socio-economic status of the respondents' parents, unfortunately, in many cases, students could not answer the question about the parent's educational background and occupation (neither the father's nor the mother's occupation was known). A high level of missing responses was observed for these questions. The responses also showed that the proportion of graduates among the respondents' parents was low and that the education level was below average, especially among fathers (41,3% of fathers had no school leaving certificate or higher, compared to 25,7% of mothers). Furthermore, among the respondents' parents, mothers/grandmothers were more likely to have a university or college degree, and men were less likely to have more than a high school diploma (Figure 5).

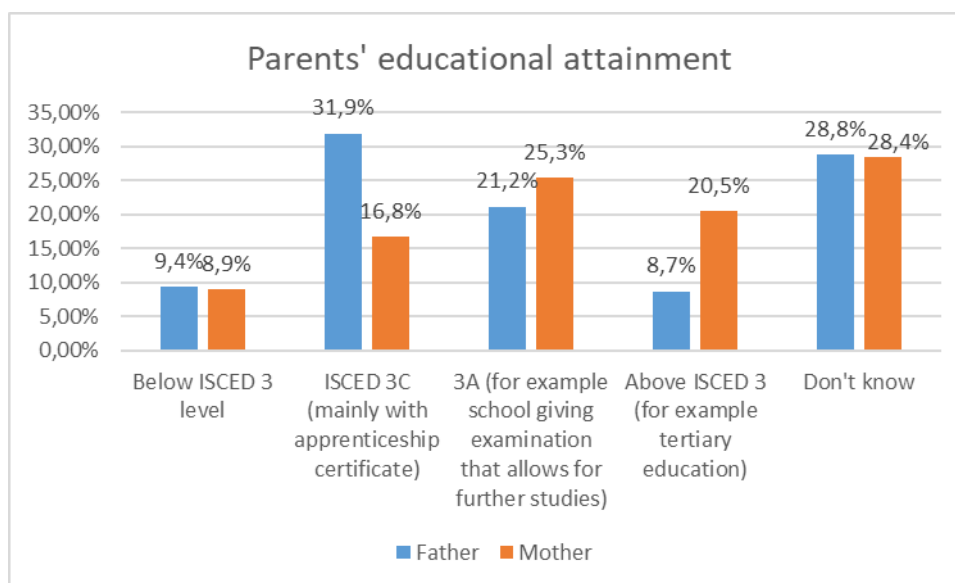


Figure 5. Education of parents (N=288)

The table below shows the distribution of the occupations of the respondents' fathers and mothers (Table 2). In line with education, it can be seen that relatively few of the respondents' parents are engaged in intellectual work, with physical work and service work predominating. There are also unskilled and unemployed workers. It can be seen that among mothers, there are more professionals with tertiary education or who are self-employed (e.g. researchers, teachers, pedagogues, doctors, lawyers, writers) (22 compared to 12 for fathers). There are also more mothers with low-level white-collar jobs (e.g. secretary, cashier, clerk, telephone operator) (29 compared with 11 for fathers). Meanwhile, fathers are over-represented among those who can claim to be owners of a private business (31 fathers compared with 15 mothers). Fathers are more likely to be unskilled workers (13, mothers: 4). More mothers than fathers are also unemployed (25, compared to 2 fathers). The proportion of respondents who could not specify the occupation of the mother and father was almost equal.

*Table 2. Parents' occupation*

	Mother (N=280)		Father (N=277)	
	Number	Percent	Number	Percent
director, chairman of the company, senior government official, member of Parliament	0	0,0	2	0,7
A specialist with higher education, a free profession (employee scientist, lecturer, teacher, doctor, lawyer, writer)	22	7,9	12	4,3
Technician and specialized worker administrative and office worker, white-collar worker	23	8,2	21	7,6
Low-level white-collar worker (secretary, cashier, clerk, telephone operator)	29	10,4	11	4,0
Owner of a private company	15	5,4	31	11,2
Trade and service worker	24	8,6	21	7,6
Unskilled worker	4	1,4	13	4,7
Skilled worker	36	12,9	71	25,6
Farmer	3	1,1	6	2,2
He is unemployed	25	8,9	2	0,7
On a pension, retirement	4	1,4	3	1,1
It's hard to say, I don't know	93	33,2	83	30,0

Source: PCSET 2021

Although we did not obtain significant results, we would like to emphasize that in our sample, girls were more likely to be able to report the father's occupation ( $\chi^2(24) = 13,2$ ,  $p=0,962$ ), while boys were more likely to be able to report the mother's occupation ( $\chi^2(22) = 12,5$ ,  $p=0,946$ ) (Table 3).

Table 3. Ability to report the parents' or guardians' occupation

Occupation of parents	Boy	Girl	Total
Occupation of mother	51 person	42 person	93 person
	54,8%	45,2%	100,0%
Occupation of father	37 person	46 person	83 person
	44,6%	55,4%	100,0%

Source: PCSET 2021

## 2.6 Property status

The students' subjective perception of their family's financial situation was also measured (Table 4). Respondents could choose 1 of 5 statements that best described their family's money management habits. Most respondents said that their family lives at or above average (88,0%), with 4,5% admitting to living modestly. Some considered their family's financial situation to be exceptionally good compared to others (6,6%). The respondents were more likely to classify themselves as middle class, and the description of the two extremes (poor-rich) was used infrequently by respondents to describe their financial background.

Table 4. Which of the following statements do you think best describes the way money is managed in your home?

	Number	Percent
We live very modestly, with not even enough money for our basic needs	4	1,4
We live modestly, we have to be very economical on a daily basis	9	3,1
We live averagely, we have enough money every day, but we have to save for larger purchases	97	33,9
We live well, with enough money for us not to have to save much	157	54,9
We live very well, compared to others, we can afford luxury	19	6,6
<b>Overall</b>	<b>286</b>	<b>100</b>

Source: PCSET 2021

Only 15,3% of respondents have a scanner in the family, while significantly more households have a printer (42,7%). The most common device is a smartphone (96,7%), but there are also families with a laptop or notebook (69,9%) or tablet (56,3%). Only 54,0% of the respondents have their own room to study in peace and quiet. Not many more have a desk (57,0%). However, 89,4% of pupils have access to good quality broadband internet, which was particularly important during the pandemic. Whether or not the family had an internet connection played an extremely important role in the learning experience (Table 5).

Table 5. Which of the following items are in your home?

	Number	Percent
Scanner	46	15,3
Printer	129	42,7
Desktop computer	172	57,0
Laptop or notebook	211	69,9
Tablet	170	56,3
Smart Phone	292	96,7
Permanent internet access	270	89,4
Desk	266	88,1
Private study room	163	54,0

Source: PCSET 2021

### 2.7 School achievements

The graph below shows that most of our respondents considered their performance at school to be average (60,7%), in total 28,5% of the respondents considered their performance to be above average, of which 4,7% considered themselves to be the best in the class. There were also some who underestimated their own performance (10,9%) (Figure 6).

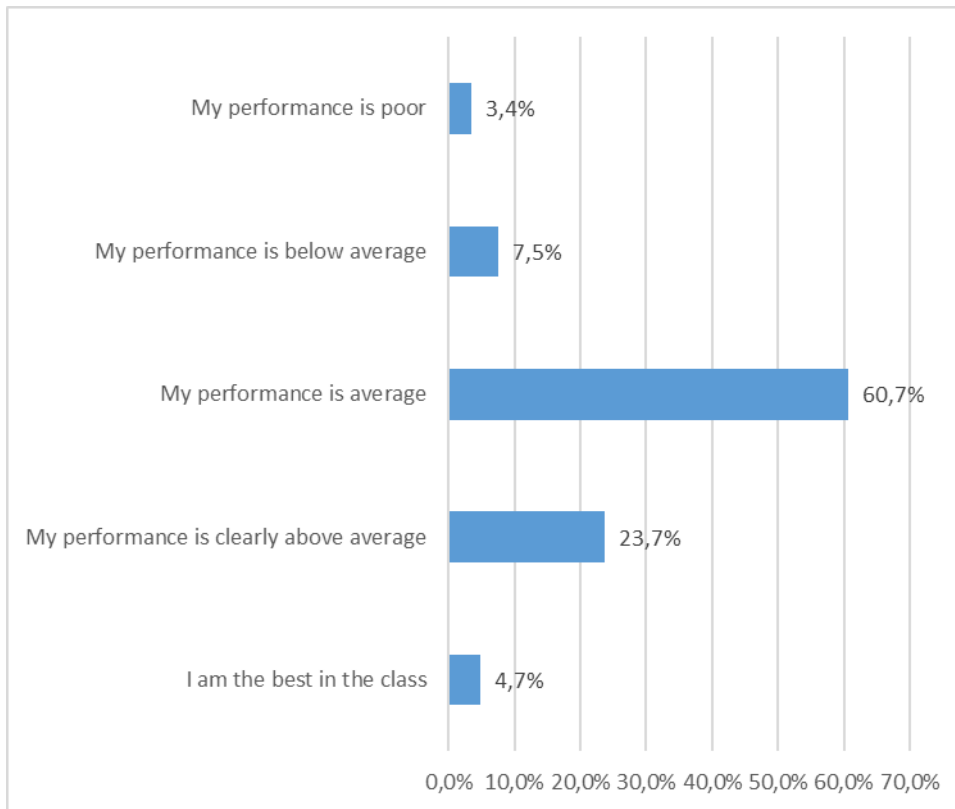


Figure 6. Perception of academic achievement (N=295)

### 2.8 Number of books

We also measured how many books the students' families have at home. Our results show that 24,1% had between 0-10 books at home, 23,7% had between 11-25, and the highest percentage (29,4%) indicated that their family had between 26-100 books. Having more than 200 books was less typical (Figure 7).

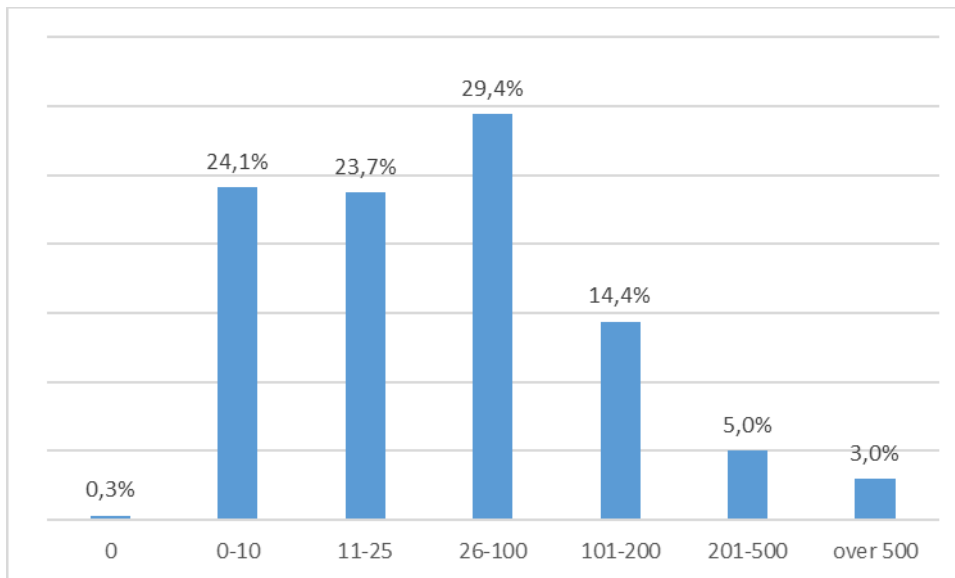


Figure 7. Number of books (N=295)

## 2.9 Summary of the section

This section shows the basic distribution of the sample. We were able to survey a total of 305 respondents, and our sample was relatively balanced in regards to gender. Descriptive statistics have been carried out in this section, covering gender, age, type of municipality, the number of siblings, and parents' education and occupation. The distributions of different devices such as tablets, smartphones, laptops or notebooks, printers and scanners, and books within the respondents' families were also presented. Additionally, we were able to determine the availability of internet access, desks, and the availability of a private room in each household. We found that in some cases, the conditions for learning were adequate, while in others, they were not: few households had a dedicated room, a desk and a printer.

### 3 Psychosocial condition and Imponderabilia

#### 3.1 Psychological well-being

The World Health Organisation- Five Well-Being Index (WHO-5) is a short self-reported measure of current mental well-being. The instrument measures well-being through five items where respondents have to evaluate the statements on a Likert scale from 0 to 5. While scales measuring health-related quality of life are conventionally translated to a percentage scale from 0 (absent) to 100 (maximal), it is recommended to multiply the raw score by 4 (Topp et al., 2015, p. 168). The instrument can be used for screening depression, too: following the WHO-5 recommendation, the cut-off score is  $\leq 50$ . Therefore, reaching 50 points or less may indicate depression.

Table 6. Basic descriptive statistics on the well-being of the respondents (N=289)

	Number	Mean	Median	Minimum	Maximum	Dev. std	Coefficient of var.
Well-being	289	55,5	56,0	0,0	100,0	22,0	39,6

Source: PCSET 2021

As Table 6 shows, the value of well-being varies between 0 and 100. The average well-being score is 55 points, which is slightly above the cut-off point. When creating groups based on the cut-off point, approximately two-fifths of the sample belongs to those reaching fewer points than the cut-off value. This means that 40,1% of the pupils have depressive symptoms (Figure 8).

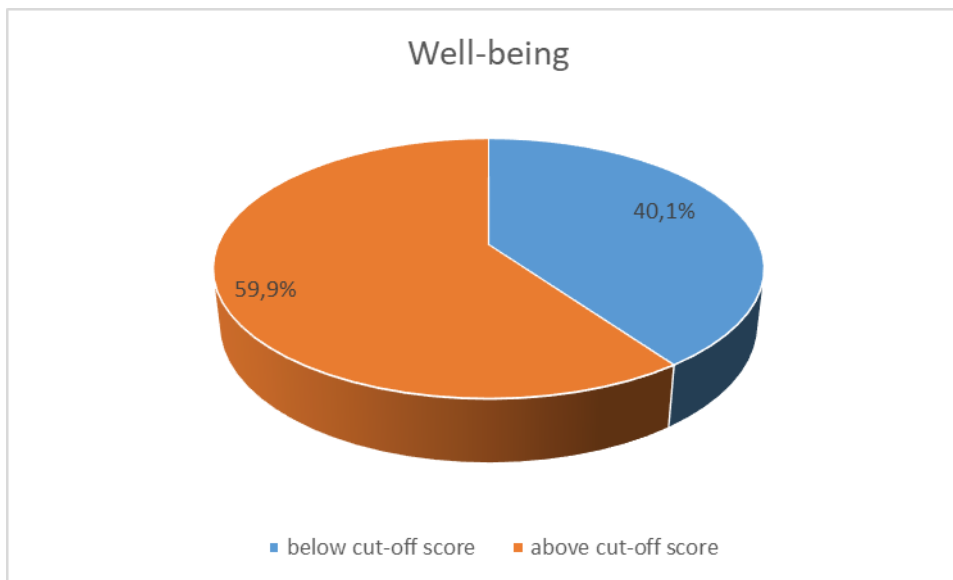


Figure 8. The proportion of pupils above and below the cut-off score (N=289)

#### 3.2 Perceived stress

The Perceived Stress Scale (PSS) was used to determine how the participant “perceived” stress. The original survey asks 14 questions about stressful situations and helps determine what stress the participants experience and how stressful they feel their life to be. Higher

scores indicate higher levels of stress. In our study, we used eight questions, of which three are reversed items. Therefore, we had the following questions:

- How often did you feel rushed or hurried?
- How often did you have enough time to do what you wanted? (R)
- How often did you feel worried about being too busy?
- How often did you feel nervous?
- How often did you feel angry?
- How often did you feel happy? (R)
- How often did you get enough sleep? (R)
- How often did you have fights with friends?

The modified questionnaire is proved to be reliable based on the value of Cronbach’s alpha (0,766)<sup>1</sup>. Table 7 introduces the item-total statistics of the items.

*Table 7. Item-total statistics of the modified perceived stress scale (N=288)*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
How often did you feel rushed or hurried?	11,8	22,3	0,5	0,7
How often did you have enough time to do what you wanted?	12,7	23,8	0,4	0,7
How often did you feel worried about being too busy?	12,1	22,2	0,4	0,7
How often did you feel nervous?	11,6	19,5	0,6	0,7
How often did you feel angry?	11,9	19,6	0,7	0,7
How often did you feel happy?	12,7	23,9	0,3	0,8
How often did you get enough sleep?	12,6	22,3	0,4	0,8
How often did you have fights with friends?	12,8	23,1	0,3	0,8

Source: PCSET 2021

Based on the original questionnaire, we created categories based on peer evaluation, which have resulted in three dimensions: time-related stress, mental health, and physical health. The characteristics of these dimensions are presented in Table 8.

<sup>1</sup> a questionnaire is considered reliable if the value of Cronbach’s alpha is above 0,6.

Table 8. Basic descriptive statistics on the dimensions of perceived stress of the respondents

	Number	Mean	Median	Minimum	Maximum	Dev. std	Coefficient of var.
time-related stress	294	5,5	5,0	1,0	11,0	2,1	38,2
mental health	291	5,8	6,0	0,0	12,0	2,6	44,8
physical health	294	2,7	3,0	0,0	7,0	1,6	59,3
overall stress	288	14,0	14,0	2,0	29,0	5,3	37,9

Source: PCSET 2021

The average level of time-related stress is the exact midpoint of the subscale. Therefore, it indicates an average level of time-related burden shouldered by pupils. The mean value of the mental health subscale is slightly below the midpoint of this subscale. This is true for the physical health dimension, suggesting that mental and physical health is below the desired level. The total score of the questionnaire also presents an average level of stress.

Also, based on the overall stress level, we created categories for the level of stress, including the following:

- Low Stress (scores 0 - 10)
- Moderate Stress (scores 11 - 21)
- High Stress (scores 22- 32)

The distribution of the groups can be seen in Figure 9. Almost two-thirds of the pupils have a moderate stress level. The proportion of students reporting a low stress level is relatively high; however, we have to emphasize that almost one-tenth of the pupils report a high level of stress which may be related to a decreased level of well-being.



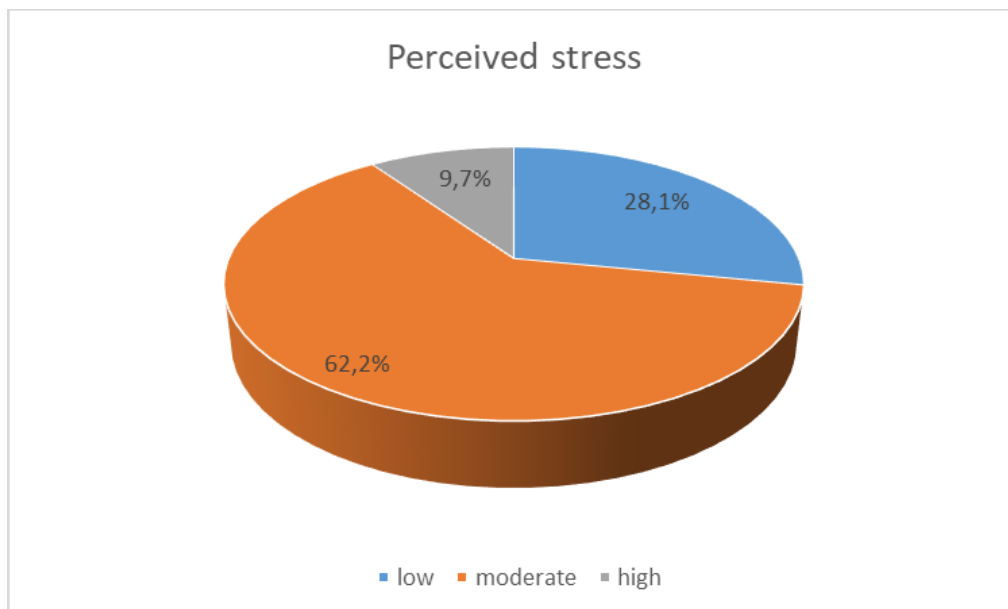


Figure 9. The proportion of pupils in the three groups of stress level (N=292)

### 3.3 Life satisfaction

To measure the life satisfaction of pupils, we asked them to evaluate their life so far, whether they are rather satisfied or dissatisfied with their life overall. Pupils had to choose one statement out of five (definitely dissatisfied / rather dissatisfied / rather pleased / definitely pleased, / I don't know, it's hard to judge).

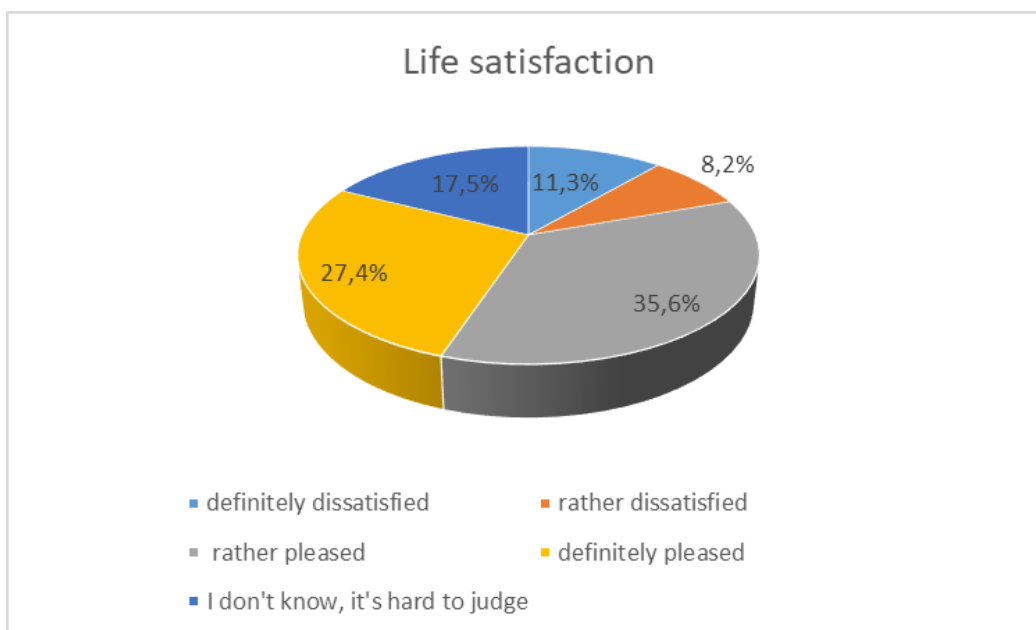


Figure 10. The proportion of pupils according to life satisfaction (N=289)

Figure 10 introduces that most pupils (63,0%) are definitely pleased or rather pleased with their lives while approximately 20% are definitely dissatisfied or rather dissatisfied. However, approximately one-sixth of the pupils reported that they could not evaluate their level of satisfaction with their lives.

### 3.4 Social support

First, we used the Short scale of youth's social support assessment to measure social support. SSYSS is an 18-item questionnaire to measure the impact of parental (5 items), peer (8 items), and teacher (5 items) support on a five-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). The maximum total score is 25 points for the parental and teacher subscales and 40 points for the peer subscale. The instrument covers the most important environments where a young person might live. The questionnaire is a widely accepted, accurate, and valid measure for investigating youth social support (Pluta et al., 2020). The reliability of the questionnaire was appropriate in our study too (parental support: Cronbach's alpha = 0,818; peer support: Cronbach's alpha = 0,825; teacher support: Cronbach's alpha = 0,835; overall questionnaire: Cronbach's alpha = 0,837). The results of the subscales are introduced in Table 9.

Table 9. Social support of students (N=288)

Support	N	Mean	Median	Minimum	Maximum	Dev. std	Coefficient of var.
Parental	296	23,7	25,0	11,0	25,0	2,2	8,8
Peer	293	32,7	14,0	14,0	40,0	5,2	15,9
Teacher	296	19,7	20,0	5,0	25,0	3,6	18,3
Overall support	280	76,2	77,0	47,0	90,0	8,0	10,5

Source: PCSET 2021

The results indicate a rather positive experience of social support. Especially the level of parental support seems to be high as the mean is just slightly below the maximum of total points that can be given for the subscale. The high level of perceived support received from teachers refers to the high-level engagement of teachers in helping their students in distance education. The level of perceived support received from peers also indicates a high level of collaboration with classmates and counterparts.

We also asked the pupils to mark who helped them with problems during distance education. Figure 11 shows that most support was received from the parents and classmates. Also, a significant proportion of pupils noted that siblings supported them and/or they used the Internet as a problem-solving technique. Teachers of the subjects and classmates can be found only in the fifth and sixth places, respectively, which can be surprising in the light of the results of the SSYSS. Pupils may have a closer relationship with their parents, siblings and classmates, and it was easier to ask them for help. Receiving support from other family members was reported by 14.8% of pupils. The support received from tutors and school psychologists was quite low, maybe due to the fact that tutors are not available for everyone and school psychologists are usually not so close to general schoolwork. We also have to note that 14.1% of pupils reported not experiencing any problems, and approximately 4.7% reported not having any help even if needed.

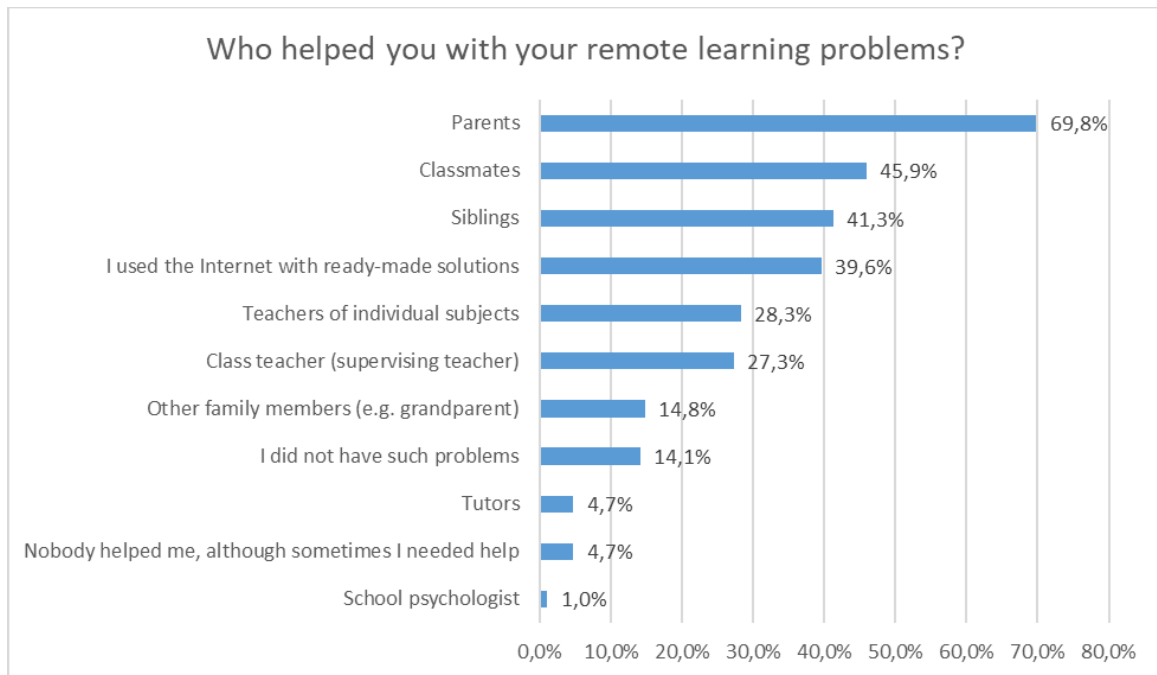


Figure 11. People and tools supporting pupils in dealing with problems during distance education (N=305)

### 3.5 Summary of the section

Our results show that the overall well-being of the children is below the desired level as approximately 40% of the pupils have depressive symptoms based on the data of the WBI. In line with this result, the level of perceived stress seems to be average, however, suggesting the level of mental and physical health to be below the desired level. This can also be seen in the high proportion of students perceiving moderate stress and those with a high level of stress. However, the results concerning life satisfaction are somehow controversial as most students are at least rather satisfied with their lives.

Concerning social support, we can conclude that the results of SSYSS indicate that pupils generally perceived a high level of support from their parents, teachers and classmates. However, when measuring the support received from the different actors during distance education, we can see that the most important ones helping the pupils came from their close environment such as their parents, classmates and siblings. The results suggest that the high level of perceived support based on the SSYSS refers to general and rather emotional support; however, when asking for physical help (e.g. support in doing home works), teachers' supportive role significantly decreases.

## 4 Students from peripheral areas in the course of distance education

### 4.1 Technical conditions for online education

Our results indicate that technological readiness for online education in Hungarian homes was mostly sufficient. Two-thirds (74,1%) of students had appropriate technological conditions to take part in online learning, and a small part of students (3,0%) said they did not have appropriate opportunities to learn online (Figure12).

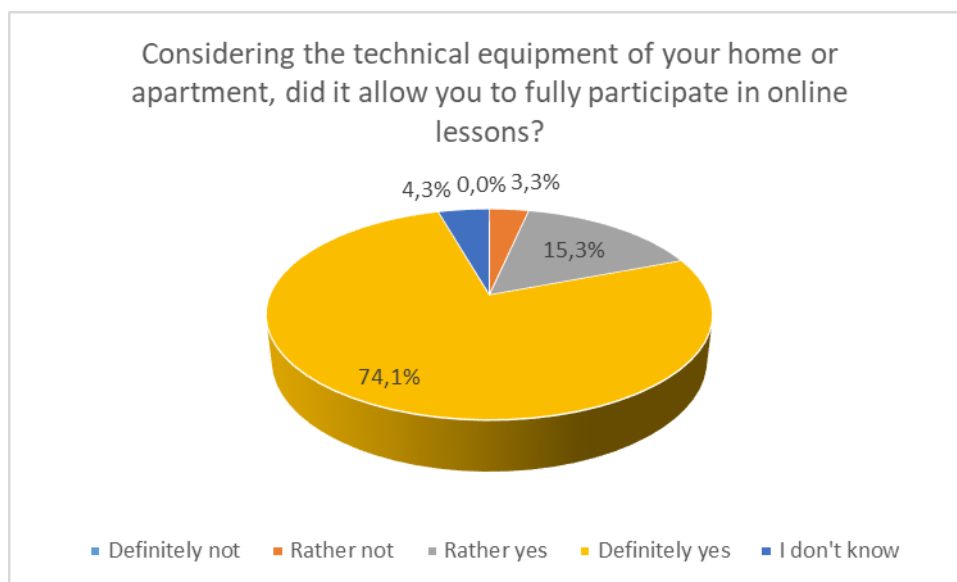


Figure 12. Technological readiness for online education in Hungarian homes (N=301)

We examined what kind of digital devices have been used by the pupils during emergency remote teaching. The most used digital devices were smartphones (43,6%) and laptops (33,7%). A smaller portion of the students used a personal computer (14,2%) and tablet (6,6%). Few students did not use any digital device (2,0%) (Figure13).

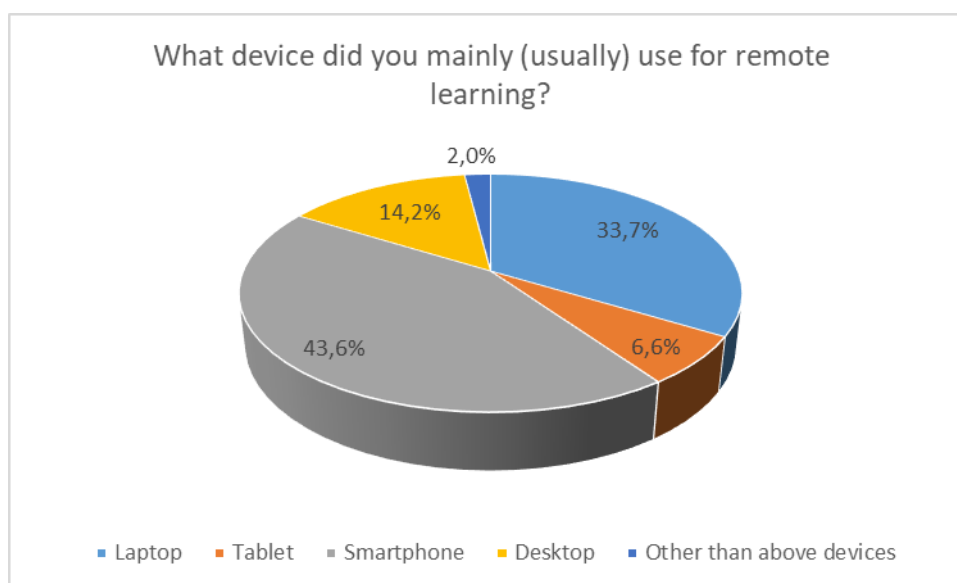


Figure 13. Digital devices used during emergency remote teaching (N=303)

Next step, we examined which digital devices were primarily used during emergency remote teaching. Our results indicate that the digital devices used most often were students' own devices (84,2%). There were not too many students (11,6%) who had to share devices with their siblings or parents. Even fewer students (1,7%) received devices from their schools. Finally, 2,6% of the students did not use any digital device; we can assume these students have been excluded from education during the pandemic (Figure14).

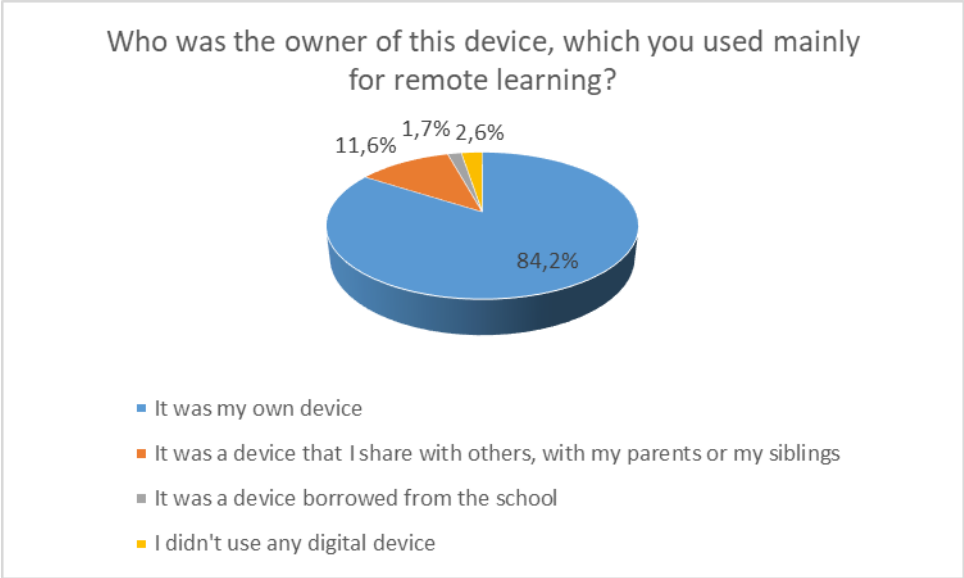


Figure 14. Primarily used digital devices during emergency remote teaching (N=303)

In our research, an important question was where students could learn during emergency remote teaching. The most frequently chosen answer to this question was "in my own room" (76,6%). A small portion of the students (12,2%) learned in a room with their siblings. Few pupils (9,2%) learned in a common family room (e.g. living room, kitchen, etc.). The smallest portion of the respondent (2,0%) learned in none of the before mentioned places (Figure15).

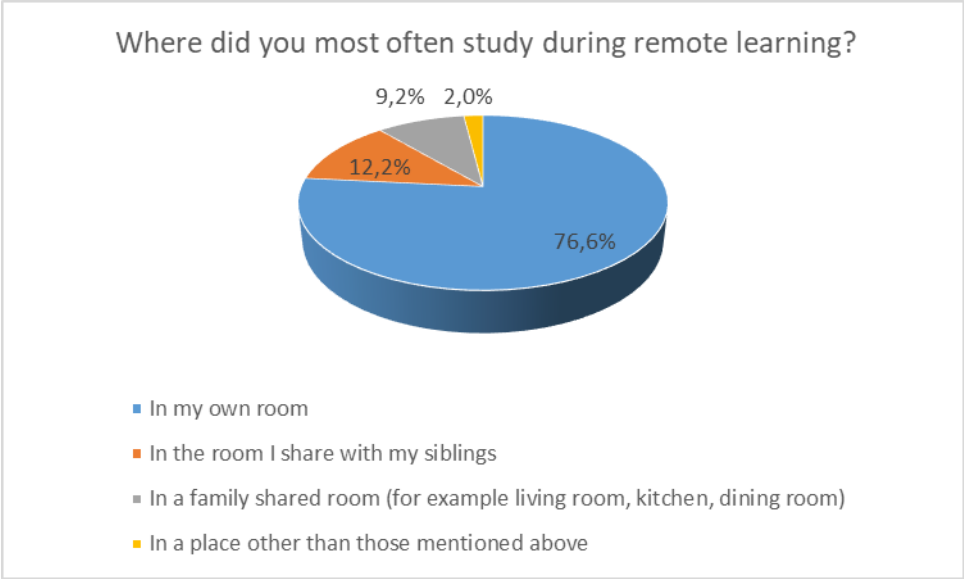


Figure 15. Place where students usually learned during emergency remote teaching (N=303)

## 4.2 Online education assessment

The answers to the question pertaining to the quality of online learning were diverse. The largest portion of the respondents (32,4%) said online learning was a little bit worse than traditional learning. A smaller portion said that online learning was much worse than traditional learning (16,9%). The second largest portion, (23,0%) said that learning during emergency remote teaching was a little bit better. In addition, fewer of the students (9,1%) thought online learning was much better than traditional learning. 18,6% of the pupils answered that the quality of learning was the same level as before the pandemic (Figure 16).

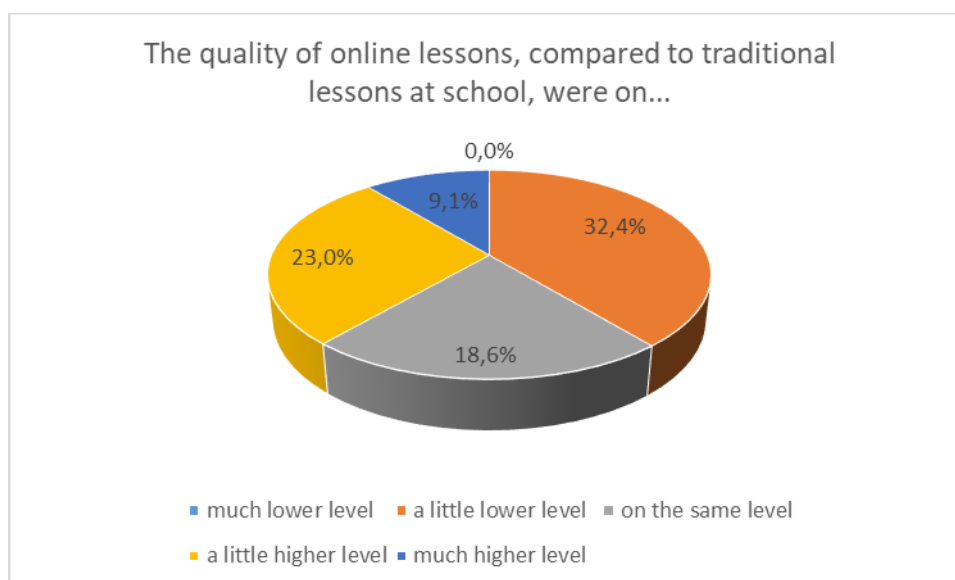
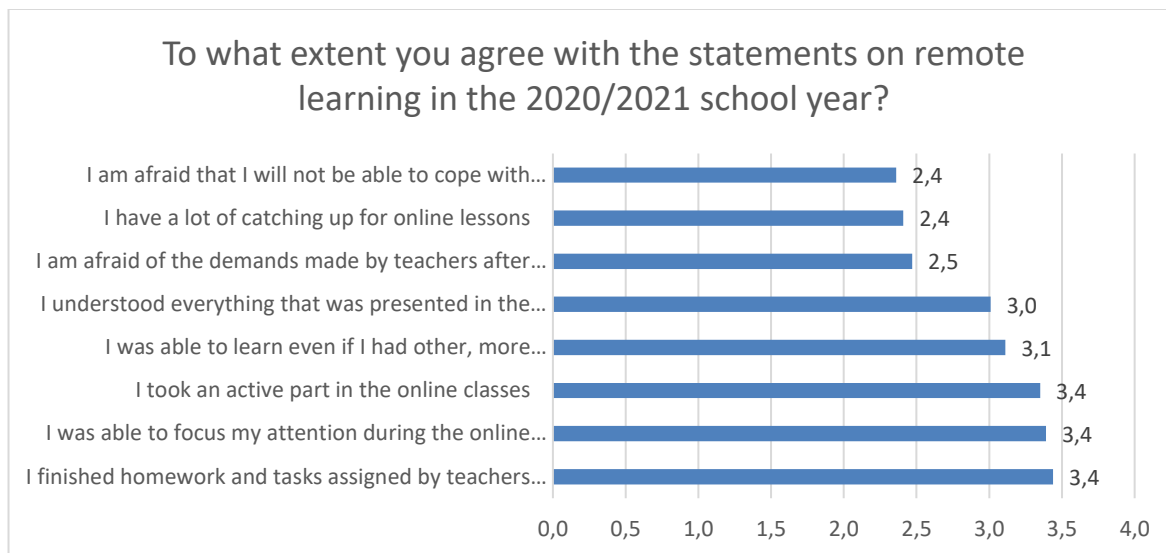


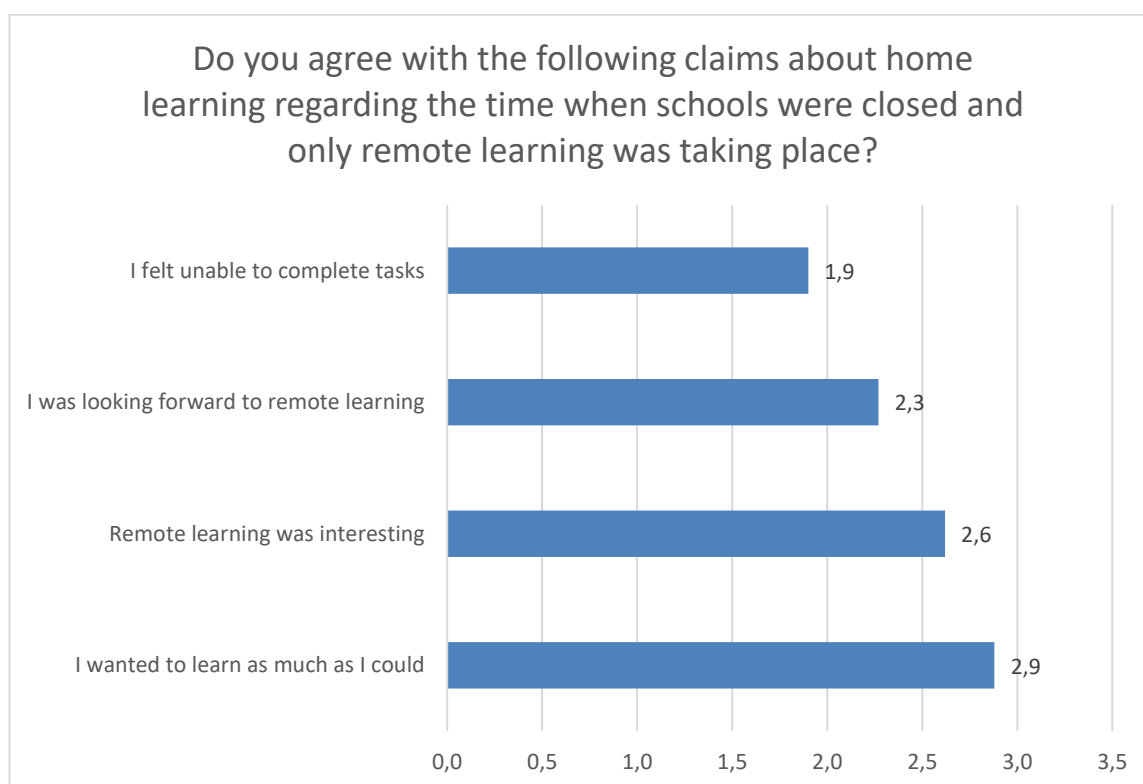
Figure 16. Quality of teaching during emergency remote teaching (N=296)

Our questions about online education revealed that students sought to do their homework, pay attention to their teachers, and they tried to take part in online classes actively. Students were more able to pay attention in online classes and understand the curriculum. It was less common for students to be afraid of their teachers' demands or to have too much to make up for in online lessons. We can establish from our data that students rather do not fear dealing with traditional learning in the future (Figure17).



*Figure 17. Student's opinion about emergency remote teaching I. (On a scale of 1 to 5) (N=305)*

Examining the students' feelings about emergency remote teaching, we have recognized that the average value of the answers did not exceed 2,9 and did not fall below 1,9. This illustrates that students did not have strong feelings about online learning. Students did not explicitly think that online lessons were interesting and did not look forward to them. The most extreme answer appeared to the question, which focused on the task performance. Unfortunately, students replied that they could not complete the task of the teachers (Figure18).



*Figure 18. Student's opinion about emergency remote teaching II. (On a scale of 1 to 5) (N=305)*

### 4.3 The pros and cons of online education

One of the research tasks was to examine the pros and cons of emergency remote teaching. From the students' point of view, the greatest benefit of online learning was that they had more time to sleep, and spent more time with their families and friends. Another advantage was that students could avoid becoming infected by the coronavirus. Moreover, students could take part in online classes when they were ill. Based on the students' responses the most problematic part of online learning also became apparent, which was cheating during tasks and exams. There were no concerns on behalf of the students' feelings about returning to traditional education. The less characteristic opinion of the students was being more tired, or that their relationships with other students and friend have deteriorated (Figure19).

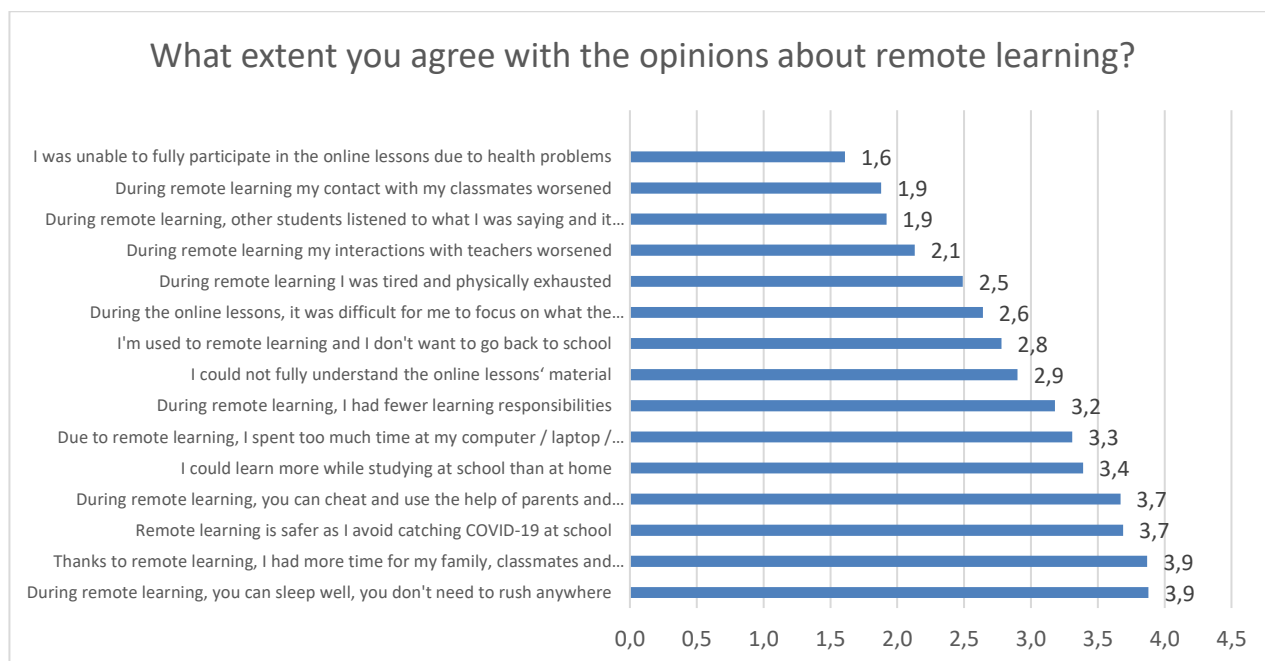


Figure 19. Pros and contras about emergency remote teaching (On a scale of 1 to 5) (N=305)

### 4.4 Level of involvement in online classes

Our results showed that the daily average number of hours spent learning during emergency remote teaching was approx. 5 hours. The number of hours spent on homework and preparing for future lessons was roughly 2 hours, while the parents' average time spent helping in their child's studies numbered 1 or 2 hours. The minimum value of the hours spent learning, doing homework, and preparing for future lessons and parents' helping their child studies was 0. The highest value of the hours spent learning was 12 hours. There was a child in our data who spent 8 hours preparing for their studies, and we can identify parents who spent 10 hours helping in their child's studies (Table 10).



Table 10. Level of involvement in online classes (N=305)

	N	Mean	Median	Minimum	Maximum	Dev. std	Coefficient of var.
How many hours a day on average did you spend during remote learning in 2021 on online lessons?	281	4,6	4,5	0	12	1,7	36,9
How many hours a day on average did you spend during remote learning in 2021 on preparing for lessons and doing your homework	283	2,5	2	0	8	1,6	64
How many hours a day on average did your parents/ guardians help you learn online in 2021?	268	1,7	1	0	10	1,7	100

#### 4.5 Attendance in online classes and reasons for absenteeism

The rate of taking part in online classes was high. Half of the students (50,9%) were present in all the lessons, while a quarter of the students (34,1%) attended most online classes. 6,5% of respondents said they attended only a part of online classes, fewer students (4,8%) answered they barely took part in online classes; finally, 3,8% of students never attended online classes (Figure 20).

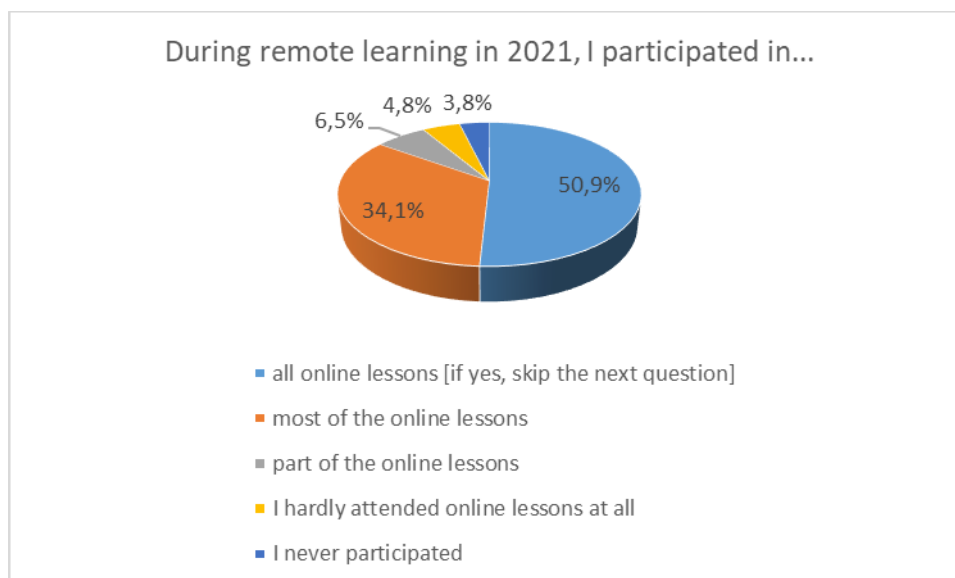


Figure 20. Participation rate in online classes (N=294)

The student's most common reason for not attending online classes due to illness. This was followed by a malfunction of the devices. To a lesser extent, two other reasons were students

having to help with housework or the students being tired of online learning. Other explanations were not common among students (Figure 21).

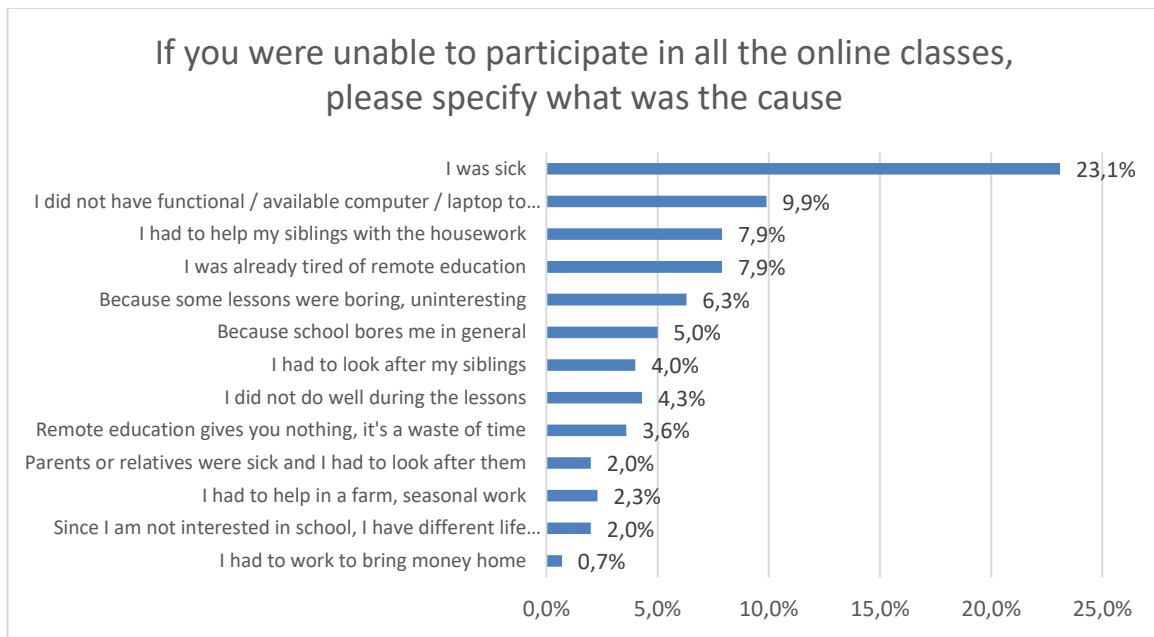


Figure 21. Reasons for absenteeism during emergency remote teaching (N=305)

#### 4.6 Readiness for school learning

Examining the students' opinions about how they would like to continue learning in the future, we can identify that almost half of the students (45,5%) would like to return to traditional learning. Fewer than one-third of the pupils (21,5%) stated they wanted to stay with online learning, while 16,0% of the responders said hybrid learning would be preferred. Also, 15,6% could not answer this question, and 1,4% would rather not study at all (Figure 22).

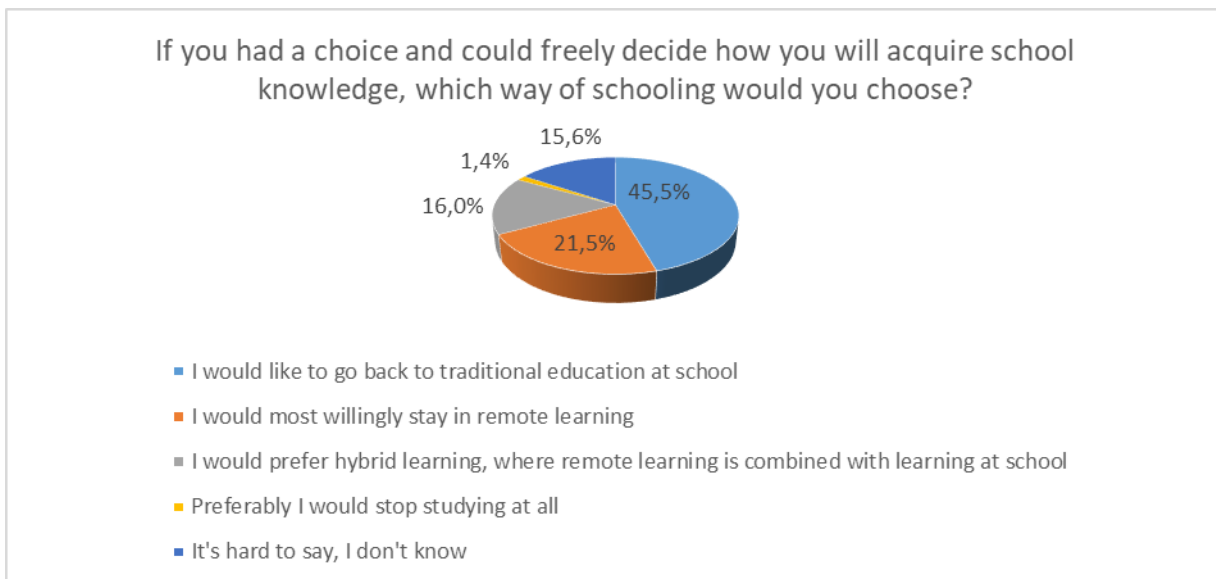


Figure 22. Students' opinions about how they would like to continue learning in the future (N=292)

#### 4.7 Educational aspirations

Examining what kind of studies students want to pursue in the future, we have established that all students would like to learn in the future. More than a third of the student want to learn in a secondary grammar school (36,0%), and a similar amount of the students wish to study in a secondary vocational school (38,0%). Fewer pupils (26,0%) want to go to secondary vocational grammar school (Figure 23).

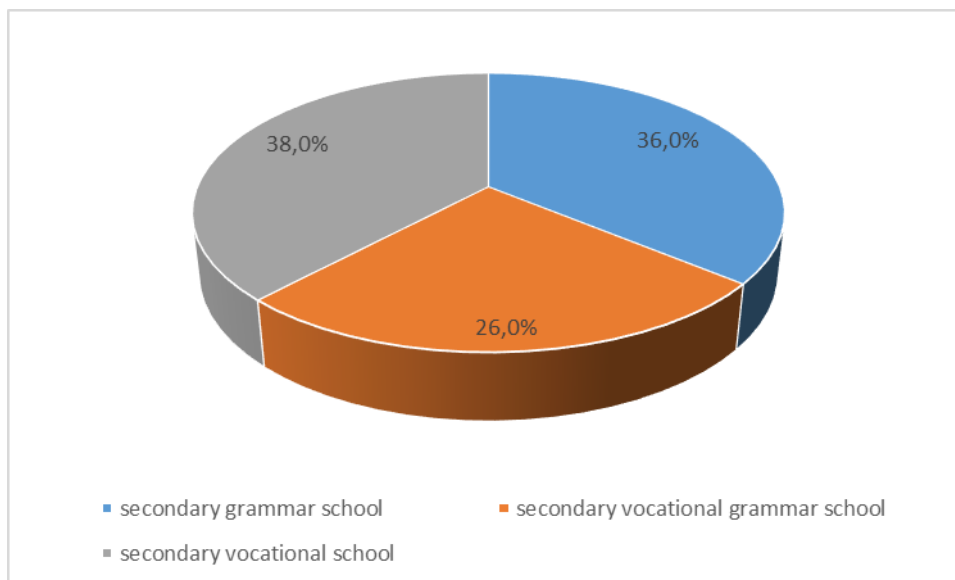


Figure 23. Students' educational aspirations (N=293)

#### 4.8 Summary of the section

We could see that most of the students we asked have adequate conditions to attend online classes. Rather, the students actively tried to participate in online classes and complete their homework and tasks. However, the results also showed some students dropped out of absentee education because they did not have the right tools or places to learn. The important result is that students did not enjoy online learning and wanted to return to traditional education.

## 5 Main research results and further recommendations

*Recommendations based on the research results that can help to answer the PCSET questions in Hungary:*

*What should be done to prevent educational and social exclusion of young students during pandemic?*

It is of paramount importance that the level of anxiety and the prevalence of depressive symptoms significantly increased during the epidemic. Compared to previous national research results, the ratio of students belonging to the depressed group indicated by the WHO-WBI is almost doubled (Kovács, 2020). The prevalence of psychosomatic symptoms also significantly increased. Therefore, it is critically important to improve the mental health and positive personality characteristics and strength.

School counselling can be a basic supportive tool in reducing social exclusion. It is well-known that social exclusion has an adverse effect on youth's psychological wellbeing. However, school counsellors and psychologists can design school-based prevention and intervention services (e.g. individual and/or group counselling for adolescents who perceive themselves as socially excluded in school, and their families if necessary). These programs can be useful to enhance youths' psychological wellbeing while reducing the negative feelings such as anxiety, grief, jealousy, and loneliness which are the outcomes of social exclusion (Baumeister and Leary 1995, Arslan, 2018).

To improve mental and physical health of children, we suggest to strengthen parental involvement by improving communication and support (Gascoigne, 2014). Families of children in a disadvantaged situation (living in peripheral areas) have a lot to gain from the help of professionals which can improve the outcomes of the educational process. Schools should hold regular sessions, including individual and group therapy meetings, to support institutions in examining parents' attitudes. Offering a wide range of additional support (e.g. physiotherapy, speech and language therapy, music therapy, animal-assisted therapy etc.) may also be useful in the involvement of parents and the improvement of the child's academic and non-academic achievement (Kovács et al., in press).

Concerning these issues, we have the following recommendations:

- To improve and strengthen the relationship between parents and schools. More active parental engagement, even if it is informal, leads to better school achievement and motivation
- Teachers need to create a classroom environment, which is supportive, welcoming and inclusive. For this, they may have to use translanguaging methods (using basic vocabulary of the native language of ethnic minorities, refugees etc), or they need to use such social skills in their everyday work that promotes inclusion and equity.
- Schools should invite professional psychology counselors, and experts that can provide training for educators.

*How to support students without IT equipment during remote education?*

Social-economic status (SES) is an integrated part of the Hungarian education system as it defines the school environment, opportunities for further education, and job perspectives.

Schools at both primary and secondary level are becoming increasingly selective, and as these schools pave the way to tertiary admission, competition begins at younger and younger ages. This has brought about a situation in which, due to this increased competition, the composition of schools tends to become homogenous. PISA results have revealed that Hungary has one of the most significant differences in academic achievement among schools, while the differences in academic achievement within schools are insignificant (Szabó et al., 2021).

To gain a well-founded overview of the Hungarian context, some of the major difficulties in teaching in low SES classroom environments need to be mentioned.

- The decreasing number of pupils: Most schools in low SES areas claim that due to segregation they constantly face a reduction in the number of pupils (Liskó 2009; Buda 2017). This is a crucially important matter as schools receive government funding and teacher appointments based on a certain quota of pupils. Consequently, segregation does not only lead to a decreasing number of pupils, but also creates a lack of teachers.
- Increasing number of pupils from disadvantaged backgrounds and children with special learning difficulties: low SES presupposes the fact that there will be many societal, learning, and behaviour-related problems. Pupils often have daily difficulties, problems with accommodation, food, or even their own schoolwork (Csányi, 2007). These children are often subjected to segregation within school and their own classes, and they often lack professional support.
- Lack of teachers: Széll (2015) points out that the added value of pedagogical work plays an important role in low SES environments. Teachers can compensate for various cognitive skills; furthermore, they can intervene in certain areas requiring development.

Concerning these issues, we have the following recommendations:

- Developing digital awareness of teachers in low SES regions
- Improving teachers' knowledge of segregation, thus establishing training about inclusive education
- Providing practical, classroom-based training on inclusive education
- Research claims that involving parents into school life brings about more interaction and trust between family and school: cooking events, gardening at school etc
- Digital classrooms with foreign students: international mentor program, where foreign students can practise homework, English etc with pupils in low SES.

Following the advices of the Digital Pedagogical Development Working Group (Digitális Pedagógiai Fejlesztések Munkacsoport (2021, p. 13), we suggest implementing the following:

- Reverse classrooms where built-in technology allows for learning based on students' individual work.
- Use installed devices - alternating with the previous "Bring Your Own Device" (BYOD) approach, meaning each child uses his or her "own" device.

- The use of augmented or virtual reality that brings the real world into the walls of the school and places a layer of digital information on the real environment viewed through the displays.
- The use of artificial intelligence, such as chatbots, that is, chat algorithms, allows students to interact for learning purposes, thereby supporting individual work and personalized feedback.
- Gamification, i.e. the use of game theory for specific pedagogical purposes in lessons.
- Support personalized learning and individual learning pathways, for example in a blended learning environment, increasing student responsibility and reducing direct teacher control. The applied adaptive learning technology further increases the students' decision-making opportunities, the number of individualized learning / practice opportunities, and provides feedback by analyzing the student's performance and offering the next learning activity based on it.

## Glossary of abbreviations and terms used

PSS: Perceived Stress Scale

SSYSS: Short Scale of Youth Social Support

WHO: World Health Organisation

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