



## SCHOOL UNITS AND EMERGENCY REMOTE TEACHING: THE CASE OF A PUBLIC PRIMARY SCHOOL IN GREECE DURING COVID-19 LOCKDOWN<sup>i</sup>

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### Abstract:

This paper presents the results of a case study examining the response of the public elementary school of Kalamos (Attica - Greece) to the implementation of the emergency remote teaching decided upon the suspension of the schools' operation in spring 2020, due to COVID-19. The research combines qualitative and quantitative methods of data collection to explore the experience of the school principal, the educators and the parents/guardians of the pupils. The data analysis showed that the pupils responded adequately to the remote teaching, despite the obstacles observed, such as few teaching hours, technical problems (connection to the Internet, lack of equipment), difficulty to understand the course material, increased involvement of the parents in the learning process, and exclusion of a part of pupils. The educators of the school unit co-operated to resolve any problems and highlighted the importance of organising formal training courses for educators, parents, and pupils in advance. A strong negative correlation was found between the degree of the ability to use the platform of synchronous and asynchronous learning and the trust in the effectiveness of the educational process mentioned by the parents. Finally, the role of the school principal was to enforce, explain, co-ordinate and inform.

**Keywords:** emergency remote teaching, school unit, COVID-19

### Περίληψη:

Στην παρούσα εργασία παρουσιάζονται τα αποτελέσματα μιας μελέτης περίπτωσης, η οποία εξέτασε την ανταπόκριση του δημοτικού σχολείου Καλάμου Αττικής στην εφαρμογή της επείγουσας εξ αποστάσεως εκπαίδευσης που

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αποφασίστηκε μετά το κλείσιμο των σχολικών μονάδων, την άνοιξη του 2020, λόγω COVID-19. Η έρευνα συνδύασε ποιοτικές και ποσοτικές μεθόδους συλλογής δεδομένων για να διερευνήσει την εμπειρία της διευθύντριας, των εκπαιδευτικών και των γονέων/ κηδεμόνων των μαθητών του σχολείου. Η ανάλυση των δεδομένων κατέδειξε την ικανοποιητική ανταπόκριση των μαθητών στην εξ αποστάσεως εκπαίδευση παρά τον εντοπισμό εμποδίων, όπως λίγες ώρες διδασκαλίας, προβλήματα σύνδεσης στο διαδίκτυο, έλλειψη συσκευών, δυσκολία κατανόησης της ύλης, αυξημένη εμπλοκή των γονέων στην μαθησιακή διαδικασία, και αποκλεισμός μερίδας μαθητών. Οι εκπαιδευτικοί της σχολικής μονάδας συνεργάστηκαν μεταξύ τους για την επίλυση προβλημάτων, ενώ υπογράμμισαν την ανάγκη εκ των προτέρων οργάνωσης τυπικών επιμορφώσεων για εκπαιδευτικούς, γονείς και μαθητές. Εντοπίστηκε ισχυρή αρνητική συσχέτιση μεταξύ του βαθμού ευκολίας χρήσης της πλατφόρμας σύγχρονης και ασύγχρονης διδασκαλίας και της πεποίθησης της αποτελεσματικότητας της εκπαιδευτικής διαδικασίας που ανέφεραν οι γονείς. Τέλος, ο ρόλος της διευθύντριας ήταν ενισχυτικός, επεξηγηματικός, συντονιστικός και ενημερωτικός.

**Λέξεις κλειδιά:** επείγουσα εξ αποστάσεως εκπαίδευση, σχολική μονάδα, COVID-19

## 1. Introduction

During the Covid-19 pandemic in 2020, various governments all over the world announced measures for the confinement of the pandemic, some of which included the resumption of the educational process using remote teaching methods. The main reason behind this was the restriction of face-to-face interaction; however, not everybody was prepared for this online transition of teaching. Even though online teaching and learning have a long past, this was not the case this time: there was little or no planning involved in the implementation of remote teaching. In Greece, the idea behind the decision to “go online” was to save the school year, so that students would not have to repeat the class the following year. During the lockdown period, a non-mandatory remote teaching framework was established, for the pupils of elementary schools in Greece. This framework provided for the support of the educational process with a platform for synchronous teaching and the use of a repository for asynchronous operation for pupils and educators. The whole project was rated as a success, however, there needs to be a scientific investigation regarding the actual experience of teachers, students, and their families. Researchers from different countries mention insuperable obstacles for some students, obstacles which prevented the learning process from happening (Abel, 2020; Johnson, Veletsianos, & Seaman, 2020; Onyema, et al., 2020; Sahu, 2020).

Sharma and Kitchens (2004) define e-learning as the use of online operations, such as virtual classrooms, which allow for digital collaboration and technology-assisted distance learning. However, it is certain that e-learning is designed for online use from the beginning (Hodges et al., 2020). E-learning is offered in two ways or a combination

thereof: synchronous and asynchronous teaching. The model of synchronous teaching resembles that of a traditional classroom. The communication between the educator and the pupils is performed in real-time (Sophos, Kostas & Paraschou, 2015 in Greek). The educator teaches and the participants attend the class remotely at the same time from different locations. The asynchronous model includes handing out the material to the students who study it at a different time individually, which may be preferable in a number of cases, e.g. when the students are needed to explore a course unit themselves or to study something, each one at their own pace or when it is difficult to arrange a meeting with all the students at once (ibid.).

In contrast to distance learning, which is based to a great extent on careful advance planning, emergency remote teaching is a temporary shift of the educational process from face-to-face teaching to remote, due to some crisis. Crises may regard the obstruction of the educational process because of earthquakes, floods or hurricanes, warfare, or educational reforms (Sinclair, 2001). As soon as the crisis is over, teaching returns to face-to-face, as the usefulness of the process is limited, in the lack of alternatives, to the temporary substitution of delivering face-to-face teaching. This means that the educational process is not based on remote delivery from the beginning, but tools and methods are remotely used from necessity and exclusively for the duration of the crisis (Hodges et al. 2020).

## 2. Current situation

The transition to remote teaching cannot be made overnight, in the sense that designing a course for remote teaching is a time-consuming process that needs organization and is quite different from designing a face-to-face teaching course. In other words, teaching is “*not merely a matter of information transmission*” (Hodges et al., 2020). The effectiveness of remote teaching is related to numerous factors: technology infrastructure, technical and technological knowledge of the involved parties, quality of the material, and effectiveness of the methods, as well as communication among the parties.

However, the transition in the case of emergency remote teaching is a source of concern for the researchers and raises a number of questions regarding its implications on the educational process itself (Onyema et al. 2020). The main concern is that not all students have access to the technological means necessary for remote teaching, i.e. access to the Internet or some device (Shin & Hickey, 2020). The negative impact of the occasional Internet connection must also be considered (Reich et al., 2020). These barriers account for approximately 45% of households worldwide, creating therefore high educational, social, and economic costs for disadvantaged persons and their families (Onyema, et al., 2020). Czerniewicz et al., (2020) also stress the inequality issues, highlighting that students lacking resources and already facing challenges in face-to-face teaching, fell further behind compared to their classmates, during the pandemic.

School closure intensifies pressure not only for the families with limited resources but also for those with limited digital skills. Moreover, students may have less

involvement in the educational process and fewer participation opportunities, as well as fewer opportunities for progress and development. The limited access to education may be a risk factor of increased school dropout, as well as criminality. Finally, there may be phenomena of social isolation and reduced socialization, which is necessary for learning and creativity (UNESCO, 2020b).

According to Abel (2020), the main problems encountered regarding the transition to remote teaching amidst the pandemic are the poor quality of Internet access, the financial constraints, the lack of technological devices and affective or emotional support, factors that seem to have a negative impact on engaging in the learning process. The phenomenological research concludes that it is of the utmost importance to adapt the design of curricula to make education inclusive and to reduce the number of learners that are excluded from the learning process. It is very important to respond to the needs of the learners and to the experiences of the educators, in order to design effective curricula for everyone.

Wilcox and Vignal (2020) highlight the reduced student motivation in their study. More than 80% of the students participating in the research, reported that they experienced reduced interaction during remote teaching and 72% considers that this reduction had a negative impact on learning. An additional challenge was faced in the field of assessing the knowledge gained by the students. It appears that a great percentage of the participants in the research is doubtful regarding the credibility and the validity of the online assessment examinations. It is a challenge for the teachers to apply assessment procedures that ensure valid results, are easily used online, and ensure equal terms for all the participants (Sahu, 2020). Finally, more than one-fourth of the participants in the study encountered problems with seamless Internet access, the ability to find a proper place for study or connection to the synchronous learning platform, and time difference. Shin και Hickey (2020) maintain that the success of remote teaching is related to various factors, e.g. student motivation, the sense of community and social interaction, knowledge of the tools and devices used, but also factors related to the teachers' preparedness (Cherif et al., 2019). Many teachers stated that they felt unprepared for the transition to emergency remote teaching and delivered remote teaching without the necessary time to prepare (Shin & Hickey, 2020; Johnson, Veletsianos, & Seaman, 2020; Sahu, 2020). Naturally, this emergency transition to remote teaching did not allow for proper design in advance in order to ensure quality. Even teachers who had had experience with remote teaching encountered problems with the unrealistic time frames available to support remote teaching (Johnson, Veletsianos, & Seaman, 2020). The difficulty of the educational institutions, educators, and students to respond to the transition to remote teaching, led to modifications and leniency in the educational process, workload, and syllabus, with frequent postponements of the scheduled and unscheduled examinations and assessment criteria (Johnson, Veletsianos, & Seaman, 2020; Shin & Hickey, 2020).

Talidong (2020) studied the implementation of an emergency remote teaching in China, using a sample of 20 teachers. She focused on the emerging difficulties, the

teachers' views regarding emergency remote teaching, the material available for use, as well as teaching quality. The researcher used an online questionnaire with 15 questions that led, inter alia, to the following conclusions:

- Most of the participants believe that they are equipped with the necessary material to be able to teach in case of an emergency.
- The participants expressed the importance of continuing the learning process during the pandemic and consider the results of emergency remote teaching beneficial.
- It is necessary to include the students' needs and their background in the design of remote teaching, as well as to place the design in a conceptual framework and to use a teaching model to support the designers and the teachers with theory.

Another case study (Mohammed, Khidhir, Nazeer & Vijayan, 2020) showed the effectiveness of emergency remote teaching in Middle East College Oman, using random sampling from students and educators and collecting qualitative analysis data. The researchers suggest flexibility in teaching and provision of synchronous and asynchronous learning, variety in the tasks assessed and deadlines, and constant support of the students during remote teaching. Moreover, direct and accurate feedback is deemed necessary. The analysis of the research data highlighted the importance of pedagogical creativity on the part of the educators aiming to motivate students. On the other hand, educators need to be equipped with the necessary tools in order to deliver efficient remote teaching and to avoid simply transmitting information online. Finally, technical support is important both for the educators and the students, but also for the material assessment of the learning process.

Whalen's study (2020) was conducted through a questionnaire distributed in the social media to 325 educators of public and private schools mainly in the U.S.A. and in other countries (Egypt, Hong Kong, Canada, Italy, Spain, and China). The study describes a significant difference in the degree of educators' readiness to deliver emergency remote teaching during the pandemic. Most educators stated that they were learning didactic strategies and tools during the remote teaching period, although it has been stressed for decades in the literature that educators do not seem capable of teaching with the aid of technology (Foulger et al., 2017). The study showed that the lack of preparation, training and support in designing quality lessons has intensified the participants' stress, but also the effectiveness of remote teaching. The researcher suggests infusing curricula with experiences with educational technology, providing the teachers with opportunities to develop remote and blended teaching skills, and fostering the creation of social networks supporting lifelong education for educators in remote teaching.

All survey findings agree that technological barriers may prevent students from attending remote teaching seamlessly and delivering assignments in time (Shin & Hickey, 2020; Reich et al., 2020). Some participants in the Shin και Hickey survey (2020) with limited resources and Internet access, reported that the process of emergency remote teaching was a challenge to them. Moreover, there seems to be a risk of further marginalisation of the students with special educational needs and a general increase in

phenomena of inequality (Shah et al., 2020). Shin και Hickey (2020) wonder if the results of the studies really include those that did not have the means to participate in online surveys; are the more vulnerable groups of population sufficiently represented in the findings of the surveys or not?

Student motivation during the emergency remote teaching adopted to respond to the pandemic seems to be at a low level in matters of research (Reich et al., 2020). This fact can have a negative impact on learning.

Many participants in surveys stated that physical presence at the educational institutions does not only facilitate the learning process; the educational institution is considered to be at the heart of interaction and communication, which is necessary for learning and development. Feedback also seems to be of great importance (Chatterjee & Correia, 2020; Czerniewicz, Trotter & Haupt, 2019; Lorenzo 2008; Shin & Hickey, 2020). The postponement of laboratory classes and practical exercising seems to have a negative impact on the experience of the participants (Onyema et al., 2020; Shin & Hickey, 2020).

The interaction of students with their peers was interrupted during the pandemic and due to the restrictive measures adopted by the governments to control the situation. This, apart from hindering the learning process (Onyema, et al., 2020), may have a negative impact on the children's mental health (Douglas, Katikireddi, Taulbut, McKee, & McCartney, 2020), and especially the younger ones, whose brain may be exposed to higher levels of stress and isolation (Fernández-Aranda et al., 2020; Shah, Mann, Singh, Bangar, & Kulkarni, 2020). Anxiety in children may increase due to the lack of physical proximity with other members of the family, the disease, or fear of death for themselves or their beloved people, serious changes in the financial condition of the family, uncertainty about the future, causing depression (Racine et al., 2020), panic attacks, reduced appetite and other mental disorders (Minihan, Gavin, Kelly, & McNicholas, 2020; Wigg, de Almeida Coutinho, da Silva, & Lopes, 2020; Tsamakis et al., 2020). Home isolation may intensify family disputes and affect the family dynamics. Overloading households with working from home, interrupting the school routine, and isolating from beloved persons affects the social and emotional balance of the family, risking increasing vulnerability and domestic violence (Marques et al., 2020; Wigg, de Almeida Coutinho, da Silva, & Lopes, 2020; Tsamakis et al., 2020).

In conclusion, the effectiveness of school closure, a practice adopted by governments all over the world, is questionable: indeed, many researchers stress that the disadvantages for the students and their families are greater than the risk of virus transmission within the school environment (Levinson, Cevik, & Lipsitch, 2020; Sharfstein, & Morpew, 2020). The disadvantages appear to be greater for the children living at the poverty line or with diagnosed disabilities. However, the capabilities of schools to safeguard the health of both the students and the personnel need to be taken into account (Dibner, Schweingruber, & Christakis, 2020; Edmunds, 2020).

On the other hand, school reopening seems to be a cause of concern. A recent study (Panovska-Griffiths et al., 2020) recorded increased cases in elementary schools that reopened and the second wave of infections, although it was not clear whether the

increase in cases was due to the increased interaction among the children or the adults, who when the schools are open can return to their work or to other free-time activities. In any case, school opening is expected to lead to increased cases, unless students attend classes in rotation and if the techniques of tracing cases and testing the population for COVID-19 are implemented (Di Domenico et al., 2020).

Many researchers explore the effectiveness and the problems of emergency remote teaching, mainly in tertiary education: whilst the selection of this particular option is perceived as useful (Mohammed, Khidhir, Nazeer & Vijayan, 2020), the limited access due to a lack of connection or devices (Shin & Hickey, 2020), the strong inequality issues (Shah et al., 2020), the high levels of stress (Fernández-Aranda et al., 2020), and the intense family disputes (Tsamakis et al., 2020) have led to some skepticism.

The abovementioned show that it is necessary to further study the school unit with the aim to record the actual conditions of the emergency remote teaching in school units of primary education. The need to explore whether there have been similar or different problems in primary education, where the young age of the pupils may be an additional factor affecting the effectiveness of the tools, but also a factor allowing or even imposing the involvement of parents in the educational process, is imperative. Moreover, the relationship of educators with the young pupils and their increased needs to interact with their classmates may augment the negative impact of the lockdown.

### **3. Research method**

This research aims primarily to record the response of the educators and the pupils of the public elementary school of Kalamos, Greece and their families to the emergency remote teaching, in the period between March 2020 and May 2020, after the suspension of operations of the school units as a measure to prevent the spread of COVID-19.

#### **3.1 Research questions**

Taking into consideration the critical results of the previously mentioned researches, we aimed towards the design of a research which would trace the current situation of the elementary school of Kalamos and would provide an insight of the struggles, if any, of students, parents, and teachers, regarding the abrupt transition to ERT. The existing literature pointed towards specific issues, namely, the lack of internet connection or available devices (Abel, 2020; Whalen, 2020; Wilcox & Vignal, 2020), resulting in the exclusion of students, reduction of motivation (Shin & Hickey, 2020; Wilcox & Vignal, 2020) and compromise (Johnson, Venetsianos & Seaman, 2020; Mohammed, Khidhir, Nazeer & Vijayan, 2020), as well as practical issues related to the evaluation of the learning process through testing (Sahu, 2020).

**Table 1**

<b>Research</b>	<b>Kind</b>	<b>Sample</b>	<b>Results</b>
Abel Jr, A. (2020).	Phenomenological study	5 students (Philippines)	Connection issues, lack of devices, financial limitations, emotional support
Chatterjee, R., & Correia, A. P. (2020).	Correlational research	396 students (USA)	High correlation between positive stance against cooperative learning and feeling of community
Johnson, N., G. Veletsianos, and J. Seaman. 2020.	Survey	897 members of university staff, administration and teachers (USA)	Use of new teaching methods, reduction of taught material and expectations, need for guidance/ assistance
Mohammed, A. O., Khidhir, B. A., Nazeer, A., & Vijayan, V. J. (2020).	Case study	Middle East College (Oman)	Flexibility in learning process, need for student support, technical skills, socialization problems
Onyema, E. M., Eucheria, D. N. C., Obafemi, D. F. A., Sen, S., Atonye, F. G., Sharma, D. A., & Alsayed, A. O. (2020).	Survey	200 participants (parents, teachers, students)(Nigeria, Bangladesh, Saudi Arabia, India)	Disruption of learning process, increase of debt, poor infrastructure and connection issues, loss of jobs
Shin, M., & Hickey, K. (2020).	Survey	64 students (USA)	Reduced motivation, escalation of inequalities
Talidong, K. J. (2020).	Survey	20 primary school teachers (Philippines)	Competence, need for evaluation of students' background before ERT
Whalen, J. (2020).	Survey	325 K-12 teachers (USA, Canada, Italy, Hong-Kong, Spain, Egypt, China)	Connection issues, problems in transformation of traditional teaching to ERT, need for support
Wilcox, B., & Vignal, M. (2020).	Survey	112 students (USA)	Connection issues, space- finding problems, reduced motivation

Considering the lack of specific studies aimed towards elementary school students, we designed our research in order to seek answers for the following research questions:

1. How did the pupils of the public elementary school of Kalamos respond to remote online teaching?
2. Which factors obstructed the involvement of students in the educational process?



3. How were the obstacles resolved?
4. With which practices did the parents/guardians support the pupils during the remote teaching period?
5. How did the educators perceive their role during the remote teaching period?
6. What were the expectations of the educators regarding the participation of pupils in remote teaching and the effectiveness of the procedure?
7. To what extent did the trainings organised by the co-ordinators of education or other bodies assist the educational process during the pandemic?
8. What was the role of the school principal in the organisation of this entire process?

### **3.2 Sample**

The school under study is in Kalamos, a village in the north-eastern Attica. In the school year 2019-2020 this public elementary school numbered 88 pupils, the parents of which were asked to fill out an online questionnaire created in Google Forms. The questionnaire was distributed from October until November 2020. The school is a six-teacher school with 6 supply teachers of general education, 5 of whom were interviewed by telephone in the framework of the research in November 2020. No interviews were performed with specialty teachers, as there were very few respective classes due to the non-mandatory nature of remote teaching at the time. Despite the non-mandatory nature of remote teaching, the headteacher was eager to support the whole process, along with the teachers, who expressed themselves positively towards the resumption of the teaching process, so as not to disrupt the students' learning. Apart from the positive predisposition of the staff, they also stated their eagerness to participate in the research.

### **3.3 Methodology**

Mixed methods were used for the data collection: a questionnaire was distributed to the parents and/or guardians, as it was considered the most appropriate method of collecting the greatest possible number of data, given that it was not possible to have physical proximity with the participants. On the other hand, the educators and the school principal were asked to answer some general questions in a semi-structured interview. This was considered important as it offers the researcher flexibility and freedom to alter the sequence of questions or to ask for clarifications depending on the answer, or to ask follow-up questions (Bryman, 2017).

The questionnaires distributed for the collection and recording of the views of the students' parents and guardians included their experience during remote teaching due to COVID-19, which led to the closure of schools in March 2020. The questionnaire was created upon careful study of the existing relative literature aiming to record the experience of the students and their parents. During the questionnaire design stage, no published surveys on the assessment of the emergency remote teaching by parents of public-school students existed. As a result, studies that mainly examined the views and the experiences of college or university students were used (Petillion & McNeil, 2020;

Shin & Hickey, 2020). The main axes of the questions used in the questionnaire are presented in the following table.

**Table 2**

<b>General/ Demographical</b>	<b>Asynchronous teaching</b>	<b>Synchronous teaching</b>	<b>Students' support</b>	<b>Materials/ Devices/ Network</b>	<b>Evaluation</b>
Education of parents	Platform used (Petillion & McNeil, 2020)	Platform used (Petillion & McNeil, 2020)	Which member	Availability of devices	Effectiveness (Shin & Hickey, 2020)
Availability of devices	Frequency of participation	Frequency of participation	Grade of support	Problem solving	Feelings (Shin & Hickey, 2020)
Technology	Convenience of use (Petillion & McNeil, 2020)	Convenience of use (Petillion & McNeil, 2020)	Comparison with face to face needs of support	Internet connection	Comments
Number of children		Mic/ camera usage	Concerns (Petillion & McNeil, 2020)	Appropriateness of available space/ room	
Grade		Feelings			
Communication with teacher (Shin & Hickey, 2020)					

The questionnaire, which comprised 27 questions, was created and distributed in electronic form. Upon its trial distribution and having resolved any ambiguities, the questionnaire was distributed to the participants as follows: initially, it was sent by the researcher via social media (Facebook). Then, it was posted on the social media webpage of the Parents and Guardians Association of the elementary school of Kalamos. This kind of distribution excluded from the participation of parents or guardians who may not have had access to the Internet or to this particular social media platform, but the restrictive measures regarding movement that were in force during the data collection due to COVID-19, made it impossible for the researcher to have personal contact with parents and guardians.

Semi-structured interviews were used to record the experience of the educators, which the researcher recorded and transcribed upon the consent of the participants. Before conducting the interviews, the participants were informed both on the importance of the research and the importance of their answers for scientific research in general. Moreover, they were informed of the possibility to interrupt the procedure at any time or withdraw their participation in the research. The interview revolved around the

following axes: platform, students' participation, communication, support, educator's role, feelings, comments.

The interview transcripts were analysed using thematic content analysis, as defined by Berelson (1952 in Bryman 2017). The content was classified into two levels: Initially, the points of the interviews regarding the educators' views about this process were noted, their role, and their expectations. Secondly, the comments were classified (selected platforms: disadvantages and advantages of use, problems, training and professional development, pupils' and educators' feelings, participation of pupils and expectations, course material, material, and teaching subjects).

The statistical tool SPSS was used for the data analysis of the questionnaires.

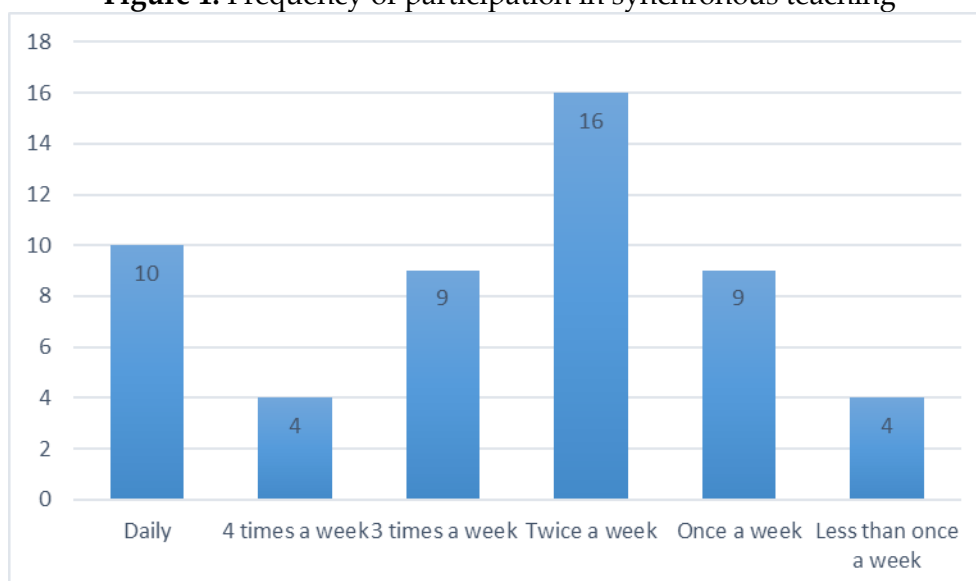
## 4. Results

### 4.1 How did the pupils of the elementary school of Kalamos respond to remote online teaching?

49 out of the 52 participants stated that their children participated in the remote synchronous teaching, 48 of whom used the Webex platform to this end. Because of the non-mandatory nature of the remote synchronous teaching, only 10 participants stated that the pupils participated daily in the synchronous online class, whereas half of them stated that they used it 2-3 times per week (n=25).

The participation of the pupils of all classes was large. Some isolated problems were noted regarding pupils that could not participate due to lack of equipment or connection to the Internet, which puzzled the educators. One teacher mentioned: *"Out of the 19 students, only one couldn't participate in Webex, and two didn't participate in e-class... I would prefer it if the ministry had found a way to resolve the problem, so that the students wouldn't have been excluded..."* Another teacher said: *"I had one student without internet connection at home, nor printer, with just a cell phone to use... there was no provision for this boy, which made me upset"*.

**Figure 1:** Frequency of participation in synchronous teaching



Only 25% of the participants found remote online teaching highly or quite effective, whereas 41% were not satisfied at all or thought that it was a little effective.

The statistical analysis of the data of the questionnaires was performed using Pearson's r correlation coefficient for the questions regarding the degree of easiness to use the synchronous and asynchronous platform, as stated by the parents, given the trust in the effectiveness of remote teaching. This analysis showed that there is a correlation between the degree of easiness to use the platform of synchronous teaching and the trust in the effectiveness of the process stated by the parents,  $r = .413$ ,  $n = 52$ ,  $p = .002$ . Similarly, it showed that there is a correlation between the degree of easiness to use the platform of asynchronous teaching and the trust in the effectiveness of the process  $r = .418$ ,  $n = 52$ ,  $p = .002$ . The statistical analysis shows that the easier the pupils considered the use of the asynchronous and synchronous platform, the more ineffective the parents considered remote teaching. That is, the parents may have believed that emergency remote teaching was not effective because the pupils were able to easily handle the platforms for the classes. No statistical correlation was found between the level of education of the parents and their stance throughout this process.

		How easy to use was the asynchronous platform for the student?	How effective do you think was the remote teaching?
How easy to use was the asynchronous platform for the student?	Pearson Correlation	1	.418
	Sig. (2-tailed)		.002
	N	52	52
How effective do you think was the remote teaching?	Pearson Correlation	.418	1
	Sig. (2-tailed)	.002	
	N	52	52

		How easy to use was the synchronous platform for the student?	How effective do you think was the remote teaching?
How easy to use was the synchronous platform for the student?	Pearson Correlation	1	.413
	Sig. (2-tailed)		.002
	N	52	52
How effective do you think was the remote teaching?	Pearson Correlation	.413	1
	Sig. (2-tailed)	.002	
	N	52	52

#### 4.2 Which factors obstructed the involvement of the pupils in the educational process?

The data analysis showed the following obstacles:

- Inadequate organisation by the state, non-existent provisions, accounts in the Greek School Network

- Few teaching hours, reduced contact with classmates and educators
- Difficulty to understand the course material, especially for younger pupils, increased involvement of the parents
- Problems in sending and correcting exercises, an adaptation of the course material
- Problems in finding the appropriate place, use of camera/microphone
- Sharing equipment with others/lack of equipment, connection problems.

Other difficulties encountered by the school unit regarding the transition to remote teaching, according to the school principal, were the difficulty to set a timetable, the transfer of multiple documents sent by the ministry to everyone involved, the “unwillingness” problems of some parents, poor organization of the Greek School Network’s helpdesk, the lack of means at school (equipment, connection to the Internet) to respond to pupils’ needs that did not have the necessary means or encountered difficulties in sharing devices in the family, and the non-mandatory nature of remotely participating in the educational process.

#### **4.3 How were the obstacles resolved?**

Both the educators and the principal identified the exclusion of pupils from the educational process as a basic problem. One parent stated: *“This whole procedure was really sloppy... the Ministry should have resolved the problems, instead of waiting from the families to resolve them... we were expected to support our children, without having any support from the Ministry”*. Another parent mentioned: *“There should have been a better structural support system, as well as better organisation from the Ministry”*. The principal highlighted the weakness of the school unit to resolve this problem, due to the lack of equipment but also to non-existent connection to the Internet. Otherwise, the school could have lent its equipment to the pupils or used the school premises for the attendance of classes. A parent mentioned that *“...this whole thing is just a parody, just to ease the society that something is being done when in reality, it’s only superficial”*. *“We had to buy devices, like scanners and printers”*, said another parent. Moreover, the principal attributed the absence of some pupils to the non-mandatory nature of the educational process, whereas the educators focused on the absence itself avoiding giving any probable causes. Some parents underlined the problematic communication with the teacher, as well as the lack of interaction among the students.

#### **4.4 With which practices did the parents/guardians support the pupils during the remote teaching period?**

In total, more than 85% of the parents stated that they are highly or quite familiar with the various devices and manage to operate them adequately (n=47).

In the vast majority of households (n=44), the parents stated that they were the ones that assisted the pupil during the remote teaching period. In some cases, apart from the parents, the older siblings assisted, whereas only 5 pupils did not need any assistance during remote teaching. In fact, the assistance provided for 31 pupils was more in remote teaching than the assistance the pupils needed in face-to-face teaching. Only four pupils

needed less support by parents or others, whereas in 17 households there was not any difference in the assistance needed, either for remote or for face-to-face teaching.

The pupils had different needs that had to be covered with the help of parents/guardians. The parents offered practical help in typing and sending exercises, in connection problems, or supported the pupils during synchronous teaching.

#### **4.5 How did the educators perceive their role during the remote teaching period?**

The educators believe that they responded in the best possible manner in the new demands of their didactic work, especially if the emergency circumstances and the non-existent preparation time for the transition to remote teaching are taken into consideration:

E-class was admittedly easy to use and the educators used it as a repository, uploading exercises, theory, quizzes, links, games, and videos. Most teachers used external links or adapted material in the form of documents. The educators stated that for the process to be effective, they invested a lot more personal time than in face-to-face teaching. *"I had to give my email to the parents because it was difficult for some to send homework on e-class"*, said a teacher. *"I gave everything, phone number, facebook, skype, everything, to facilitate the participation of the students"*, confessed another one. In addition, the teachers mentioned that they had to adapt the materials to be taught and sometimes skip chapters, wishing that they would go back to school before the summer to teach these chapters: *"I skipped some maths units, like geometry or fractions, and moved to easier ones, like volume and measurements. Thank God we returned to school later and I could teach them face to face again"*, said one teacher. *"I didn't have the time to teach religion or civics, so I just stuck to the basics, language, maths, history, and physics"*, said another teacher. As for the amount of workload, they all agreed that it was increased: *"Of course, I had to work longer hours! First of all, the students sent in homework at any time of the day or night, so I was in a constant battle against time to correct it and provide feedback!"* Another teacher mentioned: *"I had to write down somehow everything I would say out loud in class. Also the correcting of homework took a lot of my time... converting pdfs, using this or that program"*.

#### **4.6 What were the expectations of the educators regarding the participation of pupils in remote teaching and the effectiveness of the procedure?**

All educators stated that, in fact, remote teaching exceeded their expectations regarding the participation of the pupils, their performance, or the effectiveness of the platforms. According to the classroom educators, the pupils were happy to participate in the synchronous remote teaching. *"I wasn't expecting any participation, to be honest. It wasn't obligatory, so I thought it would just be me, myself and I! I was surprised to be proven wrong"*, said one teacher. *"The kids needed the interaction, they missed school, their classmates, even me"* said another one.

The principal considered the remote teaching offered by the school unit as effective, despite its initial problems, for two reasons: First, because of her readiness to respond to the new conditions, due to her familiarisation with technology, and second,

because the school teachers were 100% supply teachers, “of young age”, who were positive towards the use of technology and willing to try new methods.

#### **4.7 To what extent did the trainings organised by the co-ordinators of education or other entities assist the educational process during the pandemic?**

Three out of the 5 participants participated in the trainings organised for the educators during the lockdown period, but they mentioned that they did not find the content of the trainings very enlightening. However, most of the participants highlighted the need to organise training programmes for everyone, i.e. educators, pupils, and parents. *“The trainings were a joke, if we want to be honest... They came too late, when everyone had already solved their own problems in their own ways... I contacted my fellow teachers, from this school or previous ones, searched online, watched tutorials on YouTube. Had I waited for the trainings...I wouldn't have started yet”*. *“We helped each other. I was trained by my fellow teachers, not the Ministry”*, said a teacher.

#### **4.8 What was the role of the school principal in the organisation of this entire process?**

The process followed for the transition from face-to-face teaching to remote teaching was organised by the school principal. Under the instructions of the Ministry, the principal instructed the educators of the school unit to create accounts in the Greek School Network, facilitated the process of creating accounts for the pupils in the Greek School Network, handled the connection problems of particular students, and drew up the timetable for the school unit, which she sent to the parents through e-mail. Moreover, she participated in conference calls with the co-ordinator of educational work, and she disseminated the information in the circulars dispatched by the Ministry to the interested parties and informed the personnel and the parents on any important information or alterations. Finally, she participated in the support group of the school unit together with the computer science teacher, with whom she organised trial sessions of synchronous communication with the school educators. She stated that her managerial duties were diversified because of the remote teaching.

### **5. Discussion**

The findings of the survey regarding the 1<sup>st</sup> research question (How did the pupils of the public elementary school of Kalamos respond to remote online teaching?) correspond with other research data (Talidong, 2020) regarding the beneficial results of emergency remote teaching. The participants stated that the entire process was a positive experience despite the difficulties met. Moreover, the students responded to remote teaching, and that remote teaching was preferred to not having classes at all. The vast majority of students participated in remote teaching, although there were students who were utterly excluded from the educational process, due to lack of equipment or Internet connection. Some parents expressed their disappointment that devices for those that did not have or had devices of obsolete technology were not provided for. Mohammed, Khidhir, Nazeer

και Vijayan (2020) conclude that flexibility, as well as the combination of synchronous and asynchronous learning in remote teaching are very important. It appears that the educators of the elementary school of Kalamos consider this variety of means important for the provision of education of quality for their students.

Regarding the 6<sup>th</sup> research question (What were the expectations of the educators regarding the participation of pupils in remote teaching and the effectiveness of the procedure?), the survey showed that the educators were satisfied by the students' participation, and by the flow of the teaching hours, although in the first stages of its application, remote teaching presented some serious problems.

As regards the 7<sup>th</sup> research question about the usefulness of training during emergency remote teaching (To what extent did the trainings organised by the coordinators of education or other bodies assist the educational process during the pandemic?) as in Whalen's study (2020), it appears that the educators were being trained and familiarised themselves with the new technologies during remote teaching. The participants to the research were familiar with the technology before the emergency remote teaching. However, it took time to learn how to operate the platforms used. This fact is also recorded by Johnson, Veletsianos & Seaman (2020), who stress the additional burden for the educators, even those familiarised with the new technologies. Time pressure is a major issue regarding the familiarisation of educators with the platforms and the tools, mentioned in many studies (Shin & Hickey, 2020; Johnson, Veletsianos, & Seaman, 2020; Sahu, 2020). Many educators in the school unit questioned the usefulness of training, mainly because "*it came too late*", but they considered that co-operation among them was more useful to resolve questions that arose. The usefulness of the co-operation among educators can be found in other studies as well (Aliyyah, et al., 2020).

The findings of this study show that the educators did not exploit the full potential of the platforms. On the contrary, most educators used tools with the operation of which, they were already familiar. This happened because the process of remote teaching and the organization of classes seemed quite time-consuming to the educators, who despite feeling that they responded adequately to their new duties, at the same time, they saw an increase in the demands brought about by the new means of teaching. Therefore, to answer the 5<sup>th</sup> research question (How did the educators perceive their role?), the survey shows a difference in the demands both regarding the educators' technological skills and the time required for the completion of this endeavour. Aliyyah et al (2020) reach similar conclusions, as the educators expressed disagreement regarding the limited choices in organizing teaching due to the manner that the lesson was delivered and the limited available time.

Regarding the 2<sup>nd</sup> research question (Which factors obstructed the involvement of students in the educational process?), this survey showed that the technological barriers were the main obstacle. The students who did not possess the necessary equipment (device or Internet connection) did not have access to education of the equal quality, as their classmates. Therefore, they seem to be excluded from remote teaching, as there was not any provision to resolve these difficulties neither centrally by the ministry nor by the



school unit which did not possess the necessary equipment or the Internet connection to support the families in need. Similar inequality issues are expressed by other researchers (Abel, 2020; Czerniewicz et al., 2020; Onyema et al., 2020). Other studies agree that the technological barriers may prevent the students from attending remote teaching seamlessly (Shin & Hickey, 2020; Reich et al., 2020). Internet connection and platform connection problems are also recorded as obstacles hindering the effectiveness of remote teaching by Wilcox and Vignal (2020). Therefore, there seems to have emerged a need to shift from current remote teaching to an inclusive one and to centrally organize a plan to resolve such difficulties for the students.

Answers to the 3<sup>rd</sup> research question (How were the obstacles resolved?), vary depending on the obstacle encountered. More specifically, the obstacles regarding the lack of devices or Internet connection were not resolved. For some students, the communication with the educators was resolved with alternative means of communication, the use of email or social media. The difficulties encountered in teaching particular subjects were resolved either with the use of video or other Internet resources by the educators or by omitting particular chapters from remote teaching. Finally, the difficulties encountered in correcting assignments and sending feedback were resolved by using alternative programmes/ applications, such as photo processing programmes in mobile phones or PC drawing programmes.

Parents supported the students in various ways during remote teaching. The participating students needed their parents' support, who often had to resolve connection issues, understand the lesson, distribute the devices among siblings and parents. Most students needed more assistance than they needed in face-to-face teaching, and parents had to dedicate more time by comparison. The platforms did not present any difficulty to the users. Students in the first classes encountered problems in sending their exercises to the teachers, which were resolved with the assistance of the parents. Problems in understanding the course material were also resolved by the parents, who undertook to explain the theory. Parents' involvement to resolve issues that emerged during remote teaching is also mentioned by Aliyyah et al. (2020).

Moreover, the findings of this study agree with current literature regarding the role of the school principal in crises. According to Kibble (1999), the school principal undertakes to communicate with the educators and the parents, which is what happened in the case of the elementary school of Kalamos. On the other hand, the literature emphasizes the preparedness of schools and advance planning (Barclay, 2004; Liou, 2015). However, this did not apply in this case, maybe because the procedures followed in Greece to prepare the school unit for crisis management are defined centrally by the ministry and are common for all schools, which does not leave much room for an initiative to the principals.

In conclusion, the educators believed that their duties were increased and that their role in remote teaching demanded more personal time. Many educators encountered technical problems and needed to adapt the course material and the teaching to the needs of remote teaching. The educators expected low attendance,

especially because of the non-mandatory nature of the process, but were surprised by the increased participation. Some complained about excluding students and widening inequalities due to the limited access of students to technological means and the Internet. The majority of educators did not benefit from the training that was organised and stated the need for advanced training at various levels (parents, students and educators), not in the course of a future emergency remote teaching.

## 6. Conclusions

In conclusion, emergency remote teaching which was adopted as an alternative method to the educational process seemed to have a positive result, despite the obstacles encountered in its application (Talidong, 2020). The most important obstacles were technological (equipment and Internet). Moreover, practical problems appeared related to the provision of feedback to the pupils by the educators, as well as the effective teaching of all subjects or particular chapters. The combination of synchronous and asynchronous teaching appears to be effective, as can also be seen in the research of Mohammed, Khidhir, Nazeer και Vijayan (2020). However, asynchronous teaching may lead to increased involvement of the parents in the educational process, in order to explain the course material to the pupils, especially the younger ones. This involvement is not sought by the parents and is time-consuming when time is valuable. Besides, the majority of pupils needed more assistance than in face-to-face teaching. Therefore a question arises of how can the pupils whose parents may not be able to assist them to respond to the needs of remote teaching?

On the other hand, the educators who began the remote teaching with feelings of anxiety and stress saw in the course of time that the situation improved, the pupils participated more and more in the educational process and the course material was being taught. Of course, to respond to their new role, the educators had to show initiative in order to be trained and to resolve their own questions regarding the platforms used, since the official training of the Ministry came very late, a finding observed in the literature as well (Whalen, 2020). The co-operation among colleagues was the key to the effective response to the difficulties encountered (Aliyyah, et al., 2020). Moreover, the boundaries between didactic and personal time, as well as the communication between parents and educators became quite blurry. The teaching hours were extended, the exercises and the queries would arrive at any time and personal means of social networks were employed to communicate more effectively with the pupils' community (Johnson, Veletsianos & Seaman, 2020). Both the educators and the school principal made all efforts to assist the pupils and their families in order to include as many pupils as possible in this online endeavour.

Parents, pupils, and educators appear to prefer face-to-face teaching. Besides, the socialisation issues, as well as the mental health issues of the pupils must be taken into account, as the primary goal of the elementary school is not to teach writing and reading but to promote the socialisation of the young pupils. Moreover, the parents seem

disappointed at the sloppiness in the organisation of this endeavour by the competent bodies and the lack of sensitivity towards the “have-nots”. Similar inequality issues are mentioned by other researchers as well (Abel, 2020; Czerniewicz et al., 2020; Onyema et al., 2020).

### **6.1 Limitations and significance of the study**

This research, as a case study, does not attempt to offer generalised conclusions for the general population. However, it provides for the interested parties, researchers, educators, university students, and other bodies a detailed look into the response of the public elementary school of Kalamos to the implementation of the emergency remote teaching applied in the second trimester of the school year 2019-2020. The exploration of the parents and the school pupils experiences, and the assessment of the situation on the part of the educators and the principal offer invaluable information on the new reality of the pupils, the problems they encountered, and the struggle of the educators to provide quality education to as many pupils as possible.

The limitations of this research, apart from the small sample, also include the online sharing of the questionnaire to the parents, which may have excluded some parents from the research. Also, the research did not include the pupils that attend the specialised support class and/or were assisted by a parallel support educator.

This study is addressed to researchers, primary education students, primary education teachers, school principals, and people forming the educational policy. The conclusions of this study may be useful in case of a potential closure of schools due to pandemic:

- To the educators in school units and the principals to locate problems that hindered the smooth running of an emergency remote teaching in spring 2020 and to take proper action to resolve them in case of a new lockdown,
- To the administration forming educational policy, to understand the needs of the school unit and to organize actions aiming to alleviate the inequalities created due to emergency remote teaching for the students, as well as the advance organization of training courses for everyone involved (parents, students and educators),
- Other researchers that may be particularly interested in how the schools can respond to a pandemic or crisis,
- University students interested in the school unit, the role of the principal in case of a crisis, the response of educators to emergency remote teaching, or the involvement of parents in remote teaching.

### **Conflict of Interest Statement**

The authors declare no conflicts of interest.

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## Appendix: The Elementary school of Kalamos during ERT

Please fill in this questionnaire if your child was a student of the elementary school of Kalamos in 2019-2020. For more than one children, please fill in the questionnaire once per child. All acquired data will be used for research purposes. The user can interrupt the procedure at any time. We appreciate your time and ensure your anonymity.

### A. General Info

#### 1. Level of education\*

- Elementary school;
- Junior high school;
- High school/ Vocational school;
- University/ College;
- Master's;
- Other.

*\*Mark only one option.*

#### 2. What kind of devices do you own (multiple answers)\*

- Smartphone;
- Laptop;
- Tablet;
- Personal computer;
- Other.

2a. If clicked on "Other", please define:

---

*\*Check all that apply.*

#### 3. What is your relation to PCs or other devices? \*

- Great. I use devices on a daily basis for work.
- Great. I use devices daily for entertainment.
- Good enough. Even though I do not use them daily, I manage with most functions.
- Good. With a bit of help, I manage the basics.
- Rather bad. I find it difficult to function a device.
- Bad. I almost never use computers or other devices.

*\*Mark only one option.*

#### 4. How many of your children were students of the primary school of Kalamos during 2019-2020?\*

- 1;
- 2;
- 3.

*\*Mark only one option.*



5. Did your child participate in remote teaching of March- May 2020?

- Yes;
- No.

5a. If clicked "No", please explain the reasons.

---

---

*\*Mark only one option.*

6. Which class did the student attend in 2019- 2020?\*

*Mark only one oval.*

- 1<sup>st</sup>;
- 2<sup>nd</sup>;
- 3<sup>rd</sup>;
- 4<sup>th</sup>;
- 5<sup>th</sup>;
- 6<sup>th</sup>.

7. In which way/s did you communicate with the class teacher during the pandemic?  
(multiple answers)\*

- On the phone;
- Via social media;
- Via email;
- I did not communicate;
- Asynchronous teaching.

*\*Check all that apply.*

8. Did the student participate in asynchronous teaching? If so, which platform did they use?\*

- E-class;
- E-me;
- Other;
- They did not participate.

8a. If you clicked on "Other", please define:

---

*\*Mark only one option.*

9. How often did the student participate in asynchronous teaching? \* *Mark only one oval.*

- Daily;
- 4 times a week;
- 3 times a week;
- 2 times a week;
- 1 time a week;
- Less than once a week.

10. How easy was it for the student to use the asynchronous platform? \*

*Mark only one oval.*

1    2    3    4    5

---

very easy to use                        very difficult to use

---

Synchronous teaching

11. Did the student participate in synchronous teaching? If so, which platform did they use?

- Skype
- Other
- They did not participate, even though it happened
- There was no synchronous teaching

11a. If clicked on "Other", please define:

---

*\* Mark only one option.*

12. How often did the student participate in asynchronous teaching?\*

- 4 times a week;
- 3 times a week;
- 2 times a week;
- 1 time a week;
- Less than three times a month.

*\*Mark only one option.*

13. During synchronous teaching, was a camera and/or microphone used?\*

- Camera
- Camera and microphone
- Microphone
- Neither

*\*Mark only one option.*

14. What were the student's feeling when using the camera and/or microphone? (multiple answers)\*

- Stress
- Confidence
- Nervousness
- Shyness
- Comfort
- Other

14a. If you clicked on "Other", please define:

---

*\*Check all that apply.*

15. How easy was it for the student to use the synchronous platform? \*

Mark only one oval.

	1	2	3	4	5	
very easy to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very difficult to use

**Support of the student**

16. Which member of the family offered support to the student during remote teaching?\*

- Parent
- Sibling
- Grandparent
- Other member of the broad family (cousin, uncle, etc.)
- Non- related (neighbor, friend, teacher, etc.)
- No one. There was no need for support.
- No one. There was no one to support them.

*\*Check all that apply.*

17. How much help did you provide to the student, during the remote teaching? \*

	All the time	More at first, less later on	A bit at first, more later on	Barely	Not at all
Connection on PC, connection on platforms					
Communication, message sending					
Homework uploading					
Problem solving (sound, connectivity, camera, etc.)					
Doing homework					
Typing homework/ answers					
Support during synchronous teaching					

18. Compared to the support you offered to your child during face to face teaching, how would you characterize the amount of help needed in remote teaching?\*

- In remote teaching the student needed more support.
- In remote teaching the student needed less support.
- The amount of support was the same.

*\*Mark only one option.*

19. Did you have any concerns regarding remote teaching? (If not, then type "No"). \*

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## Devices and connection

### 20. Availability of devices (PC, laptop, tablet, smart phone) \*

- The student always had at least one device available to study or log on the platforms.
- The student had everyday access, but at specific hours in the day.
- The student did not have everyday access to devices.
- The student did not have access to devices.

20a. If the student did not have everyday access, please define the reason (device in use by adults and/or siblings, internet connection issues, etc.)

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*\*Mark only one option.*

### 21. If there was no device available, what did you do? (multiple answers)\*

- Borrow device.
- Share other student's device.
- No participation in class.
- Other

21a. If you clicked on "Other", please define:

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*\*Check all that apply.*

### 22. The student's access online during remote teaching was:\*

- Continuous and without problems.
- Very good, with rare issues.
- Sometimes good, others problematic.
- Most of the times problematic.
- So bad that the student could not participate

*\*Mark only one option.*

23. How easy was it for you to ensure an appropriate room or space for the student to study or log on the platforms?\*

- Very easy. There was always a room available.
- Easy. We had a problem very few times.
- Pretty difficult. This was a frequent issue for us.
- Impossible. There was always a problem finding space for the student.
- Evaluation

*\*Mark only one oval.*

24. How effective was remote teaching in your opinion? \*

*Mark only one oval.*

1    2    3    4    5

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Not effective

Very effective

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25. After this experience, how do you feel about remote teaching? (multiple answers)\*

- Security;
- Confidence;
- Relaxed;
- Trust in the system;
- Optimistic;
- Stress;
- Nervousness;
- Insecurity;
- Fear;
- Pessimistic;
- Other.

25a. If you clicked on "Other", please define:

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*\*Check all that apply.*

27. Do you have any comments to make, which would help us better to understand the situation you experienced during remote teaching, i.e. organization of the school unit, coverage of taught materials, your family's reaction or any other personal comment?

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End of questionnaire

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