



## EXAMINING EMERGENCY REMOTE TEACHING: A CASE STUDY IN A PRIVATE SCHOOL

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### **Abstract:**

The aim of this study, which was designed as an internal case study, is to examine the remote teaching period carried out in a private school because of the Covid-19 pandemic. Data were collected by using a survey which consisted of open and close-ended questions. Data gathered from 176 teachers were analyzed by using quantitative analyses, percentage and frequency, and qualitative analysis, content analysis. According to the quantitative findings, it is seen that teachers generally experienced technological equipment inadequacy problem. IT support solutions and IT staff are found to be adequate and activities conducted for professional development are thought to contribute to the quality of education. According to the frequency density in the qualitative findings, teachers prominently emphasized problems they experienced regarding device, infrastructure, connection, applications, technical issues and students. While mentioning about ways to overcome difficulties, main emphasis is found to be on computer problems and solving problems about technical issues. The expectations of teachers from the R&D (Research and Development) Unit and school administration also focus on the arrangement of technological investments and regulations. It is thought that the results of the study reflecting the experiences of the emergency remote teaching period can be used to prepare for a possible new emergency and/or to increase the quality of distance education at K12 level.

**Keywords:** Covid-19, distance education, emergency remote teaching, K12, online learning

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## 1. Introduction

With the advent of 21st century, ways of accessing to information as well as education have changed to a great extent. Yet, the widespread of Covid-19 virus has brought a different and also inevitable dimension in the education world. With the spread of Covid-19 in December 2019 and its being called as pandemic worldwide by WHO (2020a, 2020b), schools in different levels were closed in 191 countries in the world. With worldwide school closure, 1.6 billion students were affected which was 90% of the world student population (UNESCO, 2020a). In this sense, as the challenging situation of Covid-19 involved mass school closures, social distancing restrictions, and increased health risks, with worldwide school closure, Turkey got its share and the education of about 16.5 million students was suspended (UNESCO, 2020b). Like many countries in the world, Turkey searched for an alternative immediately and as of March 2020 revised the courses broadcasted through television as well as the internet.

As a result of the extraordinary situation cited above, this period is often referred to as emergency remote teaching to differentiate it from distance education. The main idea of this emergency remote teaching was not to form an educational system as a permanent alternative to face-to-face education but to continue instruction without any suspension during the time of crisis. As opposed to educational experiences that are planned from scratch and designed to be online, emergency remote teaching (ERT) is usually defined as *“a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances.”* (Hodges, Moore, Lockee, Trust & Bond, 2020, p. 6). By the same token, Bozkurt, et al. (2020) distinguishes emergency remote teaching from distance education by focusing on emergency remote teaching’s aiming at keeping education ‘alive’ in times of crisis with what is in hand rather than continuing education with field-specific goals planned in advance. While this study uses the term *“emergency remote teaching”* in general, it also refers to the term *“distance education”* depending on the context it appears especially in the quotations of the participants.

## 2. Literature Review

It is true that the world has witnessed many different types of crisis in different times such as SARS outbreak in 2002 and H1N1 influenza in 2009. Back in time, in 1918 the flu pandemic caused the closure of schools worldwide and paused formal education. In the context of educational technology, as the previous references related to pandemics are limited and often refer to epidemiological and health policy journals (Stern, Cetron & Markel, 2009) which makes implications for education difficult to reach. However, with Covid-19, it is now possible to suggest that this situation has changed. Covid-19 has had a great impact on the educational researches and many studies with various perspectives have been conducted to gain a better understanding of the issues involved in emergency remote teaching.

When looked at the various studies with different aims and perspectives, it is interesting to note one of the researches conducted during Covid-19 in the Philippines.

This study explored the challenging situation in the country which never turned to distance education before, with the highest confirmed cases of Covid-19 as of April 14, 2020 (Toquero, 2020). In exploring the current state of how the country is dealing with the crisis, the implications of the study included practicing an evidence-based curricular response and forming a responsive curriculum as well as inclusion of students with special educational needs.

Within the scope of this study, when looked at a study conducted by Bakioğlu and Çevik (2020), it is seen that the opinions of science teachers working in a secondary school during Covid-19 were investigated to explore their experiences during this crisis. This phenomenology pattern study showed that teachers often mentioned about having problems such as internet connection, communicating with students, low participation rate of students and exposure to the pressure of school administration as well as the change in the use of materials. Yet, the Covid-19 period contributed to their professional development and technology use positively.

Furthermore, again within the scope of this study, another study regarding teachers' views during Covid-19 was conducted by Fidan (2020). This qualitative phenomenology research investigated the opinions of the primary school teachers in the spring term of 2019-2020 academic year. The results revealed both the positive and negative aspects of the emergency remote teaching period. The general negativities were mostly under the problem of access whereas the codes named as comfort, technology, motivation and parents were included in both positive and negative aspects. Teachers usually approved of technology use in education but had concerns about its leading to technology addiction and unsociability on the part of the students. Teachers in this study also expressed their views as negatively regarding class management during emergency remote teaching.

In investigating the Covid-19 emergency remote teaching period, Osmanoğlu (2020) explored the views of social studies teachers about the TV-based education. In this study social studies teachers' views were referred to regarding the education carried out by the government on television. Social studies teachers whose opinions were analyzed by using content analysis technique revealed that teachers were usually positive about the appearance and diction of teachers which they believed did not impede the presentation process. However, they had some concerns about the content, teachers' not speaking but actually reading the instructions as well as the environment not being real-classroom like.

The spread of Covid-19 caused disruption all over the world and as aforementioned adjustments had to be made to provide education. It can be said that while distance education was only considered to be an option where possible before the pandemic, it became the most appropriate possible option with the pandemic which forced the whole world to make the necessary adjustments. On the whole, what the education world experienced and continue to experience was not a usual transition on the part of teachers as well as the students and *"the nature of teachers' work shifted radically, and practically overnight"* (Marshall, Shannon & Love, 2020 p. 47). As this was not an

expected transition, this study finds it beneficial to explore what was experienced during this period.

In Turkey, with the spread of Covid-19, education started online and students had to stay home and follow the courses through the internet and on television. In this context, this study investigates the shift from face to face education to emergency remote teaching during the Covid-19 Pandemic by providing a case study.

This study is important in that it is conducted to investigate the emergency remote teaching period in the extraordinary conditions of Covid-19 with a relatively large number of teachers of almost all branches in K12. Yet, keeping in mind that “*these are not normal teaching and learning conditions*” (Milman, 2020), the idea of this study is not to compare or contrast the instructional delivery or the effectiveness of the emergency remote teaching but to portray the sudden transition with describing what was experienced with all the challenges on the way during the time of Covid-19.

The aim of this study is to examine the emergency remote teaching period continued in a private school between March 16th and June 19th due to Covid-19 pandemic. In line with the aim of the study answers to the following questions are sought:

- 1) Were the current technology infrastructure, IT solutions, IT staff and the school’s activities for professional development adequate during the emergency remote teaching period?
- 2) On what areas difficulties were experienced?
- 3) What was done to overcome the difficulties experienced during this period?
- 4) What should be done for the possible future experiences?

### 3. Method

This is a qualitative case study. Case study is “*description and examination of a limited system thoroughly*” (Merriam, 2013, p. 40). “*Based on the differentiating features from other research models, it is possible to suggest that case study is a research method which focuses on ‘how’ and ‘why’ questions on the basis and allows the researcher to examine a phenomenon or a case that they cannot control*” (Yıldırım & Şimşek, 2013, p. 313). Patton (2015, p. 447) mentions that cases can be “*critical situations in a programme*”. This study is also described as an interior case study since it “*focuses on the case itself because it is unexpected and unique*” (Cresswell 2013, p. 99). Johnson and Christensen (2014, p. 396) mention that interior case study is used frequently while it is also an approach that researchers who want to examine “*a phenomenon that is known little about*” and prefer to examine it in detail. The period of emergency remote teaching in a private school is examined as a case. In case studies, evaluating facts and cases with the participant’s viewpoint is important (Yıldırım & Şimşek, 2013). As Hodges et al. (2020) mentioned, since education activity is usually in the control of teachers during ERT period, in examining the case teachers’ opinions in the school this study was conducted are considered as the main data source.

### 3.1 Study Group

Participants of the study have been selected by using purposive sampling method and considering “convenience” (Patton, 2014, p. 241). The participants were also considered according to the convenience of the conditions within the principles of the purposive sampling method (Merriam, 2013). The participants consisted of teachers in a private school that had four pre-, primary and secondary schools including a high school and R&D (Research and Development) Unit. Demographic information of the participants are given in Table 1.

**Table 1: Demographic Information of Participants**

		N	%
<b>Gender</b>	Female	134	76.1%
	Man	42	23.9%
<b>Level</b>	Pre-school	27	15.3%
	Primary	65	36.9%
	Secondary	53	30.1%
	High School	31	17.6%
<b>Branch</b>	Homeroom Teachers	32	18.2%
	Pre-school	19	10.8%
	English (EFL)	17	9.7%
	Religious Studies	14	8.0%
	Maths	12	6.8%
	Guidance and Counseling	9	5.1%
	Physical Education	7	4.0%
	Social Studies	7	4.0%
	Information Technologies	6	3.4%
	Philosophy for Children	6	3.4%
	Science	6	3.4%
	Visual Arts	6	3.4%
	Turkish Language and Literature	6	3.4%
	Skill workshops (Wooden design, drama, cookery)	6	3.4%
	Turkish	5	2.8%
	Music	4	2.3%
	Biology	3	1.7%
	Physics	3	1.7%
	Chemistry	3	1.7%
	Geography	2	1.1%
History	2	1.1%	
Manager	1	0.6%	
<b>Total</b>		176	100.0%

### 3.2 Data Collection Tool

Data were collected from the teachers by using a survey named “Covid-19 Emergency Remote Teaching Evaluation Survey”. The survey was developed by the researchers based on the suggestions of Hodges, et al. (2020) regarding emergency remote teaching. In case studies, it is important to search for answers to how, why and what questions

(Yıldırım & Şimşek, 2013), which was taken into account when the survey questions were prepared. The questions were evaluated by another researcher who studied educational sciences. There was a consensus among all three researchers to apply the survey as it was and the survey was handed in the participants.

The survey consisted of nine questions, the first three of which was to gather demographic information. Other questions (three closed-ended questions, three open-ended questions) referred to the evaluation of the Covid-19 Emergency Remote Teaching period. Covid-19 Emergency Remote Teaching Evaluation Survey was handed in the participants online through Microsoft forms. 176 participants answered the questions in the survey between 24th June 2020 and 1st July 2020, which was just after the education year ended.

In addition to this, the information regarding the features of the computers the teachers used, IT support services provided for the teachers, IT staff who supported the teachers and professional development activities for the teachers was collected from the school administration.

### 3.3 Data Analysis

Frequency and percentages of the closed-ended questions are calculated and graphics are designed in Word program. In the analysis of qualitative data content analysis was used. The purpose of content analysis is *“to overcome the subjective effects while understanding and interpreting discourse. It enables the researchers to reveal the subliminal and covered content of the discourse instead of the obvious content which is easily perceived. Therefore, content analysis is ‘reading for the second time’ about finding out the factors that affect the individual”* (Bilgin, 2006, p.1).

Content analysis in this study was carried out by coding all the data gathered from the answers given to three open-ended questions. *“In qualitative studies a code is usually referred to as a word or phrase that has a summative, attractive and reflective essence in quality.”* (Saldaña, 2019, p.5). After the thorough examination of the data, 300 codes (f= 824) in three areas in total were formed. Moreover, with the comments usually occurring as *“in vivo”* such as *“Not having any difficulty - Not having much difficulty.”*, *“I had no difficulty”*, *“I have no suggestions”*, 3 codes (f= 21) were formed. As these codes expressed a meaningful response unit, they were included in the findings as categories and presented at the bottom of the category tables.

*“Coding enables the researcher to group the data under specific categories or ‘families’ by organizing similarly coded data because of their mutual features or (the beginning of a pattern)”* (Saldaña, 2019, p. 9-10). That is why, codes are put under the category headings which are closest to them. At the end of the data analysis, in three areas 29 categories were formed.

Some of the techniques that can be used to ensure internal validity (or credibility) in a qualitative research are triangulation, expert review, and the position of the researcher expressing the researchers' experience in the relevant field (Merriam, 2013; Patton, 2014). In order to ensure internal validity 1) In addition to the data collected from the teachers, data were obtained from the school administration to allow comparison.

Moreover, both quantitative and qualitative data on the same issues were obtained and mutual checking of the data was achieved which allowed to provide multiple data usage. 2) While preparing the survey, expert opinion was obtained for closed-ended and open-ended questions, which is also important for content validity. 3) Both researchers were experienced in teacher education and held PhD in educational technology. Therefore, they were competent enough in carrying out the study which can also be considered to be an increasing factor in terms of the study's credibility and reliability. In addition to this, in accordance with Merriam's (2013) suggestion, special attention was paid to ensuring appropriate and adequate participation in terms of internal validity and direct quotations were made from the responses of the participants.

Merriam (2013) proposes a rich and dense description of the findings in order to ensure external validity (or transferability). In the presentation of research findings, emphasis was placed on increasing external validity by providing rich and intense definitions. Auditing is important for the reliability or consistency of the research (Merriam, 2013). In order to audit the research:

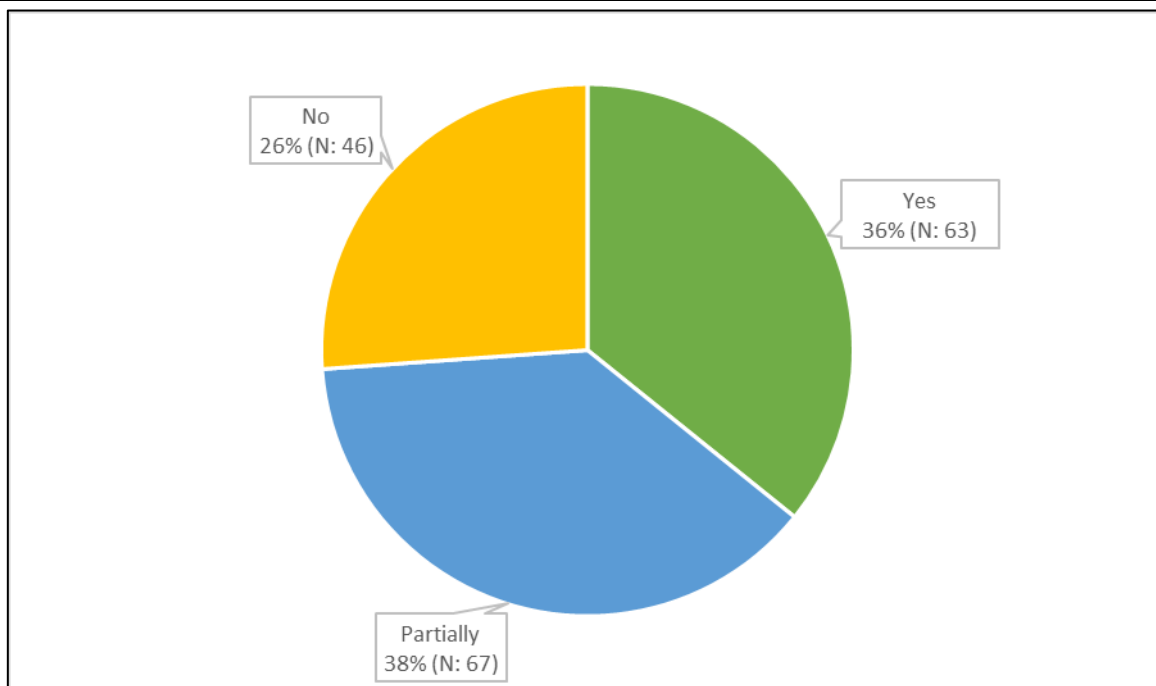
- 1) code memos were written during data analysis, and all works carried out by the two researchers individually during the research were dated and archived.
- 2) the codings were made and compared by two different researchers and the final coding was checked by them.

## 4. Findings

### 4.1 Quantitative Findings

In this section, quantitative findings regarding the questions that investigated "Were the current technology infrastructure, IT solutions, IT staff and the school's activities for professional development adequate in the emergency remote teaching period?" and "What was done to overcome the difficulties?" are presented. Firstly, findings based on information related to three closed-ended questions gathered from the teachers are presented then information about the same issue gathered from the school administration are shown.

**Question 1:** Was the technological equipment (computer etc.) provided by the school adequate for you to continue your remote teaching?

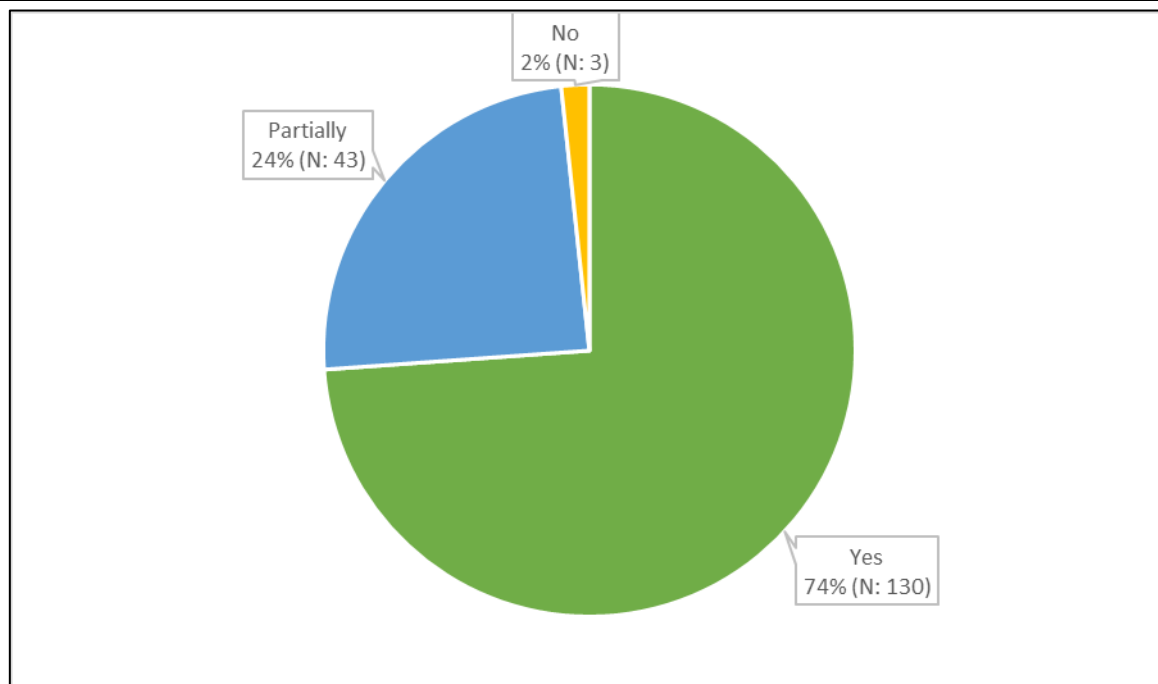


**Figure 1:** Results of the First Question

According to the findings in Figure 1, 36% of the participants believed that computers and technical equipment were adequate while most of the participants mentioned that computers and technical equipment were not adequate. This is aligned with the qualitative findings as 50.5% of the participants mentioned about the category “technical equipment inadequacy and technical problems”. The information obtained from the school suggest that the computers (tablet PC) that were provided for the face to face education accordingly before remote teaching had the features of 4 atom processor, 4GB RAM, 10" screen, 64 GB SDD, touch screen, Windows 10. During the remote teaching period teachers were provided with either laptops that were not in use before, the features of which are not given, or all in one PCs (i3 processor, 4GB) in the computer lab. However, as these computers were not adequate in number, some teachers had to continue using the current computers provided during the face-to-face education period. Some of the teachers used their own computers or found different solutions as suggested in the qualitative findings.

**Question 2:** Were the IT support solutions and IT staff of the school adequate for you to continue remote teaching?

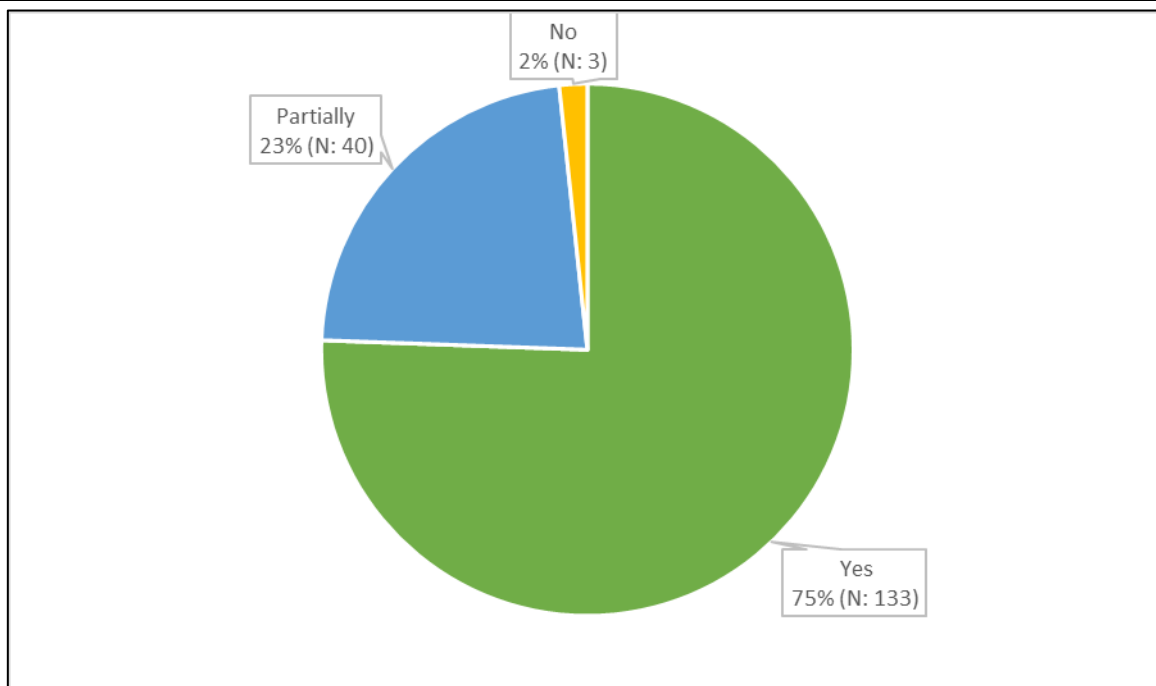




**Figure 2:** Results of the Second Question

According to Figure 2, 74% of the teachers mentioned that the school's IT support solutions and IT staff were adequate to continue emergency remote teaching. These findings are aligned with the findings in the qualitative data as they appeared in the category of "ways to solve computer-related problems, technical issues, and connection issues". There was either an IT expert or IT officer in each campus of the school under the supervision of IT expert who worked in the headquarters. During the emergency remote teaching IT experts/officers supported all the teachers fully including the students and the parents. Each IT teacher working in each campus also supported the teachers. The school continued remote teaching based on Microsoft Teams (Zoom application was also used heavily). The processes regarding these platforms were followed by IT experts, IT teachers and two educational technologists working in the R&D Unit. IT experts/officers mentioned that they spent most of their time on and had the most difficulty in forming the classes and teams on Microsoft Teams as well as enrolling people to become members.

**Question 3:** Did the professional development activities of the school contribute to the increase in the quality of your remote teaching?



**Figure 3:** Results of the Third Question

According to Figure 3, 75% of teachers mention that school's professional development activities to support remote teaching contributed to their educational work. These findings are in line with "In-Service Trainings, learning with colleagues" category appeared in qualitative findings. Teachers were given more than eight hours of online training. At the transition period of remote teaching, 2,5 hours of Microsoft Teams training was carried out. In addition, instructional strategies, technology integration, web 2.0 tools, ARCS Model of Motivation, digital transformation, gamification and micro learning topics were covered. Also, workshops on how to use digital tools for branch-specific subjects were conducted. Moreover, teachers' competencies were tried to be strengthened and increased by sharing documents regularly. The works summarized here are the ones carried out by the school's R&D Unit for all the teachers. As not within the scope of this study, the works performed within each coterie for each branch for the preparation of online education are not presented here.

## 4.2 Qualitative Findings

In this section, qualitative findings regarding the research questions "On what areas difficulties were experienced?", "What was done to overcome the difficulties?" and "What should be done in terms of the possible future experiences?" are presented.

### 4.2.1 Difficulties Experienced during Emergency Remote Teaching Period

In line with the research question of the study "On what areas difficulties were experienced?" the findings obtained are presented.

**Table 2:** Difficulties Experienced During Emergency Remote Teaching Period

Categories	Frequency	Percentage
Technical equipment inadequacies and technical problems (Device-infrastructure, connection etc.)	146	50.5%
Difficulties regarding students (motivation, class management, etc.)	52	18.0%
Difficulties regarding new working order (working hours, working environment etc.)	21	7.3%
Difficulties regarding inadequate competence and experience (not having enough experience in distance education, etc.)	20	6.9%
Difficulties regarding content preparation and provision	17	5.9%
Difficulties regarding parents	10	3.5%
Difficulties and disruptions of homework and measurement-evaluation processes	8	2.8%
Difficulties regarding online lesson preparation	6	2.1%
Digital security, privacy and protection of privacy	2	0.7%
Not having any difficulty. Not having much difficulty	7	2.4%
Total	<b>289</b>	<b>100.0%</b>

#### 4.2.1.1 Technical Equipment Inadequacy and Technical Problems

In terms of frequency, the most intense category among the difficulties experienced by teachers is technical equipment inadequacies and technical problems (146). In this category, five sub-categories emerged: device and infrastructure inadequacies (67), connection problems (45), problems arising in the use of applications (18), technical failures (11), computer permission problems (5). To exemplify the device and infrastructure inadequacies subcategory, one of the teachers expressed *"I think we quickly adapted to education, the difficulty I had was that the computer was inadequate. I was worried every day, as well as preparing for the lesson, hopefully today, I hope there will be no setback. The longer the period, the worse it got."* [T34] In the "connection" subcategory an example from the teachers' statements is *"and of course we did not have internet at home, we weren't prepared, we had difficulties in this regard."* [T16]. Some teachers stated that there were problems not only with their own internet connection but also with the connection of students. In one of the teachers' quotations it is seen as *"Students' internet connection."* [T99]. In the subcategory of problems arising in the use of applications, the problems experienced in the applications used are mainly emphasized. An example in this category is *"I had difficulty connecting to Microsoft Teams and sharing/setting up files."* [T101]

When looked at the technical problems subcategory it is seen that one of the teachers mentioned *"Apart from that, it was tiring to produce instant solutions when we encountered technical problems that negated all the preparations while taking everything under control in some way."* [T98] As for the last subcategory, computer permissions being a problem, a teacher expressed the problems caused by the security permissions granted to the school computers of the participants by the school administration by underlining the view as *"I couldn't download every program because it is a corporate computer. Admin connection was required. This made me not use some of the programs."* [T113]

#### **4.2.1.2 Difficulties Regarding Students**

In the second category (52) teachers focused on issues such as the inability to ensure active participation of students, difficulty in maintaining and managing student motivation, difficulty in maintaining students' attention, lack of face-to-face communication/contact with students, and difficulties in adapting students to education which can be seen in the exact words of [T14] as "*Students do not participate fully.*"

#### **4.2.1.3 Difficulties Regarding the New Working Order**

In this category (21), teachers stated that they had difficulties such as disruption in the working hours and difficulties in planning, being on the screen for a long time, having too many lesson hours, and having difficulty keeping up with the digital directions of the institution as [T20] pointed out the new working order with "*Being on screen all day*" and "*excessive lecture hours / student meetings included.*"

#### **4.2.1.4 Difficulties Regarding Inadequate Competence and Experience**

In this category (20), teachers stated that they experienced difficulties such as difficulties rooting from not having enough competence and experience in online education, inadequate technological knowledge-skills, difficulty in adapting to the variety of new applications, and having to learn online education by trial and error which can be seen in the view of [T13] as "*Providing online education for the first time was a challenge at first, with inadequate knowledge in this sense.*"

#### **4.2.1.5 Difficulties Regarding Content Preparation and Provision**

In this category (17), teachers focused on issues such as the difficulty of preparing online content, the inadequacy of digital content suitable for online education, and the difficulty of preparing content suitable for students by describing their views with expressions like "*Not having digital content suitable for education*" [T25].

#### **4.2.1.6 Difficulties Regarding Parents**

In this category (10), issues such as parents' not providing adequate support and parents' adaptation to the online system's taking time are emphasized. [T21] pointed out the situation with the statement that "*not all families arrange their environment for their children to attend classes*".

#### **4.2.1.7 Difficulties and Disruptions of Homework and Measurement-evaluation Processes**

In this category (8), teachers stated that they had difficulties because of students' resistance to homework, not being able to evaluate whether the course was adequate because of the lack of measurement-evaluation, as well as difficulties in measurement-evaluation processes and homework in online teaching. One of the teachers mentioned about these difficulties with "*I had difficulties controlling the students' homework. It was difficult to control and follow this during the education period.*" [T47]

#### 4.2.1.8 Difficulties Regarding online Lesson Preparation

In this category (6), teachers focused on difficulties such as planning and preparation of online lessons like having to access lesson-specific online programs on their own, the difficulty of choosing applications that can be used, difficulties in applying digital methods to the lesson and difficulties in online lesson planning that will increase student participation. The statement of [T77] in this category can be seen as "*I had difficulty with lesson planning.*"

#### 4.2.1.9 Digital Security, Privacy and Protection of Privacy

A feature of digital security, privacy and protection of privacy category can be noticed in the statement of [T120] with the focus on "*Secrecy and privacy*"

#### 4.2.2 Ways to Overcome the Difficulties Experienced during Emergency Remote Teaching Period

In this section, in line with the research question "What was done to overcome the difficulties experienced during this period?" the findings obtained from the data analysis are presented.

**Table 3:** Ways to Overcome the Difficulties Experienced during Emergency Remote Teaching Period

Categories	Frequency	Percentage
Ways to overcome computer-related problems, technical issues, and connection issues	128	42.8%
To increase student participation; finding communication solutions and making changes in the lesson	67	22.4%
Finding individual solutions to problems and personal development efforts	45	15.1%
In-Service trainings, learning with colleagues	34	11.4%
Preparing/compiling digital content suitable for remote teaching immediately	9	3.0%
Seeking different ways to continue work on measurement-evaluation and homework and giving feedback to students and parents	5	1.7%
Making efforts to adapt to the emergency remote teaching (himself, students, parents)	5	1.7%
Taking action for digital security	2	0.7%
I had no difficulty	4	1.3%
Total	299	100.0%

##### 4.2.2.1 Ways to Overcome Computer-related Problems, Technical Issues, and Connection Issues

Here, the most intense category in terms of frequency is the category of computer-related problems, technical problems and ways to overcome connection problems (128). In this category, three sub-categories emerged: ways to overcome computer-related problems (52), ways to overcome technical problems (46), and ways to overcome connection problems (30).

In the subcategory of ways to overcome problems related to computers, teachers mentioned solutions such as using their personal computers, using the phone instead of/with a computer, borrowing someone else's computer, lightening the computer by deleting files and programs from the computer, using a different (better) computer, getting a different new computer from school, and buying a new computer personally. Teachers also stated that they used solutions such as going to school (temporarily using the computers in school), requesting a new computer from the school and using two computers/devices which can be seen in one of the teacher's exact expression as *"I taught by connecting with my phone when my computer was causing problems. I always went to the lessons using both devices (In case of unexpected problems)."* [T86]

In the subcategory of ways to overcome technical problems teachers' expressions included issues such as mainly using the method of asking for solutions from school management, IT staff and information technologies teachers, not using/using less of the feature that caused problems, preparing what they would use by entering the lesson earlier than usual, keeping the software updated, trying to eliminate the deficiencies by using different programs and technical equipment, giving additional lessons for the lessons that they could not do due to problems. An example statement in this category is *"I tried to solve the problem by contacting my administrators, the IT department and my fellow teachers for the difficulties I experienced during and after the lesson."* [T50]

In the subcategory of ways to overcome connection problems teachers' opinions included issues such as getting support to improve internet connection, upgrading the internet package, purchasing additional packages, renewing the connection, changing the modem, using the phone internet and solving internet outage problems with mobile data. In the statement of [T26] it is seen as *"I constantly contacted my internet provider and looked for solutions for situations such as internet speed connection, etc."*

#### **4.2.2.2 To increase Student Participation; Finding Communication Solutions and Making Changes in the Lesson**

The second category (67) involves teachers' finding communication solutions and making changes in the lesson to increase student participation. Teachers' communication solutions included ways like communicating with parents, having private/personal meetings with students, following them by constantly staying in touch with students, getting support from class-counsellor teachers for student participation and meeting with parents with guidance support. As for making ways of changes in the lesson teachers' definitions for student participation and motivation included ways such as preparing interesting content-activities and using new-different tools. An example of a teacher's statement is *"I created different activities and lesson contents to attract attention. I provided support with small activities to keep student interest alive"* [T64].

#### **4.2.2.3 Finding Individual Solutions to Problems and Personal Development Efforts**

The third category is finding individual solutions to problems and personal development efforts (45). Teachers stated that they used solutions such as doing research to find new solutions and improve themselves, solving problems by working hard, trial and error,

and trying to solve problems on their own which appeared in the description of [T77] as *"I tried to do research on how to do online courses."*

#### **4.2.2.4 In-Service Trainings, Learning with Colleagues**

The fourth category is in-service trainings and learning with colleagues (34). Teachers stated that they used solutions such as the contribution of in-service trainings, consultation-experience sharing with other teachers in the coterie, consultation-experience sharing with other teachers who are not in their coterie, consultation with experienced teachers and getting support from those around them. This can be seen in a teacher's statement as *"By participating in as many webinars as possible, I tried to gain insight into the knowledge of digital tools and their meaningful integration into lessons"* [T67].

#### **4.2.2.5 Preparing/compiling Digital Content Suitable for Remote Teaching Immediately**

In this category (9), teachers stated that in case of emergency, they found solutions such as moving existing course contents to digital environment-arrange according to distance education, focusing on meeting the minimum needs, allocating more time for content preparation, benefiting from lack of determination in new areas in terms of digital production and bringing digital lessons back gradually. A teacher expressed the viewpoint as *"I have digitized the urgent parts of the current course content"* [T25].

#### **4.2.2.6 Seeking Different Ways to Continue Work on Measurement-evaluation and Homework and Giving Feedback to Students and Parents**

In this category (5), teachers talked about topics such as using different digital tools to measure achievements, browsing different resources for homework topics, and giving feedback to students and parents an example of which can be seen in the statement of [T48] as *"Even though I had the chance to measure the given gains by using different digital tools, I could not measure exactly due to student tendencies."*

#### **4.2.2.7 Making Efforts to Adapt to the Emergency Remote Teaching**

In this category (5), teachers stated that they were making an effort for parents and students to adapt to the online system. The statement of a teacher in this category is *"For the adaptation of distance education, I progressed by relaxing the student as much as possible and trying to understand his thoughts about the period"* [T118].

#### **4.2.2.8 Taking Action for Digital Security**

As for the category of taking measures for digital security (2), an example statement describes the period with mentioning *"I tried to take security measures as much as possible and hide student or personal information"* [T26].

### 4.2.3 Suggestions to R&D Unit and School Administration

In this section, in line with the research question of the study “What should be done for the possible future experiences?”, the findings obtained are presented. All the explanations focused on the possible future experiences they might have to go through later.

**Table 4:** Suggestions for the R&D Unit and School Administration

Categories	Frequency	Percentage
Making technological investments and regulations	98	41.5%
Having in-service trainings	24	10.2%
Reorganizing timetables and planning	24	10.2%
Selection, provision/development of applications used in distance education and providing experience in applications	21	8.9%
Preparing and digitalizing course contents	18	7.6%
Policy development for distance/online education	17	7.2%
Emergency situation and crisis management	15	6.4%
Raising awareness and guidance of parents	6	2.5%
Developing students' digital skills and self-control	3	1.3%
I have no suggestions - There is nothing they can do.	10	4.2%
Total	<b>236</b>	<b>100.0%</b>

#### 4.2.3.1 Making Technological Investments and Regulations

The category that had the highest frequency (98) among Suggestions to the R&D Unit and school administration is making technological investments and regulations. Teachers had suggestions such as regarding providing better computers or updating the computers in hand, providing necessary equipment for distance education, updating the infrastructure of the current equipment, improving internet infrastructure, clearing the private security permission features of the school computers, making a deal with a firm for computer/technical equipment for discount, dealing with parents' technical problems with a separate unit, and supporting/training parents on using applications. A teacher expressed the viewpoint by pointing “*If lessons are going to continue online, computers with adequate hardware and performance have to be provided*” [T11].

#### 4.2.3.2 Having In-service Trainings

In this category (24), considering the possible experiences they might have to go through later, to overcome the difficulties experienced during the remote teaching period teachers suggested having in-service trainings. The trainings they suggested included issues such as distance/online-digital education branch-specific digital introduction of the applications, technology use, enriching/improving digital course content, digital instructional design. A view in this category mentioned about trainings as “*There should be more web seminars and workshops about online education*” [T175].

#### 4.2.3.3 Reorganizing Timetables and Planning

In this category (24) teachers' suggestions were made up of remarks such as no differentiation should be made among lessons as obligatory-voluntary; considering



students' levels, features of lessons and differences between face-to-face and online lesson hours should be reorganized; keeping track of attendance/absenteeism, participating the lessons and evaluation processes thoroughly. A teacher described the difference with *"I believe admitting that conditions in distance education are different from face-to-face and reorganizing the lesson hours and time allocated to them are among what needs to be done"* [T53].

#### **4.2.3.4 Selection, Provision/Development of Applications Used in Distance Education and Providing Experience in Applications**

In this category (21) teachers' suggestions included issues such as provision of fee-paid/licensed applications by the school, school's developing special applications for their use only, teachers' gaining experience in the main and popular applications, using applications that are more suitable to distance education, researching alternative application and lesson tools. A teacher pointed out the issue with *"school should buy the fee-paid and expensive applications"* [C1/54].

#### **4.2.3.5 Preparing and Digitalizing Course Contents**

In this category (18), teachers' expressions included suggestions such as course contents' being enriched and transferred to digital environment, teachers' being supported and guided for content development, contents/materials' being prepared professionally. In preparing the content [T106] suggested that *"I believe producing materials with more professional people and programs will be more useful"*.

#### **4.2.3.6 Policy Development for Distance/Online Education**

In this category (17) teachers' suggestions included issues such as forming a policy for distance/online education, considering the philosophy of distance education, enabling exchanging information and experience between institutions, restructuring R&D Unit according to new conditions, the whole team's being experienced and ready for possibilities, considering teacher's new role, thanking/praising teachers, determining the fields to be open for the students well and information and guidance for cyber security. In this category an example quotation of a teacher is *"If there are any issues and subjects that need to be taken into consideration in distance education, policies can be determined"* [T120].

#### **4.2.3.7 Emergency Situation and Crisis Management**

In this category (15) teachers' suggestions included issues such as not postponing the plannings to the last minute, informing and guidance's being carried out on time, deciding on what to do during crisis intervention in advance, forming an emergency intervention team and emergency sets for emergency situations, preparing practical guide for precautions which can be clearly seen in the quotation of [T154] as *"A unit that can find an immediate solution should be formed"*.

#### 4.2.3.8 Raising Awareness and Guidance of Parents

In this category (6), teachers suggested issues such as making parents aware by informing them about the process and talking to parents about the importance of participation. A teacher drew attention to this issue by underlining “Parents should be informed. (We have managed the whole period well and got prepared very quickly but some parents found it hard)” [T16].

#### 4.2.3.9 Developing Students' Digital Skills and Self-control

In the category of developing students’ skills and self-control, a teacher [T57] mentioned “Improving students’ digital skills and integrating it into this period”.

#### 4.2.4 Relations between Qualitative Findings

The relations between the qualitative findings regarding three research questions (“On what areas difficulties were experienced?”, “What was done to overcome the difficulties?” , “What should be done for the possible future experiences?”) are presented in Figure 4 as a diagram.



**Figure 1:** Relations between Qualitative Findings

## 5. Conclusion, Discussion and Recommendations

This study aimed to explore the emergency remote teaching period carried out in a private school between 16th March and 19th June 2020 due to Covid-19 pandemic. According to the quantitative findings, it is seen that teachers generally experienced technical equipment inadequacy problems. However, it is also seen that IT solutions support and IT staff were found to be adequate and contributed to the quality of

professional development activities. The density of the frequency in qualitative findings suggest that teachers prominently highlighted device, infrastructure, connection, applications and technical problems as well as the problems they went through with their students. While explaining the ways to overcome difficulties, the most featured issues are related to overcoming computer problems and technical setbacks. The expectations of the teachers from the R&D Unit and school administration also focus on technological investments and regulations. When all the qualitative findings of the study are considered as a whole, the most prominent issues are seen to be technology integration, technology use and technical problems. Competencies, experience, professional development (including in-service trainings) and issues regarding students-parents are seen to come up with almost equal frequencies.

It is noticed that online education primarily depends on technological devices and the internet's being available and adequate. The provision of technological equipment became a serious difficulty for the institutions, educationalists and students during the emergency remote teaching period (Adedoyin & Soykan, 2020). These are also the mostly occurring issues in this study, too. The related studies carried out recently also mention that teachers and other shareholders experienced difficulties similar to the ones in this study. For example, Fidan (2020, p. 32), expressed that the mostly occurring negativity teachers mention about is either "*connection or infrastructure (20,3%)*". Talidong (2020, p. 198) signified that 65% of the participant Filipino teachers of their study experienced difficulty in online education. They explained these difficulties as "*internet connection (65%), technical issues (15%), overloading of conferencing tools (10%), and passive learners (10%)*." Marshall, et al. (2020) suggest that some teachers did not have reliable internet access at home. Also, 57,2% of the participants in their study mentioned that at least one-fourth of their students did not have access to broadband internet outside school and even if they had, these students did not have appropriate tools to study online.

It is indicated in some studies that technical infrastructure and connection problems triggered new problems or increased the current ones. In this context, Marshall, et al. (2020, p. 48) indicated that technological limitations caused serious problems regarding teachers' giving feedback to their students and forming direct relations with them. Yet, having "*lack of real time communication*" also caused motivation problems especially on the part of the younger students. Gares, Kariuki & Rempel (2020) shared that limited internet broadband or problems based on internet speed caused setbacks on especially synchronous parts of the lessons. Green, Burrow & Carvalho (2020) highlighted that students and teachers have to deal with technical worries, location, family and health problems which caused most importantly stress, uncertainty and anxiety.

Zweig & Stafford (2016) and Donley, Keyworth & States (2020), state that teachers need more professional development trainings for the online education periods carried out in normal conditions. Studies that focused on this subject before the pandemic (Archambault & Kennedy, 2018; Barbour, Siko, Gross & Waddell, 2012; Linton, 2018) indicate that teacher training and professional development trainings do not prepare teachers for online education as needed. What teachers are currently experiencing have

become a kind of experiment that justifies this idea. Studies regarding ERT mainly focus also on the inexperience of teachers and students in online education. Trust & Whalen (2020) signify that in 325 teacher participants of their study 68% of them have never tried remote teaching while 66% have never tried online teaching and 55% of them have no experience in blended teaching. The difficulties teachers faced are in line with the results of this study. Similar to highlighting inexperience, Marshall, et al. (2020), indicate that the majority of teachers (92.4%) have not experienced online teaching before ERT and very few of them have had a quality training on this subject. Gares, et al. (2020) express that although there were no problems in terms of technology and software, not being competent in how to use technology on the part of students and teachers led to problems. They added that in overcoming these problems, a mutual flexibility system was developed between the students and the academics. Lindner, Clemons, Thoron & Lindner (2020) also explain that teachers were caught unprepared for online teaching.

Some studies mention the difficulties associated with the new working order that arose during the emergency distance education period. Gares, et al. (2020) cite the challenges they face in ERT, such as Zoom fatigue, difficulties in creating a home-study space, and conflicts with students about the appropriate time for students to study. Green, et al. (2020) and Mohammed, Khidhir, Nazeer & Vijayan (2020) also highlight similar challenges.

According to the results of one of the researches conducted during the emergency remote teaching period, it is understood that during this period, the teachers focused on transferring the content used in face-to-face education online, so there was little time left for formal education (Green, et al., 2020). In normal conditions, it takes 6-9 months to plan, prepare and develop a typical online course (Hodges et al. 2020; Yıldız & Kartal, 2020), but in the case of emergency remote teaching, everyone should have only the necessary things. It can be said that the prediction of *"trying to take just the essentials"* (Hodges et al. 2020) has been confirmed. In fact, Marshall, et al. (2020, p. 48) state that teachers do not have enough time to improve the quality of education given to students and in some cases, they need *"pedagogical materials"* that they cannot access because they stay in their schools, which negatively affects the quality of online teaching.

In line with the difficulties highlighted in this research regarding students and parents; teachers interviewed by Çakın and Külekçi Akyavuz (2020) also stated that they had problems with communication, parents and students' learning. Marshall, et al. (2020) and Talidong (2020) also mention problems in communication with students. Zweig & Stafford (2016, p. 399) state that the difficulties most emphasized by teachers in online education are *"about supporting student participation and perseverance"*. In parallel with this research conducted before the pandemic period, this issue was emphasized by the teachers in this study as well regarding the difficulties experienced with the students.

Marshall, et al. (2020, p. 48) state that one of the teachers' *"the most common response"* is related to the fact that the measurement and evaluation area is out of their responsibilities. In this study, it is thought that the reason why the subject of measurement and evaluation did not come to the agenda widely is because of the differentiation of priorities due to the difference in context or time.

Finding individual solutions to problems and personal development efforts emerged as a category in this study. Similarly, Marshall, et al. (2020, p. 48) state that teachers have learned much of what they have now from "*each other*" and also "*from their own individual research*". Trust & Whalen (2020) also state that their participants prefer self-directed learning with professional learning networks for assistance. The emphasis on professional learning networks here seems to be parallel to the findings in another category of this study, the category of learning with colleagues. Another example study on this topic (Joubert, Callaghan & Engelbrecht, 2020) shows that the participants generally evaluate online cooperation positively and emphasize the motivational value of coming together through "*online interaction and teamwork*" (p. 922). In addition, Green, et al. (2020, p. 920) state that the while ERT period offers staff/teachers opportunities to "*discuss and learn different ways of teaching*", it offers students and staff/teachers to work in a team. Gares, et al. (2020) indicate that sense of community affects the motivation and participation of students positively in the ERT transition period. On the same issue, Alvarez, Ventura & Opiniano (2020, p. 60) comment that online/distance learning support lifelong learning which is thought to open "*a new learning pathway*" for the professional development of teachers.

Cavanaugh & DeWeese (2020) show in a study based on the usage statistics of a website for teachers that in March 2020, when the ERT period entered, the search tendency of teachers turned completely towards digital and distance learning. They also state that the increase in video viewing rates during the same period indicated teachers' turning to practical learning and that the preference for learning by using videos led to thinking that it was at the entry level. This result is in line with the findings in this study in the category of finding individual solutions to problems and personal development efforts, and seems important in terms of showing the learning paths teachers use for their professional development.

According to Hilli (2020), teachers in distance teaching feel obliged to develop new teaching strategies to communicate with students. In this study, some teacher expressions in the category of "*to increase student participation; finding communication solutions and making changes in the lesson*" seem parallel to this result.

In this study, the participants suggested making technological investments and regulations for possible future experiences. Similarly, the study of Çakın and Külekçi Akyavuz (2020) suggest providing students with free internet.

In the context of suggestions for possible experiences, the participants made suggestions for professional development trainings in this study. Likewise, 66% of the participants of Trust & Whalen (2020) stated that they thought educators should receive more training. Lindner et al. (2020) also recommend that teachers receive extensive training for distance education.

Hodges et al. (2020) state that in the same way that face-to-face education does not consist of only courses, online education does not consist of only lessons either and it should be ensured that it creates its own ecosystem as in the face-to-face education ecosystem. This context needs to be dwelled on when considering possible future experiences. Hodges et al. (2020) also state that institutions should rethink how to operate

support systems in crisis situations. In this study, the participants in the categories of policy development for distance/online education and emergency and crisis management also expressed their views in this way. Marshall, et al. (2020, p. 49) also state that their participants recommend preparing for such emergencies during the normal period.

Hilli (2020) states that teachers need extra time and technical support to learn how to teach online and when enough time and resources are provided, teachers realize the opportunities of distance education. Participants of this study also expressed similar thoughts in categories related to suggestions for possible experiences.

Bozkurt (2020) indicate that students should be supported to improve themselves in the areas of gaining more autonomy and self-sufficiency. This idea seems consistent with teacher expectations for improving student self-control in this study. Similarly, Fidan (2020) also expresses that teachers realize the importance of student motivation and responsibility during this period.

On the whole, it can be suggested that emergency remote teaching period has come as a surprise and shock to everyone in the education world in which there appears to be a long way to go in search of finding what works best for both teachers and students. It is thought that the results of the study reflecting the experiences of the emergency remote teaching period can be used to prepare for a possible new emergency and/or to increase the quality of distance education at K12 level.

Research data were collected during the first ERT period, which started with the pandemic. In the later stages of the pandemic (for example, in the fall period of 2020-2021, which can also be named as the second ERT period), similar researches can be conducted to monitor the progress and try to identify differences, which will contribute to the ERT and therefore distance/online education literature.

### **Conflict of Interest Statement**

The authors have no conflicts of interest to declare. Both authors have seen and agree with the contents of the manuscript and there is no financial interest to report. The submission is original and is not under review at any other publication.

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