



SUPPORTING DISADVANTAGED AND VULNERABLE STUDENTS DURING EMERGENCY REMOTE TEACHING: EDUCATION STAKEHOLDERS' ACTIONS TOWARDS EQUITY AND IMPLICATIONS FOR THE FUTURE

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Abstract:

The COVID-19 pandemic came as a catalyst, altering the everyday life of people worldwide. The shift to Emergency Remote Teaching (ERT) during the pandemic exposed and exacerbated existing educational inequalities, disproportionately affecting disadvantaged and vulnerable students. These students encountered various obstacles to participating in ERT, and despite targeted interventions and support from schools, NGOs and government agencies, a large proportion of these students remained disengaged due to systemic shortcomings and the absence of a holistic, inclusive strategy. This paper summarizes empirical findings from 39 school counselors, 129 school principals and 221 primary school teachers in Greece, to highlight the structural limitations of current educational systems in responding to crises, and proposes a set of actionable recommendations. These include ensuring universal access to technology and internet connectivity, enhancing digital skills training, providing tailored support for linguistic and learning needs, strengthening psychosocial support systems, and fostering collaboration between schools and homes. The findings emphasize the necessity of multidimensional, equity-driven policies and crisis preparedness plans in order to ensure inclusive and effective distance education in future emergencies.

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1. Introduction

The unforeseen advent of the COVID-19 pandemic provoked a series of measures to restrain the contamination of citizens, which varied across different countries. For schoolchildren, these restrictions limited their access to healthcare, nutrition, social interactions and education, among other things (Rao & Fisher, 2021; UNICEF, 2022).

The abrupt transition from face-to-face instruction to ERT disrupted continuity of education, exacerbating existing educational inequalities. During school closures, students need reliable access to technology and a stable learning environment, as well as parents who have the necessary time and skills to support remote learning. Although remote learning poses challenges for all families, those in poverty face greater difficulties and are at increased risk of widening educational disparities (UNESCO, 2021; UNICEF, 2021).

Data show that the impact of the pandemic was greater on students from marginalized, socially or economically disadvantaged families, or from disadvantaged and vulnerable groups (Drane et al., 2020; Indrawati et al., 2020; UNESCO, 2021). The digital divide impeded access to education for many students, especially those lacking the necessary technological equipment, internet access and a suitable homeschooling environment. Many of these students also lacked educational resources and parental support, and attended deprived schools without resources or trained teachers (Dorn et al., 2020; Gee et al., 2023; Hammerstein et al., 2021; Kuhfeld et al., 2022; Kuhfeld et al., 2023; Lewis et al., 2021).

The significance of our study lies in identifying the challenges faced by disadvantaged and vulnerable students in Greece, as in other countries worldwide, exploring the mitigation strategies adopted to tackle them, and providing implications and actions for future crises.

2. Literature Review

2.1 Students at Risk due to School Closures

Disadvantaged and vulnerable students often come from low socioeconomic households facing poor housing, health issues, food insecurity, and limited access to pedagogical and technological resources, challenges worsened by the COVID-19 pandemic (Australian Bureau of Statistics, 2018; DeMatthews et al., 2023; Haderlein et al., 2021; Larsen, 2013; OECD, 2020; Pinoncely, 2016; Stelitano et al., 2020).

Unequal access to public education disproportionately affected students from low socioeconomic backgrounds (Belay, 2020; Dimopoulos et al., 2021; Engzell et al., 2020;

Kwakye & Kibort-Crocker, 2021; Lagi, 2020; Rasmitadila et al., 2020), marginalized or migrant/refugee groups (Godsey, 2020; Kaden, 2020; Lynch, 2020; Mabeya, 2020; Rasmitadila et al., 2020; UNESCO, 2020a), and students in remote or rural areas (Lewis et al., 2022). Students with disabilities or special educational needs face stigma, marginalization, and lack of resources or specialist teachers (Godsey, 2020; McAleavy et al., 2020; Polydoros & Alasona, 2021). Students from large families (Bol, 2020), or with parents having low education or digital skills (Engzell et al., 2021; Tosun et al., 2021) encounter difficulties benefiting from the educational process. These factors confirm persistent educational inequalities impacting disadvantaged and vulnerable students.

2.2 Implications of School Closures for Disadvantaged and Vulnerable Students

The digital divide is pronounced in countries lacking digital infrastructure and resources for ERT (Engzell et al., 2021; McAleavy et al., 2020). Schools with pre-existing educational technology adapted more quickly and engaged students better than those without, which required lengthy preparation (Petrie et al., 2020). Remote and rural schools often lack necessary infrastructure and equipment for ERT (Dlamini & Zulu, 2024; Tadesse & Muluye, 2020), and disadvantaged and vulnerable students typically attend such under-resourced schools with less experienced teachers and lower engagement levels (Carver-Thomas et al., 2021, 2022; DeMatthews et al., 2023; Di Pietro et al., 2020; Julius & Sims, 2020; Lee et al., 2021; Parczewska, 2021). For students living in rural or remote areas, or in developing countries, access to radio or TV broadcasts is not guaranteed, so they cannot benefit from broadcast lessons (Dlamini & Zulu, 2024; Tadesse & Muluye, 2020; Tiruneh, 2020).

Home learning environments critically affected ERT success and depended on families' socioeconomic status, geographical location, and access to necessary infrastructure and technological equipment (Tziouvara & Kakana, 2025; UNICEF, 2019; UNICEF & UNFPA, 2020). Educational disparities arose from differences in household resources such as devices, internet, quiet study spaces, parental pedagogical knowledge, digital skills, and language proficiency (Asadullah, 2023; Di Pietro et al., 2020; Espino-Díaz et al., 2020; Minkos & Gelbar, 2020; Mustafa, 2020; Tiruneh, 2020; Tzifopoulos, 2020; Tziouvara & Kakana, 2025).

Students from low-income families face educational inequalities due to a lack of technological equipment and internet access (Ochieng & Ngware, 2023; Thomas et al., 2019; Chandra et al., 2020; Drane et al., 2020). Many families prioritize basic needs over technological equipment and internet access (Karpman et al., 2020), often relying on costly, limited mobile data (Olingo, 2020; Thomas et al., 2019). Sharing devices with family members further restricts access for disadvantaged and vulnerable students (Asadullah, 2023).

Despite everyday technology use, young people often lack digital skills for educational purposes and confidence navigating ERT platforms (Bennett et al., 2008; Thompson, 2013; Wang et al., 2014). Disadvantaged and vulnerable students face

additional challenges due to limited parental support, stemming from low pedagogical or digital skills, work demands, or lack of confidence, which can widen educational gaps (Asadullah, 2023; Julius & Sims, 2020).

COVID-19 lockdowns increased stress, anxiety, and depression, contributing to school dropouts, diminished self-esteem, and distrust in the education system (Di Pietro et al., 2020; Pikulski et al., 2020; Tan, 2020). Psychological services at school are vital for some students, while students with disabilities or special educational needs often lack specialized support and resources, especially in disadvantaged households.

A lack of childcare, lack of assistive technologies or trained teachers for students with disabilities or special educational needs, and limited family pedagogical knowledge in remote or rural areas, hinder student participation (Dvorsky et al., 2023; Fish et al., 2023). Starting from disadvantaged positions, many students excluded by school closures risk further educational disengagement (Burke & Dempsey, 2020).

2.3 Ways to Support the Participation of Disadvantaged and Vulnerable Students

UNESCO (2020b) issued 10 key recommendations to ensure educational continuity during COVID-19 school closures, by assessing school readiness for closures, ensuring inclusive distance learning, prioritizing psychosocial support, training teachers and parents in digital tools, limiting platforms used, monitoring student progress, and fostering community connections. In some countries, disadvantaged and vulnerable students received laptops, tablets, or internet-enabled devices, and free internet access, though provision favored urban over disadvantaged schools (DeMartino & Weiser, 2021; Julius & Sims, 2020; McAleavy et al., 2020). Free internet access to educational platforms and improved telecommunications were arranged by some governments or schools (Asadullah, 2023; Hayes et al., 2021; UNESCO, 2020a). Additional support included SIM cards or financial aid for internet costs (McAleavy et al., 2020), comprehensive instructions for teachers and families (Asadullah, 2023), and hotlines for technical assistance (Drane et al., 2020).

Education entities supported students with disabilities or special education needs by providing sign language interpretation and captions on TV programs (Ngware & Ochieng, 2020). Teacher training programs focused on online teaching methods for students with disabilities were also offered (McAleavy et al., 2020). Some NGOs set up multilingual support lines to help parents establish home learning routines (McAleavy et al., 2020).

Collaborative approaches involving families and teachers were used to tailor learning activities, with platforms like Edugestio facilitating co-designed online learning (Drane et al., 2020; O'Shea et al., 2020). Disadvantaged and vulnerable students were often provided with printed materials, delivered via home distribution, sometimes in cooperation with postal services, or school collection (Julius & Sims, 2020; Mabeya, 2020; Sari & Nayir, 2020; UNESCO, 2020a). Educational content was also shared through email, Google Classroom, WhatsApp, live streaming, e-games, videos, audio clips, e-books,

recordings, online assignments, or social media to accommodate families with limited internet access (Asadullah, 2023; Günbaş & Gözükcük, 2020; United Cities and Local Governments et al., 2020).

Educational content was delivered through radio and TV broadcasts, dedicated educational channels, and live-streamed lessons via YouTube to support households lacking technology or internet access and assist parents with homeschooling (Asadullah, 2023; Günbaş & Gözükcük, 2020; Mabeya, 2020; Mustafa, 2020; Sari & Nayir, 2020; United Cities and Local Governments, 2020). To accommodate low-income families, educational processes were simplified and adapted to basic household resources, with materials accessible via smartphones and other available devices (Drane et al., 2020; Günbaş & Gözükcük, 2020; Ngware & Ochieng, 2020, 2021; Sari & Nayir, 2020; Tadesse & Muluye, 2020).

During the COVID-19 quarantine, schools and school principals played a critical role in providing psychological and mental health support to families (Brion & Kiral, 2021; Longmuir, 2021; McLeod & Dulsky, 2021; Moss et al., 2020). Psychological support and online courses helped families manage relationships during lockdowns (Drane et al., 2020), while some NGOs offered WhatsApp support lines for families with children with disabilities (McAleavy et al., 2020). Collaborations between schools and social workers provided disadvantaged and vulnerable students with psychosocial support, including home visits and additional non-educational assistance (Julius & Sims, 2020).

The most effective strategy would combine multiple delivery methods—high-tech (online learning), low-tech (radio/TV), and no-tech (printed materials)—to maximize participation among disadvantaged and vulnerable students (McAleavy et al., 2020). However, providing technological equipment alone did not guarantee engagement in distance learning (Ochieng & Ngware, 2023) nor fully meet all students' needs (Julius & Sims, 2020). Despite diverse efforts, students from lower socio-economic backgrounds remained the most impacted by educational disruptions during ERT (Dimopoulos et al., 2021).

3. The Present Study

This study explores the response strategies adopted by educational systems to address the needs of students, particularly those from disadvantaged and vulnerable groups, as experienced by school counselors, school principals and teachers. This study is part of a broader research project for a PhD thesis exploring educational inequalities. The aim of the study is to identify the restrictions that these students faced during ERT, and to develop recommendations for interventions that will ensure equitable access for all students and make ERT more inclusive and effective in future crisis periods.

The main research question was:

- What were the ways deployed by education stakeholders to tackle the difficulties faced by disadvantaged and vulnerable students regarding their participation in ERT?

3.1 Materials and Method

The research adopted a mixed methods design involving the collection of qualitative and quantitative data. More specifically, the research followed an explanatory sequential design, which consisted of two distinct and interactive phases (Creswell, 2011). The first phase was the collection and analysis of quantitative data from a great number of participants, using structured online and printed questionnaires. The second phase was the collection of qualitative data from a subgroup of the participants through semi-structured interviews. Quantitative and qualitative data were collected separately, with a combined interpretation of the results at the end, to better understand the phenomena under investigation.

3.2 Sample

The present study involved 39 school counselors, 129 school principals and 221 primary school teachers. Participants were selected from a wide range of regions across Greece to reflect both mainland Greece and the Greek islands, as well as metropolitan, urban, semi-urban, and rural settings. The qualitative sample comprised individuals from the initial quantitative sample who consented to follow-up interviews. The survey was approved by the Institute of Educational Policy (Act no. Φ.15/141611/ΑΑ/1017/Δ1, IEP Board). All ethical considerations were taken into account in the present study. All participants were informed in writing about the purpose, procedure and duration of the research and agreed to participate.

3.3 Instruments

For this study, the researchers designed specific questionnaires for each target group. The school counselors' questionnaire consisted of 35 questions in total. The school directors', and teachers' questionnaires each consisted of 38 questions. All questionnaires included demographic questions, as well as multiple-choice and open questions, covering a wide range of educational experiences during the school closures due to the pandemic.

Semi-structured interviews were conducted to gather qualitative data, exploring participants' thoughts, emotions, and experiences during Emergency Remote Teaching (ERT). The interviews included questions about the implementation of ERT, lasted approximately 40–60 minutes and were conducted in person or online via the Webex platform. All participants were informed of the research objectives and provided written consent before participating.

3.4 Procedures

The research was conducted over the course of one year and comprised two distinct stages. During the first stage, participants were given a questionnaire (either online or in printed form) to complete. During the second stage, the researchers conducted semi-structured interviews with participants who had consented to further involvement. Throughout the research process, all ethical and deontological principles were strictly upheld. Participants' personal data were pseudonymized to safeguard their anonymity.

3.5 Statistical Analysis

Descriptive statistical techniques were used to analyze the quantitative data from the research using IBM SPSS Statistics (version 27). The NVivo tool was used to analyze the qualitative data from the interviews and questionnaires. A thematic analysis was conducted, beginning with initial coding and developing themes. The same thematic analysis process was followed for the qualitative data from the questionnaires. Representative quotes were chosen for each theme to illustrate the key findings.

4. Results

4.1 Quantitative Results

The lack of technological equipment posed a major challenge during ERT, as it could impede students' equitable access to the educational process. When asked about students' need for technological equipment, all of the school counselors responded positively. The majority of school principals (94.6%) and teachers (86%) said that there was a need for such equipment at their school, highlighting inequalities in access to ERT. Conversely, a smaller percentage of school principals (3.9%) and teachers (8.6%) answered that there was no such need, while 1.6% of school principals and 5.4% of teachers had no clear opinion (Table 1).

Table 1: Need for provision of technological equipment
to some students in your class/school/schools of jurisdiction

	School counselors		School principals		Teachers	
	n	%	n	%	n	%
Yes	39	100	122	94.6	190	86
No	-	-	5	3.9	19	8.6
I don't know	-	-	2	1.6	12	5.4

To address the issue of unequal access to education, various entities provided schools and students with the necessary technological equipment, as indicated by responses from school counselors, principals and teachers (Table 2).

Most schools used their own resources and implemented school initiatives in response to students' needs, according to 53.8% of school counselors, 49.6% of school principals and 64.5% of teachers. Local municipalities were mentioned as the main

providers of technological equipment. However, a significant variation is observed in the answers of the participants, with 59% of school counselors mentioning municipalities as the main provider, compared to lower percentages of 34.1% of school principals and 18% of teachers. The Ministry of Education also appears as a support entity, according to 53.8% of school counselors, 38% of school principals and 15.6% of teachers. Parents' associations played an important role in providing technological equipment, as recorded by school counselors (51.3%), school principals (12.4%) and teachers (12.8%). Private entities were less engaged, according to 23.1% of school counselors, 17.8% of school principals, and 5.2% of teachers. Finally, 10.3% of school counselors, 20.9% of school principals and 15.2% of teachers referred to the contribution of other sources.

Table 2: Need for provision of technological equipment
to some students in your class/school/schools of jurisdiction

	School counselors		School principals		Teachers	
	n	%	n	%	n	%
Ministry of Education	21	53.8	49	38.0	33	15.6
Municipality	23	59.0	44	34.1	38	18.0
School	21	53.8	64	49.6	136	64.5
Parents' Association	20	51.3	16	12.4	27	12.8
Private entities	9	23.1	23	17.8	11	5.2
Other (describe)	4	10.3	27	20.9	32	15.2
Total	98	251.3	223	172.9	277	131.3

There was significant heterogeneity in the participation of disadvantaged and vulnerable students in ERT. The participation of Roma students was very limited or non-existent (Table 3).

When asked about the participation of Roma students in ERT, 23.1% of school counselors, 55.8% of school principals and 59.3% of teachers said they had no clear idea about it. Furthermore, 35.9% of school counselors, 23.3% of school principals, and 26.7% of teachers responded that Roma students never participated in the educational process during ERT. Conversely, 33.3% of school counselors, 7.8% of school principals, and 3.2% of teachers indicated that Roma students participated only a few times. 7.7% of school counselors, 1.6% of school principals, and 0.9% of teachers responded that Roma students participated occasionally, and a very small percentage of school principals (2.3%) and teachers (1.4%) reported that Roma students participated frequently.

Participation by refugee students was also inconsistent or non-existent to a great degree (Table 4). As with Roma students, 15.4% of school counselors, 50.4% of school principals and 55.2% of teachers had no clear idea of refugee students' participation. 10.3% of school counselors, 19.4% of school principals and 19% of teachers declared that refugee students were completely disconnected from the educational process.

Table 3: Roma students' participation in ERT

	School counselors		School principals		Teachers	
	n	%	n	%	n	%
I don't know	9	23.1	72	55.8	131	59.3
Never	14	35.9	30	23.3	59	26.7
A few times	13	33.3	10	7.8	7	3.2
Sometimes	3	7.7	2	1.6	2	.9
Very much	0	0	3	2.3	3	1.4
Total	39	100	117	90.7	202	91.4

According to 48.7% of school counselors, 11.6% of school principals and 9.5% of teachers, some students participated just a few times, while according to 20.5% of school counselors, 2.3% of school principals and 4.1% of teachers, others participated sometimes. Only 5.1% of school counselors, 5.4% of school principals and 2.7% of teachers said that refugee students participated frequently in ERT (Table 4).

Table 4: Refugee students' participation in ERT

	School counselors		School principals		Teachers	
	n	%	n	%	n	%
I don't know	6	15.4	65	50.4	122	55.2
Not at all	4	10.3	25	10.4	42	19
A few times	19	48.7	15	11.6	21	9.5
Sometimes	8	20.5	3	2.3	9	4.1
Very much	2	5.1	7	5.4	6	2.7
Total	39	100.0	115	89.1	200	90.5

The responses of stakeholders highlighted various means of support aimed at ensuring the participation of Roma and refugee students in ERT (Table 5). Stakeholders emphasized the importance of schools as a supportive entity for such students. Support focused mainly on providing pedagogical and linguistic support to disadvantaged and vulnerable student populations during ERT (42.7% of school counselors, 81.6% of school principals and 56.5% of teachers), as well as technological and technical support (37.3% of school counselors, 65.3% of school principals and 58.8% of teachers). Collaboration was established with NGOs to provide technological/technical support (10.7% of school counselors, 4.1% of school principals, and 5.9% of teachers) and pedagogical/linguistic support (8% of school counselors, 4.1% of school principals, and 4.7% of teachers) to disadvantaged and vulnerable students. However, 1.3% of school counselors, 22.4% of school principals and 31.8% of teachers declared a total lack of support for these students. Finally, 22.4% of school principals and 10.6% of teachers mentioned other types of support interventions.

During the school closures, there was an urgent need for psychological and social support for disadvantaged and vulnerable students. However, according to the responses of school counselors (2.6%), schools in their jurisdiction did not have a support team of experts. Similarly, the responses of school principals (51.9%) and teachers (41.2%)

revealed that their schools had no provision for mental health or social support experts. Furthermore, 8.6% of teachers declared ignorance regarding the role of such experts within their school (Table 5).

Table 5: Types of support for Roma and refugee students

	School counselors		School principals		Teachers	
	n	%	n	%	n	%
Technological/technical support by NGOs	8	10.7	2	4.1	5	5.9
Pedagogical/linguistic support by NGOs	6	8.0	2	4.1	4	4.7
Technological/technical support by school	28	37.3	32	65.3	50	58.8
Pedagogical/linguistic support by school	32	42.7	40	81.6	48	56.5
No support for these students	1	1.3	11	22.4	27	31.8
Other (describe)	0	0	11	22.4	9	10.6
Total	75	100.0	98	200.0	143	168.2

With regard to the psychological support of disadvantaged and vulnerable families during school closures, the data show that the relevant interventions were limited and fragmented (Table 6). More specifically, 74.4% of school counselors responded positively, compared to 38.8% of school directors and 22.6% of teachers who said that some type of psychological support was offered through available entities or school expert teams. 10.3% of counselors, 58.1% of principals and 47.5% of teachers mentioned that there was no such provision. Finally, 15.4% of school counselors, 3.1% of school principals, and 29.9% of teachers stated that they did not know whether such a provision existed in their school.

When asked about monitoring students at risk of abuse or severe violence at home during school closures, 41% of school counselors responded positively, compared to just 22.5% of school principals and 12.7% of teachers. No such provision existed was the answer of 2.1% of school counselors, 63.6% of school principals and 46.2% of teachers. A significant percentage of school counselors (35.9%), 14% of school principals and 40.7% of teachers stated that they were unaware of any protection measures for disadvantaged and vulnerable students at risk.

As for monitoring students at risk during school closures, the data show that, when interventions did take place, they were mostly based on phone communication. More specifically, 35.9% of school counselors, 11.4% of school principals and 13.5% of teachers reported phone contact between the school and the student, while 56.4% of school counselors, 32.4% of school principals and 27.5% of teachers reported phone contact between the school and the parents. According to school counselors, interventions made by the interdisciplinary team of experts were phone communication with parents (53.8%) and students (48.7%).

Table 6: Support for economically disadvantaged families during school closures

		School counselors		School principals		Teachers	
		n	%	n	%	n	%
Was there an interdisciplinary support team of experts in your school (social worker/school psychologist)?	Yes	38	97.4	62	48.1	111	50.2
	No	1	2.6	67	51.9	91	41.2
	I don't know	-	-	-	-	19	8.6
Was there provision for psychological support to disadvantaged and vulnerable families during school closures?	Yes	29	74.4	50	38.8	50	22.6
	No	4	10.3	75	58.1	105	47.5
	I don't know	6	15.4	4	3.1	66	29.9
Was there monitoring of disadvantaged and vulnerable students at risk of abuse or severe violence at home?	Yes	16	41	29	22.5	28	12.7
	No	9	23.1	82	63.6	102	46.2
	I don't know	14	35.9	18	14	90	40.7

However, school principals and teachers claim that this kind of communication was very limited. Only 26.7% of school principals and 18.7% of teachers referred to phone communication between school psychologists/social workers and parents, and 17.1% of school principals and 11.7% of teachers referred to phone communication with students. Home visits were reported by 15.4% of school counselors, 6.7% of school principals and 2.3% of teachers. A small percentage of school counselors (10.3%), school principals (14.3%) and teachers (15.2%) mentioned other types of support, primarily communication via email or social media applications. Notably, according to school counselors (23.1%), school principals (49.5%) and teachers (50.9%), no action was taken (Table 7).

Table 7: Types of monitoring of disadvantaged and vulnerable students at risk of abuse or severe violence at home

	School counselors		School principals		Teachers	
	n	%	n	%	n	%
Phone communication between school and student	14	35.9	12	11.4	23	13.5
Phone communication between school and parents	22	56.4	34	32.4	47	27.5
Phone communication between social worker/school psychologist and student	19	48.7	18	17.1	20	11.7
Phone communication between social worker/school psychologist and parents	21	53.8	28	26.7	32	18.7
Home visits	6	15.4	7	6.7	4	2.3
Other (describe)	4	10.3	15	14.3	26	15.2
No action	9	23.1	52	49.5	87	50.9
Total	95	243.6	166	158.1	239	139.8

School principals responded positively about actions taken to provide financial support for disadvantaged and vulnerable families during school closures by 20.9%. Conversely, 69.8% of school principals answered that no financial support was provided, while 8.5% answered that they did not know if relevant actions were taken (Table 8).

Table 8: School provision for the financial support of disadvantaged and vulnerable families during school closures

Yes		No		I don'tknow	
n	%	n	%	n	%
27	20.9	90	69.8	11	8.5

When asked about the sources of financial support for disadvantaged and vulnerable groups, only 2.4% of school principals mentioned state funds, 8.5% mentioned municipalities, 18.3% mentioned Parents' Associations, and 19.5% mentioned private entities or donors. The largest percentage, 74.4%, responded 'other' (Table 9).

Table 9: Entities for the financial support of disadvantaged and vulnerable families

	n	%
State	2	2.4
Municipality	7	8.5
Parents' Associations	15	18.3
Private Entities/donors	16	19.5
Other (describe)	61	74.4
Total	101	123.2

4.2 Qualitative results

The data from the interviews provide insights into the challenges faced by disadvantaged and vulnerable students during school closures, and reveal the methods adopted by education stakeholders to encourage their participation in ERT.

To mitigate the challenges faced by disadvantaged and vulnerable families and tackle educational inequalities during ERT, many schools loaned technological equipment from their own resources. School counselors (N=4) mentioned that *“Some computers were given to Roma students by European programs, the municipality or the Ministry of Education. However, school reports indicate that student participation was limited”*.

School principals also mentioned providing technological equipment from school resources, from the Ministry of Education, the municipality or donors to disadvantaged and vulnerable families in need (N = 17) *“We received ten tablets, six from the municipality and four from the Ministry of Education. We gave them out to families. We also had some tablets in our IT lab, so I took half of them and gave them to disadvantaged and vulnerable students. There were more or less twenty families to which we provided technological equipment,”* and *“We lent all the available technological equipment from the school's resources to large families based on their financial status. Afterwards, with a long delay, we received a few more tablets and lent those out too. But not every student's needs were met”*. Disadvantaged and vulnerable families received a voucher to buy technological equipment (tablets) based on their financial status (N=1) *“Regarding the technological equipment, there was a relief for many families in our school that they received a voucher by the Ministry of Education to buy equipment and an additional voucher from the Center for Creative Children' Engagement that runs in our school”*. One school principal (N=1) reported that the school had no digital equipment available

to lend to students in need, so the Parents' Association found a solution“*We had no equipment available. Then, every class was organized into social media groups, such as Viber and Messenger. Whenever a student had no equipment or faced challenges, the Parents' Association would get notified. Some parents with extra equipment lent it to disadvantaged and vulnerable students in need. It was amazing how it worked out*”.

Teachers made significant efforts to ease the equipment challenges faced by families (N=16). In collaboration with school principals, “*We tried to find a supporting line along with the school principal. During the second year of ERT, we provided tablets to disadvantaged and vulnerable students in need*”, or donors “*Because of the earthquake that year, many donations were made to schools in the area by private donors and companies. Even Fraport sent tablets, and expatriates made a substantial donation of €10,000. This enabled us to ensure that each family had at least one technological device*” teachers tried to find a solution. In some cases, the Parents' Association or private donors provided the necessary equipment to students in need (N=1) “*It is a small community there, and even when two or three students didn't have the necessary equipment, we worked with the school principal to find some tablets from the municipality. There were also donations by other parents*”. Disadvantaged and vulnerable families received vouchers to buy technological equipment (tablets), based on their financial status but with some delay (N=2) “*Two students received a voucher to buy technological equipment, a phone or a tablet, by the end of the year; but it was too late then*”.

In an attempt to encourage more students to participate in ERT, school principals collaborated with local entities and the municipality to provide free WiFi internet access for families without an internet connection (N=1) “*I communicated with the municipality to reinforce the signal of their hotspot. This would enable more students in the wider surrounding area to access the internet and participate in ERT. That worked for a while, but then the hotspot signal would reduce again*”. Some school principals allowed students facing exceptional difficulties with technology or internet access to attend ERT at the school (N=3) “*Some students without the necessary equipment or internet access could come to school. There were seven or eight students under my supervision. It was the only way to ensure they weren't excluded*”.

Teachers report that some students in their classrooms did not have an internet connection or data packages to participate in ERT, resulting in alternative solutions being found, such as using the Wi-Fi connection in cafeterias or at the houses of friends or classmates (N=5) “*Some students did not have an internet connection to participate in ERT. They would go to their classmates' houses to join in*” and “*There were students in my class who didn't have an internet connection. One of them connected to the Wi-Fi from a neighboring restaurant, and the other from a neighbor's house. Another student went to a classmate's house to attend ERT together*”.

School counselors delivered online training sessions for parents to help them familiarize themselves with the educational platforms used for ERT and prepare them to support their children's homeschooling (N=1) “*We organized training sessions through the platforms, not face-to-face. Parents familiarized themselves with the platforms and participated*

actively in the discussions and groups we created to address various issues". According to the school counselors, teachers also provided support to families (N=1) "They created groups on Viber, a free application, where they had the opportunity to communicate with parents, provide guidelines, resolve issues, and support them".

School principals and teachers provided technological support to parents who were facing significant challenges via phone or email, and in many cases through face-to-face communication involving school or home visits (N=14) *"Many parents didn't even have the basic technological knowledge, so they couldn't handle the educational platforms or resolve any technical issues they were facing. The need for me to provide support was overwhelming" and "I was always at school, providing instructions and technical support, such as how to connect online. Families had support every day".* Some school principals and teachers went the extra mile by creating videos with all the necessary information and instructions to guide families on how to navigate ERT (N=1) *"We tried to create educational material with information. We made some videos and sent them out to every family. Depending on the problem they faced, they could find possible solutions in those videos".*

Teachers also provided technical support to families in need (N=11) *"Many times, parents called me for support. I tried to help them by providing instructions over the phone or by sending them screenshots of my screen showing them what to do" and "We resolved any issues, because I kept sending them detailed instructions on what to do every time. For every problem, I told them what to do".* Teachers also provided support for smartphone users due to the different interface (N=1) *"I had to communicate with parents many times to explain how to log in, how to use certain tools, and how to send screenshots with instructions — even screenshots from my own phone — due to the different smartphone interface".*

School counselors reported cases of students with disabilities and/or special educational needs, particularly those with autism and ADHD, for whom the ERT parameters were modified to facilitate their participation (N=1) *"We contacted the parents and offered these students the opportunity to attend private lessons or join smaller groups, or even receive face-to-face teaching in some cases. Special education teachers assigned to students with disabilities offered extra help during or after lessons".*

School principals offered students with disabilities and/or special educational needs the opportunity to attend ERT in the school environment or receive personalized assistance while safety measures were in place (N=3) *"Students with special educational needs could come to school. Three teachers implemented ERT in the school building and worked with students on a personalized level who were having difficulty attending ERT".*

Teachers mentioned that students with disabilities and/or special educational needs in their classrooms received additional support, either via telephone or through private Webex lessons with the teacher or the special educational needs teacher responsible for them (N=3) *"The special educational needs teacher would contact the student by telephone to maintain contact and discuss general matters, so that they wouldn't lose contact with the school" and "Students with special educational needs required special handling and a*

modified, more personalized program for ERT. One student had one-to-one lessons with a special educational needs teacher on the same material with modifications, using videos and images".

School counselors report that schools in their jurisdiction took action to support disadvantaged or vulnerable students, including Roma and refugee students. At first, school principals and teachers attempted to establish communication via phone, email or other applications. Afterwards, they collaborated with social workers and mediators (N=2) *"School principals approached refugee camps, mediators, and social workers to encourage these students to participate. This was a very challenging task, and the outcomes were not as desired"*. Principals also collaborated with school psychologists, who contacted disadvantaged and vulnerable families (N=2) *"Principals and psychologists called parents either on the phone or invited them to the school for face-to-face meetings and consultations"*. Collaborations with specialized state centers were also established (N=1) *"We collaborate with the University of Athens, a parenting school, to support parents in the area. Along with the Interdisciplinary Evaluation-Consulting and Support Centre, we organized joint training for parents via Webex about the implications of the pandemic on children"*.

School principals and teachers were burdened with the task of providing psychological support to parents and students during ERT (N=7) *"We had to provide psychological and emotional support, both teachers and I"*. School principals speak highly of their collaboration with interdisciplinary teams of experts, such as psychologists and social workers, to provide psychological support to families and students in need (N=1) *"Many families and students were stressed out and required psychological assistance. I was lucky enough to work with a great team of experts on that"*.

Teachers were in constant communication with families and provided support to students in need (N=5) *"They (families) expressed gratitude because I was always there to help and guide them"*, and *"Because some students were absent from ERT, I was always on the phone to support them and check that they were OK"*.

School counselors mentioned that school principals and teachers attempted to include students who were absent during ERT in the educational process (N=5) *"School principals and teachers would leave educational material in printed packages at school, which someone from the family or the student themselves would collect and return when completed"*.

School principals sought ways to address educational inequalities and encourage student participation in ERT. They provided physical alternatives, such as printed educational material, as well as digital alternatives, such as emails, applications, social media and phone communication. These were intended to promote the participation of students who lacked technological equipment and/or internet access (N=18) *"Many teachers would send out lessons and assignments via email or Viber, and students would send back pictures of their completed assignments. Moreover, they opted for phone communication just to keep in contact and provide support"*, and *"I urged teachers to find any means possible to contact the students. If not through video, then at least through the phone. Just call and talk to students about the lessons and explain something to them about the lesson. Then communicate with their parents"*. Specialized teachers of entry-level language classes tried to contact students and

provide instructions and support despite linguistic barriers (N=3) *"We had a substitute teacher to assist students with linguistic barriers. She set up an online class and tried to contact these students via email and phone", and "The teacher responsible for assisting students with linguistic barriers regularly contacted students, trying to engage them online or even printing out modified exercises and assignments for them to collect from school"*.

In order to tackle educational inequalities and mediate students' unequal access to ERT, teachers used every means at their disposal — such as phone communication, email, Viber and printed school materials — to encourage the participation of every student (N=18) *"I would drive to the village two or three times every now and then. We didn't use asynchronous learning. Since many families didn't own printers, I made it easier by going two or three times to leave printed educational material. I prepared it, printed it, cut it, and left it with instructions for them to collect from school" and "Since I live in the village where I work, every Friday I would collect their notebooks and prepare the material. Families would leave the notebooks on my door, which I would then check. During the weekend, I would prepare all the work: some assignments in the notebook and some photocopied exercises. I also told them which exercises to do and when. We even did crafts and songs this way. I provided them with packs"*. Some teachers significantly reduced and simplified the material to be taught (N=1) *"I tried to reduce the demands and the amount of material to be taught significantly. I explained things over and over again and gave students simplified activities to do at home"*. Specialized teachers for entry-level language classes tried to communicate with students and provide instructions and support despite the linguistic barriers (N=5) *"We have some students facing linguistic barriers. They had extra communication difficulties. Some of these students engaged in private sessions with a specialist colleague who assisted them with the language difficulties"*.

5. Discussion

In this paper, we attempted to identify the mitigation strategies adopted by the Greek education system to respond to the needs of disadvantaged and vulnerable students, as experienced by school counselors, school principals and teachers. Our findings underscore the urgent need for coordinated efforts to provide technological equipment, ensuring equitable access during crises, particularly for disadvantaged and vulnerable students. The discrepancies between the responses of the school counselors, school principals and teachers indicate a lack of coordination and a common framework for action within the educational system.

Responses regarding the provision of technological equipment varied across groups, reflecting their distinct roles, and levels of engagement. A lack of centralized coordination has contributed to uneven support (Engzell et al., 2021; Masonbrink & Hurley, 2020; McAleavy et al., 2020; Petrie et al., 2020), with rural schools particularly affected (Dlamini & Zulu, 2024; Drane et al., 2020; Ochieng & Ngware, 2022; Tadesse & Muluye, 2020). Participants emphasized that schools often relied on their own resources to meet students' needs, a pattern seen in other studies (Drane et al., 2020; Günbaş &

Gözüküçük, 2020; Jamilah et al., 2021; Nikiforos et al., 2024; OECD, 2020; Tosun et al., 2021).

School counselors highlighted the role of local municipalities and the Ministry of Education in providing technological equipment, while principals and teachers were more critical, due to their closer involvement in school operations. This gap may reflect delays and inconsistencies between central policy and school-level implementation, with late-issued equipment vouchers from the Ministry excluding students who don't meet the financial criteria, failing to meet overall needs, thus limiting access to ERT. In decentralized systems, local municipalities played a key role in equipment provision; despite Greece's centralized structure, their support was still notable (Köhler et al., 2022; Kouzelis & Terlexi, 2021).

School counselors also highlighted Parents' Associations' contribution—possibly at a district level—more than principals and teachers, noting varied involvement depending on geography. A minority of school counselors and school principals, and even fewer teachers, acknowledged contributions from private donors, likely due to school counselors' and school principals' roles in managing such partnerships. Research confirms that private initiatives were mostly local and unsystematic (CEDEFOP, 2020; IEP, 2021; Köhler et al., 2022; UNESCO, 2021). Consistent with UNESCO (2021), respondents gave multiple answers, indicating that technology provision resulted from combined efforts by schools, the Ministry of Education, municipalities, Parents' Associations, and local donors (CEDEFOP, 2020; Köhler et al., 2022).

Students from disadvantaged and vulnerable groups—such as Roma, refugees, those with disabilities and/or special educational needs, and those from low socio-economic backgrounds—faced major barriers during ERT, including limited access to technology and the internet, a lack of pedagogical support from their families, linguistic and cultural barriers, and the need for personalized support (IEP 2021; OECD, 2020). These factors increased their risk of educational exclusion and deepened existing inequalities (UNESCO, 2020).

For students with disabilities and/or special educational needs or from lower-income families, schools and teachers made local efforts to offer alternative support—printed materials, email communication, educational apps, and phone contact. Despite these mitigation actions, distance education methods could not meet their complex (UNICEF, 2021).

Roma students, in particular, were largely absent from ERT. Most participants reported that they rarely or never participated, with only a few noting regular involvement. Despite efforts by school staff to provide equipment and support, participation remained low. Alarming, many school principals and teachers were unaware of these students' status. This reflects a lack of initiatives for tracking these students and establishing meaningful contact with them, as well as weak monitoring and poor communication with Roma communities. Ignorance regarding the participation of Roma students cannot be considered neutral, but rather indicates institutional failure by

the school to fulfill its role as a support and inclusion body with pedagogical responsibility. These findings align with international research showing that ERT widened educational gaps for Roma students, driven by lack of technological equipment and technological/technical support, the linguistic barriers, and the cultural differences (Bester & Pirc, 2020; Council of Europe, 2021; FRA, 2020; Mourão et al., 2023; Open Society Foundations, 2020; UNICEF, 2020).

Like Roma students, refugee students were largely excluded from the educational process during the pandemic. Most school counselors, principals, and teachers lacked clear information on their ERT participation, likely due to linguistic, cultural and administrative barriers, as well as pre-existing enrolment instability. The disturbing ignorance displayed by education stakeholders reveals critical deficiencies in pedagogical responsibilities and administrative provision, as well as a systematic weakness in schools to monitor and support disadvantaged and vulnerable groups of students efficiently and a rupture of the school's pedagogical role. Teachers attempted to support refugee students through interpreters, simplified materials, and one-on-one help. Despite collaboration among school staff, refugee camp coordinators, interpreters, and social services, participation remained limited. Only a small percentage of refugee students engaged regularly, highlighting their broader disengagement from the educational process. International studies confirm similar challenges: lack of technological equipment and internet access, linguistic barriers, lack of parental support, and cultural obstacles (Menashy & Zakharia, 2022; OECD, 2020; Save the Children, 2020; UNHCR, 2021; Woodward et al., 2024).

All participants emphasized the key role schools played in supporting Roma and refugee students with pedagogical, linguistic, and technological/technical help. This aligns with prior research showing that, during crises, schools often fill gaps left by central authorities (European Commission, 2020; IEP, 2021; OECD, 2021; UNICEF, 2021). Support from NGOs was reported as minimal—contrasting with international findings that highlight NGOs' critical role in assisting refugee students (Dryden-Peterson, 2015; UNESCO, 2021; UNHCR, 2020; UNICEF USA, 2021). This discrepancy may stem from the lack of strong NGO–school collaboration in Greece.

A notable divide also emerged between school counselors, some of whom acknowledged support for disadvantaged and vulnerable students, and school principals and teachers, most of whom reported no such support. This reflects a broader disconnect between educational administrators and those directly involved in school life. It suggests that school counselors had no clear understanding of the actions taking place in schools, whereas school principals and teachers, being more directly involved, experienced the lack of support as an everyday reality. While the findings suggest a general intention to provide support, it remains unclear whether such support was systematic or temporary, and whether it was effective for all disadvantaged and vulnerable groups. Our findings confirm the lack of systematic support for disadvantaged and vulnerable students in

Greece (European Commission, 2020; Kakana et al., 2017; Tsakiridou et al., 2014; UNICEF, 2021).

Significant differences emerged regarding interdisciplinary support teams during the pandemic. While many school principals and teachers reported the absence of such teams, only a few school counselors agreed, revealing a gap between the administration and schools. Such discrepancies may be attributed to the more detached role of school counselors, who have a more theoretical than empirical view of educational practices during ERT. This exposes the crucial danger that a lack of connection with everyday school reality may lead to misjudgments and delayed interventions. These discrepancies among education stakeholders may indicate a lack of coordination and a shared framework for action within the education system. Previous research also highlights inconsistent psychosocial support for disadvantaged and vulnerable groups, especially Roma and refugee students, in Greek schools (IEP, 2021; Kouzelis & Terlexi, 2021; Magklara et al., 2020; Marchionatti et al., 2024; Vlachou et al., 2023). Some teachers were unaware of these teams, revealing their limited knowledge of crucial issues affecting students' mental health.

Similarly, more school counselors than school principals and teachers reported psychological interventions for disadvantaged and vulnerable students and families. Many teachers were uncertain about the availability of such support, pointing to poor communication and implementation during school closures. The large number of teachers who declared ignorance revealed a lack of information, coordination and communication within schools. The variations in answers reveal that school counselors rely heavily on predictions or theoretical policies rather than their implementation, whereas school principals and teachers have a more realistic view of the lack of organized interventions. Participants' answers demonstrate severe institutional and organizational gaps in the implementation of support mechanisms, as well as a lack of coordination, common operational knowledge, sensitization and awareness. These findings align with studies showing that many education systems were unprepared to provide adequate psychological support during the pandemic, despite increased distress among disadvantaged and vulnerable students (Drane et al., 2020; Kouzelis & Terlexi, 2021; Masonbrink & Hurley, 2020; UNESCO, 2021; UNICEF, 2021).

Regarding students at risk of abuse or severe violence at home, school counselors reported relevant provisions, but most school principals and teachers said none existed. Teachers, often on the front line, lacked sufficient information and expert support. Many participants were unaware of any interventions, highlighting concerns about institutional gaps and ineffective protection mechanisms, particularly in times of crisis. Variations in responses expose ruptures in communication and horizontal collaboration among education stakeholders, as well as a lack of organized intervention mechanisms for at-risk students.

Monitoring and support during the pandemic primarily relied on phone communication between schools and parents, and to a lesser extent, between schools and

students, with limited involvement from interdisciplinary teams (psychologists, social workers), mostly via phone. School counselors reported more expert involvement, possibly due to differences in their schools' of jurisdiction. School principals and teachers mentioned occasional house visits for high-risk cases, but many respondents reported no action taken.

Monitoring of at-risk students during ERT was structurally inadequate, uncoordinated and largely non-existent, relying primarily on telephone communication due to limited expert involvement. The most severe danger was the risk of normalizing inaction and abandoning vulnerable students in isolation. These findings align with Greek and international research pointing to a lack of preventive strategies and organized intervention plans during the pandemic, resulting in inadequate school support for disadvantaged and vulnerable students (Kouzelis & Terlexi, 2021; UNICEF, 2021).

In conclusion, our findings align with the findings of other researches (OECD, 2020; UNESCO, 2021), which outline the lack of readiness of educational systems to address the challenges posed by ERT and the social dimensions of the crisis caused by the Covid-19 pandemic. The Greek educational system was unprepared, as evidenced by the limited and uncoordinated initiatives undertaken by schools, teachers and local entities to support disadvantaged and vulnerable students, exacerbating educational and social inequalities.

6. Conclusions and Recommendations

This study investigated support mechanisms adopted by educational institutions and related bodies for disadvantaged and vulnerable students during the COVID-19 pandemic. The shift to ERT exacerbated existing educational inequalities due to institutional, technological, and sociocultural barriers. Limited access to digital devices, internet connectivity, and technical support—combined with linguistic and cultural challenges—disproportionately affected marginalized students. School-managed funding initiatives, such as device loans or vouchers, were identified as potential mitigators.

Despite targeted interventions by governments, NGOs, and schools, many vulnerable students faced exclusion from ERT. Barriers included absenteeism, irregular platform access, and minimal parental involvement. Without targeted pedagogical or technological assistance, some students disengaged entirely. Effective digital learning requires training for all stakeholders, unrestricted access to platforms, and continuous technical support.

Gaps in coordinated monitoring, limited involvement of psychosocial professionals, and the absence of a learner-centered national strategy highlighted systemic weaknesses. To promote equity during crises, educational responses must combine digital and non-digital methods, such as radio, television, and print materials, tailored to community needs.

Students with language barriers require multilingual support, while those with disabilities need inclusive learning environments, assistive technologies, and individualized instruction. Broader access to psychosocial services is essential, especially for at-risk families. Prioritized home visits, strong school–family partnerships, culturally responsive parental guidance, digital literacy training, and dedicated support hotlines can improve student engagement. Peer support networks may also foster emotional well-being.

Effective distance learning frameworks require clear logistics, defined roles, and targeted educator training. While Greek schools demonstrated adaptability, the pandemic revealed critical institutional gaps. Findings underscore the need for interdisciplinary support teams in schools, a national psychosocial support framework, and teacher training in child protection. Cross-sector collaboration, with clearly defined responsibilities, is essential. Structural reforms and preparedness strategies must prioritize educational equity to ensure schools can fulfill their protective and integrative role during future crises.

7. Limitations of the Study

The study relied on a limited number of participants selected through snowball sampling; therefore, the findings may not be fully representative of all regions, school types, or stakeholder experiences within the Greek education system. Additionally, the reliance on self-reported data may have influenced the accuracy and consistency of responses.

8. Future Research

Future research should adopt longitudinal designs, assess the effectiveness of specific interventions, and examine inter-agency collaboration, barriers to policy implementation, and educator preparedness. Further investigation into the limited role of NGOs in Greece and the development of equity-focused crisis response frameworks would be valuable.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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