

Distance Education in Early Childhood Education During the COVID-19 Pandemic: Teachers' and Parents' Perspectives and Experiences in Greece

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Abstract

The unprecedented crisis of the COVID-19 inflicted all spheres of social life and especially education, to which Early Childhood Education (ECE) belongs. ECE had to adapt to an entirely new and unknown situation, including teachers, parents, and children. We qualitatively explored through semi-structured interviews both teachers' and parents' perspectives toward the implementation of distance education in ECE in Greece. Data were triangulated. The aims of this research were to examine: (1) The reactions of teachers and children/parents toward distance education; (2) Advantages and disadvantages of distance education in ECE; (3) Method preferred; (4) Parental involvement. Results indicated that although the shift to online teaching was abrupt, they managed to respond effectively by applying digital tools and teaching strategies to motivate the participation of children. However, they also highlighted the increased demand for teacher's training in ICT, the social impact, the implementation of a holistic approach, material and psychological support to parents and children, and finally, post-pandemic implications.

Keywords

Distance education, early childhood education, COVID-19 pandemic, teachers' training, social inequalities, parental involvement

1. Introduction

The outbreak of the COVID-19 pandemic in early 2020 caused an unprecedented world crisis in all sectors of human life, such as the economy, social life, and education, and led to global mass lockdowns, physical distancing, and isolation to constrain the spread of the virus. The world's largest disruption in modern history afflicted education immensely, as it is estimated that over 1.5 billion children across the globe were deprived of the education to which they are mostly entitled to. Governments worldwide decided the transition from face-to-face to distance education in various forms. Distance education under these specific terms was implemented as "emergency remote education" (ERE), which is mainly a temporary online instructional delivery mode in crisis conditions (Shraga-Roitman et al., 2022; Achen & Rutledge, 2022; Trust & Whalen, 2021; Nisiforou et al., 2021), and differs significantly from a quality and effective well-planned and well-organized online teaching (Hall et al., 2020; Hodges et al., 2020). However, it was the first time that the crisis period

was prolonged and on a mass scale, extended to all educational levels, even in Early Education Childhood (ECE) and Early Childhood Care (ECC). It is estimated that already in April 2020, 180 million children of preprimary age lost their access to educational facilities in 196 countries, during March 2020 and February 2021 (McCoy *et al.*, 2021). Nevertheless, the pandemic affected disproportionately children and in various ways, which are not connected only to interrupted learning; more households and children were pushed into poverty, hardships were intensified for poor children, the threats to child survival and health were increased, as well as child malnutrition, access to life-saving vaccines was reduced, decades of long progress against HIV was reversed, risks of violence, exploitation and abuse were mounted, more girls and boys faced an increased danger of child marriage and, finally, the learning crisis was exacerbated (UNICEF, n.d.). However, we should bear in mind that disparities, especially the learning loss, are not equally distributed, as they are inextricably bound with pre-existing socioeconomic inequalities on a global scale (Patrinos *et al.*, 2022; Haelermans *et al.*, 2022; Bormann *et al.*, 2021).

Additionally, ECE was afflicted the most, as it involves young children and is considered as a crucial educational level, which can not only support developmental outcomes, but also future physical, psychological, social, and economic short and long-term benefits (McCoy *et al.*, 2021; Atiles *et al.*, 2021; Papatzikis, 2021). High-quality ECE is also a fundamental concept linked to early childhood development, encapsulated within the 4th Goal of Sustainable Development (4SDG) among the other sixteen (Mérida-Serrano *et al.*, 2020). Finally, distance education in ECE is a rather complex and multifaceted issue, since it implicates not only the developmental, cognitive, psychological, and emotional demands of children but largely depends also upon teachers' self-efficacy in digital skills, and competence, positive reactions, flexibility, and increased parental involvement (PI), as formal education is transferred within informal, private home settings.

2. Literature Review

2.1 Distance education, ICT use, and difficulties

Distance education, which requires the use of Information and Communications Technology (ICT), created an immense opportunity for teaching and learning, in a new educational context that provided digital educational content and tools, while it was the only available option for young children to continue their schooling, to meet and interact with their peers and teachers (Hodges *et al.*, 2020; Tarrant & Nagasawa, 2020; Dias *et al.*, 2020; Dong *et al.*, 2020; Gayatri, 2020). However, the implementation of ICT in education generated some important difficulties, unveiled, and exacerbated disparities, and in some cases was conducted with adversities.

Concerning teachers in ECE, literature indicates that the main and most common factors were the following: the abrupt and unprepared shift to distance education, the lack of expert knowledge and skills that are conquered through training in ICTs, limited access to technological resources, personal beliefs, attitudes, expectations, and self-efficacy in ICT use (Gözüm *et al.*, 2022; Atiles *et al.*, 2021; Munastiwi & Puryono, 2021; Carrillo & Flores, 2020), the psychological pressure and time management issues, as many of them were parents with children attending distance education as well (Košir *et al.*, 2020). Accordingly, for children, the most important aspects were the lack of concentration and attention, lack of self-regulation, limited or no access to resources and materials (Lau & Lee, 2020; Tarrant & Nagasawa, 2020), psychological/emotional pressure and stress (Kruszewska *et al.*, 2022), and the deprivation of their socialization, interactions, and play (Gayatri, 2020).

Furthermore, the educational shift from formal and structured settings within the informal private domain was disrupted by other causal factors inextricably bound with the unequal distribution of resources and opportunities, and social inequalities, which spread along a wide array and affect the overall educational quality. As highlighted by relevant literature, inequitable access to technological devices, the lower socioeconomic level of parents who were not skilled or not willing to actively engage with their children's learning, and the growing digital divide contributed to the overall learning loss which has an enormous impact on children's future academic performance, psychological and emotional development. There is growing evidence that children from vulnerable groups, such as populations struck by poverty, ethnic minorities, children with disabilities, or other health issues, and those living in distant and/or rural communities have been the most at risk for being vulnerable to social exclusion. Thus, the pandemic not only created new inequalities but exacerbated the already existing ones (Haelermans *et al.*, 2022; Kruszewska *et al.*, 2022; Cheshmehzangi, 2022; Khalid & Singal, 2022; UNESCO, 2020a; UNESCO, 2020b).

2.2 ICT use in ECE

The integration of ICT in ECE is a largely contested and controversial area that is highly placed on the global educational agenda and academic discourse. Despite the existence of many studies that raise concerns about children's psychological,

physical, mental and developmental health (Suggate & Martzog, 2021; Edwards *et al.*, 2016; Palaiologou, 2016) and learning, and despite the fact that interaction with peers and teachers differs between face-to-face education, which offers a wider range of direct verbal and non-verbal features and involves realistic play (Nikolopoulou & Gialamas, 2015) that cannot be visible through distance education (Kozar, 2016) and, finally, teachers' confidence in teaching methods and tools is stronger (Sato & Chen, 2021), there is a growing body of literature, which supports the benefits of the use of ICT in ECE. Nevertheless, the opportunities provided by the use of ICTs in distance educational settings in ECE can function as innovative practices (Doucet *et al.*, 2020) and can be equally effective, as it is supported that ICT can mobilize revolutionary changes to teaching methods, changes that are not prompted by the use of ICT, but through moving from the teacher/subject matter-centered strategies to student activity-centered ones (Rapanta *et al.*, 2020; Scrimshaw, 2004). Many studies have highlighted that ICT can enhance children's curiosity, notion of exploration, creativity, language, and communication, competency in STEM, foster literacy and cooperation, and function as a scaffolding tool, according to Vygotsky's social constructivist learning theory (Gözüm *et al.*, 2022), when used consciously by early childhood educators. There are cases where the use of ICT in ECE is misinterpreted as integrating to some extent technological resources as a teaching tool.

However, the effectiveness of ICT use in ECE is a multifaceted issue, as it demands more complex and higher skills in technology integration (Ford *et al.*, 2021). It is a holistic approach, with a focus on the following main areas: communication and collaboration, cognitive development, creativity, socio-dramatic play, and metacognitive skills, and its implementation is disseminated in three structural perspectives: macro-, meso- and micro-, which means that it is an integral part of national policies. Additionally, the core principle within this framework is the developmental appropriateness of ICT for ECE. Suggested guidelines involve that it should be strictly educational, encourage collaboration, support integration, support play, role-play, and imitation, leave the child in control, be transparent and intuitive, avoid violence and/or stereotyping, promote awareness of health and safety, and, finally, involve parents (Kalas, 2012). Therefore, a concrete and comprehensive design of ICT in ECE requires "addressing pedagogical approach, relevant and authentic assignments, and appropriate tools and technology" (Carrillo & Flores, 2020, cited in Mankki, 2022), while respecting the overarching children's rights with their emotions, ideas, needs and interests (OMEP, 2020).

Furthermore, the effective integration and implementation of ICTs within distance education, even in emergency cases, such as the pandemic, largely depends upon teachers' positive view, knowledge, skills, flexibility, persistence, resilience, creativity, self-efficacy, need to communicate and cooperate differently with parents, which brings to the forefront the imperative demand for teacher's training, both in pre- and in-service, and the upgrade of digital tools (Gözüm *et al.*, 2022; Aditya *et al.*, 2022; Ford *et al.*, 2021; Atilas *et al.*, 2021; Masoumi, 2020; Kim, 2020; Carrillo & Flores, 2020; Kruszewska *et al.*, 2020).

Finally, another important aspect is the connectedness and interactions among participants within distance education, as digital classrooms can function as supportive learning environments/communities defined by interconnectedness, interactivity, self-reflexivity, respect, and trust in human relationships, which all can promote cohesion, enhance participation, and ameliorate the disparities caused by the pandemic (Carrillo & Flores, 2020; Papandreou & Vellopoulou, 2022).

2.3 Parental involvement in distance education

Prior literature highlights different aspects of PI during the implementation of distance education, such as the heavy reliance upon parents, who in some cases had personal negative perceptions toward distance education and technology (Dong *et al.*, 2020; Lau & Lee, 2020; Danby *et al.*, 2018), lack of time or inadequate educational and technological skills to assist their children (Ford *et al.*, 2021). Also, parental anxiety was even stressed due to economic inducement, as in some cases they suffered from job losses during the pandemic (Stites *et al.*, 2021).

Furthermore, although it has been supported through well-established prior research that various forms of PI (Epstein, 2001; Hoover-Dempsey & Sandler, 1995) are associated with academic progress and positive cognitive and socio-emotional development (Hill, 2022). PI during mandatory distance education should be distinguished from the participation of parents in traditional schooling/learning (Knopik *et al.*, 2021), as in this specific case it is exclusively home-based (Epstein, 2001; Hoover-Dempsey & Sandler, 1995) and it is abrupt as an emergency response (Garbe *et al.*, 2020). Most researchers who have conducted research on the specific topic of PI and distance learning amid the pandemic, highlight the demand for further research on the topic (Knopik *et al.*, 2021; Garbe *et al.*, 2020).

Parents participate in activities related a. to technical issues (providing digital equipment, creating individual accounts on the platform, providing printed materials, sending homework through photos, and supervising the entire schedule), b. to the learning process (homework assignments, explaining difficult parts, facilitating with notes etc.), and c. related to the communication with teachers and other parents. Above all, parents during home-learning are expected or forced to provide more increased motivation and encouragement to their children, control them more intensely, while at the same

time they have to support their self-regulation/organization and responsibility (Knopik *et al.*, 2021).

Knopik *et al.* (2021) explored home-based PI and their results concluded in three types of parents: 1. “The committed teacher”, where parents participated in all three activities (technical, learning, communication) outlined before, while they also motivated their children to participate/study but did not do their children’s homework assignments for them; 2. “The autonomy-supporting coach”, where parents were less involved in technical/learning activities, but supported their children’s autonomy and motivated their self-organization. 3. “The committed teacher-intervener”, where parents assume similar roles to the “committed teacher”, but additionally they perform homework assignments for their children (Knopik *et al.*, 2021). Furthermore, the specific research highlights that parental involvement and children’s participation, overall outcomes and progress depend on parental perceptions about the importance/benefits and/or barriers of distance education, while it is indicative that the “autonomy-supporting coach” type of parent perceives barriers as least important against the other two categories (Knopik *et al.*, 2021).

Additionally, PI had, as well, increasingly gendered characteristics, as mothers were physically exhausted due to an immense workload caused by the multiplicity of undertaken roles; mothers were caregivers of young children, assisted them with digital lessons and homework, occupied them creatively with literacy activities during the day, became teachers, motivated children to engage actively with school, which is crucial for motivational development (López-Escribano, *et al.*, 2021), provided psychological support to their children, had to take care of the household duties and in some cases, they were even working (Addi-Racah & Tamir, 2022). Finally, we have to highlight that all the above are also consistent with inequitable gender power relations within households, as parenting is not a gender-neutral term (O’Toole *et al.*, 2019).

2.4 The Greek Context

The closure of all educational institutions, at all levels, public and private, throughout the entire country was mandated on the 10th of March 2020 (the first wave) until May. During that period, teachers could choose to continue teaching/learning through synchronous, asynchronous, or blended modes. During the second wave (November 2020-April 2021), under the instructions of the Ministry of Education, digital teaching/learning for kindergartens was conducted through the Cisco Webex platform daily, between 2.00-4.00 p.m., by any available to the family means (desktops, laptops, tablets, smartphones), without any provision for adjustments according to families and/or children’s needs and access to digital resources and without any prior (except technical guidelines) teacher’s training (Papandreou & Vellopoulou, 2022; Chalari & Charonitis, 2022).

2.5 The Present Study

The main purpose of this qualitative study was to examine the way distance education was implemented during the COVID-19 pandemic through the perspectives of teachers and parents along with their children. More specifically, participants described in detail the implementation of distance education in ECE and their experiences, which came from different standpoints (Creswell, 1994), highlighted the advantages, and a wide spectrum of disadvantages of distance education in the specific age group and described explicitly aspects of PI. The specific research sought to answer the following Research Questions (RQ):

- RQ 1: What are the perspectives and reactions of teachers and children/parents toward distance education?
- RQ 2: What are the advantages and disadvantages of distance education?
- RQ 3: Which method-distance education or traditional education (face-to-face)- is preferable?
- RQ 4: How was parental involvement defined during distance education?

3. Methods

3.1 Design

Research questions were divided into sections (axes) with sub-questions for each question. Research questions prompted through bibliographic research on the topic and specifically on the challenges of distance education in ECE, both educational and social.

This study employed interviews as an informative and flexible instrument to explore participants’ views, as this qualitative methodology enables an open and at the same time exploratory valid outlook on the topic. Semi-structured interviews allowed subjects to express in their own words their conceptualizations, perceptions, feelings, attitudes, and opinions and enabled access to their actual experiences of distance teaching/learning (King *et al.*, 2018).

3.2 Participants

19 teachers participated in this research (see Table 1). They all had an Early Childhood Education bachelor’s degree (four-

year attendance). Participants' working experience in education was drawn both from the private and the public sector or only from the private sector or only from the public sector in the Attica Region (Greece). Their school classrooms consisted of 15-25 children, preschool males, and females, with ages ranging from four (4) to six (6) years old. All participating teachers were female, something consistent with the overrepresentation of females in all educational levels and particularly in pre-primary education (96%) (OECD, 2021). 10 parents, as outlined in Table 2, had at least one child who was attending kindergarten (ECE) during 2020-2021. All participating parents were female, something also consistent with prior literature, which supports the increased or almost exclusive involvement of mothers in their children's upbringing and education, especially for school children (O'Toole *et al.*, 2019).

Table 1. Sociodemographics for Teachers

Teachers	Teachers			
	Age	Gender	Educational level	Working Experience (Years)
1	29	Female	Master's Degree	5
2	32	Female	Bachelor's Degree	7
3	40	Female	Bachelor's Degree	17
4	29	Female	Bachelor's Degree	5
5	37	Female	Master's Degree	14
6	36	Female	Master's Degree	14
7	31	Female	Bachelor's Degree	6
8	31	Female	Master's Degree	6
9	41	Female	Master's Degree	18
10	30	Female	Bachelor's Degree	5
11	38	Female	Bachelor's Degree	15
12	47	Female	Bachelor's Degree	16
13	36	Female	Bachelor's Degree	14
14	37	Female	Master's Degree	14
15	45	Female	Bachelor's Degree	16
16	38	Female	Bachelor's Degree	15
17	39	Female	Bachelor's Degree	16
18	42	Female	Bachelor's Degree	16
19	30	Female	Bachelor's Degree	5

Table 2. Sociodemographics for Parents

Parents	Sociodemographics for Parents			Children	
	Gender	Residential area	Working Experience (Years)	Gender	Age
1	Female	Urban	5	Male	4.5
2	Female	Urban	7	Male	5
3	Female	Urban	17	Male	5
4	Female	Urban	5	Female	4.5
5	Female	Urban	14	Female	4.5
6	Female	Urban	14	Female	5.5
7	Female	Urban	6	Male	5
8	Female	Urban	6	Female	5
9	Female	Urban	18	Female	5
10	Female	Urban	5	Male	6

3.3 Procedure

Data were collected through semi-structured interviews from November 2020 to February 2021, where all educational institutions of all levels were compulsorily closed. Interviews were conducted under strict measures of physical distancing during obligatory quarantine with all schools closed. The interview protocol was designed for the demands of the present research. Teachers were selected upon personal knowledge, as they all had working experience in ECE and continued to work while schools were closed through digital schooling, and parents were chosen on the criterion they had at least one child attending ECE through distance schooling. Interviews were conducted through Skype and were audio-recorded, then data were transcribed and analyzed. Before the interview, participants filled out a short sociodemographic questionnaire. After obtaining verbal ethical approval, consent forms were sent to all participants electronically. All participants were informed about the study's aim and the confidentiality and anonymity of their responses. Throughout the whole research process, the ethical standards and principles of research integrity were followed. During the interviews, the interviewer posed additional questions, according to the progress and appeal of the discussion. The response to the interview was positive and participants were invited to share any further thoughts or additional information. Parents, particularly, were spontaneously willing to share further information and their inner thoughts concerning their families, how they internalized this major global crisis, the impact of the new situation of school closures and home confinement, and the response and reactions of their other children who were of different ages and attended e-classes, as well. All the above contributed to the enrichment of our knowledge and perception of the conditions and the impact of the pandemic on other levels of the education system.

3.4 Measures

Two measures were employed in the current study: 1. a teacher-reported interview guide with open and closed-ended questions and 2. a parent-reported interview guide with open and closed-ended questions. 1. *The teacher-reported interview guide*, included 13 open-ended questions divided into three four axes: a. about the implementation of distance teaching (reactions and adjustment), b. advantages and disadvantages of distance education, c. the effectiveness of distance learning in ECE, and d. the contribution/involvement of parents. 2. *The parent-reported questionnaire*, included 16 open-ended questions, divided into four main axes; a. children's reactions and adjustment toward distance learning, b. benefits and disadvantages of distance learning, c. the effectiveness of distance learning in ECE, and d. how parents were involved during distance learning.

3.5 Method of Analysis

First, each questionnaire was transcribed and checked for accuracy. The two datasets, a questionnaire for teachers and a questionnaire for parents, were analyzed separately. Data analysis was based on thematic analysis, which involves the collection, analysis, and coding of the qualitative dataset (Lester et al., 2020; Braun et al., 2019; Bryman, 2012; Silverman, 2011). Thematic analysis (TA) classifies data, detects patterns of meaningful categories, embedded within data, and focuses precisely on those related to the aim of the study and our research questions (Braun et al., 2019). The procedure comprises seven stages (Lester et al., 2020). Both datasets were read three times each, to get a sense of their overall content, and those sections that contained relevant information to answer the research questions were identified. Sections of the datasets were divided into accurate meaning units, each corresponding to a concept or a theme. For each unit, a category that represented the conveyed idea was assigned to the excerpt, and all excerpts that carried similar ideas were classified under the same category. This procedure of data reduction was sequentially performed. The authors coded both datasets, to develop interpretative themes. After coding, thematic content analysis was used to identify thematic recurrence in the data and to identify meaningful categories. Data were triangulated, to highlight common or opposite understandings and emerging themes from a different standpoint (Natow, 2020). Relationships -similarities and differences- between codes were investigated, to define their inter-relationship and consequently to develop the dominant thematic pattern. At this stage, the analysis of qualitative data was completed, as theoretical exhaustiveness emerged.

4. Results

In the following section, we present the results of the TA of teacher's and parent's responses to the open-ended questions about distance education. All 29 participants provided responses to the open-ended question, described their experiences, and expressed their perspectives and reactions toward various aspects of distance education. TA resulted in the following four themes:

- Distance education: experiences and reactions

- Comparison of face-to-face with distance education
- Advantages and disadvantages of distance education
- Parental involvement

4.1 Distance education: experiences and reactions

4.1.1 Digital teaching: tools/methods

Teachers (19/19) described their distance teaching strategies -methods and tools- aiming at the development of digital soft skills in children, according to the curriculum. They reported that they applied a wide range of methods based on digital tools:

“annotate, slide share, e-books, quizzes, Power Point, Youtube, applications for creating quizzes and other activities, Webex (synchronous digital classroom) and e-class blogsch.gr, liveworksheets, kahoot, white-board, wordwall for exercises and activities,

The majority of teachers (18/19) supported that their teaching methods and practices were effective:

“Teaching was conducted in a playful and pleasant manner, reciprocal influence was apparent, children were interested and motivated, there was positive interaction and vigorous communication, and images were used as a dominant feature in order to enhance children’s imagination” (T5).

They also suggested that effectiveness depended on the extent of literacy competence of each child, which is a crucial factor, but not a stable parameter of the educational process.

4.1.2 Reactions and Adjustment

Furthermore, it is indicative that almost all teachers (17/19) highlighted that, although distance teaching was applied as an emergency policy, a new and unknown reality with many challenges, they managed to respond effectively and adjust successfully to a very demanding landscape. The main challenge they faced was to use digital tools and methods in a pleasant and effective manner that would keep children’s interests alive and allow children and parents to engage in the learning process. However, this was a demanding process: “It took so many hours of preparation for the lesson and the teaching material. This was a new situation for all” (T1). Personal motivation for involvement and progress throughout the entire period of digital teaching arose as a decisive feature for teachers’ performance: “I tried to come up with new ideas and motivate all children to participate” (T2).

On the other hand, parents (4/10) supported that distance education did not captivate the interest or the enthusiasm of children, while on the contrary, it hindered them away from education, as there were many cases of children who asked their parents not to connect them to their digital classroom. All children faced difficulties adjusting to their new reality, something that demanded increased PI and systematic support, to help children assimilate to distance learning. Cases who reported an effortless and prompt adjustment were limited (2/10): “He adjusted easily from the beginning; he is a very flexible kid” (P3). Most participant’s parents supported that they were distressed, especially in the beginning, and the whole procedure demanded a long period of adjustment: “...in the beginning, it was very stressful, and he did not want to attend or even sit on his chair. He was leaving and he wanted to play” (P1). Also, the implementation of the two-hour lessons, including several breaks, did not excite children. It was also reported that children did not have any technological/digital skills in computer use, and could not operate it easily, since there was not any prior engagement with the device. Furthermore, children’s negative reaction toward distance education was caused by the fact that they were easily getting tired by the specific method and demanded their return to face-to-face education with their classmates and with the kindergarten teacher. Their age had a negative impact and functioned as a predicament toward their regular attendance; children were easily frustrated, as they had to demonstrate concentration, patience, resilience, self-control, and retainment, to avoid any possible disruptions, notions which are not yet evolved for most children of this age.

4.2 Comparison of face-to-face education with distance education

Participants were asked to compare face-to-face education with distance education and express their preference. The comparison between the two types of education was unavoidable, regardless of the RQ3 in our research, as all participants referred to advantages and disadvantages (outlined below) through an explicit comparison. All parents supported that even the slightest benefits from distance education cannot outnumber those deriving from traditional schooling. Teachers (17/19) supported that face-to-face education cannot be replaced with distance education, especially in ECE, where children are very young: “Teaching in early childhood education cannot be replaced by distance teaching, it demands

experiential learning” (T6). “Distance education didn’t help at all! The natural environment (space) for children of this age is school and not the computer screen. We are dealing with 5-year-olds” (T7). However, there were some contrasting opinions that highlighted that: “Distance teaching is interesting and challenging, especially in emergency cases” (T1), “...in the future, it would be best to implement a combination of asynchronous and synchronous education” (T5). Two teachers highlighted the advantages of digital tools and skills in teaching/learning and suggested the implementation of mixed/combined methods in future policies: “Technology, however, provides additional tools, which combined could have contributed to early childhood education” (T4).

4.3 Advantages and disadvantages of distance education

4.3.1 Advantages

All participants were called to assess the educational policy adopted during the pandemic, to reflect upon their lived experience, and to refer to the positive and negative aspects of distance education. Most teachers (9/19) and parents (6/10) responded that the educational policy of distance teaching as an emergency response contributed vastly, as it was the only form of schooling available to children and the only option for them to stay in contact with their teachers and friends, secure the continuing of the school year and, although it was implemented under many obstacles and contradictions, it was adequately accomplished. Some parents (4/10) supported that the most important advantage is that children even at a young age can obtain technological and digital skills, especially in a global context that is largely based upon technological advancements: “The only positive is that they can master technology” (P6). The second most important advantage of distance education was the protection from Covid-19, as children and their families felt secure while staying at home: “From the beginning, I wanted schools to be closed so that I could protect my children from getting exposed to the virus” (P9).

4.3.2 Disadvantages

Almost all participants (27/29), both teachers and parents, supported that disadvantages outnumber advantages, as they reported a wide spectrum of negative aspects. Participants, especially parents (9/10) reported technical issues, such as bad or low connectivity or low internet speed, which functioned as an impediment to effective communication and comprehension, very crucial especially during narration or storytelling. The collapse or disruption of the official digital platform of the Ministry of Education was common, due to the highly increased demand for connectivity. The Ministry attempted to resolve the issue, which was reduced, but not entirely solved. Insufficient teacher training in new technologies was reported by most participants and highlighted the increased demand for the enhancement of ICT skills and competencies “Our teacher has limited skills in ICT. She tried to make the lesson through her mobile; she couldn’t even play a song (P3). Teaching materials and strategies were described by parents as formulaic and average: “She is trying to keep children with some songs and printed drawings, but this is not enough and to tell the truth it’s boring. Can this really be called learning?” (8) and P10: “We aren’t learning anything new ...this isn’t going anywhere”. Teachers’ age, socioeconomic status, and the distinction between the private and public sectors of education determined their inadequate response to the demands of distance teaching in ECE. Teacher’s 2 discourse encapsulates all the above:

“... there should have been more preparation and training on the whole procedure, therefore, we did not respond adequately. There were many inequalities concerning age because older teachers do not even possess basic competencies in computer use compared to their younger colleagues. Also, educators in private schools were more and better trained and had obtained instructions and guidance compared to their colleagues in the public (educational) sector. Finally, some of us did not even have a computer or network and this was a personal economic burden, while the state should have made provisions”.

More than half of parents (6/10) supported that the two-hour exposure of young children to computer monitors was an extremely negative feature that could endanger children’s vision and create a form of addiction to digital devices “It has become addictive ... a 4-5-year-old shouldn’t be exposed for so long in front of a screen!” (P1), especially when at the same time parents try to prohibit or pose limitations to screen exposure to this age group. Also, most parents (8/10) referred to the time frame and duration (14:00-16:00), of distance teaching as a negative aspect. Parents argued that families with more than one child who attended other levels of education had to use computers for many hours and had the anxiety of assisting all children at the same time. Very young children could not adjust to afternoon classes, and it was in complete contrast to their daily routine, as in this age children usually attend school in the morning and in the afternoon have their lunch and rest. Therefore, young children were already tired when digital lessons began and manifested fatigue and discomfort. Finally, Teacher 9 highlighted another important aspect that is tightly connected to the very nature of distance education: “Personally, I had to connect with my two children present at home who were attending

Primary Education, and sometimes the network collapsed”.

Most participants (27/29) stressed that through distance, young children (4.5-6) are deprived of various forms of interaction and their overall socialization in a well-organized and structured educational environment, which is crucial for the attainment of knowledge, as it is constructed through their interaction with other children and their kindergarten teacher, and for psychological reasons. It is important for children to exchange their thoughts, participate actively in discussions, express themselves, and play with their friends, all crucial aspects of social development.

“For kindergarten children, the impact is only negative. Even if we as parents cannot provide them with the socialization they need, we can do everything else, but we can’t give them their friends, which I consider is the worst for this age” (P2).

Furthermore, concerning the psychological and emotional impact on children, parents (8/10) reported that they have noticed immense changes. Children are easily irritated and portray increasingly aggressive behavior, which is caused by the deprivation of socialization and mainly of playing with other children, something that they profoundly miss. For children of this age, it is crucial to contact others who do not belong to the inner family circle, to play with friends, and to participate in group activities and discussions, not only for their natural socialization but also for their weaning from their family. Children displayed various psychological fluctuations during home confinement, and along with the repetitive everyday routine that imposed further anxiety, they were fatigued and distressed: “I have noticed important changes in her behavior, she has appeared increased aggressiveness” (P5), and in some cases, they exhibited speech disorders (P4).

Additionally, psychological pressure was confronted by parents (8/10), as well. Parents supported that when the pandemic broke out and school closures were imposed, they were relieved, as they felt more secure and safe confined at home. However, after the first four months of the implementation of distance education, all family members experienced psychological pressure and their daily routine was even more stressed due to distance education. Personal space and time for parents was erased and pressure was intense, especially for mothers. Home confinement intensified and fostered family relationships, but brought along many manifestations of negative feelings, as freedom is suppressed, activities are radically restricted, and everyday life becomes a vicious circle. Irritation, aggressiveness, emotional and psychological distress, and discomfort were the most common reactions reported, along with the deprivation of socialization for all family members. Also, parents were experiencing intense anxiety as they felt that they could not respond effectively to their children’s needs and constantly had the impression of neglecting them. Children’s demands were increased, while parental endurance was decreasing, and the impact was more intensified for parents with more than one child: “I have three kids and they are all attending distance education, I have to run from one room to another to catch up with everything” (P10). Parents had to perform various roles and assist mutually all their children, something that was not always feasible. Due to the implementation of distance education in the afternoon, some parents could not be present, as they had to work at the same time. In such cases, a close relative had to be at home with children: “Some days I can’t be with her ... she stays home with her grandma” (P5).

Furthermore, parents (8/10) suggested that children did not portray any sign of further cognitive development and that the overall educational strategy and approach were inappropriate for this age group. Children did not evolve, retained only their prior knowledge and experiences, which did not derive from the curriculum: “We aren’t doing anything new... every day is the same, some drawings and songs ... things we can do at home otherwise” (P7). Also, long-term absence from traditional schooling can have a negative and decisive effect on their educational capital, as children will have to move forward to the next educational level without having obtained adequate knowledge and cognitive skills: “Will he be able to go to the next class, he has many gaps...” (P1). The effectiveness of distance education was approached comparatively with the implementation of other age groups of older children. Parents suggested that distance education is more appropriate for older children who, as they have already accumulated basic skills, knowledge, and behavioral aspects, will have the ability to adjust more easily to the new digital educational reality: “I believe that for an older child is more effective, as the child has already experienced a settled school environment, is aware of its obligations and its rights and is more mature” (P2). Also, methods, tools, and approaches implemented are different and more effective under specific circumstances for older children. Additionally, they accentuated the importance of kindergarten, not only for the development of cognitive skills, but for transmitting discipline, and other virtues, such as perseverance, persistence, tolerance, and self-control; notions pivotal to the developmental demands of this age group, that cannot be transmitted or enhanced through distance teaching/learning and whose inadequacy will pertain to the rest of children’s life and cannot be easily substituted. However, fewer parents (2/10) argued that the overall effectiveness of distance education is largely based on the behavioral reaction of every single child. Every child as a different and unique person exhibits different attitudes and behaviors toward distance education. Effectiveness is defined by the resilience, perseverance, discipline, concentration, and flexibility of each child.

Another disadvantage of distance education was the large number of children in digital classrooms, which was assessed as a determinant of ineffectiveness. While face-to-face education can function even with many children, this cannot equally apply to distance teaching in ECE. Distance education, also, was negatively assessed as it cannot cultivate and enhance all types of intelligence and various competencies and skills, in comparison to traditional schooling: “Distance teaching due to its intrinsic characteristics, it’s not face-to-face, can’t cultivate equally all types of intelligence” (P6).

Furthermore, another crucial issue raised by a teacher concerning children with various forms of learning difficulties and communicational delays and the psychological impact upon them: “His speaking skills are left far behind, and I’m stressed about his progress” (P1).

Most teachers (16/19) stressed that the most decisive disadvantage of distance education was the various manifestations of social inequalities in their classrooms, in various sectors, such as poor or no access to technological resources (computer devices, laptops, tablets, printers, etc.) and low or poor internet quality. Families with more than one child faced the most important difficulties, as digital resources had to be equally distributed to all family members: “All children do not have access to computers and their parents do not have digital literacy skills. State did not make any provisions to respond effectively to those demands” (T1). However, teachers (4/19) referred to cases of sharp inequalities of children who were constantly absent from classes because they had no access to digital resources and/or no internet connection. State policy arranged the distribution of vouchers exclusively for the supply of technological equipment and internet connection without charges among vulnerable families who are suffering from poverty. However, this provision was in effect after the first wave of the pandemic, which means that schools of early childhood education had been closed already for four months. Also, other sociodemographic factors had a negative impact on distance education and determined low participation. Finally, ethnic and/or cultural differences amplified the unequal distribution of resources and social inequalities in general: “Digital resources were not equally accessible, as there were families who did not have any of them. Their families have a different cultural background and very low socioeconomic status” (T7). Differences are more striking when the public sector is compared to the private: “Also, children attending private schools completed the curriculum or at least they heard it. Therefore, in my opinion, this process is not based on equality, and it is not egalitarian” (T2). Three teachers (3/19) were occupied in the private educational sector and characteristically reported that no one confronted unequal distribution of resources.

4.4 Parental involvement

Teachers’ responses (17/19) concerning the contribution of parents and PI, in broader terms during distance education, revealed that in most cases parents were supportive, not only in material terms by assisting their children with their computers, cameras, and microphones and with connectivity to digital classrooms, but also with the entire learning procedure, with homework that had to be sent via email or with printed material, by keeping regular communication with teachers, but most importantly, they were supportive emotionally and psychologically toward their children: “Parents’ contribution was immense, and they responded excellently to the situation. Each family put a huge effort both materially and psychologically to support the overall learning process” (T5).

However, there were fewer controversial and disputable cases, where the collaboration with parents was ineffective, posed obstacles, and was oppressive or even negative and in some cases absent. In some other cases, parents were negative toward distance education, as they considered distance education unnecessary for this age, or absent, as there were families with no access to computers and mothers who did not have adequate time to assist all their children. Mothers, especially, had to assume a multiplicity of simultaneous roles, parental, spousal, working employees, and educators, an immense burden that exhausted them: “I’m exhausted ... I wouldn’t make it without my mother’s help” (P9). Also, the pre-arranged time zone of the digital classrooms, which was common for all educational levels, caused a series of problems that caused abstaining from distance education for many children, as parents wanted to rest and/or sleep: “... there were some parents who did not connect their children to digital classrooms because it was afternoon and they wanted to rest or sleep” (T18).

Parents (8/10) reported that they had to be constantly present for various reasons, such as opening/closing the microphone, helping the child with handcrafts that involved scissors and glue, because children of this age do not have conquered fine motor skills effectively, and providing cardboards, colored pens, glues, and other resources essential for handcrafts. Another reason for their involvement (9/10) was the fact they had to restrain and discipline children so that they could manage to stay in front of the computer screen, to restrict children from leaving the room or doing something else, such as playing, to keep the child focused and concentrated, and urge participation during the lesson: “I try to restrain her as much as I can in front of the screen and keep her occupied, according to teacher’s guidance” (P5). In the beginning, their involvement was more intense, but as children adjusted to the demands and the procedure of distance learning, parents restrained their interventions and provided children with more autonomy. Also, another negative aspect of PI was

highlighted: “Parents, in general, were present all the time, but this did not allow free expression of children, and there were cases where children’s discourse or reactions was guided by parents” (T3) and “Parents, in many cases, regard that they are the ones being evaluated through this whole procedure and instead of helping their child, they oppress it” (T12).

Also, parents (3/10) argued that even if they wanted to help their children and tried to become teachers, they did not know how, as they did not have any specific knowledge and skills to transmit knowledge and could not substitute a professional teacher. Instead, parents focused their effort on occupying children with creative educational and pedagogical games and activities, something that according to their opinion should be teachers’ responsibility. The majority (9/10) reported that the time of engagement with children had increased: “I have to play the role of the teacher and devote even more time to my child and to the household, neglecting at the same time my job” (P7). Parents focused on activities that did not involve any form of technological resource or device, and most of them preferred to spend their free time outside the house, at parks, riding bicycles, and walking in nature, aiming mainly at distressing children and releasing psychological pressure due to home confinement. Many parents also mentioned their preference toward educational activities (for children), as they believed that the cognitive development of children was stagnant: “I bought her some educational books, with activities so as to help her exercise with writing and oral speech” (P7). Parents argued that their attitudes and habits had changed, and they allowed things that they were prohibited before because they wanted to satisfy children and keep them happy instead of creating tensions and further pressure.

PI, also, included communication with the kindergarten teacher. According to the findings of this research, home-school communication was well-organized and regular, in most cases. A small sample (3/10) mentioned that the established parental briefing was conducted digitally or by the phone, and teachers provided information regarding the abilities, weaknesses, and development of each child “4 to 5 weeks ago she asked to inform us about the progress of our children, to hear children’s impression, and provide an overall assessment of our child. This lasted for 15 minutes” (P3). Most cases (7/10) reported that parent-teacher communication was conducted through e-mail. Kindergarten teachers were informing parents in advance to prepare handcraft materials needed for the next lesson. Finally, parents believed that it was their duty to contribute as much as they could so that the teacher could be more effective. Also, two (2) teachers reported that they were mostly concerned about keeping contact with cases of absent children: “If a child is constantly absent, I try to communicate with the family” (T6).

To summarize, the first 3 prevalent themes for teachers with rank were the following: 1. effective distance teaching strategies and challenges (19/19), 2. the demand for teacher’s training in ICT (12/19), and 3. social inequalities created by distance education (16/19). For parents, the first 3 prevalent themes with rank were the following: 1. the negative impact of distance education on children’s socialization (9/10), 2. the psychological impact of intense pressure and discomfort on children (8/10), and 3. the heavy reliance on parents combined with problems in time management (9/10).

5. Discussion

5.1 ICTs, Distance Education in ECE: Challenges and Difficulties

The COVID-19 pandemic led to the shutdown of all educational institutions and forced ECE teachers to implement distance teaching. In this study, we examined the reactions and perceptions of teachers and children toward distance education, the advantages and disadvantages of distance education, and PI during distance education.

Overall, our findings are supported by prior research/literature on the field. Teachers were mostly concerned about the effectiveness of their teaching strategies, the tools and methods applied, and creating a pleasant educational environment through which children would receive knowledge and happiness. Although there were cases in which teachers’ personal perceptions about distance education in ECE were negative and without any previous similar experience and training, there was an immense personal effort to respond through various teaching challenges to the demands-cognitive, developmental, emotional, psychological, and social- of very young children, and to retain good communication and co-operation with parents. Distance teaching is in general challenging, however, kindergartens as part of the official and mandatory ECE were affected the most by distance education, as at this age children are expected to be socialized, interact through play, conquer basic skills, get physically, and mentally, emotionally, and spiritually stimulated (Munastiwi & Puryono, 2021). The above raised several issues, such as the selection of appropriate integration of ICT in ECE, the lack of training and support for teachers and families, retaining enthusiasm while avoiding fatigue of children and long absences, the inappropriate time zone for conducting digital lessons, technical problems with connectivity, the heavy reliance on parents who had constantly to be present, assist and impose self-regulation to their children, and already existing social inequalities concerning limited access to resources and materials for all participants, both teachers and families, that were amplified due to distance education. The difference between the teaching staff of the public and the private sector of ECE, in terms of the quality of education and curriculum continuity, preparation, and access to resources is supported also by prior

research conducted in Greece (Chalari & Charonitis, 2022). Our results concerning the spectrum of difficulties faced are supported by prior studies in the field (Atiles *et al.*, 2021; Dias *et al.*, 2020; Dong *et al.*, 2020; Dayal & Tiko, 2020; Gayatri, 2020; Nagasawa & Tarrant, 2020; Lau & Lee, 2020; Danby *et al.*, 2018; Kim, 2020). Finally, one aspect that is highlighted in the present research is the inappropriate time zone of the digital lessons, which were conducted during the afternoon, something that caused fatigue to children, as it was in complete contrast with their normal daily routine and with physical endurance of young children in general.

Teachers attempted to be personally motivated to transform the abrupt discontinuity of normality into a positive experience for all participants. Face-to-face education is the established, structured, and regular space for the education of young children, as it offers teachers a myriad of ways and methods to transmit knowledge, promote interaction, foster socialization, and enhance experiential learning through play with children (Ford *et al.*, 2021). Therefore, challenges and concerns were even more intense for ECE educators, who had to demonstrate resilience, flexibility, and creativity (Aizenberg & Zilka, 2022).

However, as this study suggested, distance education was the only possible option to ensure the continuity of the school year and to allow children, families, and teachers to stay connected within a new digital space. This was extremely important especially for young children, as it was the only means to meet and communicate with their friends. Findings highlighted that although teachers were positive in integrating ICT in digital teaching and assessed their overall performance positively, children's reactions and parental assessment were not equally positive. Parents supported that distance education in ECE is not developmentally appropriate, not responding to the curriculum content, leads to learning stagnation (Papandreou & Vellopoulou, 2022), something highly connected with the future academic performance of children and their progression in Primary Education, and above all cannot substitute or counter-balance the benefits face-to-face education, mainly because children are deprived of their normal socialization and interaction with their peers. Thus, this contradiction raises crucial concerns about the implications of using ICTs and their developmental effectiveness in teaching and learning, specifically in ECE. Findings of this research are supported by existing literature that also raises similar concerns on the overall quality and aims of distance education in ECE and suggests that technology can be used to enhance and widen learning opportunities, support effectively children's cognitive development (Aditya *et al.*, 2022), and foster relationships through a critical perspective (Ford *et al.*, 2021), which is crucial, especially if we consider that these generations are growing up and their experiences/knowledge are constructed within an intensified information society (Gözüm *et al.*, 2021), where even very young children (2-4 years old), "digital childhoods", as they are called (Gordo, 2020), are familiar with and access on a daily basis technological commodities.

Additionally, the entire issue has become a part of the global educational agenda, which promotes and fosters democratic participation and integration through digital citizenship, especially in educational settings through digital citizenship education (Pliogou *et al.*, 2022; Choi & Cristol, 2021; Emejulu & McGregor, 2019).

5.2 Teachers' Training

Furthermore, the findings of this study on the increased demand for teachers training are supported with extant literature (Mankki, 2022; Ford *et al.*, 2021; Dayal & Tiko, 2020; Dias *et al.*, 2020; Szente, 2020; Tarrant & Nagasawa, 2020; Gayatri, 2020; Babatunde & Soykan, 2020; Carrillo & Flores, 2020). Teacher's preparation is crucial, as the implementation of ICT in ECE classrooms has already been introduced, as supported by some researchers, although not fully and effectively (Dong, 2016) and with great concerns about ambivalent outcomes, teachers technologically upgraded role has come to the spotlight, not only within emergency educational settings but in general terms. Teacher's perceptions about ICT (Epps *et al.*, 2021), flexibility, persistence knowledge, abilities, skills, and self-efficacy in ICT play a decisive role in the effective implantation of distance education (Gözüm *et al.*, 2022).

5.3 Parental Involvement

However, the effectiveness of distance education is inextricably bound with PI, as highlighted within this study, and also found in prior research (Yildiz *et al.*, 2022; Buchanan *et al.*, 2022; Aizenberg & Zilka, 2022; Karabanov *et al.*, 2021; Stites *et al.*, 2021). Parents' perceptions about education and distance education, willingness for support and home-school communication, time availability, and socio-economic status play a pivotal role in the effective implementation of distance education. Finally, social inequalities, a prevailing issue that emerged from within this study, which is also supported by extensive extant literature (Kruszewska *et al.*, 2022; Khalid & Singal, 2022; Cheshmehzangi *et al.*, 2022; Bormann & Seong Ng, 2021; Bates *et al.*, 2021) is a key determinant of inequitable access to technological resources, of involvement of parents with children's education, and children's educational quality and academic performance worldwide. Finally, findings revealed three types of parents ("the committed teacher", "the autonomy-supporting coach" and "the committed

teacher-intervener”) and that PI was defined by parents’ perceptions about the importance/benefits and barriers against distance learning, which are overall supported by prior research (Knopik *et al.*, 2021). Although the specific research was conducted in Primary Education, it is interesting that we draw similar findings in ECE settings, while we should also consider the fact that Primary Education in Greece addresses students six to twelve years old, while ECE spans the period from birth to eight years.

5.4 Looking toward the post-COVID future-lessons learned from the pandemic: resilience and educational transformation

Notwithstanding our findings drawn during the pandemic, a very distinct from now (post-pandemic) condition, they have important implications for reacting towards similar conditions, which demand the disruption of face-to-face education. Although the possibility of similar future policies with mass lockdowns seems unrealistic, however, scientists urge governments and citizens to be prepared for imminent pandemics in the future, while we should also consider the case of natural disasters (i.e., floods, earthquakes) and the imperative that education should be included and addressed in plans which intend to manage national disasters and crisis (UNESCO, 2020c). Also, findings can help build a more resilient and sustainable quality education, which is oriented mainly toward equitable and inclusive access, a concept aligned with the 4th Sustainable Development Goal (UNESCO, 2021).

After the first shock, governments strived to open and maintain schools and make students’ and teachers’ return as safe as possible, while focusing on the thorough assessment of children’s learning and learning recovery through various strategies (OECD *et al.*, 2022). Concerning specifically ECE, the aim was to ensure that all children would return and no one was left behind, facilities maintained child-friendly and developmentally appropriate practices that would ensure children’s options for learning, playing, and socialization in inclusive and safe environments, staff’s training, familiarizing children with hygiene measures through creative and meaningful practices, meeting children’s holistic needs, building partnerships with families, and prioritizing the needs of the most vulnerable families (UNESCO *et al.*, 2020). However, growing research evidence and global initiatives taken by (coalition of) institutions, such as UNICEF, UNESCO, WHO, and The World Bank, shift more towards educational transformation through a systemic and holistic approach that involves all stakeholders and will capitalize lessons learned during the pandemic and critically approach inefficiencies of the pre-pandemic period (UNESCO Institute for Statistics *et al.*, 2022).

Although there is a wide acknowledgment of the importance of ECE both individually and socially and that ECE plays a decisive and fundamental role (Spiteri, 2021) and therefore it should be prioritized by public and educational policies, the European Commission (2021) reported that the sector of ECE has not been sufficiently included in discussions and policies which aim to recovery or transformation, especially in comparison with other educational levels, such as primary, secondary and higher education. The formality and importance of ECE have been undermined, thus causing short and long-term effects, such as insufficient pedagogical and practical guidance for ECE staff, insufficient material resources to respond to the immediate reopening of ECE facilities after lockdowns, lack of guidance to secure learning and to support PI, lack of attention toward the specific needs of ECE staff, a gap on research concerning the negative effects of the pandemic on young children and data reporting children’s attendance, lack of specialists in early childhood development, and insufficient financial support. Thus, our findings can help reduce the data/research gap in the area of ECE.

Research highlights that children’s development, learning (communication and language development), personal, socio-emotional, physical, and well-being, which is a multifaceted term (Schroedler *et al.*, 2022), has been affected in various ways and degrees, as we have already discussed. In the UK, interventions and strategies focus on the above areas, for example, teachers are asked and trained to provide richer language communication interactions to children to foster their communication skills and language development, use more often role-playing, using soft toys, and implement strategies that enhance and broaden children’s ideas, thinking and vocabulary. Some interventions include the family as well, such as sending toys, books, and home-based activities, and collaboration with language and speech therapists. Concerning, socio-emotional development providers attempt to foster social and interpersonal skills to tackle stress and anxiety, as children were deprived of their normal socialization, by creating networks with peers of the same age, something that can accelerate their confidence in creating friendships. Physical development is enhanced with outdoor playing, using more often play-ground equipment and accessing soft-play settings, something that builds children’s gross motor skills, independence, confidence, and stamina (UK Government, 2022).

Furthermore, an equally important focus has been oriented toward increased school-home communication, which also plays a decisive role in children’s academic and socio-emotional development (Hill, 2022). Parents were deprived of their regular face-to-face communication with teachers, while after ECE settings re-opened parental access was restricted. Building strong and meaningful home-school collaborations is crucial, as parents want to know how to help and support their children’s learning and development (UK Government, 2022). This study also highlighted various forms of PI and

the demand for parents' training in ICT and the psychological and emotional support of families.

5.5 Limitations

It is important to acknowledge that the specific study has certain limitations. First, data were collected during a very specific period, during the pandemic, and therefore findings, now that we have shifted to a post-pandemic era and conditions—educational, social, and political have immensely changed, should be carefully approached as they do not reflect the same conditions. Second, findings are drawn from small-scale research, conducted in a specific country, where the only available option to Greek teachers was online synchronous education, something that may have influenced the positive attitude toward distance teaching, in general. Therefore, we cannot articulate generalizations, as findings do not reflect the implementation of distance education on a European or global scale. Third, this study highlighted the means—tools and teaching strategies, the reactions and perceptions toward the overall teaching-learning impact, therefore, it cannot be used as a report of actual daily practices. Additionally, a further focus on pedagogical issues connected with the expressed perceptions would further enhance future research. Fourth, all parents who participated in this study had access to technological equipment and digital resources, had positive attitudes toward supporting their children, and did not have an ethnic or lower-class economic background, something that would have influenced their lived experiences, their access to technological resources, and the forms of PI. Fifth, all participants were female, thus a gender-based research would be something that could be explored in future research.

6. Conclusion and Implications

This study aimed to explore the effects of school closures due to the pandemic and the implementation of distance teaching specifically in ECE, which along with ECC, are both sensitive, demanding, and crucial educational levels that were mostly affected by disrupted access, due to COVID-19 imposed restrictions (Kim *et al.*, 2021; McCoy *et al.*, 2021). Therefore, it can contribute to the enrichment of literature on the field, as data can be used for further research and to inform public policies in the post-pandemic era.

Additionally, the specific study explored PI in distance education amid the pandemic, a relatively unexplored area in comparison to the field of PI in traditional schooling (Knopik *et al.*, 2021; Garbe *et al.*, 2020). Thus, our contribution to the field is important, as there have been multiple calls for more research data on the field.

Also, extant literature on distance education in ECE is mainly drawn from various other countries (Aditya *et al.*, 2022; Yildiz *et al.*, 2022; Aizenberg & Zilka, 2022; Ford *et al.*, 2021; Atilas *et al.*, 2021; Sonnenschein & Stites, 2021; Munastiwi & Puryono, 2021; Muhdi *et al.*, 2020) and is limited when referring to Greece (Papandreou & Vellopoulou, 2022; Chalari & Charonitis, 2022; Foti, 2021; Tzilou & Papadimitriou, 2021), which means that each case study explores similar issues but within different educational, economic, political and cultural contexts that largely, although there is an alignment, define the design and implementation of distance education.

This study has important implications for future policies for the professional development of teachers. Future policies can capitalize on information drawn from this research and focus on the implementation of a more comprehensive and concrete professional teacher's training on ICT, that would not be limited to the general and theoretical resources but would also include specific pedagogical and psychological additional content. Teachers' training even from the pre-service stages (Aizenberg & Zilka, 2022) should be more intensified and comprehensive, focusing on holistic outcomes, on teachers' self-efficacy, and on providing high-quality education to children, while considering the entire array of overarching children's rights within ECE and ECC (OMEP, 2020). The use of ICT as a key component in educational settings is highly mobilized and promoted within the global formal agenda of 21st-century skills as a permanent strategy for sustainable development (Petrie, 2022; Kalas, 2012), while at the same time, there is an increased demand for the acceleration of the digital transformation (McCarthy *et al.*, 2023) and preparedness in education (UNESCO, 2023). Finally, future policies should draw data from the international literature but should consider the demands of the local social, cultural, and economic context as well.

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