PRESCHOOL EDUCATION AND DISTANCE EDUCATION: TEACHERS' OPINIONS ABOUT PRESENT STATUS AND FUTURE POSSIBILITIES

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ABSTRACT

Coronavirus pandemic has imposed significant innovations in all aspects of our lives which were a respond to precautional measures to avoid covid-19 spreading throughout the community. In many countries, Greece included, education shifted rapidly to a distanced form affecting this section of our lives as well. The present study attempts to investigate the intergration of distance education in preschool education in the future as well as the factors that promote or inhibit it, by examining the views of kindergarten teachers. By employing quantitative modes of enquiry and specifically a significant number of questionnaires we concluded that teachers argue about the effectiveness of distance learning. Specifically, in order for the educational community to start a meaningful conversation about the integration of distance education in preschool education, issues such as teachers' technological readiness, technological equipment and parental involvement need to be addressed.

Keywords: Distance education, preschool education, Coronavirus pandemic, kindergarten.

INTRODUCTION

The coronavirus pandemic and the necessary measures taken to circuit break its spread caused significant upheavals and adjustments both in society and economy. It has also led to major adjustments and significant innovations in education, leading most countries to suspend face to face, traditional learning, while immediate decisions have been made to introduce innovations in the educational process with the ultimate goal of continuing the education of students. In short, distance education was the most appropriate tool for continuing the educational process.

In Greece, the Ministry of Education issued a circular on the implementation of distance education in terms of Primary and Pre-school education clarifying that distance teaching is sought to keep alive the contact and the interest of students with the educational process (Greek Ministry of Education, 2020). Kindergarten teachers were requested to use digital skills to meet the modern needs of distance education, although the use of these skills in everyday teaching practice is scarce due to the lack of access to the Internet and technological and digital media, which is duly noted not only in our research but also in other recent researches (Doyumgac et al., 2021; Erkan & Sedat, 2021; Gkoros & Bratitsis, 2021; Gkoros & Papageorgiou, 2020; Fis Erumit, 2020). This phenomenon derives from the fact that most schools suffer from inadequate digital infrastructure and financial inequalities of students' families which become an unambiguous obstacle

to equal access in distance education. Generally, in pre-school education the use of ICT in the educational process presents several difficulties of implementation, which are related to the lack of administrative and logistical infrastructure of schools (Gkoros & Bratitsis, 2021; Slaouti & Barton, 2007; Butler & Sellbom, 2002; Pelgrum, 2001; Guha, 2000) and the lack of teacher training (Gkoros & Papageorgiou 2020; Dayal & Tiko, 2020).

As is widely known, daily life in kindergarten is shaped by the related curriculum that provides proper guidance for planning and developing activities that will help children to cultivate learning areas that refer to their language ability, mathematics and mathematical thinking, expression and creation, supporting technological and digital literacy (Pedagogical Insitute, 2021; 2003). Rosales (2011, as cited in Dereshiwsky et al., 2017), emphasizes that all 21st century curricula must include digital approaches, whether taught online or in person. The organization and pedagogical utilization of the digital environment of the kindergarten is an important parameter in the educational process (Pedagogical Institute, 2021) and the kindergarten teachers should constantly enrich and improve their knowledge. However, preschool education is constantly being modernized, a fact that is reflected in the new Greek curricula that is about to be implemented and in which are notably imprinted the basic abilities and skills that every student must develop in order to be able to function as an independent thinking and active citizen of the 21st century. Specifically, the new curriculum states that "modern curricula are called to equip students with the necessary skills…for their personal integration, social inclusion, active citizenship and their employability in our knowledge-based society" (Pedagogical Institute, 2021). It is further argued that the cultivation of these skills from pre-school age has significant advantages for their subsequent consolidation.

THEORITICAL FRAMEWORK

Preschool Education

Education, in its narrow meaning and as it is used today in the science of pedagogy, means the systematic and organized process of education and learning that is planned on the one hand by the state or by any other body, public or private, and on the other hand implemented by their bodies (Xochellis, 2018). Preschool education is a term used to describe the organized process of education and learning of children aged four to six that is offered to them by professionals with comprehensive scientific education, pedagogical and didactic training in the natural space of young students, the kindergarten. Preschool education attendance has become essential for children as, according to modern scientific data, preschool age is a critical and essential period for their physical, mental and social development (Vrynioti et al., 2008).

The main purpose of the preschool education is the comprehensive development of children and specifically "to help children develop physically, emotionally, mentally and socially" (Pedagogical Institute, 2003). Greek preschool education curriculum focuses on teaching and learning for all students without exception and encourages them to reflect on their learning processes and practices. Essentially it encourages them to learn how to learn. Its basic principles aim at the design of multi-level activities, the realization of realistic goals, the utilization of pre-existing knowledge, the utilization of error, the application of alternative evaluation methods and the substantial contribution of the game (Pedagogical Institute., 2003). A kindergarten teacher, therefore, is expected to form a learning environment in the classroom that is open and flexible, which will facilitate the learning effort, will encourage students and will promote the construction of personal identity and autonomy, will promote skill development such as communication, creative and critical thinking, social skills and competencies related to citizenship (Dafermou et al., 2006).

Kindergarten school life offers children daily opportunities for multifaceted experiences that help them acquire the necessary social skills through social interactions with others (Hoogsteder et al., 1999). The development of social skills allows the child to adapt smoothly to the group life of the classroom and to develop interpersonal relationships with those around him. The absence or lack of these skills can lead to isolation, school failure and dropout resulting in problems in the child's life (Asher, et al, 1992, as cited in Bosniadou, 2000). According to neuropsychology findings, social and emotional skills are essential for the integrated development of thinking and learning activities (Elias, et al. 1997). Another necessity for school success is the acquisition of motor skills and abilities and to this end, curricula that have been formulated in

Greece during the last two decades incorporate as a pedagogical approach the psychomotor education that aims at its comprehensive development of children through the improvement of motor skills and abilities (Pedagogical Institute, 2021; 2011; 2003).

In the context of conventional teaching, a dominant element of the learning process is communication which takes place on the basis of teacher-student interaction (Matsagouras, 2006; Gotovos, 1997). Essentially, communication helps to develop interpersonal relationships between team members, creates a pleasant atmosphere, enhances social learning processes and contributes to the effectiveness of learning (Bakirtzis, 2003). With the existence of proper communication, the appropriate supportive environment is formed in the classroom that aims not only at the acquisition of knowledge but also at the cultivation of basic skills and abilities that contribute to the psycho-emotional and social development of the child (Pasiardi, 2001; Charalambous, 2000).

Distance Education

In exceptional cases, such as Covid-19 coronavirus pandemic, where children do not have access to the above mentioned teaching-learning process on a daily basis, distance education is one of the most effective ways to access it. The rapid spread of the internet and social networks has changed not only the way we communicate but also the way we work and learn (Garrison, 2011; Pange & Pange, 2011; Toki & Pange, 2010; 2009; 2007; Pange, 2009) contributing significantly in shaping a sophisticated framework for the implementation of distance education and leading to a new era of learning. In the literature there are a variety of approaches and definitions for distance education and in its more general dimension the term of Distance Education is used to describe the educational activities in which the learner is at a physical distance from his / her trainer and uses some form of technology to communicate with him, accessing at the same time educational material online (Schlosser & Simonson, 2002). Thus, the learning process takes place through an organized computer network where the teacher and students interact remotely, exchanging messages and educational material (Curran, 2006; Moore & Thompson, 1997). Distance education refers to a pedagogical-teaching process where the student is trained to learn while at home without the physical presence of his teacher whereas at the same time it is possible to use flexible teaching techniques to help each student adapt the educational process to his needs, his pace of life, his level of knowledge and his personal learning style (Rowntree, 1992). Also, for its realization, a series of technological means is used, aiming not only the student's contact with the teacher but also the students' own access to the educational material (Papalambrakopoulos, 2020).

The implementatipn of distance education can take three forms, synchronous, asynchronous and blended. In synchronous distance education, participants have the capability of direct communication while the process of teaching and learning takes place simultaneously. The instructor delivers the lesson live with the support of teleconference means and the students, although in a different place, attend the lesson at the same time. This form provides flexibility and competence of student reaction and interaction time. Other features this form holds is interactive communication and sharing content. Also, feedback can be provided not only through live video and sound but also through discussion and chat forums. In asynchronous distance education the participants do not have the possibility of direct communication as the process of learning as well as the delivery or creation of a lesson takes place at any time. It's all about unrestricted electronic classes as the content is available by the teacher to certain platforms of asynchronous education that students can access at any time (Anastasiades, 2012; 2008; Moore & Kearsley, 2012). In blended form of distance education, the learning environment is shaped by the combination of synchronous and asynchronous distance education followed by traditional face to face learning, creating a collaborative learning framework (Joksimovic et al., 2015; Anastasiades, 2012).

Research data indicate that the learning process in distance education is based on communication between teacher and learner (Iliadou & Anastasiadis, 2010; Zygouris & Mavroidis, 2010). Teachers' main goal is to support, inspire, give feedback, activate students' interest and develop motivation for students' participation in daily teaching practice, but also to form a learning framework that will be based on communication (Iliadou & Anastasiadis, 2010; Papadimitriou & Lionarakis, 2011). Dereshiwsky et al. (2017) emphasize that effective distance learning follows the same models as traditional face to face teaching and that its success is established on three key factors: teacher's essential contact with the learner, academic integrity in the curriculum and the skills of organization, presentation and evaluation of curriculums' material.

In summary, distance education refers to a pedagogical-teaching process where the student is guided to learn while at home without the physical presence of his teacher. At the same time, it is possible to use flexible teaching techniques in order to help each student to adapt the educational process to his needs, to the rhythm of his life, to his level of knowledge and to his personal learning style. Furthermore, in order for distance learning to be accomplished a series of technological means is used with ultimate purpose the interaction of students and teachers but also the access to educational material.

Although in most distance education programs technological means and educational material hold a key role, in pre-school education their role is more supportive than crucial. The above view is based on the fact that the spatial distance between teacher and student creates the need for another adult to facilitate, support and supervise the learning process in order to bridge this spatial gap that is inevitably created (Downes, 2013). The role of "supervisor" and "facilitator-supporter" at home is usually taken over by one of the two parents of the child, who in most cases is his mother (Harley, 1985, as cited in Kontogeorgakou & Georgiadis, 2016). Nowadays, modern research suggests that the content of learning is not completed at school but much is done at home. Researchers believe that the participation of parents in the educational process ensures the success of preschool education programs (Manolitsis, 2004). The cooperation and communication between the school and the family seems to be necessary since they coexist in the life of the child for several years and have a decisive influence on his cognitive, physical, emotional and social development (Vrynioti et al., 2008). In distance education, spatial distance cannot be a disadvantage when the learning process is based on the principles of mutual respect, cooperation and coordinated joint effort (Xia, 2020) thus creating a different dynamic of communication with all participants (Segrin & Flora , 2019) and the conditions for a more effective cooperation between kindergarten teachers and parents. In any case, many argue that the learning process in distance education is a multifaceted educational process that is not based on the teacher-centered model of vertical knowledge transfer, but on the creation of individuals able to learn how to learn through active knowledge acquisition processes (Mouzakis, 2006).

PURPOSE OF THE STUDY

The present research was conducted during the school year 2020-2021 in Kindergartens of the Region of Epirus, Greece. Its main goal is to investigate the views of kindergarten teachers on distance education after its application due to the suspension of teaching in the context of the implementation of measures against coronavirus spread. This paper attempts to explore the views of kindergarten teachers on the integration of distance education in kindergarten in order to draw useful conclusions that will help formulate a framework for its implementation as an alternative and complementary teaching tool under normal conditions. Subsequently, the following research questions can arise:

1. How familiar were kindergarten teachers with distance education before its implementation due to the COVID 19 pandemic?
2. What is the relationship between teachers' years of service and teachers' ICT literacy?
3. Does teachers' ICT literacy affect their degree of familiarity with distance education before its compulsory application?
4. To what extent do kindergarten teachers believe that distance education can be used in pre-school education after the end of the pandemic?
5. What are the factors that, according to the teachers, can contribute to the integration or not, of distance education in pre-school education after the end of the pandemic?

METHOD

In order to explore the views of kindergarten teachers regarding the integration of Distance Education in Preschool Education, we chose the quantitative research approach to study a large number of cases and to statistically analyze research data.

Participants

A probability sample was used in our research because this is the most accurate form of sampling and in this way we can claim that our sample is representative of the population in order for the results of the survey to be generalized (Creswell, 2016). The population of our research consists of all the kindergarten teachers in the country while the target population is the total of the kindergarten teachers of the Region of Epirus, Greece. From the total of 280 kindergarten teachers we selected a random sample of participants with probability but our approach was non-systematic by selecting a percentage (30%) of the target population as a sample. The selection of a probability sample was crucial as it is the most accurate form of sampling in quantitative approaches since the selection of one person or another is a matter of pure luck (Cohen, Manion & Morrison, 2008). More specifically, the sample of our research consists of 82 Kindergarten Teachers of the Region of Epirus because 2 of 84 teachers refused to participate in the survey for personal reasons.

Data Collection and Analysis

As a data collection tool we used a web based questionnaire. In particular, the questionnaire is considered to provide the ability to collect empirical data related to the same subject from a large sample number in a short period of time (Paraskevopoulos, 1993). Other than that, web questionnaires can provide data in fast and economic way (Creswell, 2016) while measures of social distancing due to covid-19 are being followed. Our questionnaire, apart from the first part which consists of demographics, mostly adopts closed type questions on a Likert scale ("1" Not at all to "5" Absolutely) and its creation is based on our main goal and, in particular, in the abovementioned research questions, in order to guarantee the validity and reliability of the results (Cohen, Manion & Morrison, 2007). Closed-ended questions are the most appropriate means of collecting opinions, as they are easier to complete and answer and they allow collection, processing and statistical analysis of numerical data (Creswell, 2011). In addition, our questionnaire incorporates an open-ended question and four semi closed ended questions. More specifically, the first part included questions related to demographic characteristics, the extent that individual characteristics are considered determinants of shaping the attitudes and perception of individuals. Thus, there were questions concerning gender, employment relationship, years of service, educational level and familiarity with ICT. The second part concerned a group of questions that had to do: a) with the readiness and familiarity of the respondents with distance education and its conceptual content, b) their prior experience and participation in any distance education program, c) their set of preferable apps that they used during distance education due to covid. The third part had to do with the participants view about integrating distance education in pre school education in the future. The fourth and last part of the questionnaire, concerned the factors that may or may not contribute to the future integration of distabce education in pre-school education. It is also crucial to mention that a pilot test of the questionnaire was preceded the main survey in order to have some feedback about our tool and of course the pilot test participants were excluded from the main survey. Other than that, we made sure that specific steps and procedures needed to be followed were thoroughly descripted to the preface of our questionnaire in order to prevent errors during the completion.

The survey was conducted from May 5, 2021 to June 4, 2021 with an anonymous online questionnaire (google forms), which was requested by e-mail to be completed by 84 kindergarten teachers. The participants of the present research were informed about the fact that the questionnaires were anonymous and that the results that would result from their processing would be used for research purposes only. In the aforementioned period, 82 questionnaires were received. SPSS 21 software was used for statistical processing.

FINDINGS

Descriptive Analysis

Demograhpics

Our sample consisted of 82 participants and 96.3% of them were women, meaning that only 3,7% of them were men. Also, 55.6% of the participants had from 15 to 25 years of service and about 31% of them had more than 25 years of service.

Table 1. Participants' level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor	62	75,6	76,5	76,5
	Master	16	19,5	19,8	96,3
	Ph.D.	3	3,7	3,7	100,0
	Total	81	98,8	100,0	
Missing	System	1	1,2		
Total		82	100,0		

In respect of participants' level of education, about one in five participants had a master's degree (19,8) meanwhile most of them had only bachelors' degree (75,6).

Furthermore, half of the participants were familiar with basic ICT skills (Ministry of Educations' certificate: Level A) while 35.4% of the participants were familiar with enhanced ICT skills (Ministry of Educations' certificate: Level B).

Familiarity with Distance Education

Table 2. Familiarity with Distance Education

	Not at all		A little		Sufficiently		Considerably		Absolutely	
	N	%	N	%	N	%	N	%	N	%
Level of familiarity with D.E. before pandemics' mandatory implementation	37	45,1%	25	30,5%	9	11,0%	7	8,5%	4	4,9%
How familiar are you with the conceptual framework of D.E?	16	19,5%	23	28,0%	29	35,4%	7	8,5%	7	8,5%
Level of correspondence between D.E. and Greek Curriculum	17	20,7%	34	41,5%	24	29,3%	6	7,3%	1	1,2%
How familiar is the term synchronous education?	3	3,7%	9	11,0%	22	26,8%	19	23,2%	29	35,4%
How familiar is the term asynchronous education?	2	2,4%	9	11,0%	25	30,5%	18	22,0%	28	34,1%

More than three in four kindergarten teachers were a little or not at all familiar with distance education, while about 13% said they were considerably or absolutely familiar with it. Also, 17% state that they are considerably or absolutely aware of the conceptual content of distance education, while more than six out of ten kindergarten teachers believe that distance education corresponds to the basic principles governing Greek Curriculum for Pre-school education. Nevertheless, about 56-58% of the participants are considerably or absolutely familiar with the terms of synchronous and asynchronous education.

Level of Experience in The Context of Distance Education

Table 3. Level of Experience on the Context of Distance Education

	No	Yes
	%	%
Do you have any experience in participating in any program of reeducation that was conducted remotely?	56,1%	43,9%
Do you have any experience in participating in any educational program that your school conducted remotely?	76,8%	23,2%
Did you integrate Distance Education into the educational process before the pandemic?	91,5%	8,5%

More than nine out of ten teachers had not incorporated distance learning practices into the kindergarten before the pandemic. In addition, approximately 77% state that they do not have experience in implementing a distance learning program while 56% do not have any experience of participating in a training program conducted in the form of distance learning.

Distance Education Tools that were Used by Kindergarten Teachers during Distance Education

Table 4. Usage of Distance Education Tools

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SYNCHRONOUS	53	64,6	64,6	64,6
	ASYCRHONOUS	29	35,4	35,4	100,0
	TOTAL	82	100,0	100,0	

It is obvious from table 3 that synchronous education was preferred than asynchronous in about 65% of the sample while the rest 35% chose asynchronous education. It is possible that the decision of the Greek Ministry of Education for mandatory implementation of synchronous distance education at other levels of education (elementary schools, high schools and Universities) played an important role in these results because synchronous distance education tools were available for free by the state in order to support synchronous education.

Distance Education Tools Frequencies

Table 5. Tool Usage Percentages

		Responses N	Percent of Cases
Tools[a]	Webex	72	88,9%
	ZOOM	3	3,7%
	eclass	19	23,5%
	email	49	60,5%
	Schools' Blog	6	7,4%
	Schools' Website	1	1,2%
	Viber	20	24,7%
	Messenger	16	19,8%
	Skype	3	3,7%

Almost 89% of the participants stated that they used *Webex* (synchronous application-tool). The percentage is really high, but it probably has to do with the fact that this application was the one that the State offered for free usage. Only 3.7% of the participants used *zoom* (synchronous application-tool). *E-mail*, being a rather conventional tool, was used as a means of asynchronous communication by six out of ten kindergarten teachers. One in four kindergarten teachers used *online classrooms* (asynchronous application-tool). Other tools that can combine synchronous and asynchronous communication such as *Viber* application was used by one in four kindergarten teachers while one in five used Facebooks' *Messenger*.

Kindergarten Teachers' Opinions about Distance Education

Table 6. Teachers' Opinions about Distance Education

	Not at all	A little	Sufficiently	Considerably	Absolutely
	%	%	%	%	%
ICT and distance education contribute in promoting flexible learning and teaching.	13,4%	45,1%	23,2%	9,8%	8,5%
Distance education is only appropriate when physical presence of both teachers and students isn't possible and therefore traditional face to face teaching and learning isn't possible as well.	4,9%	14,6%	29,3%	26,8%	24,4%
Distance education ensures that students with disabilities have equal access in the educational process.	17,1%	26,8%	25,6%	15,9%	14,6%
Distance education promotes blended learning supporting conventional teaching	19,5%	25,6%	29,3%	17,1%	8,5%
ICt and distance education promotes the development of computer literacy of students in pre-school age.	8,5%	17,1%	43,9%	15,9%	14,6%
New teaching approaches and tools of distance education cultivate students' critical thinking.	14,6%	29,3%	31,7%	12,2%	12,2%
Distance education is highly contributive in development of cooperation and communication between teachers and parents	14,6%	23,2%	36,6%	13,4%	12,2%
Distance education could be a solution in circumstances when students can't attend in school	13,4%	24,4%	20,7%	18,3%	23,2%
Integration of synchronous and asynchronous learning contributes in development of students' computer literacy.	14,6%	30,5%	29,3%	8,5%	17,1%
Most of asynchronous distance learning tools contribute in students' learning by enabling individual learning pace.	19,5%	25,6%	25,6%	15,9%	13,4%
During distance education students with disabilities are more involved in educational process than in conventional education	24,4%	34,2%	26,8%	6,1%	8,5%
Distance education promotes individualized learning of students.	31,7%	28,0%	25,6%	6,1%	8,5%
Distance education motivates students' interest and participation.	13,4%	39,0%	25,6%	11,0%	11,0%
There are significant problems in digital infrastructure of schools.	0,0%	11,0%	23,2%	32,9%	32,9%
There is inadequate access to internet and technological/ digital means for both students and teachers	1,2%	6,1%	19,5%	32,9%	40,2%
There is difficulty of autonomous use of technological means by preschool age students	1,2%	3,7%	17,1%	32,9%	45,1%
Distance education is less effective than conventional education in developing students' social skills	6,1%	1,2%	6,1%	23,2%	63,4%
Distance Education limits the implementation of psychomotor activities	0,0%	0,0%	7,3%	22,0%	70,7%
Distance Education in Kindergarten makes it necessary for an adult to be present as a supervisor.	0,0%	3,7%	6,1%	20,7%	69,5%

Kindergarten teachers' views on the need to integrate distance education into kindergarten are mostly negative. About 90% of them state that the implementation of distance education reduces on the one hand the implementation of psychomotor activities while the presence of an adult as a supervisor becomes necessary. Other than that, 86% of kindergarten teacher state that distance education is less effective than conventional education in developing students' social skills. Additionally, 78% of them state that preschool students face difficulties in using independently technological tools of distance education. Also, 73% of the participants, state that internet and technological means accessibility for both teachers and students is limited, while over 65% of them state that there is a severe problem regarding the digital infrastructure of schools. More than half of the kindergarten teachers believe that distance education activates a little or not at all, interest and participation of students, while 22% believe that interest and participation is activated considerably to absolutely during the implementation of distance education. Furthermore, hardly 15% of the participants believe that distance education promotes considerably individualized learning, while 60% of them believe that individualized learning is promoted a little or not at all. As for the involvement of students with disabilities during distance education, participants consider that is almost non-existent in 58% while one on four considers that their involvement is just sufficient. In addition, 44% of them believe that distance education provides a little or not at all equal access in the educational process to children with disabilities while 30.5% supports the opposite.

Asynchronous distance learning tools' contribution to individual learning pace is considered from considerably to an absolutely degree positive for the 29% of the participants, however 46% of them consider the above mentioned contribution to be either small or non-existent. Unexpectedly, in our opinion, 45% of kindergarten teachers consider the effect of distance education on students' computer literacy to be small or not-existent with only 25.6% of them accepting its' contribution to a considerably or absolutely degree.

The percentage of participants who state that distance education could be a solution in cases where students can't attend in school (41.5%) it's considered low as well. Regarding the contribution of distance education in the development of cooperation and communication between teachers and parents, 37.8% consider that there is a little or not at all contribution in that direction while 25.6% consider it to be considerably or absolutely existent. Cultivation of students' critical thinking using tools of distance education seems to take place to a little extent or not at all according to 44% of the kindergarten teachers while only 24.4% state the opposite. As for teachers opinions about blended learning, one in four of them believe that distance education promotes it, while 45% believe that distance education has little or not at all effect on promoting blended learning.

Where positive attitude seems to prevail is the promotion of the development of digital skills despite the fact that only 30.5% agree absolutely, compared to 25.6% who agree a little or not at all. However, 44% believe that digital skills are being developed even sufficiently. Also, distance education is slightly accepted at a rate of 45% regarding its contribution to promoting flexible learning and teaching.

In general, it seems that distance education, according to participants, is only a deliberate choice in case of emergency when physical presence of both students and teachers is not possible (50%). In conclusion, kindergarten teachers do not seem to appreciate the implementation of distance education in relation to preschool children. Early age, or existing infrastructure, and limited access to internet and supportive means such us computers, tablets etc. seem to be key constraints on accepting distance education. Even blended learning is treated with hesitation while it seems, but again not strongly, the application of distance education is accepted only in cases where it is not possible for students to attend school.

Comparative Analysis

Does Teachers' ICT Literacy Affect Their Degree of Familiarity with Distance Education Before Its Compulsory Application?

Variable 1: Degree of familiarity with distance education before its compulsory application (Ordinance variable, 1=not at all, 5= Absolutely)

Variable 2: Familiarity with ICT. (Categorical variable, 0: without certification, 1: A level, 2: B level).

Interpretive variable: Familiarity with ICT. (Certificate holder)

Dependent variable: Degree of familiarity with distance education

A non-parametric check was applied because in such distributions normality isn't proven. Since the interpretive variable has more than two levels Kruskal-Wallis non-parametric check was applied (corresponding non-parametric check of the ANOVA parametric test, $\alpha = 0.05$).

Table 7. Non parametric Check. Degree of Familiarity/ICT Certificate Holder

Total N	82
Test Statistic	7,001[a]
Degree Of Freedom	2
Asymptotic Sig.(2-sided test)	0,030

a. The test statistic is adjusted for ties.

There is a statistically significant difference between kindergarten teachers with different level of possession, or not, of certificate on ICT regarding the declared level of familiarity they had in distance education before the start of the pandemic (KW (82) = 7.001, p-value = 0, 03). Table six didn't provide information on where the difference lies. Therefore multiple comparison testing was carried out.

Table 8. Multiple Comparisons. Level of Familiarity with ICT/ICT Certificate Possession

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
None certificate- A level Certificate	-14,671	7,324	-2,003	0,045	0,135
None certificate- B level certificate	-20,259	7,659	-2,645	0,008	0,025
A level certificate – B level C -5,588		5,414	-1,032	0,302	0,906

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is ,05.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

According to Table 7, the difference, which made the test indicate statistical significance, lies between those who do not have any of the listed certificates and those who have a level B certificate. Specifically, level B certificate holders reported higher levels of familiarity with distance education before its mandatory application compared to those who did not hold any of the mentioned certificates (Test statistic = -20,259, p-value = 0.025).

What is the Relationship Between Teachers' Years of Service and Teachers' ICT Literacy?

Variable 1: Years of service (Ordinal variable. 1: 0-5 years, 2: 5-15 years, 3: 15-25 years, 4: 25+ years).

Variable 2: Familiarity with ICT. (Ordinal variable. 0: without certification, 1: A level, 2: B).

Spearman rho correlation coefficient.

Table 9. Correlation of Ordinal Variables

			ICT familiarity	Years of service
Spearman's rho	ICT familiarity	Correlation Coefficient	1,000	0,109
		Sig. (2-tailed)	.	0,331
		N	82	81
	Years of service	Correlation Coefficient	0,109	1,000
		Sig. (2-tailed)	0,331	.
		N	81	81

As is evident from table 8, there is no statistically significant relationship between the degree of familiarity with ICT and years of service (rho = 0.109, p-value = 0.331).

DISCUSSIONS AND CONCLUSION

The vast majority of kindergarten teachers in our research report lack of readiness and familiarity with distance education while they consider that distance education, as it was applied, does not meet the basic principles of Greek Curriculum for Pre-school education. Teachers showed a similar low level of readiness and familiarity in other recent research (Gkoros & Bratitsis, 2021; Churiyah et al., 2020) although there were cases of research in which the level of readiness was mostly in adequate levels with their data leading to the conclusion that there was a corresponding improvement and progress during the implementation of Distance education (Angelopoulou, 2021). Therefore, the state could implement some courses in order for teachers to become familiar with educational innovations in the field of distance education.

In addition, the majority of the participants report difficulties related to the lack of technological equipment both in the school units and within the families and the needs for computer literacy and electronic equipment that came along with the implementation of distance education. Difficulties are also created by the lack of interest on behalf of the parents, the time of implementation of the lessons that were carried out at noon but also the incomplete computer literacy of the teachers. The reference to connectivity and networking issues is also noteworthy. The above data are in agreement with several data of international research (Angelopoulou, 2021; Gkoros & Bratitsis, 2021; Foti, 2020; Sari & Nayir, 2020; Rasmitadila et al., 2020; Salman, Alkathiri & Bawaneh, 2021; Hosszu & Rughinis, 2020; Churiyah et al., 2020; Hebebci, Bertiz & Alan, 2020; Sikirit, 2020). Therefore, the creation of a wide-scale modernization of the material and technical infrastructure of the schools must be accelerated, as well as giving incentives to the citizens to modernize their own home facilities as well.

It is widely accepted that teachers had no experience in Distance Education, which is admittedly an unusual form of education for young children (Gestardo, 2020, as cited in Campos & Vieria, 2021; Yildirim, 2021). As Darling-Hammond & Hyler (2020) characteristically stated, new circumstances created many new needs for teachers. Alan's (2021) research highlighted the fact that teachers need both practices that psychologically encourage their efforts as well as improvement of their technological capabilities, increase of interactive resources and consolidation of a more flexible and user-friendly e-learning platform that facilitates both teachers and students and their families. More specifically, the need to improve teachers' technological skills has been highlighted by other studies such as the Starting Strong and Learning International Survey (TALIS Starting Strong) according to which teachers feel less confident in using technological tools to enrich and support learning (OECD, 2020). In fact, many other studies (Dayal & Tiko, 2020; Keengwe & Onchwari, 2009) have shown as well that teachers have difficulties in using and integrating new technologies in their teaching practice and that they need training in such fields. In the above context, therefore, the results of the research argue that it is of utmost importance to provide professional development opportunities to teachers, especially in what has to do with distance education strategies as well as their support for improvement of their technological readiness.

Furthermore, one of the points that needs attention is the negative views of teachers regarding the integration of distance education in Kindergarten. They consider that it is less effective in relation to conventional learning and in the development of students' social skills. Other than that, participants believe that preschool students have difficulty in the independent use of technological means and that distance education does not promote the interest and participation of young students. Recent research in Greece has shown that the majority of teachers believe that the use of new technologies in education enhances the interest and motivation of students to learn and the effectiveness of teaching through the use of the multi-sensory information retrieval pathway, forming a playful and active character, which in this way can be adapted to the needs, capabilities and pace of students (Angelopoulou, 2021). Consequently, one must admit that the need for interactive sources of distance education that provide attractive and meaningful interaction to students is imperative. Just like interaction with peers, the involvement of interactive sources deepens the teaching process and is a fundamental element of a high quality distance education (Darling - Hammond et al., 2020). Of course, the use of materials suitable for young students is of similar importance and for this purpose teachers should be supported with both information and resources related to interactive tools (NAEYC, 2012). In this regard, the responsibilities of the State are more than obvious in order to achieve the desired goals that we underlined, such us equipping schools with the appropriate sources of interactive tools.

Regarding the necessary presence of an adult supervisor and the general participation and consultation of the school with the students' families during distance learning, the participants consider that it is a key inhibitory factor in the integration of distance education in the kindergarten. Therefore, the fact that young students need their parents to support them during distance education, has made them a "key cog" in the whole process and an essential element of it (Lau & Lee, 2020). However, most parents have difficulty trying to cope with this role, which can be very demanding, especially for those parents who work or have to care for more than one children at home or a child with disabilities (Lee et al., 2021; Dong et al., 2020). As a result, teachers were entrusted with another role, that of informing and guiding the families in order to fulfill their new duties. In order to be able to have a minimal future integration of distance education in kindergarten it is obviously crucial to take measures to facilitate these tasks by both parents and teachers. One way to achieve this, according to Alan (2021), is by investigating the needs of families and demarcating the points that need improvement so that various online information programs can take place through the school counseling services or through states' services or even by taking advantage of other means such us educational television. However, we must be very cautious about the integration of distance education in kindergarten, as the above mentioned issues can be addressed in one way or another, but the age, which is clearly very young in pre-school children, although it is not a socio-economic parameter of students, it is the main factor in exacerbating "digital inequality" and unequal opportunities (Pramling Samuelsson et al., 2020; Yang et al., 2010).

Last but not least, as a result of our research being limited to a specific region of the country, the results cannot be safely generalized to the entire population of the country but they do literally represent the targeted population of our study which accounts for the region of Epirus. However, our research project highlights general tendencies that can further promote new studies on larger populations, in other regions or countries with the aim of a deeper and more detailed understanding of this challenging issue.

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