



RESEARCH IN DISTANCE LEARNING IN GREEK KINDERGARTEN SCHOOLS DURING THE PANDEMIC OF COVID-19: POSSIBILITIES, DILEMMAS, LIMITATIONS

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Abstract:

Recently, and in the circumstances created due to COVID-19, it has been established that new conditions have been created for almost the entire educational potential of the country. The closing of schools created new data and difficulties that had to be overcome in order to continue the educational activity and the general pedagogical process and in these new data the use and development of electronic means of communication was inevitable. In particular, the field of pre-school education, kindergarten teachers were called upon to respond to even more difficult challenges and difficulties, taking into account the age of the students (4-6 years) and the objective inability to approach the electronic forms of education. The purpose of this paper is first to describe the main objectives and conditions for distance education and then it will be presented a research that took place in kindergartens schools of 3rd region in Athens during the closing period of schools due to COVID-19. In this research was tried to explore perceptions, possibilities, and limitations regarding the implementation distance learning in kindergarten schools.

Keywords: distance learning, kindergarten, possibilities, limitations, dilemmas

1. Introduction

The ever-increasing demands on the working environment, global social and economic developments, and the speed of dissemination of information and technological and scientific development have led to the need for flexible open education. Distance learning as a new method that was already spreading more and more as a fundamental method of open education systems and at the same time the point of divergence and differentiation from conventional ones, following the rapid developments and the closure of training units due to COVID-19, was the only political and educational solution

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in order to continue the educational and pedagogical process. But how did distance learning begin and what are the historical elements that are good to know?

Distance learning, inextricably linked to both "education" and "training", as well as pedagogy, initially began as a part-time study organization, continued with correspondence by mail with already tested conventional books, used radio, television, telephone and in recent years adopted almost all forms of modern technology: from mobile phones and computers, to satellites (Keegan, 2001).

'Distance schooling' means distance learning at primary and secondary level and distinguished in self-reliant and complementary. In the first case, the learners attend educational organizations that provide integrated curricula that lead to diplomas equivalent to conventional ones, while, in the second case, students attend conventional schools but have the opportunity to choose and attend courses from other educational organizations (Vasala, 2005).

Its main characteristics are the distance separating the teacher from the teacher, forming a form of communication that takes place electronically (Kegan, 2001). A generally accepted definition of the term distance learning is as follows: the term distance learning is used to describe those educational activities in which the learner is at a natural distance from his instructor and uses some form of technology to communicate with him and access educational material (Schlosser and Simonson, 2002).

However, an additional definition of a pedagogical dimension according to Lionarakis (2005) is that: "*distance learning is the education that teaches and enables the student how to learn on his own and how to operate autonomously towards a heuristic path of self-learning and knowledge*".

2. Types of Distance Learning and Teaching Methods

Jean Piaget (1958), Lev Vygotsky (1988) and Jerome Bruner (1960) proposed the following basic principles:

- a) An active and binding process,
- b) Learning is a process of creating knowledge,
- c) The function of learning at the metacognitive level focuses on the ability of critical thinking rather than the search for the right answer,
- d) Learning concerns a social negotiation, a reflective situation, and
- e) The greatest thing is to learn how to learn.

These principles of rebuilding and the fact that new knowledge can be built and acquired through prior knowledge, so that the role of the instructor is that of the facilitator for the acquisition of new knowledge, taken or must be taken into account inter alia in the design of forms of distance learning.

Distance learning is based on three axes of interaction: the instructor, the learner and the educational material (Lionarakis, 2005) with a more important role in the learning process playing the educational material while as a method of teaching and learning, an organically structured set of instruments and processes is described. Distance learning is

distinguished in the modern with the aim according to Wedemeyer (1981) to offer training in time, space and place where students are located and the possibility of two-way communication with direct dialogue and in the asynchronous which takes place in a different space from the instructor, but also at a different time from the process of delivery or creation of the course based on technological means.

Since educational material has the most important role in the learning process, it should be mentioned that the material includes the texts, which according to Lionarakis (2003) have a role to support the work of the learner, to activate him, to train him, to teach him, and to enable him to learn alone, autonomously and creatively while, finally, helping him to discover knowledge and information through specific activities and through self-learning processes.

In addition to the texts, the audiovisual media have an important role in the distance learning process, videos, radio and television programmes, aiming at creative study without the physical presence of the teacher and giving the opportunity to the learner to see the results of his study. Finally, Modern Technologies, the internet and the web, its services with characteristic functions of Web 2.0 and e-Learning 2.0 with the potential to be an educational process and without the existence of a standard organized course (Downes, 2007) support asynchronous distance learning while the basic technical requirement is the need to support information technology in both software and equipment (Billings, Rowles, 2001).

3. New Technologies in Early Childhood Education

Most of the processes that society negotiates every day incorporate ICT. ICT can be defined as anything that allows information to be trafficked, communication and impact on the environment using electronic or digital machinery (Shah & Godiyal, 2004). Most of the processes that society negotiates every day, integrate ICT and children now live in a communication-rich environment whose models include a whole range of electronic and digital communication methods (Shah & Godiyal, 2004).

ICT is an important part of everyday life and therefore could not be absent from early childhood education (Bertram & Pascal, 2016) and includes computers (including desktops, laptops and tablets), digital cameras and digital camcorders, as well as creativity and communication software and tools (International Council for Educational Media and the XIII International Symposium on Computers in Education (ICEM & SIIE' 2011) 2011). The computer as a means of being part of the kindergarten program has a lot to offer and according to the kindergarten guide is "*the tool that has the potential to expand educational opportunities, adding a new dimension to the developing activities and enhancing the dynamics of their exploratory -creative game*" (Kindergarten Guide, 2006).

The ICT Curriculum in pre-primary and primary education, for the purpose of using ICT in kindergarten, states: "*(children) use internet software and services, organically integrating ICT into the daily activities of kindergarten as supervisory means of teaching, as tools for exploring, experimenting and problem solving and as tools for information management,*

digital literacy and expression in multiple ways, creation, communication and cooperation" (Ministry of Foreign Affairs, 2011).

According to the IcPSP (Interdisciplinary Single Framework of Computer Studies): *"The purpose of the introduction of Computer Science in kindergarten and primary school is to familiarize students with the basic functions of the computer and to come into first contact with various uses of it as a supervisory teaching tool, as a cognitive investigative tool and as a tool for communication and information search in the context of their daily school activities using appropriate software and particularly open learning software"*.

International research on the introduction of computers and ICT in education in general shows that they have positive results in learning various subjects (Fessakis, et al., 2013). Therefore, these technologies can play an essential role in achieving the objectives of the early childhood education curriculum in all areas and the topics offered similarly, if supported by software-enabled applications (Fessakis, et al., 2013) while more and more scientists and scholars are convinced that ICT in childhood and especially in preschool age offer multiple possibilities to young children (Shah & Goaldiy, 2004).

4. Distance Learning in Kindergarten. The research

4.1. Research Methodology

Below are data on the Methodology of Research. In more detail, the type of research method followed, the purpose and research questions of the research and the way research is planned are presented. Below, the sample of the survey, the research tool, the way in which the statistical processing will be carried out, the criteria for reliability and validity of the questionnaire and finally, the limitations we encountered during the survey.

4.2 Research Process

Based on the form of the data sought in a survey, the choice between quantitative and qualitative research is also made. In this research effort, quantitative research was implemented because we considered it more effective to collect quantitative data and to expand their analysis by statistical tools and methods. The quantitative data are numerical or proportional and we can present them in diagrams and shapes, which facilitates us in interpreting the results of our research (Dimitropoulos, 2001).

However, this quantification of the data does not prevent, on the other hand, the qualitative summary of the results (Dimitropoulos, 2001). At the same time, in quantitative research it is possible to: a) the production of numerical data that can lead us to a wider investigation of the subject (Cohen & Manion, 1994), b) the control of one or more cases, c) the interpretation of cause & cause, and d) predictions/estimates. Another positive element of quantitative research is that the researcher is unknown, and the participants are anonymous, thus answering the questions more honestly.

Although quantitative research enables us to approach a large part of the sample by highlighting the general trends of the population, this research effort is a pilot research

to highlight the importance of the phenomenon of the transition and anxiety of separating the child from one environment to another, a period characterized by particular demands and needs and with a profound effect on the psych emotional balance of both the family and the child, which is in the early stages of its development.

4.3 Data Collection

As mentioned above for the collection of survey data, we carried out quantitative research. The research material on which we relied comes from the completion of an electronic questionnaire divided into two parts (Part A: Demographics and Part B: Recording of possibilities, safeguards and limitations regarding distance learning during the COVID-19 period). The survey was conducted between 30 April 2020 and 10 May 2020 and the weighted questionnaire was constructed in an online form from Google, accessible at: [Google Survey Form](#).

4.4. Determination of the Sample

For the selection of the sample we used the random sampling method to set up the overall sample and the sample of the survey consisted of primary school teachers teaching in kindergartens in the 3rd Athens. In total, there were 101 teachers, of whom 100 were women and a male primary school teacher with different educational atoms and different experiences in education.

4.5. Research Tool

The questionnaire as a research tool is a standardized means of obtaining information. In our case, it was an indirect means of communication between the researcher and the respondents. As a tool it has several positive elements which among other things according to the time savings, the small cost to zero (as in the case of the electronic questionnaire), the simplicity of the procedure that does not tire and the reliability of the results from the concentration of the representative sample (Lagoumintzis, Vlachopoulos, Koutsoyiannis, 2015).

4.6. Reliability and Validity of Research Process and Measurements

Two of the necessary characteristics that a measuring tool should have are reliability and validity (Pappas, 2002). Reliability refers to the stability displayed by the research tool in successive measurements. A measuring tool is considered reliable when in repeated measurements, in the same sample and at different times, it consistently displays the same results, provided that no significant change has occurred between measurements (H. Ouzouni & K. Nakakis, 2011).

On the other hand, validity shows whether the research tool and the measurements it gives us correctly measure what is intended to measure (Paraskevopoulos, 1999). In order to ensure the reliability of the questionnaire we followed the following steps: 1) together with the questionnaire, a letter from the researcher to the respondents was sent to respondents in order to understand the purpose

of the survey, the content of the questionnaire and to feel protected by their anonymity in order to respond honestly, 2) its completion was voluntary, 3) sent electronically via the Google docs form, and 4) all stages of an investigation have been respected.

At the same time, each question in the questionnaire was evaluated for its suitability as to: 1) its content, 2) its wording, 3) its turn in the questionnaire, 4) its type (Paraskevopoulos, 1999). Finally, closed-circuit questions were given a wide range of suggested answers using a five-stage Likert scale, and to increase validity, we included open-ended questions. The online manufacturing questionnaire of Google's Google forms drive form was selected because it enables the data to be collected and recorded on spreadsheets so that it is easier and easier to process statistically.

4.7 Analysis and Interpretation of Research Results

A total of 101 questionnaires were collected from the survey through the Google docs form and the statistical analysis was done with Excel, so it is one variable. In total, the online questionnaire consisted of 18 questions where part 1 of the e-questionnaire concerned demographics such as the gender of respondents, age, level of education and their knowledge of ICT. In terms of the gender of respondents, the overwhelming advantage is 99% who were women and only 1% male, as shown in Figure 1.

In terms of the level of knowledge we note according to Figure 3 that 71.3% have a bachelor's degree, 23.8% Master's Degree, 1.0% and 2% PhD. In the supplement question followed by the electronic questionnaire, an answer was added for emulation.

In the question regarding teaching experience, 47.5% replied that they had teaching experience from 12 to 20 years, 21.8% from 21 to 25 years, 16.8% from 26 years and above, while the lowest rates were in 1 to 5 years and 6 to 11 years from 6.9% respectively, as shown in Figure 4.

In terms of knowledge in Information and Communication Technologies, the sample that answered is almost equal to 50.5% replying that it has completed the Second Level in ICT, 46.5% the First Level in ICT while only 3% are ICT 2' level educators, as shown in Figure 5.

The next question concerns the use of Distance Learning by teachers with the vast majority of 96% of teachers responding positively and only 4% responding negatively as shown in Figure 6.

When asked about experience in participating in a distance learning training program, 60.4% answered positively about their participation in a training program using this method and 39.6% negatively, as shown in Figure 7.

In the next question concerning the importance of distance learning for the current state of COVID-19 it is interesting to see that 42.6% and 28.7% replied that it is very much and very important respectively, 26.7% that it is quite important, while only 2.0% that it is a little important, as shown in Figure 8.

When asked whether asynchronous distance learning is used, there were an overwhelming majority who answered positively, 99% while only 1% replied negatively, as shown in the Figure 9.

When asked to teachers what types of asynchronous distance learning they use in kindergarten, 40% replied that they use email or otherwise email, 7% of the blogs with which teachers rely on the web and can post educational material for their students, just 4% that use e-class and e-me platforms which are asynchronous e-learning platforms developed in our country to support and integrate new technologies, while 15% of other teachers replied that they use social media such as Viber, Messenger, as shown in Figure 10. As a continuation of this question and additionally, the answers for the use of some Web2.0 tools as well as telephone communication were added.

In the question concerning the corresponding of parents and children to distance learning, teachers' responses were mostly modest, or else quite at 36.6% and very much at 23.8% and 17.8% respectively, while there was also a remarkable proportion who replied that there was a low response rate of 21.8%, as shown in Figure 11.

The next question comes to complement the previous one and refers to the degree of difficulties and obstacles associated with distance learning in relation to teachers and trainers. As for the lack of support for teachers in distance learning, 43% and 30% that they are too large respectively, 22% and 6% that is enough and a little and 2% that there is no deficit, as shown in Figure 12.

With regard to the lack of teachers training in the use of ICT technologies, the vast majority with 38% and 36% replied that they are very much and very, respectively, 25% answered too much lack of training and only 2% replied that there is no incomplete training of teachers in the use of ICT as shown in Figure 13.

In terms of the high cost of technology by teachers 36% and 35% replied that it is quite and very large, 16% is too large while 12% and 3% are from little to no, respectively, and as shown in Figure 14.

The inability of learners to access computers and internet use was a question to which teachers unanimously replied that it is too large (32%), too large (30%) and quite large (26%) 12% and only 3% answered little and no, the answers shown in Figure 15.

The figure 16 shows the answers given to the question regarding the disruption of family life by distance learning with teachers replying that it is small and quite large at 33% and 32% respectively, 19% and 11% replied that the disturbance of family life is too great while 8% replied that no family life will or will not be disturbed at all.

On the question of preventing meaningful communication between the learner and the teacher, which characterizes the collaborative and communicative climate of the class, the teachers answered 39%, 35% and 24% too much, too much, while little and no of 2% (Figure 17)

In feedback from students in distance learning, 42% and 29% of teachers replied that they are too big and quite large, 20% too long, while 8% and 3% that very little feedback to none (Figure 18).

The inability to contact with students was answered by the teachers that they are at 50% and 29% too long and too large a 10% replied that it is quite large, however, 10% and 2% replied that there is little to no inability to contact interpersonal contact respectively by referring to the contribution of modern distance learning and the use of

means used for simultaneous communication and real-time interaction with the computer network, chat and video conferencing (Anastasiades, 2008) and as shown in Figure 19.

Finally, in the Figure 20, the respondents' responses regarding the lack of educational material appropriately adapted to the needs of our students and with rates of 30%, 26% and 23% are presented as being very, very long and quite large and 17% and 6% little and no respectively.

In addition, we should also mention responses from educators who have recorded such a response regarding the inability to support this project by working parents who are unable to support it in time and technically, a response to the extremely young age of kindergarten children and two responses to the "teacher reaction to any change and anything that takes time and effort to cope" as stated. The next questions concern the use of the tools for modern and asynchronous communication used to support the educational/educational process in a distance education program and their effectiveness according to the answers of the teachers. So with regard to e-mail, 40.6% and 27.7% replied that it is very much and very useful, 24.8% that it is quite useful, while 5.9% and 1% that it is from little to no useful, as shown in the Figure 21.

Social media is used quite a lot at 32.7% and 28.7% respectively, 11.9% of teachers use them a lot, while 15.8% and 9.9% use them little to no, as shown in the Figure 22.

In using the blog and website, teachers replied that they use them a lot, too, quite a percentage of 40.6%, 34.7% and 23.8% respectively, highlighting the value and ease of creating and using them and the contribution of distance asynchronous education (Figure 23).

In terms of the use and effectiveness of the Platform eclass in kindergarten by teachers, 32.7% and 24.8% replied that it is very and quite effective in its use, 19.8% that is very useful while 19.8% that is little to not at all (3%) as shown in Figure (24).

Following the previous question, the e-me platform is considered quite, very useful and effective at 29.7% , 26.7% and 14.9% respectively, while 24.8% say it is little to no use (4%) as shown in Figure (25).

Distance learning through the Cisco Webex Platform by the teachers surveyed was assessed from several to 29.7% and 26.7% respectively, a percentage rated it as very useful, 14.9% while on the opposite side, 24.8% and 4% considered it useful and effective from little to no, as shown in Figure (26). For the utility end of the tools offered by the Panhellenic School Network and their effectiveness, teachers rated at rates 35.6%, 32.7% and 23.8% that they are very, quite and very important while there was also a percentage of 7.9% who felt that they were a little important. It is noteworthy that there was no answer for very little and at all as to the effectiveness and usefulness of the Panhellenic School Network tools as it seems in Figure (27).

Finally, it is extremely interesting to convey the views, dilemmas and concerns that teachers recorded in the online anonymous questionnaire:

"It is a new venture that causes reasonable stress, but because of the particular situations we live in, we have to try."

"Good and useful distance learning in the difficult situation we find ourselves in communicating with children with their teachers and classmates, but it cannot in any way replace live teaching"

"It takes a combination of them and the teacher's freedom to manage them, as he sees best for his students."

"In today's age, distance learning arises as a need to communicate with their students."

"Modern and Asynchronous distance learning will be a means of learning, in which we must practice and learn its principles because from now on it will be in our lives".

"I am called without knowing swimming to swim in uncharted waters."

"The import is made in drafts. Not all children are involved on equal terms."

"There is no interactive material and no training to make it myself, although I believe that there should be a bank of such material at least basic which will be created in pedagogical terms... targeting etc... I am not going to talk about the technical part... this we'll find out... He also wants a clear demarcation with laws and provisions so that we do not treat those who dare not be exposed ... I could analyze you more and I will do it when I have tried it and in practice. I leave the legal loopholes with personal data and copyright"

"I think it is another necessary step in education, for a society that wants to move forward multifaceted!"

5. Conclusions

Following the presentation of the results of the survey carried out on primary school teachers and specifically kindergarten teachers during the closure period of the Covid-19 training units, we conclude that teachers immediately responded to the vast majority of them and they organized distance education in its asynchronous form in order to maintain communication with their students and to respond as helpers of the Greek family in this abrupt and sudden situation that everyone was asked to deal with. Online social networking environments that incorporate a multitude of interaction and communication capabilities and can be a conditional, useful instrument in distance learning.

Asynchronous distance learning platforms offered through internet information systems and integrated systems, which include a wide variety of course management

tools. Typically, we mention the e-class platform that teachers rated as very useful, characterized for ease of use by both instructors and learners, without requiring specialized technical knowledge to use it. Moreover, it is distinguished for its adaptability to the requirements of all subjects with easy the possibility to upgrade and expand and with the main responsibility for the creation and management of the courses the educator himself.

Modern distance learning which supports the simultaneous interaction between instructors and trainees, between students and teachers, instructors and trainees can have voice and visual communication located in different places (Mouzakis, 2004). It was assessed by teachers as very useful in the current situation, but it should be particularly emphasized and pointed out by the respondents, it cannot replace live teaching, which promotes active interaction towards knowledge gain.

About the Author

Paraskevi Foti is a Coordinator of the Primary and Secondary Education at the 3rd Region of Attica (Greek Ministry of Education) and formerly Head of the 4th Kindergarten of Agia Varvara. She has studied piano and higher theory at the National Conservatory of Athens and has completed her master's degree in Intercultural Education and Management of Diversity. She completed her second degree in Psychology at Ethnic Kai Kapodistrian University of Athens with a specialization in Psychology and at the same department she completed her doctoral dissertation with the title: "The contribution of ancient Greek language to art and language of Aesop and the added value of ICT Technology". Her first book, entitled "Otherness, Prejudice and Stereotypes in the School Class. Teacher Management Methods" (2016, Athens: Grigoris) was selected as a university textbook at Harokopeio University of Athens and has participated in a collective volume on Teaching Scripts through ICT. (2017, Athens: Grigoris). He has published in international and national conference proceedings as well as in scientific journals and has a keen interest in Information and Communication Technologies and their contribution to the teaching process while being an eTwinning and Moodle trainer in support of open source software. She is a Researcher Associator in the Early Childhood Department of Education and Care at the University of West Attica teaching the courses in "Children's Literature" and "Pedagogy of Image" and in the Interdisciplinary Program of Pedagogy through New Technologies.

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Appendix

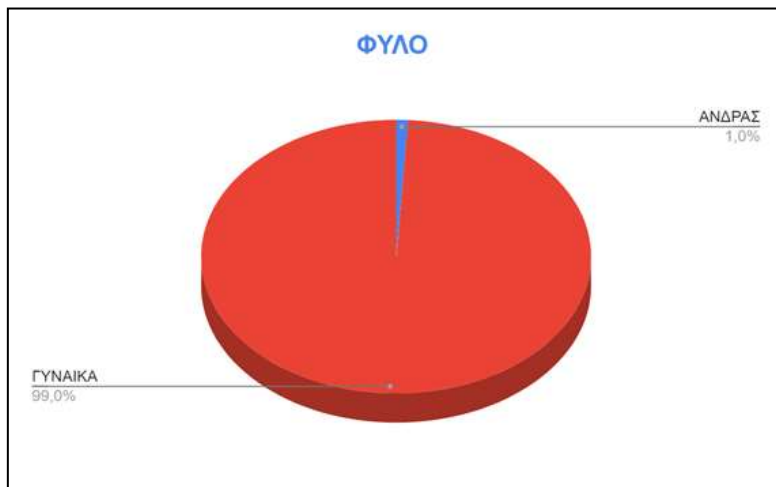


Figure 1: Gender

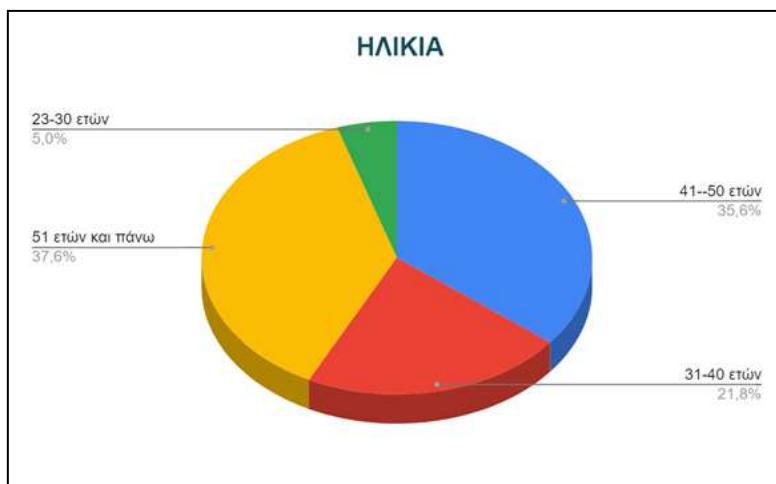


Figure 2: Age



Figure 3: Knowledge

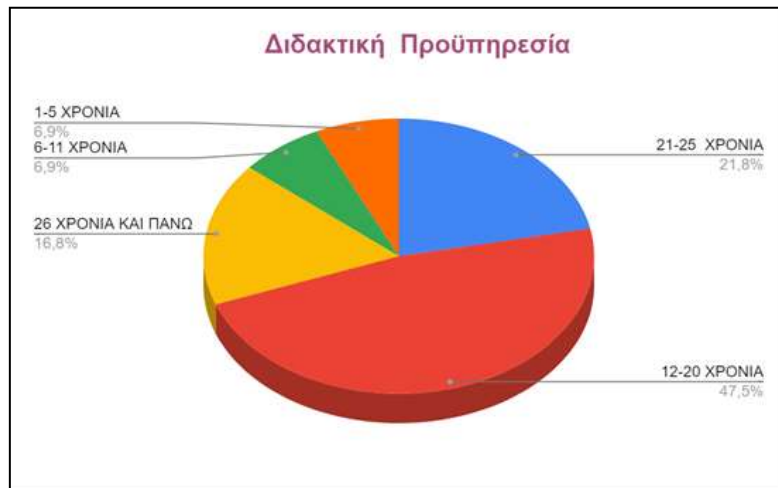


Figure 4: Teaching experience

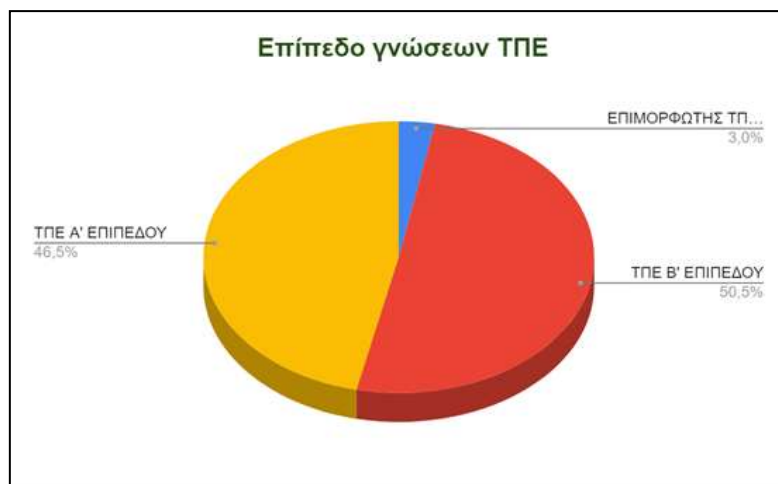


Figure 5: knowledge in Information and Communication Technologies

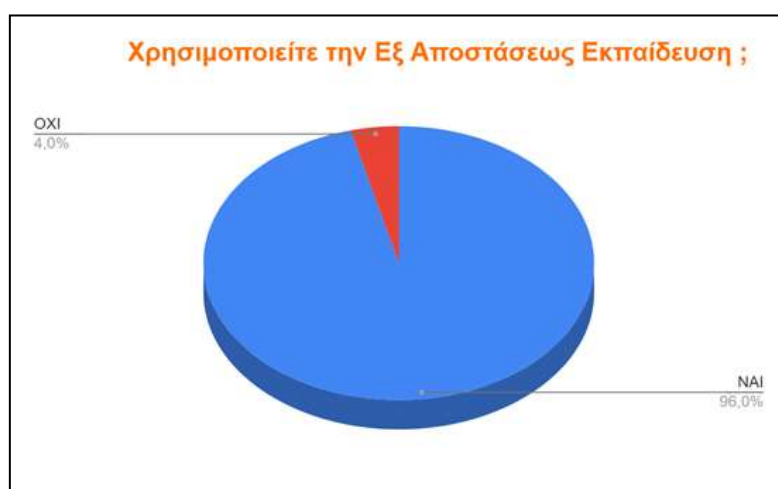


Figure 6: Use of Distance Learning

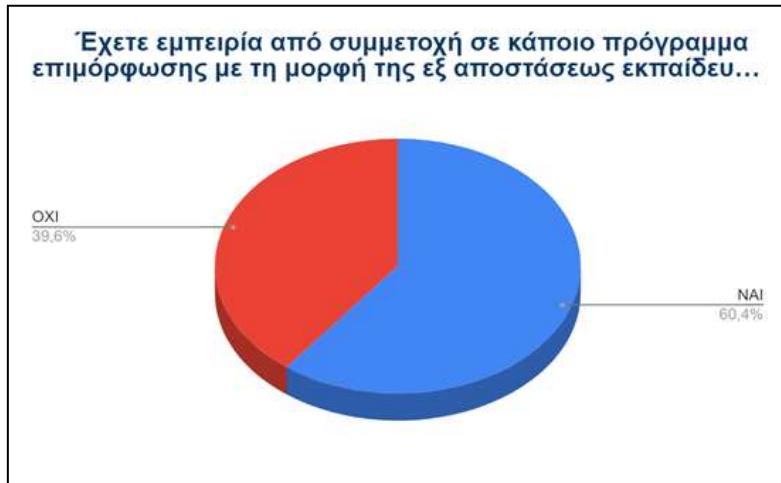


Figure 7: Experience in Distance Learning

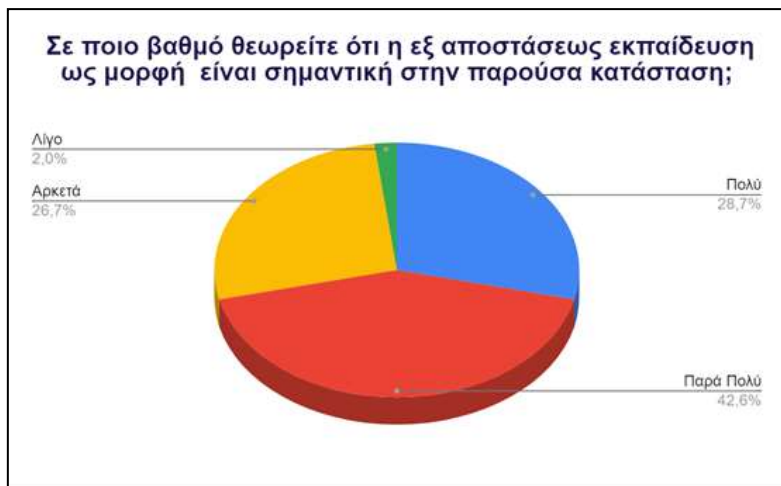


Figure 8: Importance of distance learning for the current state of COVID-19

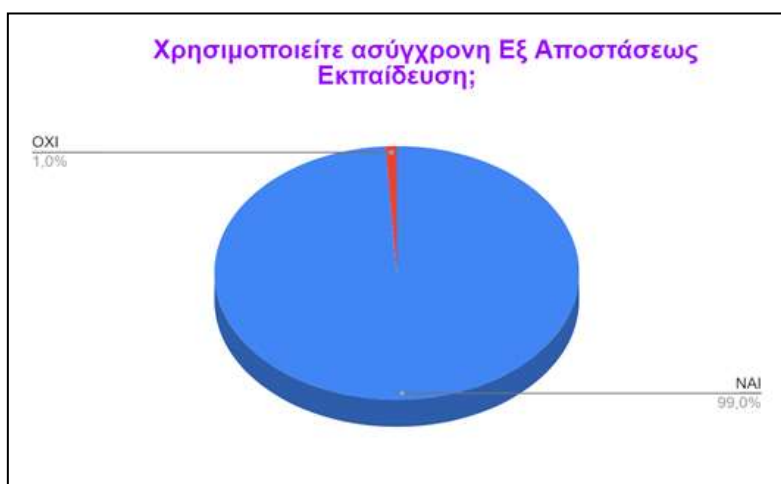


Figure 9: Asynchronous distance learning



Figure 10: What types of asynchronous distance learning they use

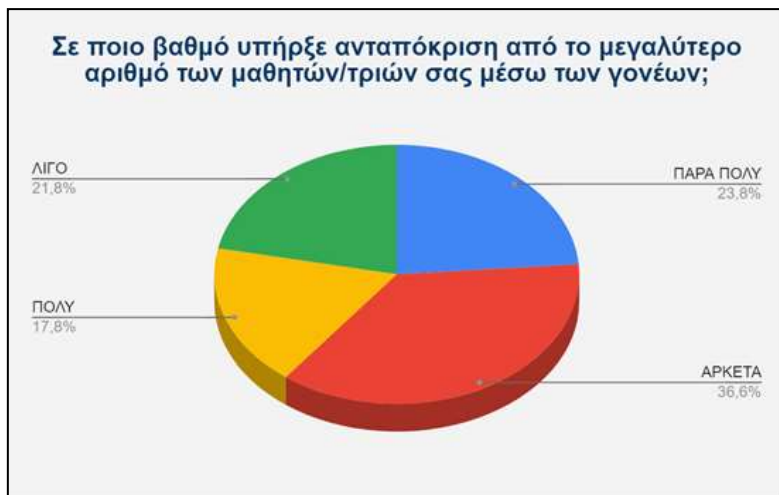


Figure 11: Corresponding of parents and children to distance learning

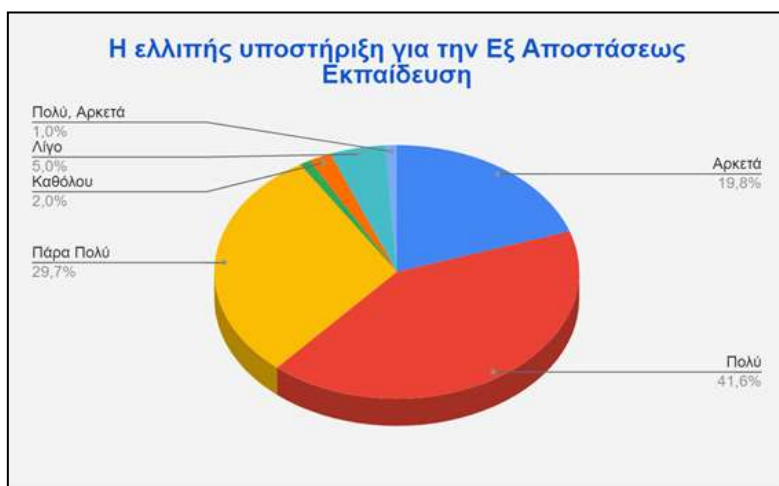


Figure 12: Difficulties in distance learning

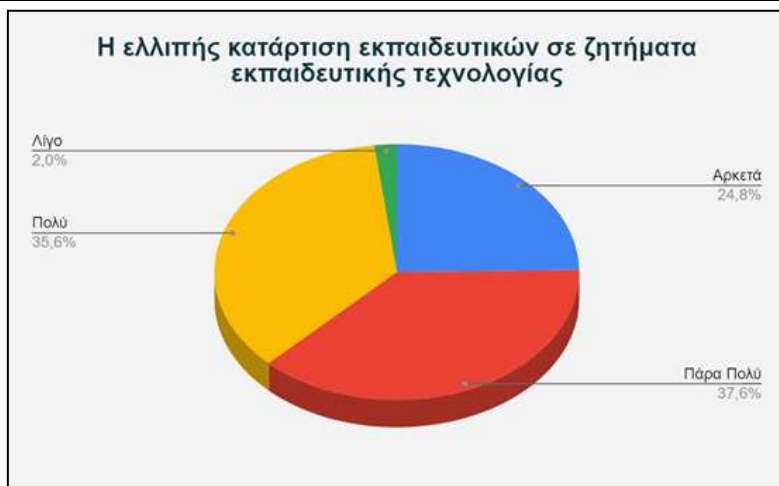


Figure 13: Lack of teachers training in the use of ICT technologies

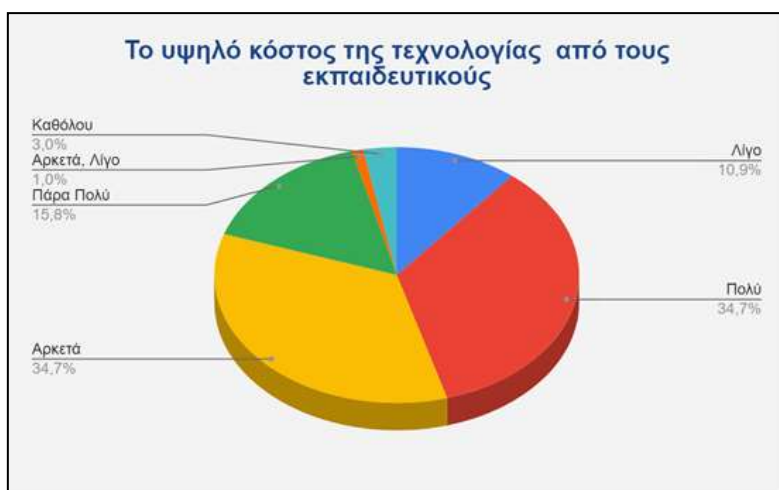


Figure 14: High cost of technology

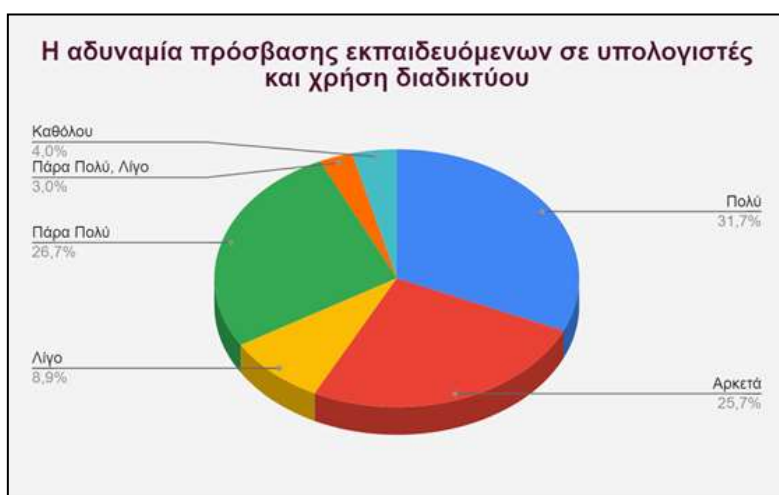


Figure 15: Inability of learners to access computers and internet



Figure 16: Disruption of family life by distance learning

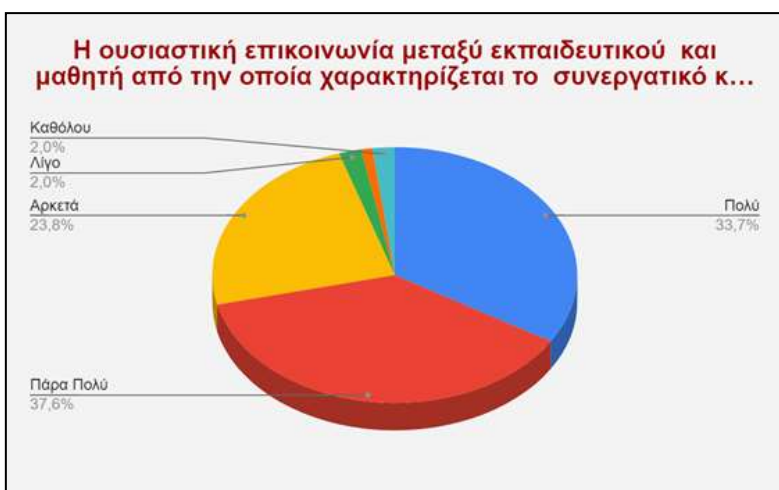


Figure 17: Lack of communication between the learner and the teacher

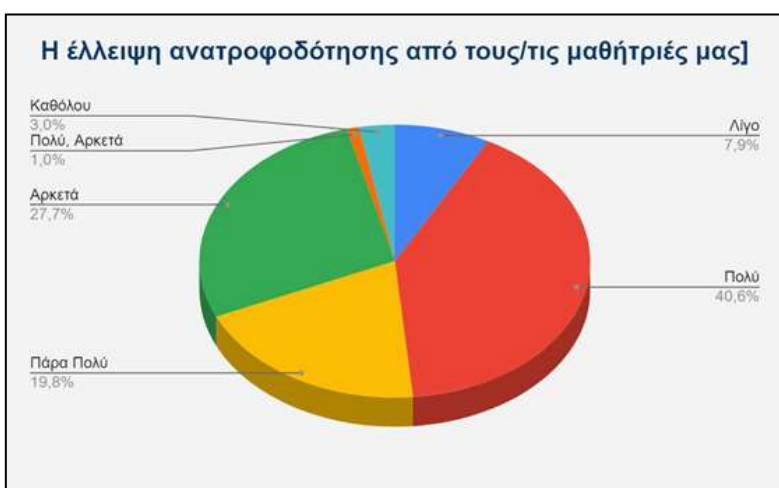


Figure 18: Lack of feedback from students

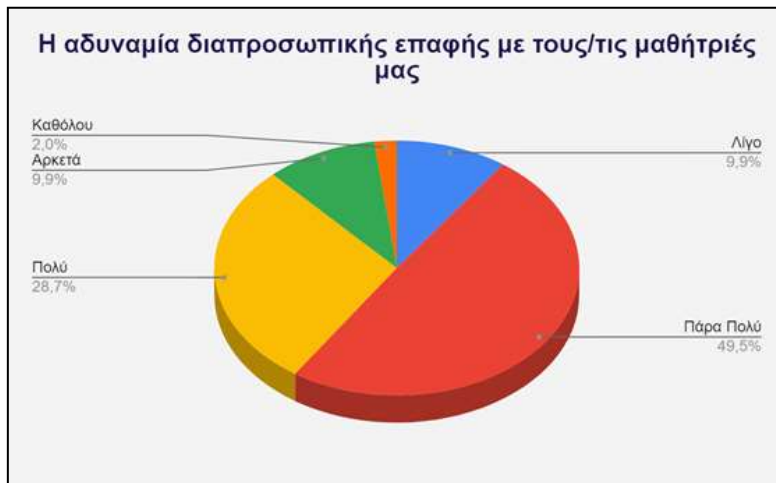


Figure 19: The inability to contact with students



Figure 20: The lack of educational material

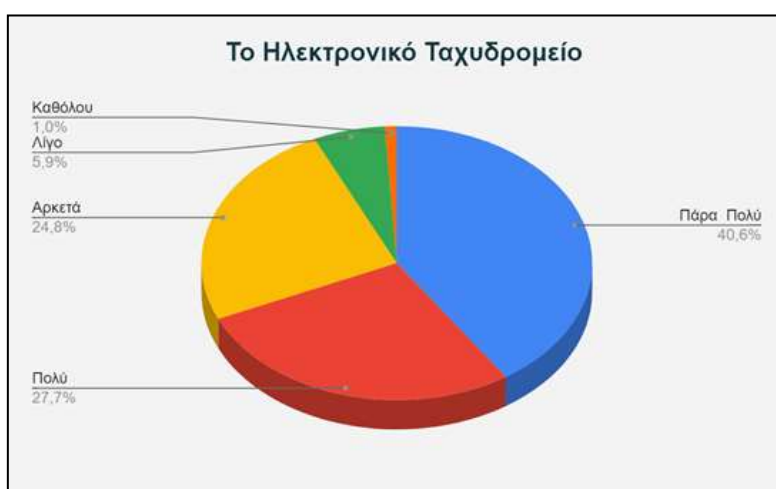


Figure 21: Use of email

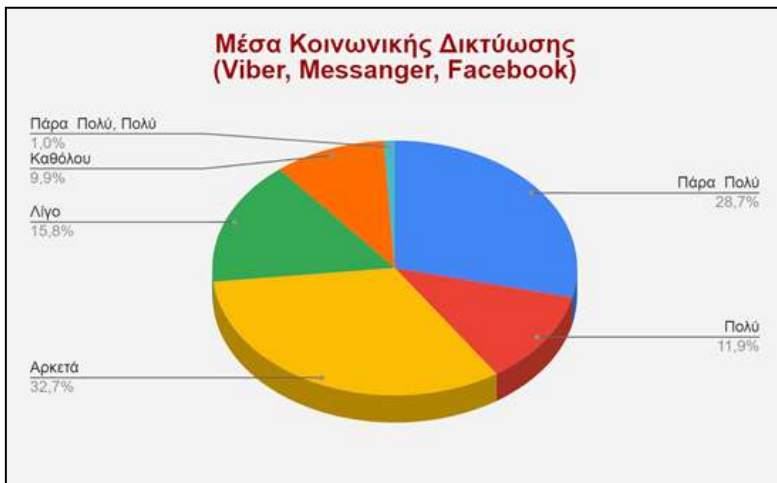


Figure 22: Use of social media

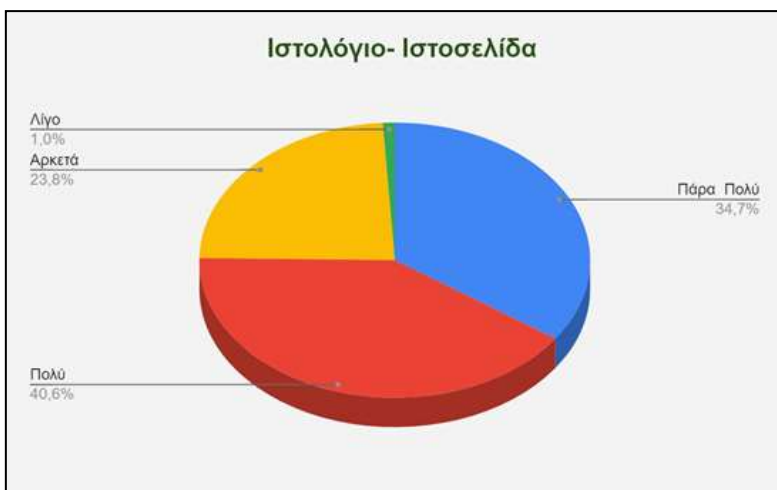


Figure 23: Use of Blog- Website



Figure 24: Use of eclass platform



Figure 25: Use of e-me platform



Figure 26: Use of Cisco Webex Platform



Figure 27: Use of Panhellenic School Network tools

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