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RESEARCH ARTICLE

Emergency remote teaching in Greece during the first period of the 2020 Covid-19 pandemic

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Abstract: During the first period of the covid-19 pandemic, schools in Greece suspended the face-to-face operation for about three months, and teachers were called in an emergency to adjust the teaching methods remotely. The educational community was called to deal with this emergency with the primary goal to maintain students' contact with the educational process. The urgent use of distance communication and teaching forms was a project with many difficulties for teachers, students, and parents. In all this transition process, the practice and learning communities that teachers themselves organized were crucial. The Greek eTwinning community immediately implemented three MOOC seminars (Mass Open Online Courses), which were designed to assist them in the use and pedagogical utilization of distance education tools. More than 30,000 teachers participated in these seminars. In this paper, we present the results of a survey conducted on a sample of 1080 Greek teachers, members of the eTwinning community, and we describe how they dealt with remotely teaching. The research refers to tools used, the distance communication content, and the difficulties encountered to implement the whole project.

Keywords: remote learning, teacher training, Covid-19

1 Introduction

The unprecedented conditions that prevailed during the Covid-19 pandemic affected the field of education too. Schools in Greece suspended the face-to-face operation on March 11, 2020, following a Ministry of Education and Religions (783/10-3-2020) and reopened gradually, per level of education, from mid-May 2020. Similar conditions prevailed in most countries of the world. According to UNESCO (25/3/2020), over 1.5 billion students and teachers were outside the schools' living operation (Tsinakos, 2020).

To maintain communication with students and continue the contact of children with the teaching process, both synchronous and asynchronous distance learning forms were adopted.

Teachers were called immediately, in an emergency, to adjust the teaching methods remotely. As Hodges et al. (2020) say, "the transfer to online teaching can allow the flexibility of teaching and learn anywhere and anytime, but the speed this transition took place was immeasurable." This project required using digital tools and resources and implementing new approaches to teaching and learning (König et al., 2020) without having the necessary preparation time.

American Universities attributed this type of distance education as "Emergency Remote Teaching" which has as primary objective "to provide temporary access to guidance and training support in order to be fast and reliable in the event of an emergency or crisis like this of COVID19" (Hodges et al., 2020). It "includes full use of remote teaching solutions for education which would otherwise be provided for return to life as soon as a crisis or emergency is suppressed" (Hodges et al., 2020).

Emergency Distance Learning, as applied during that period, does not correspond to organized distance learning as it is defined in the international literature. Organized distance learning applies mainly to adult education or school education in some countries with years, such as New Zealand, Canada, etc. (Manousou & Lionarakis, 2007). Many students complete their studies in these countries, both at primary and secondary education, using distance learning (Anastasiadis, 2017). The organized distance learning requires specially designed pedagogical material, different methodology, and design elements that did not exist at this stage.

The urgent use of distance communication and teaching forms was a project with many difficulties for teachers, students, and parents. The fact that it did not exist in the past, the lack of training, the lack of technological equipment, and not adequate know-how of those involved created several problems that made it difficult for the whole effort.

The challenges for teachers were unprecedented. Despite all the difficulties, "the educational community self-organized and began to find a new pace. In all this transition process, the practice and learning communities that teachers themselves organized were crucial" (Manousou et al.).

The issues of teacher training in digital technology use came again into the spotlight (König et al., 2020) because ICT fully determines distance education programs' nature (Sofos et al., 2020). Teacher education in ICT is highlighted as a priority, both in research and findings of international organizations and educational policymakers (Raptis & Rapti, 2000; European Commission, 2003; Dimitrakopoulou, 2004).

Because of the urgent need to support teachers, the Greek eTwinning community immediately implemented three MOOC seminars (Mass Open Online Courses), which were designed to assist them in the use and pedagogical utilization of distance education tools. More than 30,000 teachers participated in these seminars.

Due to the special condition, the material was freely accessible to all seminars without restrictions. Moodle platform was used for the implementation of the seminars.

After the seminars, we evaluated and investigated teachers' attitudes and difficulties during the distance learning period teaching through a digital questionnaire. The results we present in this article are of particular interest as they indicate how a sample of 1080 Greek teachers teach remotely during the crisis, the tools they used, the difficulties they encountered, and the contribution of eTwinning seminars regarding training and support in their work.

2 Distance teaching and learning

Distance education, including online teaching and learning, has been implemented for several years. Many research studies, theories, models, and evaluation criteria focus on online learning quality, online teaching, and online course design (Hodges et al., (2020)).

According to Rowntree (1998), "distance learning is that learning that takes place when teacher and trainee are at a distance, usually with the help of special teaching materials. The trainees are separated from the teacher, in space and time, but are still guided by him". Distance school education refers to primary and secondary education and is provided remotely to school-age students (Papadakis et al., 2017; Vassala, 2005).

The main features of distance education, according to Keegan (1980), are:

(1) Distance that separates the teacher from the learner, an element that differentiates distance to face teaching

(2) The involvement of an educational organization in the learning process, an element that differentiates this way of education from self-education and self-learning

(3) The use of technical means for the transfer of the content of education (printed materials, software)

(4) ensuring two-way communication between teacher and learner

(5) the possibility of meetings, both for didactic and social purposes.

In contrast to the threefold relationship of the trainer, trainee, and content that characterizes conventional education, distance education is shaped by a quadratic relation with axes the instructor, the trainee, the educational material, and the medium (Papadakis et al., 2018).

Manousou et al. (2020) argue that "distance education is an integrated training methodology, which, in order to be qualitative and effective, requires careful design from the first to the last step" and emphasize that "the properly designed for distance learning educational material is a prerequisite for its effectiveness."

Distance education is divided into two main categories in terms of time implementation:

(1) Synchronous: Instructor and trainees interact in a different space but at the same time. Synchronous education can include webinars via video conferencing with audio and/or video, discussions (group, chats), etc.

(2) Asynchronous: Instructor and trainees interact in different spaces and times. Asynchronous education may include communication and availability of study material through e-learning platforms, (electronic) correspondence, bulletin boards, and recorded or recorded messages.

Especially for distance school education, there are three basic forms:

(1) autonomous distance school education, which concerns integrated programs that are recognized and identical to the traditional education system

(2) supplementary distance school education, which operates in parallel and complementary to the traditional system and

(3) combined or mixed distance education (blended learning) that combines distance education with life meetings for communication between students and teachers (Vassala, 2005).

As mentioned above, during the pandemic, many teachers organized in practice and learning communities for supporting and training. ETwinning tutorials work with the framework and the structure of virtual practice communities.

The virtual community of practice consists of a group of people who work together and support each other online to achieve a common goal. The members communicate and share practices, beliefs, experiences, knowledge, problems, and interests (Kalogiannakis & Papadakis, 2007).

Wenger (1998) argues that "communities of practice are everywhere" and states examples of family, neighborhood, informal grouping workplaces, free time, associations, and societies.

According to Tzovla (2017: 65-75), "participation in them promotes building and rebuilds interpersonal relationships, reduces isolation, allows sharing educational resources and enhances critical reflection on teaching practices. All of the above contribute to the teacher's professional development, respond to the request of change and development, and help to adopt a more "open" culture, which largely allows for sustainable learning and publicizing the work of participants in a spirit of trust".

3 Educational material design: Content of the seminars

Learners who attend a seminar remotely are highly dependent on educational material. The educational material was created in such a way that (Kokkos, 2010):

(1) Guides the learner in his study.

(2) Promotes the learner's interaction with the material and activities.

(3) Explains difficult points and concepts.

(4) Evaluates and informs the trainee about his/her progress.

(5) Encourages and encourages the learner to continue.

(6) Allows the learner to freely choose the place and time as well as the pace of his study.

When designing educational material, we considered the trainees' knowledge using ICT, their available time, and the particular conditions that the educational community is located. Online courses focused on pedagogy utilization of synchronous and asynchronous distance learning platforms. We created three seminars to support teachers:

(1) The 1st seminar contains all the synchronous and asynchronous distance learning platforms that teachers are likely to use, communication and collaboration tools as well valuable tips for their use such as e-class from the Panhellenic School Network, eme platform, Edmodo, Google Classroom, TES Teach with Blendspace, WebEx, Lessons SCH.GR, Teleconferencing - Meeting, etc.

(2) The 2nd seminar contains the use of the asynchronous e-learning platform e-class used by most teachers.

(3) The 3rd seminar contains instructions for creating blogs on the Panhellenic School Network, which Kindergarten Teachers mainly requested because infants are very difficult to use the above and needed the blog to create material and update their parents.

The number of teachers who attended the eTwinning community seminars is the following:

(1) Seminar 1, Distance education - Communication tools - Collaboration tools:
https://seminars.etwinning.gr/course/view.php?id=4221
This seminar was accessed by 21956 unique users - teachers, based on IP.

(2) Seminar 2, Educational Communities & Blogs at blogs.sch.gr:
https://seminars.etwinning.gr/course/view.php?id=4222
This seminar was accessed by 3527 unique Users - educators, based on IP.

(3) Seminar 3, Electronic School Classroom (eclass.Sch.gr):
https://seminars.etwinning.gr/course/view.php?id=4223
This seminar was accessed by 9185 unique Users - teachers, based on IP.

4 Research objectives and methodology

The main objective of the research was to investigate how Greek teachers dealt with emergency remote teaching during the beginning of the Covid-19 pandemic. Primarily, we wanted to investigate:

(1) The digital tools they used
(2) The problems they faced
(3) The impact of eTwinning community seminars in their capabilities

The research was conducted by completing anonymous online questionnaires distributed after the end of the suspension of schools. The questionnaires were completed by 1080 teachers by 6 - 30 June 2020.

5 Participants

Participants in this study were 1080 primary and secondary school teachers of various specialties from all over Greece. All of them were eTwinning community members, and they had attended the eTwinning Greek Community seminars. (See Table 1, 2)

Table 1 Profile of participants

Teachers	Percentage
Nursery school teachers	16.3%
Primary school teachers	35.0%
Secondary school teachers	48.7%

Table 2 Age groups of participants

Age	Percentage
Up to 30	0.7%
30 - 40	10.4%
40 - 50	41.1%
50 -60	46.3%
60 and over	1.5%

6 Research restrictions

The sample cannot be considered representative of the entire educational staff of the country because:

(1) Teachers who belong to the eTwinning community have the experience of using and utilizing ICT for teaching and contact with some of the distance education processes.

(2) Many of them had already been trained through eTwinning seminars on using ICT in teaching practice, synchronous and asynchronous distance learning platforms, etc.

However, it is indicative of how Greek teachers addressed the needs of teaching and communication with students during the suspension of schools' operation.

7 Questionnaire results

The seminars, which were nationwide, were attended by teachers of primary and secondary education specialties. The majority of teachers were 40-60 years old. Most of the teachers had previously attended training seminars on the use and use of ICT. 66.8% had participated in the e-Twinning seminars organized in recent years, which seem to have helped them significantly in implementing urgent distance learning (56.7%).

7.1 Synchronous communication

Before the health crisis, synchronous e-learning platforms for teaching purposes were not expected, as 83.6% of respondents did not use them.

During the crisis, 81.6% of respondents to the questionnaire used video conferencing platforms for synchronous communication with students.

The vast majority of teachers used Webex meetings (83%).

To the question what were the uses of synchronous communication during the crisis, the answers were (Figure 1):

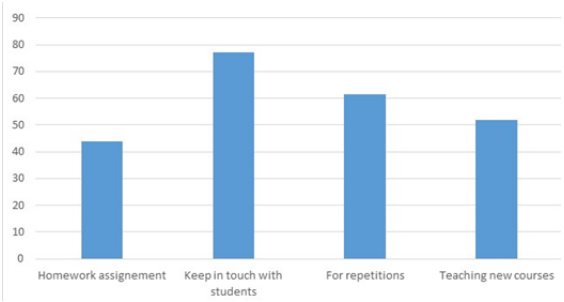

Figure 1 Uses of synchronous communication during the first period of the pandemic (multiple answers accepted)

7.2 Asynchronous communication

Regarding asynchronous communication, before the crisis, 32.8% used asynchronous communication platforms, while during the pandemic, 92.2%.

When asked which asynchronous communication platform they used, most answered the eclass (Figure 2).

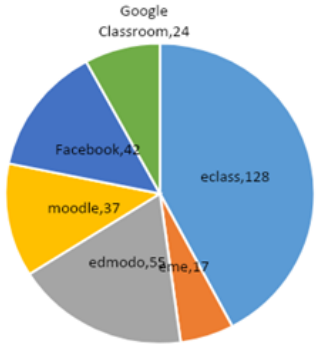

Figure 2 Which asynchronous communication platform was used

Before the pandemic, they used email to communicate with students at a rate of 35.3%, to assign tasks 21.3%, or teach new courses 3%. During the suspension of schools (Figure 3):

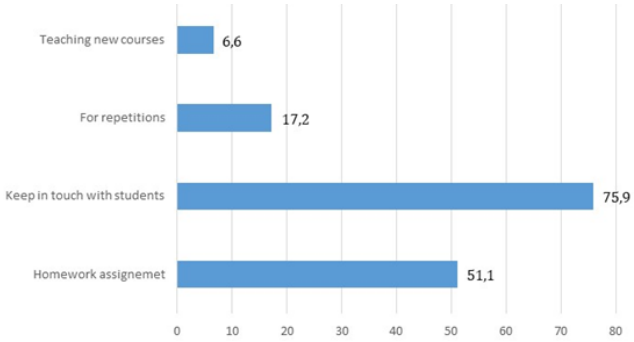

Figure 3 Uses of email (Multiple Answers Accepted)

The percentage of those who used a personal website or blog for educational use during schools' suspension was 46.2%.

Before the pandemic, most used asynchronous communication platforms assigned tasks (64.7%) or to communicate with students (55.6%), 34.9% for repetitions, and 17.2% for teaching new courses.

During the crisis, the percentages for all categories increased (Figure 4):

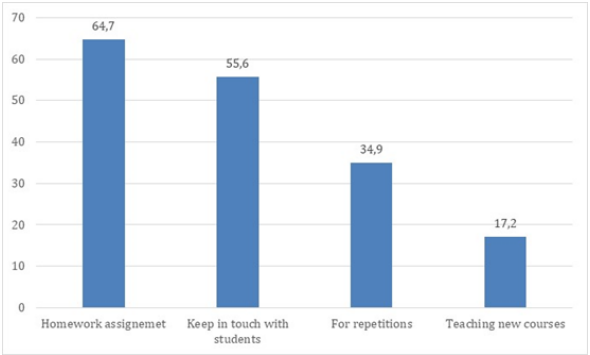

Figure 4 Uses of asynchronous communication during the first period of the pandemic (Multiple answers accepted)

7.3 ICT tools and applications used

Which ICT tools or applications did you use before and which during the crisis? (Figure 5)

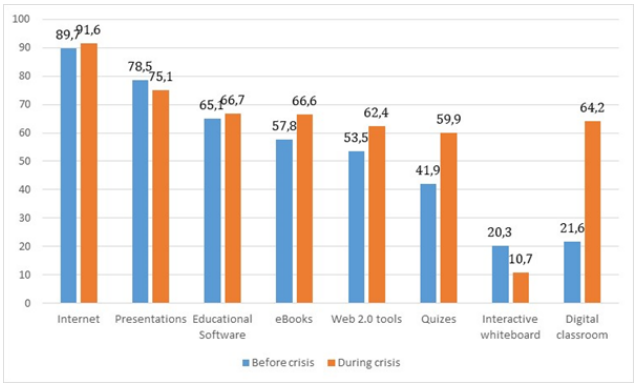

Figure 5 ICT tools and applications used during the pandemic (Multiple answers accepted)

7.4 Evaluation of teachers' participation during distance teaching

The answers to the question what the most significant problems they encountered during distance learning were the following (Figure 6):

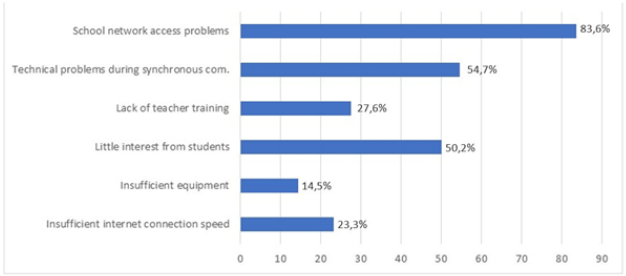

Figure 6 Problems for teachers during remote learning (Multiple answers accepted)

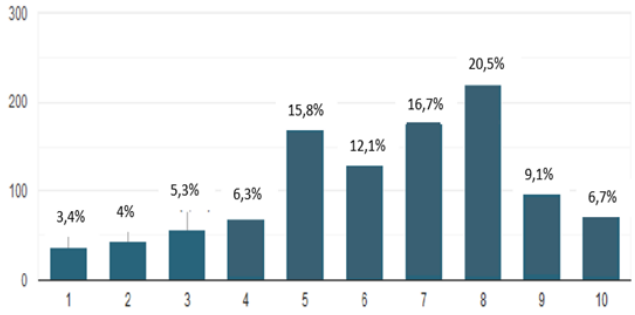

Figure 7 Level regarding the use of ICT for teaching pre-crisis courses (1: poor – 10: excellent)

When asked where they would place themselves, before the pandemic, regarding the use of ICT for teaching courses, the majority answered (Figure 7) in an average (27.9%) to a good level (37.2%).

After the pandemic, the percentages changed significantly, and in a significant percentage, they place themselves at a good (42.9%) to excellent (40.2%) level (Figure 8):

Regarding the tools that teachers will continue to use in the context of living teaching after the pandemic (Figure 9)

The teachers who participated in the research believe to a large extent that they managed to support the students during the emergency period (Figure 10).

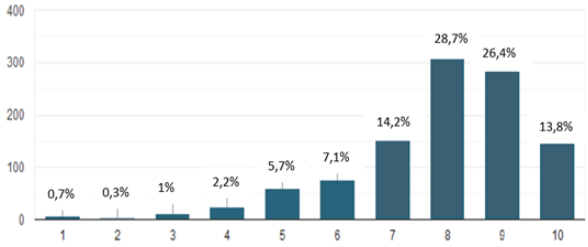

Figure 8 Level regarding the use of ICT for teaching pre-crisis courses (1: poor – 10: excellent)

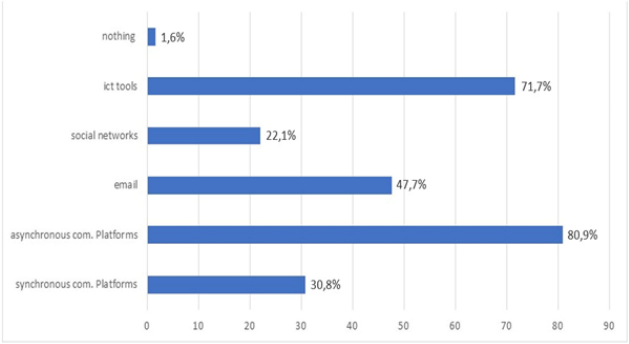

Figure 9 Tools that teachers will continue to use in the context of living teaching after the pandemic

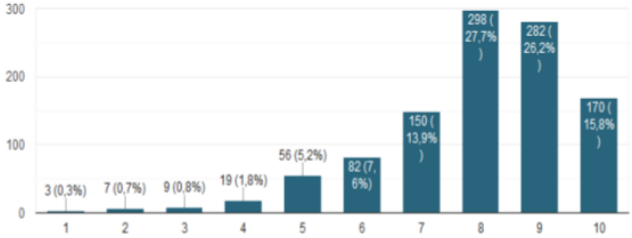

Figure 10 Do you think you managed to support students during the emergency distance learning?

7.5 Students' participation

Regarding the reasons that prevented the students from watching the actions of the teachers during the distance education, the answers (1,068 answers) were the following (Figure 11):

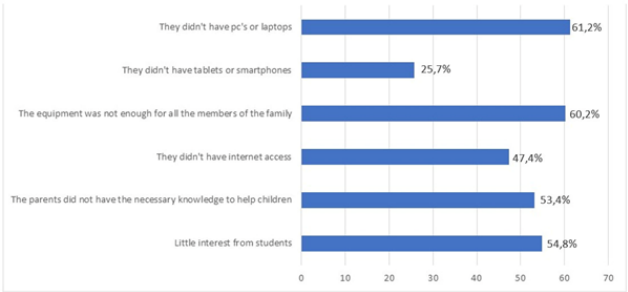

Figure 11 Why did students not participate in distance learning?

8 Commentary on the results

Teachers in Greece and worldwide were called upon to face an unprecedented situation without the necessary preparation and training and with many problems as lack of technological equipment in infrastructure and networks. Nevertheless, they tried to keep the students in touch with the teaching process, and as it appears from our research, the majority of the respondents believe that they were able to support the students significantly during the pandemic period.

They used video conferencing platforms for synchronous communication and asynchronous distance learning platforms to support remote teaching and learning. They also used email as it was the simplest way to communicate with students and parents.

There were many problems regarding the adequate equipment of families and teachers. This created several difficulties in the remote teaching process, with the result that there are no equal learning opportunities for all children. The questionnaire shows that a part of the students did not participate in the distance education processes because they did not have the appropriate equipment. For many students, there was equipment, but other family members used it. As in other research findings (Andrew et al., 2020; Green., 2020), it seems to be a significant problem of remote teaching. Unfortunately, for some disadvantaged children, the lockdown learning experience appears to be essentially minimal.

Regarding the problems that teachers faced during the crisis, the biggest problem was the issues related to access to the services of the Panhellenic School Network and the technical problems of synchronous e-learning.

Another problem teachers faced was that there was not enough interest on the part of students and that parents did not have the necessary know-how to help their children.

Teachers' involvement in distance learning processes seems to have significantly improved the level of know-how and the acquisition of digital skills, which was an essential contribution of emergency remote teaching. While initially, they placed themselves, in terms of using ICT for teaching courses, on average to a reasonable level, after the pandemic, they consider that they are in good to an excellent level. They have significantly improved their use of distance education tools.

The teachers tried to train for the needs of remote teaching attending the seminars that took place. The eTwinning seminars helped them to overcome the difficulties of synchronous and asynchronous remote teaching. They also believe that these seminars were held at the right time and that the six-month eTwinning seminars they have already attended have prepared them enough for the pandemic's needs.

9 Conclusions

In general, the emergency remote teaching during the first phase of the COVID-19 pandemic in Greece, as expected, encountered several difficulties. The teachers tried to keep in touch with the students and the contact with the teaching process, and they succeeded to a great extent even though they were not prepared to face a similar situation. The quality of the education provided and the impact that abstinence from lifelong teaching will have for students remains to be studied in the future.

The state should take all necessary measures so that the education is ready to face similar crises. No child should be left out of the educational process, and everyone should be provided with equal opportunities for education and training. The issue of technological equipment for schools, teachers, and families must be given priority. This is suggested by other researchers too (Green., 2020).

The results of most surveys are in line with ours. Other research also highlights the technical problems that arose, the difficulties encountered by teachers, the gap created between children who had the necessary equipment and those who did not, and the uncertainty about the success of the teaching process (Andrew et al., 2020; Green., 2020; Aliyyah et al., 2020; Carrillo & Flores, 2020).

Teachers' training for the use of ICT in the teaching practice and the digital literacy of the society are also issues that the competent bodies should give particular importance. The eTwinning seminars that have helped significantly in this crisis time will continue to work in this direction.

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