



## The effectiveness of distance learning in the Greek educational system: An exploratory study

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### ABSTRACT

The aim of this work is to register the views of university students regarding the advantages and disadvantages of distance learning, a teaching method applied in a compulsory and universal way to all levels of education in Greece, but also all over the world, due to the Covid-19 pandemic crisis. The students who participated in the exploratory study also expressed their views as to whether and to what extent online teaching can replace in-class teaching in the three levels of education. The reason why it was considered important to record the views of the students was that during one academic semester (February 2020 – June 2020) they attended all their courses initially in person and subsequently over the Internet. This was thought to be of great importance because the comparison between traditional and online teaching was immediate and meaningful, as they attended both forms of teaching in succession.

**Keywords:** *Distance learning, e-learning, tertiary education, covid-19*

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### INTRODUCTION

Distance learning has a long history in education, initially in a hybrid form that included correspondence courses (stenography in 1728, foreign languages in 1840, etc.). The term *Distance Learning* was used for the first time in 1892 by the University of Wisconsin-Madison in USA [1, 2]. Since 1918, and following the course of technological changes, many universities have been offering distance education and granting recognized degrees. Today, distance learning takes place almost exclusively in an Internet environment.

In Greece, undergraduate and postgraduate distance education begins in 1997. The big universities of the country gradually implement pilot programmes offering educational services and material over the Internet, providing supplementary teaching and virtual classroom programmes, while also introducing the teaching of courses over the Internet [3].

It is widely accepted that online teaching is a form of distance education that often complements formal education, and proves very useful in cases of numerous students, training, customization [4], remote areas[5], working students, adult education [6], disabled people [7], and so on.

On the part of the teachers, the implementation of distance learning programmes requires time, training in the use of technologies [8], adaptation of traditional teaching methods and course material [9], proper and comprehensive planning with respect to the interaction between teacher and student [10], clearly formulated teaching goals, properly designed educational content [11], familiarisation with student evaluation methods. Therefore, in distance learning, educators must be able to understand the characteristics and the needs of the remote student without the benefit of interaction afforded by physical presence, and diversify and adapt their teaching method to the needs and expectations of their students. Furthermore, they must be able to improve their digital skills while staying close to their educational role, modifying the teaching method rather than the course subject matter [12].

Distance education comes with shortcomings, such as the very fact of the remoteness of teaching, which mainly concerns the disassociation between student and teacher, or in other words the loss of the physical classroom [13]; this can have significant psycho-social consequences for the students. However, despite the shortcomings, various research has shown that students are more likely to actively participate and cultivate critical thinking when engaged in distance teaching. Furthermore, it would seem that communicating over the Internet brings benefits similar to those of in-person communication among peers, and is often more democratic and egalitarian [14,15,16,17 &18].

Until about two years ago, the option of distance education was used either as a complement to formal education or in adult learning programmes. However, since March 2020, the global pandemic crisis of Covid-19 has forced nations all over the world to adopt distance learning over long periods of time and in all levels of education, doing it in an

atmosphere of insecurity, fear and isolation [19,20,21 &22]. In Greece as well, online teaching was adopted at about the same time (March 2020). Specifically, it started immediately at universities with the technical infrastructure and a body of educators and students who owned the necessary technical equipment. Primary and secondary education followed almost a month later, struggling with numerous problems related to the technical infrastructure of schools and the ownership and use of electronic devices by teachers and pupils. Online teaching in the first two levels of education was unprecedented, being a practice that had almost never before been used in the Greek public educational system up to that point. Teachers were largely unprepared for it, while students and their parents were sceptical.

The present study, which could be described as an exploratory study, involves registering the views of university students who attended distance learning courses, with the aim of exploring the effectiveness of this teaching method, the problems that emerge, and the way of solving them.

## 1. Organization and presentation of the survey

The present survey was carried out with 66 students (39 females and 27 males) attending the 6th and 8th semester at the Department of Economics of the University of Macedonia. The reasons that led to this choice of survey sample are the following: (a) Classroom teaching was necessarily interrupted and replaced by online teaching due to the Covid-19 pandemic crisis, hence students could form an opinion about the difference between these methods and the quality of teaching; (b) students in tertiary education are more familiar with the use of a computer compared to students in primary and secondary education (this greater familiarity comes from the possible attendance of seminars, events, etc.; the research of bibliographical sources in libraries; communicating with students abroad through various platforms; and so on); (c) it was the level of the educational system that started online courses immediately, following the exact same course schedule as with classroom teaching; (d) the participating students came from various cities, mainly of northern Greece, so they did not have a permanent residence in the city where the university that they were attending is located; (e) they attended a university department offering courses in social sciences and humanities but also in mathematical sciences (mathematics, statistics); (f) the author teaches the survey participants. The survey methodology was by interview via a written questionnaire containing four open-ended questions along the principal subject lines of the survey. The completion time of the questionnaire was 30-40 minutes.

The survey stages can be summarized as follows:

- Presentation of the survey subject to the students,
- Online discussion with the students about the subject under investigation,
- Initiation of a debate among the students to exchange views and arguments,
- Discussion of the questionnaire with five students,
- Finalisation of the principal subject lines of the questionnaire,
- Electronic collection of the completed questionnaire,
- Study of the material and thematic organisation,
- Organisation and formation of categories and sub categories of answers,
- Presentation of the collected material on the basis of report frequency, report emphasis, and the uniqueness of certain answers. The presentation of the findings is done according to the selected categorisation to facilitate the identification of trends.

The aim of this survey is to register the views of the participating students regarding (a) the advantages and disadvantages of online teaching, and (b) the extent to which distance learning can replace classroom learning.

### 1.1. Advantages and disadvantages of distance learning

This section presents the advantages and disadvantages, as evidenced from the participants' answers. A quote is provided in each case in order to substantiate the survey findings.

#### 1.1.1. Advantages

The advantages, as recorded by the students, will be presented below in broad categories according to the number of student answers mentioning them in order of decreasing frequency. The subcategories, such as formulated by the participants, will be presented within each of these broad categories.

- Fewer commutes – Less commuting time (51 out of 66 students or 77,27%)
  - a) Affords more free time, which can then be used for other activities: *“Gives more free time to students and professors.”*;
  - b) The daily commute to the universities creates stress for arriving on time;
  - c) There are many problems with public transportation (too few buses and lack of underground railway) which cause, to those reporting this problem, a feeling of discomfort and psychological pressure until they arrive at the university: *“... it helps with the timely arrival without stress and without problems with public transportation.”*;

- d) Comfortable attendance from home: *"I attend class in my pajamas, I can drink my coffee, I wake up 10 minutes before class and not an hour and a half earlier to be able to make the commute on time."*
- Easy access and easier attendance (50 out of 66 students or 75,75%)
    - a) It helps residents of remote areas: *"Enables the education of people from remote areas."*;
    - b) It gives persons with impaired mobility due to illness, accident, etc. the possibility to attend: *"Enables the education of disabled people who cannot be physically present at school or at the university."*;
    - c) It eliminates the expenses incurred by the families of students who live in a different location from that of the university (rent, moving expenses, meal expenses, etc.): *"Distance learning offers big savings because board expenses are avoided.."*;
    - d) Classes are held even in cases of unforeseen circumstances such as adverse weather conditions, strikes in public transportation, school occupations, etc.: *"... it has occurred to me to spend an hour to get to school and the lecture was cancelled, in teleconferences I lose neither time nor effort"*;
    - e) It enables the attendance of international programmes and other studies (post-graduate, training and specialization programmes) by seniors, working persons, mothers, and persons with mobility or other problems: *"it is good for those working and unable to attend classes."*;
    - f) It helps safeguard health (not only during the current pandemic crisis but generally, even for simpler winter-time infections): *"In this way we do not put at risk the health of our fellow human beings."*
  - Promotion of modern educational practices through the use of new technologies (21 out of 66 students or 31,81%)
    - a) Familiarisation with the use of software applications and programmes related to teaching material, expansion of the use of digital libraries and digital sources;
    - b) Improvement of skills in the use of technology: *"Students and educators become familiar with technology and the use of computers, learn new skills, become more flexible."*;
    - c) Encouragement of personal learning pace and student self-motivation: *"the choice of pace, time and place of learning [is done] by the learner."*;
    - d) Programme flexibility;
    - e) Access to teaching material at any moment (possibility to repeat what was taught, to store material on the computer thus reducing the stress of taking notes): *"The course is available almost at any moment and anywhere, and makes it very accessible to more learners."*
  - Better teaching conditions in the digital classroom (18 out of 66 students or 27,27%)
    - a) Reduction of background noise, since those attending cannot talk to each other or in groups as in a "live" classroom: *"It is easier to follow the professor without the noise that is usually present in amphitheatres."*;
    - b) Facilitating shy students, pupils, etc. to ask questions or to participate more actively in the learning process: *"Many students are too shy to ask their questions and to express their opinions in front of their classmates. This is avoided with distance teaching."*;
    - c) Possibility of participation for a larger number of students (a solution to infrastructure problems such as too few or too small amphitheatres): *"Distance learning can be good for crowded sections because the educator can teach a lot of material in a very short time."*
  - Possibility to invite speakers either from abroad or from elsewhere in the country (11 out of 66 students or 16,6%)
 *"An advantage is [having] invited speakers who would otherwise not be able to embed themselves in conventional teaching hours."*
  - Reduction of educational expenses 9 (out of 66 students or 13,6%)
    - a) Equal educational opportunities: *"... persons from different social, economic and cultural backgrounds can participate in the learning process."*;
    - b) Solution to the problem of teacher unavailability in remote areas since the teachers would not have to move to a remote area in order to teach there but would be able to do it from their place of residence: *"... solution to the problem of teacher unavailability in places where the physical presence of the teacher is impossible."*

### 1.1.2. Disadvantages

Quoted below are the student views related to the disadvantages that they identify with distance learning.

- Conversion of personal space to a work environment (54 out of 66 students or 81,81%)
 *"Conversion of personal space to a 24-hour learning environment and decrease of precious free time."*

- Alienation-Isolation-Nonexistence of interpersonal relations (53 out of 66 students or 80,30%)
  - a) Change (for the worse) in the relations between educators and students since there is no “live” interaction: *“Absence of physical communication and interaction between students and educator.”*;
  - b) Teaching becomes an impersonal process: *“... the passion that an educator can instill in the learners is not there.”*;
  - c) Issues with the socialisation of students, the development and cultivation of social skills: *“The socialisation of students is slowed down because they do not mingle with people from their school or university environment.”*;
  - d) Teacher-centred form of teaching, lack of counter-arguments or debate;
  - e) Difficulties collaborating on assignments, etc.: *“There is less collaboration and direct dialogue among students but also between educator and student.”*;
  - f) Technical problems
    - i) *“There are many connection problems... not just for the remote areas.”*;
    - ii) Inability to connect;
    - iii) Problems due to a “bad” connection;
    - iv) Problems with sound and video.
  
- Problems in the learning process from the educator perspective (50 out of 66 students or 75,75%)
  - a) The educator has no visual contact with the students, and therefore cannot monitor their reactions and adapt his or her teaching (by slowing down or speeding up on the subject matter, piquing the students’ interest, etc.): *“Difficulty on the part of the professor to apply the teaching methods he or she would use in physical space, and difficulty to identify the personal weaknesses of the students.”*;
  - b) Increased time and effort for course preparation (create a presentation, upload the teaching material, communicate over email, etc.): *“Increased duties and obligations for the professor... more time for the preparation of the next lesson, creating and updating of teaching material, and communicating with the students via email.”*;
  - c) The educator must acquire many digital skills that they may not have: *“Some students and professors may not be knowledgeable about technology, and therefore may not be able to use it, thus bringing about difficulties in attending the lesson.”*;
  - d) Inability to take advantage of body language: *“The educator loses the ability to recognize whether the lecture is being successful... since he or she cannot read the body language of the students.”*;
  - e) Problems with student evaluation – Often “cheating” during examinations: *“The professors do not have absolute control over the students, because students can “cheat” at any time.”*;
  - f) Problems with illegal video-recording, copying or reproduction of teaching material: *“Possibility of illegal recording and distribution of instructor material and not protection of intellectual property rights.”*;
  - g) Problems with the security of personal data: *“There is a question of personal data security (recording of transmitted video, plagiarism, etc.).”*
  
- Problems in the learning process from the student perspective (28 out of 66 students or 42,42%)
  - a) There is a higher likelihood of being distracted by events happening at the student’s home during class: *“With online classes, even a student who always attends class with full attention can easily be distracted... from a neighbour’s noise, public works, discussions inside the house.”*;
  - b) More “boredom” because there is no visual contact with the instructor, there is no interaction and no communication with fellow classmates: *“Beyond a certain point it becomes boring to sit in front of a screen and attend class.”*;
  - c) Decreased interest due to decreased participation on the part of the student, the slower course pace, etc.: *“There is less collaboration, creativity... I am “in” but I do not necessarily pay attention.”*;
  - d) Too much time spent by the student in front of the screen: *“Many of my fellow students have headaches, dizziness, and I [had to] put on glasses since I started sitting for so many hours in front of the computer.”*;
  - e) Problems dealing with questions (too shy to ask, incomplete answers taking longer to obtain): *“The instructor cannot use the blackboard and other means at his or her disposal to answer questions.”*;
  - f) Reduced effectiveness and reduced quality of education – Neglect of moral and intellectual development: *“Course effectiveness is reduced.”*;
  - g) Possibility for parents to attend class, who may then intervene or draw wrong conclusions about the educational process, the communication, etc.: *“If a parent hears at some point the instructor making a joke, he or she could draw the wrong conclusion that the instructor does not teach the lesson but wastes the students’ time.”*;
  - h) Absence of competition among the students: *“The motivation that comes from contact or competition among the students does not exist in distance learning.”*;
  - i) Slowing down of the lecture pace: *“Not everyone knows how to use electronic devices... This delays the course.”*;
  - j) Problems in the student’s environment, whether due to siblings simultaneously attending another class or parents working from home: *“I have five siblings, the four of us are students/pupils, and my father is a teacher. How can a family like mine meet everyone’s learning needs?”*
  
- Increase of social inequality (22 out of 66 students or 33,33%)

- a) Inability or high cost of acquiring digital equipment: *“Requirement to obtain hardware that neither the student nor the teacher can afford.”*;
- b) Exclusion of pupils/students who are unable to afford an Internet connection: *“There is a risk of exclusion due to economic factors, some students do not have access to either a computer or the Internet.”*

From the above presentation of positive and negative aspects of distance learning, as expressed by the survey participants, two issues gathering exactly opposite views stand out.

The first issue concerns the question of social equality or inequality of the learners. Those who consider that educational inequality decreases focus on the decrease of family expenses related to renting a home for their children when they have been admitted to a university located away from their place of residence. They also believe that people with various health or mobility issues can attend classes on an equal footing with the rest. On the other hand, those students who consider that educational inequality increases concentrate on the difficulty of acquiring the appropriate technological devices (due to their high cost) or on the difficulty, or even inability, of many families to have an Internet connection. The latter may be due to either the limited financial means of the family or to a deficient technical network at their place of permanent residence.

The second issue on which the respondents expressed diametrically opposite views concerns, interestingly, the participation of the shier students in the learning process. Some students believe that the absence of visual contact encourages those who have difficulty exposing themselves to a live audience, to ask their questions. However, other students argue that it is harder to ask questions in an online class because all participants can see who is the one asking the question, and therefore the feeling of shame is exacerbated.

An important finding from the participants’ answers concerns the physical presence of teachers and learners. In the opinion of several respondents, although distance learning frees up time otherwise spent on commuting, and creates better class-attendance conditions from home, it also has the effect that classes become slower-paced and boring, personal relations are lost, and, in the end, the effectiveness of education is diminished.

## **1.2. Replacing in-class with online teaching**

Concerning the second survey dimension, about the extent to which online teaching can replace in-class teaching, the respondents were asked to express their views separately for each level of education. Approximately half of the students (29 out of 66) replied that in none of the three levels of education can online teaching replace in-class teaching. Specifically, all participants responded in the negative regarding primary education. The main arguments why online teaching cannot replace in-class teaching is that young children usually create strong ties with their teachers and their classmates. Furthermore, it is certain that they need parental help to carry out the requisite “digital” actions, something no doubt simpler for adults and teenagers to do. Also, the survey participants believe that young children should not stay put in front of a screen for many hours as this creates problems with the development of their social skills as well as with their psychological development. Worth noting as an aggravating factor for children up to the age of 12 is that online teaching deprives them of physical activities, including playing, the latter being particularly important for them.

Regarding secondary education, approximately half (29 out of 66) of the participating students conclude again that in-class teaching cannot replace online teaching. However, they note that teenagers are much more familiar with the use of computers and gain free time. But the need to develop interpersonal relations between adolescent students is again emphasized by the survey participants. Furthermore, attending classes in person reinforces active listening, the exchange of views, student competition, all these being extremely crucial elements considering that the educational process, especially in senior high school, focuses on student preparation for admission to tertiary education. Only 4 participants replied that, given the pandemic crisis afflicting humanity, online teaching could perhaps be used, in a support capacity, in the educational process. Another 4 participants were favourable to the idea of replacing in-class with online teaching mainly for humanities courses. *“Humanities courses, which are largely taught in the form of lecture and, therefore, involve minimal to no interaction between instructor and student, could be replaced by distance teaching.”*

Concerning tertiary education, 29 out of 66 participants answered that replacement is not possible, as mentioned earlier. However, the opinions of more than half (36 out of 66) differed significantly. In their answers, they argue that under certain conditions replacement is possible, and sometimes necessary. The conditions cited by the respondents are: (a) Periods of pandemic crisis such as the one that we are currently experiencing, (b) health reasons that prevent someone’s physical presence in the amphitheatre, (c) student obligations that make physical attendance significantly harder for them (working students, senior students, etc.), (d) living and moving expenses for students attending universities located far from their family’s place of residence, (e) the nature of courses (humanities courses), and (f) reducing the number of those who abandon their studies due to one of the above reasons. They also note that university students are familiar with technology and use it comfortably and without problems, that they are mature (compared to adolescents) so as to not create problems during online teaching, and that they make a conscious decision as to whether or not they wish to attend a class when it is not mandatory. Furthermore, they believe that with distance learning it would

be much easier to undertake postgraduate and doctoral studies. Some also mention that there is no socialisation benefit to a university student from interpersonal communication because their personality and value system have already been moulded. At the opposite end, some others mention that their physical presence in class gives them the possibility to communicate in a meaningful manner with everyone involved in the educational process; with their fellow students “to talk about common interests and to exchange views and experiences,” and with the instructors to get immediate answers to their questions and attend a higher-quality lecture: “The lecture is more effective because there is a direct contact between the professor and the students, and through the tone of his voice and the emphasis that he places on certain points, he helps them to remain focused on what they are doing.”

## 2. SUMMARY AND DISCUSSION OF THE SURVEY CONCLUSIONS

The analysis of the recorded answers shows that most of the participating students, when comparing in-class to online teaching for the same course and during the same semester, have a positive view for the latter, and not just as an emergency solution during the pandemic crisis. The main advantage, as they see it, is the reduced cost of studying in a city away from their family’s place or residence, a cost that is significant or even prohibitive for the budget of many families. At the same time, almost all participants recognize the social value of interaction both between educators and students/pupils and among the students/pupils themselves. Those among the participants who reject online teaching, focus in equal parts on (a) the protection of the personal data of educators and students/pupils, (b) the protection of the educators’ intellectual property rights, and (c) the loss of meaningful contact, interactions and the fermentation of ideas that take place at the university or school when those involved in the learning process are physically present.

Distance learning as an emergency solution during the international health crisis seems to have become accepted by society as a whole, despite problems. Nevertheless, there are some basic issues that arose from its use. Perhaps the most basic problem that was identified concerns the proficiency in the use of digital devices by educators and learners. In what concerns the educators of all levels, there must be periodic training, since technology constantly evolves. When an adequate technical competence exists, it is possible to complement the traditional in-class education with asynchronous teaching, which will mainly involve supplementary teaching material. Asynchronous teaching is not common in Greece, least of all in the primary and secondary education. It may be hoped, then, that the mandatory (and within such a short time frame) training in the use of various software applicable to teaching will have a positive impact on the learning process.

As far as learners are concerned, online class attendance has apparently improved their technical skills. This could become an advantage, especially in secondary education (in what concerns homework assignments, the search of sources, or the online collaboration with classmates and teachers), where the use of computers in the learning process lags considerably compared to other countries.

A second important issue that emerged during the period of online teaching concerns the equipment necessary for distance learning to work smoothly. There was a serious problem with the adequacy of Internet connections, both at school units and at students’ homes. The telecommunications network is problematic in many areas of Greece, especially in remote areas but also in the islands. For this reason, Internet connections were an almost daily headache for educators, pupils/students and parents. Network overload or a weak signal became major hurdles during teaching. Another serious problem for the Greek family was the acquisition of a second (or more) computer(s) if two or more children from the same household were attending online classes, while often parents were teleworking as well. The combination of the above two problems, i.e., the inadequate technical equipment and the problematic telecommunications network across the country, including in urban areas, highlights the important issue of equality among pupils and students. There are two principal dimensions to this issue. The first one concerns the financial capacity of families to provide their children with appropriate technical equipment, and the policies adopted by the government in that respect. The second dimension concerns mainly the secondary education, where children confronted with the aforementioned problems lag behind in terms of quality and effectiveness of the educational process in comparison to their classmates.

Irrespective of the positive and negative aspects of distance learning, its compulsory and universal application to all levels of education for prolonged periods of time is a new condition that the educational community must face all over the world. It is necessary to conduct many and bigger surveys to better understand the advantages, disadvantages, or even dangers arising from the application of this educational strategy over long periods of time.

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