



**DISTANCE EDUCATION AND DIGITAL
TECHNOLOGIES IN ADULT EDUCATION DURING
THE COVID-19 PANDEMIC: VIEWS OF POSTGRADUATE
STUDENTS IN HELLENIC OPEN UNIVERSITY, GREECE**

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Abstract:

Distance education has always been an important pillar of Hellenic Open University, through which undergraduate, postgraduate, and short programs' students participate in. Before the pandemic crisis education in HOU had been characterized as synchronous and asynchronous with a choice of face-to-face classes. Under the new circumstances, due to the pandemic crisis, a lot of educational institutes all over the world had to adjust and offer a flexible synchronous and asynchronous electronic way of learning. This new, unprecedented situation came up as an emergency, as well as an opportunity, not only for the students, but also for the institutions so that they could evolve electronic distance education with the use of communication and collaboration online platforms. In this regard, HOU modulated the teaching in electronic form with the basic tool of teleconference for the group meetings and exams electronic platform. In this paper, there has been an attempt to research about the students' satisfaction level, concerning the group meetings and exams changes, the main difficulties they dealt with, in which way their smooth attendance was influenced, and finally their agreement level about ways to reinforce their digital education in HOU with suggested ways deriving from literature. The conducted survey was quantitative out of 125 participants' sample, with the use of a personal online questionnaire. It was found that the majority of participants had been satisfied with the changes in HOU, mainly with the communication they had with the counselor-teacher in online group meetings. Moreover, their attendance remained undisturbed, not only to their assignments, but also to their success in the exams, and regarding the difficulties they faced, their main ones were a feeling of stress or insecurity due to the unanticipated changes, a problem with their online connection and with the available time to answer the exams' questions. It is also interesting their high level of agreement with the suggested ways to reinforce their digital education since the majority of the participants are in favor of those mentioned.

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1. Introduction

Distance education as a two-way communication between instructor and learner contains the element of technology, which is characterized in modern times as essential. It includes three parameters that characterize this specific education. The first parameter states that distance education suggests the absence of individual infrastructure and interventions, that it is one two-way communication to facilitate and support those who participate, and thirdly that the presence of technology is now an integral part of it (Lionarakis, 2006).

If reference is made to distance learning through technology, it could not be omitted e-learning, which is gaining ground in adult education worldwide, as they do not exist under local or time constraints, allowing learners to adjust their learning program according to their obligations, their characteristics, and personal goals (Korre, 2018). E-learning is divided into two categories, synchronous and asynchronous, in the first category asynchronous technologies are used, without the simultaneous instructor-learner connection, while in the second category, even more modern technologies are used and connectivity takes place in real-time (Diamanti & Nikolaou, 2021).

In the Greek territory and specifically in the Hellenic Open University, the principles of distance learning have been from the very beginning of the operation of the institution the key pillar of education. In recent years the institution has evolved distance teaching through actions such as flexible teaching departments, both through face-to-face and electronic departments, providing exclusively e-learning short programs, but also available online educational material, accessible to students and teachers of the institution. The most important critics of HOU are its students, which is why not only the innovations but also the quality of educational services will determine its path in the future (Papadimitriou, Lionarakis & Ioakeimidou, 2019).

The COVID-19 pandemic crisis has been an imponderable factor internationally concerning the evolution of education in general. In Greece, this crisis caused the closure of all educational institutions in March 2020, transferring the onus of the educational act to e-distance education. The Greek students adjusted to a new reality as they began to make broad use of digital tools, such as digital platforms, to keep running smoothly with their studies. The new circumstances had to be met by the HOU, which nevertheless has a prehistory in distance education, to further develop and shape it accordingly. Thus, the changes focused mainly on the team counseling sessions and examinations, which were made online through a specifically made platform.

In the present work, these changes are examined, through the views of the same students, who found themselves in the midst of the changes and had to respond in order to continue their studies smoothly. The purpose of the research is to investigate the degree of students' satisfaction with their distance education provided by the HOU, investigate the most significant difficulties they encountered, the extent to which their

attendance was affected by the inevitable changes, and, finally, the degree of their agreement with proposed ways of enhancing their digital education always within the framework of the HOU. All query parameters came from the review of the international literature on e-learning and distance education, even the most recent ones of 2020 and 21 regarding the outbreak of the pandemic.

The empirical research presented in this paper is quantitative research with a sample of students who were attending postgraduate program studies during the pandemic crisis in the HOU, and which was carried out exclusively through an electronic questionnaire. The work is structured in two parts, the theoretical and the empirical part. The theoretical part refers to the concept of adult education, the concept of distance education, and the most important theories that compose it, to the concept of e-learning, which is divided into e-learning and m-learning, in digital technologies and how they are utilized by the HOU. Consequently, it consists of three chapters, the conceptual approaches, the use of technology in adult education, as well as literature review studies, in reference to the meanings mentioned above.

2. Literature Review

Digital technologies and their use in distance education have been the subject of research for the last decade. The research of Selim (2005), which was conducted by the University of Economics of the United Arab Emirates and was addressed to 538 students, for the factors that make e-learning effective, concluded that learners give great emphasis on flexibility, easy access, reliability of applications chosen by the trainer and the training provider. It is also very important for them the skills of the trainer in the use of new technologies, in his positive and encouraging attitude, but also the control he may have over their management. Of course, any previous experiences of the learners in e-learning environments were in fact catalytic in terms of their interaction in the learning process.

A 2005 study at the Open University of the United Kingdom which involved adult users who had no experience with the use of the internet, sought to investigate whether these trainees who do not have extensive internet experience, encounter obstacles or not. It was found that variables such as language technical terms and concepts related to the internet, the complexity of web pages with the simultaneous presence of hyperlinks, settings related to accessibility and navigation, as well as the variety of countless information found on the internet, caused them a sense of insecurity or anxiety (Attar, 2005). The research of Jelfs and Richardson (2013) moves in the same direction about the use of new technologies at the UK Open University on 4000 participants, which focused on the trainees and whether they are distinguished by age for their ability to manage technology. The older trainees were well-versed in new technologies, such as completing online questionnaires and other activities preferring computers as a medium, while the younger ones preferred additional appliances. There were some notable differences, such as that of the younger participants who use the internet for a wide range of activities and for a larger period of time, while the older ones use it for more formal activities related

to their study or work. The trainees of all ages showed a positive attitude towards the use of digital technology, an element associated with an in-depth study and adoption of personalized strategies, something in which older people were more likely to engage.

On the use of technology in an educational institution Henderson, Selwyn, and Aston (2015), in their research at the University of Melbourne, in which 1658 undergraduate students participated, mention that the trainees choose technology solely for academic purposes and for completion of their studies within the framework set by the instructor or the institution. That is, for completion of assignments, assessment, and communication for study or course issues, but on the other hand less for creative, collaborative, and more liberated from the educational context activities. In the above data the research in the United Kingdom and the Netherlands Helsper, Deursen, and Eynon (2015), supplement further data regarding the results of using the internet. Engaging in an activity online does not necessarily lead to tangible, permanent offline results. In addition, the trainees who complete an activity in a learning area does not mean that they will repeat it in another. That is why the development of digital skills is deemed necessary.

In Greece, the research of Tassi (2014), regarding the use of new technologies by Greek teachers of Secondary Education, highlights a more general positive attitude towards the role technologies play in education, but more steps are needed to improve and expand technological practices, provided that traditional centralized character of the educational system in general prevents the faster spread of digital education. Especially in the context of distance education and digital technology, Hellenic Open University presents various research, some of which offer valuable material to explore. Hatzinikita, Katsis, and Petrogiannis (2011), analyzed the relationship of complementary digitized learning material and quality through the views of undergraduate and postgraduate students in HOU. The analysis showed a positive attitude towards the digitized material and that the quality was commensurate with the brevity of the texts, the clarity, the attractive presentation, and the content agreement between online material and printed one. Referring to digital applications such as Webcast, Video, etc., it was found that learners are positively disposed, but express doubts about the effectiveness of these tools in their pedagogical purposes.

Moving on to more recent research findings in HOU, Armakolas and Panagiotakopoulos (2020), analyzed the pedagogical benefits of e-learning through teleconferencing between 121 trainees and a small number of trainers in HOU. Satisfaction levels for the educational process depend on self-sufficiency in computers, by participating in discussion groups (chatrooms), and by video conferencing, on the condition that it provides an attractive and user-friendly interface. For this, the trainer must be appropriately prepared to organize it as best as possible. Also, getting acquainted with using the video conferencing platform is a key issue that can be achieved by organizing and coordinating all those involved in the process, even the institutional body itself. Problems that may arise were also considered in such an environment mainly

dealing with technical issues, but one solution that could be given to them is to find alternative ways of communication, such as text chat.

With respect to the reluctance of trainers the research of Panagiotakopoulos et al. (2013), completes some reasons for this attitude, with most importantly the lack of live communication, technical issues, the limited knowledge of many educators in distance education, insecurity of learners because of their unfamiliarity with technology and how to manage the time and organization required to set up a suitable educational online environment.

At the same time, the role of social media in educational communication according to HOU students. In Tiga's research (2016), students who use social media daily appear willing to integrate them into their learning processes, as they envision one better collaboration and interaction with others, through them. Alongside, Karatasos' (2020) research states that social networks can indeed contribute to more effective communication between all stakeholders in the learning process, as well as in solving questions with free expression of questions and views. However, participating in social networks such as Facebook does not seem to be the case contributing to a detailed and in-depth discussion of learning questions and educational issues. Finally, regarding the use of television as a pedagogical media, even with internet access (webtv), something that is not often researched, Koustourakis, Pefoni, and Panagiotakopoulos (2010), in their research in which 394 students of HOU participated, estimate that it does not exist yet in HOU, but also in other educational institutions with distance learning programs, the necessary basis for its utilization. Nevertheless, learners show a tendency to use television for educational purposes, if it serves the needs of the studies but also, they do appear positive in terms of educational programs being created by the institutional body to be shown on television, which may contain videotaped lectures and speeches.

3. Methods and Material

The purpose of the research is to investigate the degree of satisfaction from modern and asynchronous e-learning of adult learners in HOU (Hellenic Open University) postgraduate programs during the COVID-19 pandemic, as well as the most significant difficulties encountered in relation to the use of digital technologies. It also explores how recent changes due to the pandemic in the provision of distance education by the HOU, mainly regarding Team Counseling Meetings and written exams, influenced the smooth attendance in the postgraduate programs and the successful response of students to the new circumstances. Finally, the degree of agreement of the trainees on proposed by the research ways to enhance their digital education in the HOU. It is predicted that the degree of adult satisfaction will emerge from postgraduate programs of the HOU regarding specific changes that occurred due to the pandemic in specific contexts of their study. Also, referring to the recent and international literature, difficulties are investigated that students faced with the complete conversion of their studies into e-learning and how specific changes in the HOU have had a positive or negative effect on

them. Finally, regarding suggested ways and methods of remote e-learning from the literature, the degree of agreement from adult learners is highlighted.

Therefore, the individual objectives which arise from the above and from which the relevant research questions also arise are:

- To investigate the experience of adult learners in new technologies, their knowledge, and the degree of their skills in them.
- To investigate the degree of satisfaction of adult learners who were studying during the pandemic period in HOU postgraduate programs with respect to the distance education provided by the institution, the way of conducting the Group Meetings and the online exams through the respective electronic platforms, as well as the communication with the teacher - consultant.
- To investigate the degree of agreement of the trainees with specific difficulties related to the use of new technologies, and difficulties that arose from the changes implemented by the HOU during their studies, such as those mentioned in the literature.
- To investigate the degree of agreement of the trainees with changes about the provision of distance education by the HOU and how and whether or not these changes affected their smooth attendance, as well as whether they would henceforth choose these changes to be adopted by the HOU.
- To investigate the degree of agreement of the trainees with proposed ways to enhance their digital education in the EAP, as they emerge from bibliography.

Hence the research questions, which are the educational issues or the educational considerations according to Creswell (2011) guiding the researcher in conducting research and resulting from the above are:

- 1) How satisfied are the trainees with the distance education in the HOU postgraduate programs during the pandemic period?
- 2) What are the most important difficulties encountered in relation to their use of new technologies during their studies in the HOU programs during the pandemic period?
- 3) What are their views on how the changes made to the way distance education is provided by the HOU due to the pandemic, influenced their studies?
- 4) What are their views on suggested ways concerning quality improvement and enhancement effectiveness of their digital education under the HOU?

Regarding the research methodology, quantitative research has been selected specifically the review research, which was based on the collection of quantitative data of one satisfactory numerical sample of a population, using an improvisation electronic questionnaire. Quantitative research was preferred, as quantitative data are analyzed according to researcher default questions which show the degree and correlation between specific variables (Creswell, 2011). The review research concerns a contemporary plan research, based on quantitative data collected for as representative a sample as possible of a wider set of people. The survey research data are data that are drawn at a certain point in time, simultaneously for all variables, hence the review research is implemented

in the context of the contemporary project (Bryman, 2017). Finally, the statistical approach chosen is descriptive statistics dealing with the contraction, presentation, but also description of quantitative data, which are drawn from the opinions of the participants (Paraskevopoulos, 1993). Cronbach's internal consistency index (> 0.7) in the questionnaire was found to be around 0.800.

The research tool used is an improvised electronic questionnaire, which was created through the Google Forms application and shared electronically via email. Due to the pandemic, the electronic submission of the questionnaire was considered the most appropriate method since hand-to-hand missions could not be accomplished.

The questionnaire consists of two parts with 56 closed-ended questions type, because closed-ended questions, as opposed to open-ended ones, are easier to code (Creswell, 2011). In the first part, there are questions about personal information, such as gender, and age, but also questions related to their attendance participants in the HOU, but also the skills they have in the use of new technologies. The second part of the questionnaire consists of four axes corresponding to the four research questions. In the first axis, there are 10 questions corresponding to the first research question, i.e., the degree of satisfaction from attending the HOU. The second axis also consists of 11 questions that correspond to the second research question, namely the difficulties encountered by respondents in relation to the use of new technologies in the HOU during the pandemic period. The ten questions refer to difficulties, as emerged from the literature, and are presented on a Likert scale 5. The scale Likert favors the coding of quantitative data corresponding to the same research object, which refers to the respective scale (Bryman, 2017). The third axis consists of 11 Likert 5 scale questions corresponding to the third research question, namely the changes in the way distance education is provided to Group Meetings and examinations by the HOU during the pandemic period. The fourth axis consists of 8 Likert 5 questions, corresponding to the fourth research question, i.e., the ways to enhance digital education in the HOU.

Students of postgraduate programs were selected as the research population in HOU. A population according to Creswell (2011) is a group of individuals with the same features. The target population, i.e., postgraduate students, was then selected for the institution during the period when the pandemic crisis broke out. The target population included a sample of 125 people via email at present research. A sample is a subgroup of the target population, and researching it which conclusions can be drawn, which can be generalized to the target population (Creswell, 2011).

Statistical data analysis was done using the SPSS STATISTICS program DATA 27.0.1. All responses had to be completed to make submission of the questionnaire mandatory, so there was no lack of reply to coding data in the SPSS program.

4. Results and Discussion

The research data that emerged will be presented in detail from the research of the sample of HOU students according to the principles of descriptive statistics.

4.1 Individual Characteristics of the Sample

The adult students of postgraduate programs of HOU that constituted the research sample show the following individual characteristics with respect to the first part and the first 8 questions of the research tool:

In terms of gender, the majority are women with a percentage of 72%, while men make up 28% of the sample. In terms of age, a larger percentage of 41, 6% belongs to the age group of 36-45 years, while the age group 26-36 years follows with a percentage of 29.6%. The lowest percentage is presented by those over 55 years old with 4.8% and up to 25 years with 1.6% respectively. As for the question of whether they have participated in any e-learning program in the past, the majority with a percentage 60.8% answered in the affirmative while the minority of 39.2% answered in the negative. As for the question of whether they have studied again in the online department of HOU during their postgraduate studies, the majority with a percentage of 69.6% answered negatively, while affirms 30.4%. As for the question of whether they were studying in face-to-face Group Meetings department or online ones before the changes due to the pandemic last year, the majority with 61.6% attended live, while 38.4% chose the electronic department. In a question regarding the level of knowledge they have in informatics 45.6% state that they have basic knowledge/skills, 37.6% advanced knowledge, while only 16.8% state that they have a lot of advanced knowledge. It is noted that no person in the sample stated that he is a beginner. Respectively in the question, regarding the certification of informatics, the majority with a percentage of 84.8% stated that it has some certification, while only 15.2% answered negatively. As for the question of the degree they use in their daily life new technologies (ICT), the majority of 76.8% answered very to very much, while 19.2% said enough. Only 4% say they use them a little.

4.2 Results per Research Questions

1st Research Question: How satisfied are the trainees from their distance education in the postgraduate programs of HOU during the period of the pandemic?

44.8% of respondents state that they are quite satisfied with the distance education provided by HOU during the pandemic period and 47.2% state that they remained very and highly satisfied. Regarding the degree of satisfaction with the way of conducting the Group Meetings through teleconferencing conducted by the HOU, the majority 47.2% indicate very to very much, while 42.4% indicate quiete. A little bit indicates 9.6%, while only 0.8% is not satisfied at all. Regarding the degree of satisfaction from the communication with the teacher-counselor, the majority with a rate of 60.8% is very up to highly satisfied, while at a rate of 32% state quiet. In terms of the degree of satisfaction from online video conferencing platforms, rates range from quite up to very much. More specifically, quite satisfied state with a percentage of 41.6%, while with a percentage of 44.8 very to highly satisfied. They declare a little bit satisfied with a percentage of 12.8%, while one person, i.e., 0.8% declares that he was not at all pleased. Regarding the Group Meetings students attended in the last academic year, the majority with a percentage of 54.4% attended all five of them. Regarding the question of what courses department, they

would choose if they had the possibility in the future, the majority with a percentage of 56% would choose a face-to-face department, while 44%, electronic department. Regarding the degree of satisfaction with online exams, a percentage of 35.2% stated that they were quite satisfied, while 41.6% were very to very satisfied. 17.6% stated a little, while not at all satisfied 5.6%. In terms of the degree of satisfaction from the exam simulation process, a percentage of 44% say they have left quite satisfied, while a percentage of 35.2 is very to highly satisfied. Regarding the examinations in which students participated last year, the majority state that they participated in the first exam with a percentage of 93.6%, while they participated in the repetitive or in both examinations, 2.4% and 4% respectively. Regarding the degree of satisfaction with the exam platform, the majority say they are quite satisfied with a percentage of 52%.

At this point, it is worth presenting pairs of variables, as they emerged from the statistical processing of cross-tabulation. Regarding variables of last year's student attendance and future department selection it was found that among the students who belonged to a face-to-face department last year, 60 people would select face-to-face courses, while 17 electronic ones. Respectively, among the students who last year belonged to an electronic department, 38 would again choose a department of this kind, while only 10, a face-to-face department.

Regarding the variables last year attending Group Meetings and degree of ICT use, was found by students who belonged to a face-to-face department that the majority use new technologies from very to a high extent in everyday life and respectively from the students who belonged to the electronic department last year, the majority 40 people also use them.

Moreover, it was found that students who are certified, most of them use new technologies to a great extent (79 people), while from the people who do not have any certification, only 17 use new technologies in their daily lives. Satisfaction from Group Meetings via video conferencing provided by the HOU in relation to age, a high satisfaction degree can be deduced here as well, a degree from quite to very, but not very much, especially in the age group 36-45. The older age groups are over 46 and 55, and though there were a smaller number in the sample, they also range in levels from quite up to high in terms of the degree of satisfaction. Furthermore, regarding the satisfaction from the exam simulation and exam platform according to age, the degree of satisfaction is not very high, it varies from quite to a little satisfaction.

2nd Research question: What are the most important difficulties encountered in relation to the use of new technologies during their studies in the programs of HOU in the period of the pandemic?

The degree of agreement or disagreement about specific difficulties, which arise from the literature does not show significant fluctuations and it is concluded that students have not met a lot of problems. However, the most important difficulties arising with higher rates are the feeling of anxiety or insecurity with a total percentage of agreement of 32%, and the problem of connecting to the internet with a corresponding

percentage of 28%. Moreover, 20% of the sample report symptoms of headache or dizziness, while difficulties such as poor image and sound quality followed by percentages of 20.8%, as well as the lack of technical support from the HOU with a degree of neutrality, nor do I agree, nor do I disagree.

Further analyzing the data with the statistical method of cross-tabulation for face-to-face section and electronic section respectively, the results are presented regarding the relationship between two variables, last year attending Group Meetings, i.e., face-to-face department or electronic, and the difficulties encountered faced by respondents. In terms of feeling anxious or insecurity experienced due to the changes in the pandemic, 39% of the students in the face-to-face department agree, while the students in the electronic department agree with a percentage of 20.8% and disagree with a total of 66.7%. Whether they encountered a problem with the internet connection, those who were studying in the face-to-face section stated a total degree of agreement, 29.9%, and disagreement 49.4%, and those who belonged to an electronic department appeared with a 25% agreement rate and a 54% disagreement rate. As to the lack of equipment, those who attended a face-to-face department stated a total agreement rate of 18% and disagreement of 70.2%. Those who attended the electronic department stated 12.5% agreement and 83.4% disagreement.

Regarding the lack of experience and sufficient skills, the students of the face-to-face department stated a total degree of agreement of 5.2% and disagreement of 72.8%. The students of the electronic department declared a degree of agreement of 8.3% and 77% disagreement. As for the lack of familiarity with technical terms, students in the face-to-face section stated a total degree of agreement of 14.3% and disagreement of 67.6%. Lack of experience and familiarity teleconference, face-to-face department students declared a total degree of agreement of 22% and 58.5% disagreement. Degree of neutrality, neither agree nor disagree, a percentage of 19.5%. For the students in the electronic department, the respective percentages are 14.6%, 64.6%, and 20.8%. Regarding the difficulty of the necessary time to prepare for the changes, the face-to-face students reported a total degree of agreement of 20.8% and disagreement of 58.5%. The corresponding percentages for those who belonged to an electronic department are 12.5% and 70.9%. As for the picture and sound quality and whether it was bad, the face-to-face students' segment stated in total 15.6% that they agree and in percentage 62.4% that they disagree. Degree of neutrality, 22%. Corresponding percentages for electronic students, are 2.1%, 79.2%, and 18.8%. Regarding the lack of technical support from the HOU institution, the students of the face-to-face department stated that they agree on a percentage of 16.9%, while disagreement rate 50.7% and neither agree nor disagree, 32.5%. The respective percentages for electronic students are 6.3%, 64.6%, and 29.2%. Finally, as to symptoms of headaches or dizziness from teleconferencing, face-to-face department students stated a total degree of agreement of 24.7% and disagreement of 57.2%, while students of electronic, 12.5% and 72.9% respectively.

3rd Research Question: What are their views on how the changes made in the way of providing distance education from the HOU due to the pandemic influenced them?

A total of 44% agree that participation in the Group Meetings has increased easily, while the corresponding disagreement amount is 20.8%. A percentage of 35.2% declare neutral. As for the elaboration of their work and whether it was smoothly completed 58.4% unanimously agree, while only 12% disagree. A large percentage of 71.2% agree with the fact that they have benefited from the comments and the guidance of the professor-advisor in the Group Meetings, while the corresponding amount of disagreement does not exceed 4%. Moreover, 60% agree with the view that the changes made to Group Meetings did not affect attendance, while the majority with a percentage of 58.4% agree with the next view, that is, that before the exams they had sufficient information. Also, a large percentage of agreement, 68.8% is found in the view of sufficient guidance of the teacher-counselor regarding the online exams. However, a 49.6% disagreement was also noted for the view whether they had sufficient time to answer the questions in the exam, while the corresponding agreement rate is less than 36% and 40.8% disagreement on the view that the changes to online mode made it possible to carry out additional Group Meetings. With reference to the question, if in the future they would prefer the exams to be done online, the agreement and disagreement rates are close, that is, 36% and 39.2% respectively.

Analyzing data with the statistical method of cross-tabulation will again present the relations of two variables of last year's Group Meetings study (face-to-face department, electronic department) and respondents' views on changes that occurred in the HOU due to the pandemic. More specifically, whether student participation in Group Meetings has become easier, the total percentage of agreement of those who belonged to a face-to-face department expresses the majority with 42.9%, 24.7% disagree, while a 32.5% neither agree nor disagree. The respective percentages of the electronic segment are 45.8%, 14.6%, and 39.6%. Regarding communication with the teacher-advisor and whether this was more frequent, the students' face-to-face section agreed by 20.8%, while there is a large percentage of neutrality which reaches 51.9%. Electronic section percentages range at corresponding levels, with those who agree to be at 20.9%, while respectively the percentage for those who are neutral reaches 50%. As for the video conferencing platform and whether it facilitated communication with the teacher, students in the face-to-face department agreed with a total of 28.6%, disagreed with a percentage of 31.2%, while, again, the percentage of neutrality was high at 40.3%. The corresponding percentages of electronic students vary, with those who agree to represent the majority with 43.7%, percentage, neutrality 39.6%, while those who disagree represent only 16.7%. As for the smooth preparation of assignments after the electronic Group Meetings, the face-to-face students expressed a total degree of agreement of 54.6%, disagreement of 13%, while neutrality of 32.5%. The corresponding percentages of electronic students are for grade agreement 64.6%, disagreement 10.4%, and those who were neutral 25%. Regarding whether the respondents benefited from the comments under the guidance of the professor, the majority of undergraduate students make up

68.8% with a total degree of agreement, 24.7% declare neutral, while only 6.5% disagree. For the electronic departments, the majority agree with 75%, and 25% are neutral, while notable is that there is not one who disagrees. Regarding online changes in the Group Meetings and whether they affected the attendance of the respondents, the students in the face-to-face department state that they agree with a total of 54.6%, 16.9% disagree, while 27.3% are neutral. For electronic students, the total agreement rate reaches 68.8%, disagreement 14.6%, while neutrality 16.7%. In terms of guidance from the faculty advisor for the online exams, the students of the face-to-face department state a total 68.8% agree, 9.1% disagree, while 22.1% say they are neutral. Respectively, the students in electronic one stated a total percentage of agreement of 68.7%, disagreement of 14.6%, and 16.7% neutrality. Finally, regarding whether they would choose online exams in the future, students in the face-to-face section expressed their disagreement in the majority 50.7%, with an agreement percentage of 28.6%, and 20.8% neutrality. The percentages of students in electronic departments vary, with a total of 48% agreement, 20.8% disagreement, and 31.3% neutrality.

4th Research Question: What are their views on proposed ways to improve and enhance the quality effectiveness of their digital education under the HOU?

The ways with which most of the respondents with a percentage of more than 70% agree, is the access to educational materials through applications such as Google Play (74.4%), online tests for the consolidation of the material which will be accessible only to learners (72.8%) and e-books with interactive hyperlinks (70.4%). Follows with a total percentage of agreement on the possibility of online video conferencing between trainees (69.6%), free short-term webinars from the HOU (67.2%), and webcast with video teacher (62.4%). Smaller agreement rates, though more than 50%, are the utilization by the HOU of social networks (56.8%) and the teaching method of the courses of each unit through webtv (47.2%). The latter ways show the highest disagreement rates with 15.2% and 20% respectively. Especially the teaching via webtv shows the highest percentage of neutrality, nor I do not agree or disagree with the rate of 32.8%.

With the method of cross-tabulation between two variables and more specifically last year's student attendance and ways to support the effectiveness of HOU digital education the following are presented: Regarding free HOU webinars, face-to-face course students agree at a rate of 66.3%, while only 6.5% disagrees, while a percentage of 27.3% declares neutral. Electronic courses students also state with a majority and a total of 68.8% that they agree, while 10.4% disagree. 20.8% neither agree nor disagree. Regarding the utilization of social networks in the HOU, the majority of face-to-face participants state a total agreement rate of 55.9%, disagreement of 16.9%, and neutrality of 27.3%. The corresponding percentages of electronic segments are in close numerical levels, with 58.3%, 12.5% , and 29.2%. In terms of teaching courses of each module via webtv, face-to-face students agree on a percentage of 35.1%, disagree on a percentage of 29.9%, and neither agree nor disagree with a percentage of 35.1%. The corresponding percentages of electronic students differ with a percentage of 66.7% of them who agree, with only 4.2%

of those who disagree and a percentage of 29.2% of those who declare neutral. Regarding online tests for consolidation of the material, which will be accessible only to the trainees, the students in the face-to-face department indicate a total agreement rate of 74%, disagreement of only 11.7%, and neutrality of 14.3%. Electronic students also state that a high percentage of 70.9% agree, 12.5% disagree and 16.7% disagree, nor do they disagree. On the question of the teacher webcast, students face-to-face by 53.3% agree, 13% disagree and 33.8% say they are neutral. The electronics' department differs by 77.1% of those who agree, only 4.2% of those who disagree, and 18.8% of those who declare themselves neutral. As for the e-books with interactive links, there are also high rates. More specifically, the face-to-face department students state overall grade points in average of 65% agreement, disagreement 16.9%, and neutrality 18.2%. The students of electronic departments state percentages of 79.2%, 6.3%, and 14.6% respectively. As for the penultimate question, for the educational material through applications, face-to-face students agree by a total of 70.2%, disagree by 5.2%, and remain neutral by 24.7%. Electronic students report an overall high agreement rate of 81.2%, disagreement 8.4%, and neutrality 10.4%. End, in terms of online teleconferencing between students, for face-to-face students there are agreement rates of 64.9%, disagreement 9.1%, and neutrality 26%. Most students in electronic departments state in a majority of 77.1% that they agree and 22.9% that neither agree nor disagree. There is no disagreement.

5.3 Discussion

The following are the results per research question compared to those related to recent 2020 and 2021 surveys on the pandemic crisis, but also other research related to distance education and e-learning learning in universities. Regarding the first research question, with which the degree was investigated of satisfaction with the provision of distance education for students during the pandemic, the majority of respondents were quite satisfied with the distance education provided to them by the HOU during its period of pandemic. The degree of satisfaction was related to the way the Group Meetings were conducted through teleconferencing, communication with the professor-advisor for Group Meetings and examinations, the simulation platform, and the examination platform. A high positive response rate of students responding to distance education is also mentioned in the research of Selim (2005), Gavrilis, Mavroidis, and Glossos (2020), Milioritsas and Georgiadis (2010) specifically for satisfaction through the use of a video conferencing platform and communication with the professor, Armacolas and Panagiotakopoulos (2020), who refers to the effect of the teleconference on HOU and to the extent that the participating students presented a high-grade satisfaction with the use, flexibility and effectiveness of this instrument. In terms of satisfaction and age, a positive relationship was found in all age groups of the present study, particularly in the group 36-45 which were the majority of respondents. Jelfs and Richardson (2013) also report on a more general positive attitude towards distance learning among students of all ages from the Open University of Great Britain, with one further distinction of the younger ages compared to the older ones over 55 years old. Everyone showed a positive attitude

and a high degree of acceptance of the use of technology. Regarding the communication with the teacher-advisor, for which the degree of satisfaction in the present survey was particularly high, with a score very, very high for the majority, agrees the survey of Aguilera - Hermida (2020) on the basis of which the students of the sample are more easily mobilized in the transition due to the pandemic in online learning, due to the interaction with the teacher, but also the rest of the trainees, which was a new challenge for them, as this interaction took on a new form.

Regarding the second research question and the most important difficulties that were encountered during the pandemic during their studies at HOU. The following is observed: The general picture is positive, and this means that students did not encounter a great deal of particular difficulty. However, there are three difficulties in hierarchical order from the largest percentage to the smallest, the sense of stress and insecurity, internet connection problems, but also lack of experience and familiarization with video conferencing. The reported difficulties for lack of technique support from the HOU, the preparation time available to the students to adjust to changes, audio and video quality in Group Meetings, lack of equipment, but also experience or sufficient skills in relation to new technologies show a negative sign of agreement, which indicates that few people face these difficulties. In the research of Armakolas and Panagiotakopoulos (2020) regarding teleconferencing, although most participants do not consider some teleconferencing experience necessary to participate, they do report some problems in the image, in the sound, but mainly in the internet connection. Especially the internet connection is mentioned as a technical difficulty beyond the present research and in the research of Mukhtar et al. (2020), Magomedov et al. (2020), Bashitialshaaer et al. (2021), Karalis and Raikou (2020), Lassoued et al. (2020) and in Cedefop International Exhibition (2020). Also, the technological equipment, something that in the present survey was not a difficulty, as the majority had the necessary equipment, but also a stable, fast internet connection, appear to be necessary conditions for the smooth conduct of e-learning as reported by Arkoful and Abaidoo (2014) and Stanković and Nikolić (2019). Regarding the technical support from the HOU, the majority agrees that it was enough and not incomplete, thus emphasizing the mediating role of the university towards student support, which is being thoroughly examined in research in France, Germany, Russia, and the United Kingdom of Plakhotnik et al. (2021).

The third research question and the extent to which the changes in the HOU have affected students during the pandemic are observed as follows: The majority of respondents were satisfied with the changes in the HOU and did not negatively affect their attendance. Higher agreement rates appear in the communication and in the comments with the teacher-counselor and in his adequate guidance for online examinations, for the smooth elaboration of the works, nevertheless, there is one significant degree of neutrality regarding the teleconferencing platform and whether the students were facilitated in the communication with the teacher. As to the positive relation that the teacher's guidance and comments have with the positive students' attitude to e-learning during the pandemic period and unaffected study, agrees the

research of Hani et al. (2020), in which the teacher's role appears as a catalyst, as also does Moore's work (1990), (2009) and Garrison (2000), Korre (2018) which emphasize among others the guiding role of the trainer. Regarding the elaboration of tasks, the sufficient information before the exams, and whether they would choose online exams in the future, that is, issues related to their evaluation, the research of Alkhowailed et al. (2020) shows that most students remained happy, but there were a small number who expressed doubts about their overall evaluation through electronic procedures. The present research seems something similar, except for the question of whether they would choose online exams in the future, a question on which there is almost the same degree of agreement and disagreement, something which may be consistent with the research of Alkhowailed et al. (2020). Also, in terms of choosing online exams in the future, the majority of departments for face-to-face students disagree, while on the contrary, those students who belonged to an electronic department agree. In the research of Gavrilis, Mavroidis and Giossos (2020) during the period pandemic, it is reported that students who have an experience in electronic distance learning appear more positive in e-learning and its characteristics, as in the research of Henderson, Selwyn and Aston (2015) on e-learning and the use of digital tools, but also in the research of Paliokas et al. (2021) where participating students recognize the importance of online exams with the majority to prefer them, especially if they have previous experience. There is, however, a percentage who did not have enough time to respond comprehensively, but also a number of students who would prefer the traditional way of examinations.

Regarding the fourth research question and the degree of agreement for respondents' ways to enhance digital education in the HOU, the majority of participants stated a high degree of agreement on all the modes found in the relevant bibliography. More specifically, the higher agreement rates declared for the online tests, which can only be accessed by learners, access to educational material through applications such as Google Play, e-books with hyperlinks followed by the online video conference between trainees, online seminars through HOU and finally the teacher webcast, the HOU webtv and the use of social networks. The findings are in line with the research of Hatzinikita, Petsis, and Petrogiannis (2011) in the HOU, who report that the digitized supplementary material is essential for the educational support of students, according to themselves, especially the webcast. Also, the research of Henderson, Selwyn, and Aston (2015) emphasize the importance for any educational organization the use of digital technologies. Regarding the educational material through applications, the electronic departments represent the vast majority of agreement over the rest suggested ways, such as for online tests, online video conferencing between trainees, teacher webcasts, and e-books. Something similar applies to students who attended face-to-face classes, but the percentages of electronic classes are bigger. The preference of all students for e-books with hyperlinks, even more to those who attended electronic departments, is justified in the work of Ioakeimidou and Papadimitriou (2018), in which the range of the possibilities of the digital book is mentioned. The same goes for digital applications, on which students will be able to access educational material, a method that is gaining ground in

recent years, in terms of the benefits of using m learning (Ceobanu & Boncu, 2014. Hylén, 2015).

Finally, regarding the use of social networks in HOU, all students agree, but the percentages in favor of it are not overwhelming, in contrast with other ways of digital enhancement and this may be explained by the corresponding research of Tigas (2016), in which many HOU participating students express their reservation about the widespread use of social media, as they believe that there is a risk to their privacy.

6. Recommendations

The present research could be a trigger for further investigation into the effects of the pandemic crisis on other university institutions, but also in the HOU, but to a greater extent, with the participation of more students, both undergraduate and postgraduate, as well as students from shorter duration programs. The flipped classroom method as applied to University of Patras by Karalis and Raikou (2020) during the pandemic, which concerns the study of new learning material by students at home through asynchronous or even modern e-learning, while during of online teaching to participate in activities that include collaboration with other learners. Further could be of interest to explore the role of the electronic facilitator (e-facilitator), (Karachristos et al., 2020), i.e., the person who facilitates conducting an online educational program, mobilizes by providing motivation to learners, supports and makes the communication and cooperation of all smooth and functional in the program, according to the basic principles of Adult Education.

7. Conclusion

As far as the above findings are concerned it can be concluded that distance education provided by the HOU institution during the pandemic emergency, was rather positively accepted by the postgraduate students, although back then had to deal with rapid and unexpected changes in their studying and attendance. Former electronic attendees adjusted even better than face-to-face ones, but overall, no notable difficulties were met, but to mention the ones encountered which had higher percentage rates, had been internet connection and lack of experience in teleconferencing. As for the proposed methods of enhancing online learning in HOU, all students declared in favor, a clue which indicates that e-learning ought to be strengthened through academic purposes and that it could undoubtedly facilitate the educational process and further grow adults' digital literacy.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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