



## RESEARCH ARTICLE

## OPEN ACCESS

### ADULT EDUCATORS' OPINIONS ON THE NEW TECHNOLOGIES IN DISTANCE EDUCATION IMPACT OF THE GENDER AND AGE

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#### ABSTRACT

In this study, it was attempted to capture the views of the students participating in distance-based technology-supported adult education training programs for new forms of education. Although similar types of education programs are not unknown to active or potential Greek educators, due to the conservative and non-evolving nature of vocational education in Greece, they do not receive the recognition they deserve to the point of the modern technological and globalized era imposes. The findings showed that students assess their knowledge and competence in new technology as good enough, and state that they are moderately familiar with the process of distance education. They recognize that it is very important they are technologically trained, so that their participation in the program is successful and effective, as well as that the educator has to be the administrator of the technological and computing program, in order to technically guide them anytime that is deemed necessary by the procedure.

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#### INTRODUCTION

The modern era requires an education that can maneuver, adapt to new needs and demands of the times, in order to be able to successfully cope with new technological and non-technological challenges. In this context, the development of creativity, the active participation, the continuous education of the students and educators/trainers, the achievement of learning and teaching objectives are undertaken by the central and subordinate administrations of the educational structures and are aiming to improve the programs. The different forms of education should not operate as closed systems that reproduce static encyclopedic knowledge and cultivate the given and socially necessary skills, aimed exclusively at younger students. On the contrary, they are open systems, in which knowledge and experiences of all kinds flow and outflow and are inspired by the basic features of the modern technological and globalized era, which contribute to the further development of the human being and local societies, and are addressed to all.

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In the constantly changing social, political, professional and economic world, there is a continuous dispersion of information, an unstoppable mobilization of the labor force and a rapid advance of new technologies, while at the same time there is an intense pluralism. The modern man has to acquire knowledge and develop skills of adaptability, flexibility, and cooperation, not only to survive but also to evolve. This individual development implies the renewal and enrichment of existing knowledge and skills, which can be achieved by participating in specialized lifelong educational and training programs. For this reason, educational systems, that can meet the needs of modern people, regardless of age, educational background, professional orientation, free time, increased or non-increased obligations, a remote place of residence etc., have been created. In light of that, participation in education at every stage of one's life is considered necessary. The new forms of education that have emerged from the prevalence of high demands at both a financial and professional level are aimed at developing the skills of all individuals rather than separating them into more or less competent ones, with the use of modern technological means and tools (Information and Communication Technologies ICT). For the effective operation of these types of education,

educational programs, managed by special educators, are designed, organized and implemented. They must have the know-how, not only to carry them out but also to develop, update, complement and adapt them to the new needs of the trainees. More challenging is the programs for adult learners, where the trainers should consider the various factors, that not only affect the performance of the trainees, but also determine the reason why they are taking part in them. In this theoretical context, the role of the adult educator is decisive and the success of the adult lifelong learning program depends heavily on him. In this study, the researcher's intention was to examine the attitudes and the opinions of trainees participating in the adult distance and lifelong education programs that are supported by new information and communication technology tools. Through the findings of the study, we are able to outline the profile of the participants in these programs and we can partly assess their effectiveness. The theoretical context and the description of the research and the results are following.

### **The open versatile distance education**

Distance education is an alternative form of education and training, that is nowadays widespread in higher and adult education. According to the United States Distance Learning Association (USDLA) (2006), distance education is synonymous with the acquisition of knowledge, skills and abilities through the indirect and fully guided information from a third party, with the contribution of technology resources needed, based on the demands of the era and the technology's potential. Mattheou and his colleagues (2001) proposed that distance learning is a learning process in which the trainer and trainee are at a distance from each other and communicate through technology and computer programs. Lionarakis (2001) defined distance learning as a special teaching and educational process, that activates the trainee to develop the mechanisms they need to acquire the necessary knowledge, skills and abilities, the necessary education and to lay the foundations for their own later development. The term "Distance Education" does not only refer to a learning model or a training policy or a kind of vocational education, but a multi-methodical education system, that is both personalized and collective, involving an interpersonal asynchronous communication that goes beyond the limits of space-time, and is adaptable to individual and mass needs, carried out with the help of the most advanced technological means and communication and sharing material computer systems. "Open" distance education is an interdisciplinary, flexible, alternative and democratic educational application, which in recent decades has been proved to be extremely effective and has contributed to the gradual prevalence of educational equality (Lionarakis, 2006). It takes place by modules, is supported and constantly updated by the trainer and is evaluated by oral or written examinations (Efthimiou, 2005).

A distance learning implementation is determined by the trainer, the trainee(s), the educational material and the curriculum, the teaching techniques, the implementing body of the program, the quality of the technological means and the way the interpersonal communication will be achieved (Lionarakis, 2006). In particular, the educator or the trainer, in the distance learning program of specialization, further education or training, plays a significant and multilevel role, which becomes extremely demanding, since he or she has to overcome the difficulties that arise from the spatial and time distance between them and the trainees (Keegan, 2001). The

educator should be able to motivate and encourage learners, support them to take initiatives, communicate and participate actively in the educational process so that they can learn both on their own and through interacting with the other members of the digital educational community (Kokkos, 2001; Lionarakis, 2003). Of great importance is also the quality of the feedback to the participants, the focus on collaborative learning, the stimulation of self-confidence of the trainees and the cultivation of a sense of trust in the educator and ultimately the process itself (Race, 2001). A very important parameter of the distance learning process is communication, that is the way and the frequency the learner communicates with the educator and vice versa. This communication can be interpersonal, face-to-face, may happen through direct or indirect feedback and it can be one-way or two-way. In a distance learning program, the educator shares the educational material, the trainee interacts with it and gets information on the process and then he or she either communicates with the educator through technological or technical means or not. In any case, the role of technology is crucial to this individualized form of communication (Keegan, 2001; Manousou, 2008).

### **Lifelong Learning/Adult learning and education**

The term "Lifelong Learning" combines the principles of formal education policy and non-formal educational learning process, individual and collective factors, synergy and self-action, flexible implementation of programs, formal structure and informal action, deliberate or non-deliberate binding of the parties involved to achieve the predetermined goals (Terezaki, 2010). According to UNESCO (1976), Lifelong Learning should be continuous, unbounded, not limited to schooling and extending to all areas of human activity and knowledge whereby man can be stimulated to develop personally, socially and professionally. Faure's report "Learning to Be" recognizes, among other things, the inherent need of a person to learn throughout his or her life and his or her right to be part of the learning society, to enjoy flexible and active forms of learning, to receive a general education, to be able to self-educate themselves and to learn to adapt easily and smoothly to new conditions (Vergides, 2001). Dakopoulou (2004) considers that with Lifelong Learning people have the opportunity to choose how to learn, train and further educate themselves, while through Lifelong Learning it is demonstrated which are the policies and the defined structures of the formal framework they choose to follow, which are not defined by themselves. Karalis (2010) states that the term Lifelong Learning includes educational and learning activities of all types and grades, is addressed to all people, of all ages and all levels of education, and is realized in formal, informal and non-formal educational environments. Kostika (2004) argues that Lifelong Learning is the inherent tendency of a person to learn throughout his or her life, the need to educate themselves and train to grow socially, individually and professionally, the creation of a climate of an ongoing supply of motivation to learn without being subject to spacetime constraints, the familiarity with the main pillars of learning.

Lifelong Learning includes Adult Education and is an essential part of it, as it meets the basic needs of adults for professional development and personal or social development. Adults usually turn to this education either to supplement their knowledge due to inadequate attendance at compulsory school or because they want to acquire professional and technical skills or seek further education for self-esteem or public

participation. This educational process can be formal, non-formal or informal, and can include any kind of activity from which the individual can acquire knowledge that he or she did not previously have (Rogers, 1999). According to UNESCO, Adult Education improves the trainees' professional qualifications or technical abilities, enriches knowledge and skills, differentiates their perceptions of social reality, changes their orientations, motivates them, strengthens their self-confidence and makes them active members of society. These educational services are addressed exclusively to adults who have reached a satisfactory state of social maturation and are concerned with general education, vocational or non-vocational training, formal or non-formal education, individual or collective goals and are aimed at meeting any need of the trainee (Knowles, 1980; Gray, 2005). Adult Education includes all learning activities through which balanced, responsible, mature, experienced and capable adults without any age-specific identification or limitation, gain new knowledge and skills. This requires the promotion of self-action, the development of initiatives, the exploitation of alternative and innovative sources of information and work and study practices (Karalis, 2003; Kokkos, 2005; Kiriakis, 2011).

**Education and Information and Communication Technologies (ICT):** ICTs provide innumerable educational opportunities and possibilities, as, as dynamic tools, they provide both learner and trainer with learning conditions that cannot be achieved in conventional educational environments. By integrating ICT into the educational process, teaching and learning are not just facilitated, but it is modernized, generally differentiating the climate around the process as a whole and changing the perceptions and attitudes of the participants. The use of ICTs has a catalytic effect on the performance and the psychosynthesis of trainees, who are tempted to seek for themselves the object and the material of education, to acquire the necessary knowledge through personal search, to gain confidence in their potential and to acquire a substantial interest in the educational process (Costakos, 2005). According to Lionarakis (2009), the fundamental element of the educational process, even in its modern form, is not the range of use or the quality of ICTs, but the completeness and relevance of curriculum content and teaching methodology. However, it is acknowledged by many scholars that the educational use of ICTs is particularly effective as it contributes to saving and proper management/allocation of time, facilitating the sharing of teaching and auxiliary material and saving money during the transfer of the above material (Lionarakis, 2001, Efthimios, 2005; Raptis & Rapti, 2007). As far as the educational results are concerned, the integration of ICTs into distance learning and lifelong learning programs helps to refresh the curriculum, to better understand the concepts, to identify, collect, manage and process information, to learn problem solving, the development of critical thinking, the pursuit of higher goals, the establishment of social ties, the socialization through cooperative learning, the learning and cognitive progress of trainees (Raptis & Raptis, 2007).

According to Efthimiou (2005), the use of ICTs in education should be subject to a defined methodological framework where the pedagogical principles and the expected learning objectives will be the top priority. The methodological framework varies according to the curriculum, as it depends on many parameters that are changing. Therefore, there is no specific standard, which can be applied in any case of using

ICTs in the teaching process. Instead, the trainees' basic traits, such as their educational level, their adequacy in the use of technology, their age, the objectives they expect to achieve, the basic and individual objectives and objectives of the program, the conditions of the implementation and the characteristics of ICTs are what should be taken into account. Finally, it should always be borne in mind that ICT-based distance education and lifelong education of adults is not a form of technology, but an alternative form of teaching (Biagini & Carnino, 2009).

**Purpose, objectives, necessity and individual research questions:** The purpose of this research is to investigate the way and the extent to which new technology (ICT) is used in the context of distance education programs for adult educators. The purpose and the objectives of the research are approached by examining the views of trainees and participants in the research and the distance education programs, supported by ICT, aimed at training adult educators. In essence, their perceptions, their scientific background, their positions, their assessments, and their motivations to be further educated and trained are the things examined. The individual objectives of the research are:

- Recording of the degree of competence and familiarity of participants with the use of ICTs, their previous experience in distance education programs and their personal assessments of them.
- Investigation of training methods, expected objectives, degree of individualization in learning and the role of the trainer in the context of a distance education program for the training of adult educators with the use of ICTs.

The research is necessary because the evaluation of the personal experience of participating learners in the distance education programs for adult educators with the use of ICTs can both show the effectiveness of the use of technological tools in the educational process and the progress of the participants and reveal the great relevance between the prior technological knowledge of the participants and the success of the technologically supported distance education and lifelong education program. By exploring the perceptions, attitudes and views of learners participating in Adult Education training programs, effective planning of similar types of programs will be facilitated and, as a result, their success will be ensured. This depends on the proper organization of the teaching and learning process.

The research questions aimed at approaching the most possible aspects of the problem in question are:

- How familiar are learners participating in distance learning adult education programs with the use of ICTs and how do they assess their technological knowledge?
- What is the percentage of trainees participating in distance training programs for adult educators who have experience in a similar educational field?
- What are the learners' perceptions and valuations of distance learning programs and what training methods do they consider to be more effective?
- How do learners perceive the aims and principles of distance education programs for adult educators and how do they judge the role of trainers in the learning process?

- To what extent do trainees assume that the training they receive from their participation in ICT-assisted distance programs is personalized and oriented to their personal needs and capabilities?

## RESEARCH METHODOLOGY

Exploring the views of trainees on the way and the extent to which new technology (ICTs) is used in distance education programs for adult trainers encourages the adoption of mainly quantitative approaches and the collection of data through questionnaires. For this reason, in the context of examining this problem, it was chosen to conduct a quantitative survey in order to test the objective theories by considering the relationship between variables. Along with the quantitative, descriptive research was also conducted in order to reveal the elements of the phenomenon and not the causes of their occurrence and the role of the variables that affect in a positive or negative way and dictate targeted actions. Since research focuses on the characteristics of the variables, individually or simultaneously, univariate and multivariate methods are used.

**Data and sample collection:** The first priority was to draw up a questionnaire that would be of interest to the participants so that the answers given would not only fulfill their purpose, but would reflect the realities and attribute the real perceptions of the teachers about their counseling and role. For this reason, after the initial design, many changes were made and it was finally tested in three different pilot forms, to a much smaller number of subjects. The pilot tests evaluated the integrity of the questionnaire structure and somehow ensured its validity and credibility, as it was found that there were no vague points that would make it difficult for the respondents and that the time required to complete them did not exceed 15'. No questionnaire completed in the test was included in the final sample, while they were sent digitally, through personal email and social media. The sample chosen for the quantitative survey is unlikely, random and concerns only adult educator trainees, participating in distance learning programs. An effort has been made to ensure a wide range of variables, depending on the circumstances, such as gender and age.

**Presentation of the sample:** The sample of the survey is 140 trainees participating in distance ICT-based adult education training programs. Of these, 59 (42.1%) were men and 81 (57.9%) were women. With regard to the age of the sample surveyed, 14.3% belong to the age group 20-29, 61.4% belong to the age group 30-39, 15.7% belong to the age group 40-49 and 8.9% is over 49 years old. Regarding the educational level of the trainees, 51 (36.7%) are graduates of Higher or Technical Educational Institutions, 88 (63.3%) have completed postgraduate studies while one respondent did not answer the question. In terms of work, 41 (33.1%) of the trainees have worked in some formal education sector and 83 (66.9%) have been employed in adult education. As far as seniority is concerned, 124 trainees responded, so all of those who responded to the question of "work". The answers given were many and varied, but it was considered appropriate to create three categories, which included all the answers. According to them, 58 trainees (46.8%) have work experience of between 0-9 years, 46 trainees (37.1%) have work experience of between 10-15 years and for 20 trainees (16.1%) their work experience is estimated at over 15 years. As far as the certification of computer literacy is concerned, 139 trainees responded, as one left this field incomplete. Of the trainees who responded, only

15 (10.8%) did not have a computer literacy certificate, while the percentage of those who responded positively to this was overwhelming. In particular, 124 respondents (89.2%) said they were certified at one level. The last question about sample demographics refers to the level of learners' knowledge of computer use. Out of a total of 140 participants, 128 responded and there were 12 questionnaires that did not include the question in their responses. Of the respondents, 7 trainees (5.5%) responded that their level of knowledge was not good, 45 trainees (35.2%) replied that their level of knowledge was good enough, 24 (18.8%) responded that their level of knowledge was good and 52 trainees (40%) said their level of knowledge was very good.

**Processing and analysis of research findings:** The data collected during the survey was processed through the 23rd edition of the SPSS program, while the descriptive and inductive statistical analysis was followed for all the variables of the survey. For the first, frequency ranges and percentages were used for the nominal variables, while the average as a measure of the central trend of the respondents' declarations and the standard deviation as a measure of the price dispersion were used for the quantitative and gradational variables. With regard to the induction analysis, where necessary, the non-parametric statistical criterion  $\chi^2$  was applied and where it was considered necessary to carry out further checks between an independent categorical and a grading variable, a normality test was performed using the Kolmogorov-Smirnov criterion. In this study, the findings showed that the requirements as to accuracy were not obtained for the whole of the variables and for that reason the non-parametric criterion Mann-Whitney U test of two independent variables was used, for the case where the independent variable refers to two categories (e.g. gender), while the non-parametric criterion Kruskal-Wallis H test was used for the case, where the independent variable refers to more than two categories. In the course of the statistical checks, the significance level was  $p=,05$ .

**Presentation of the findings:** In the first question of the questionnaire, the respondents confirm their position on the adequacy of their technological knowledge, which they characterize at 96.3% from moderate to very good. In the second question, where the respondents' ability to use ICTs is checked, the majority of participants (44.9%) agree that they would check the control panel settings to correct any damage, while they were less willing to ask for help. The third question also relates to the participants' technological knowledge, who estimates at a percentage of 94.3%, that they can from moderate to none follow successfully the developments concerning the integration of ICTs in distance adult education. In the fourth question, participants were asked to answer if they had experience in distance learning as teachers. Out of them, 79 answered positively (56.4%) and 61 responded negatively (43.6%). In the fifth question, the respondents in the majority respond to the fact that they are moderately acquainted with the distance learning procedure at 40%, while the percentage of those who are positively self-evaluated in this respect is lower. In the sixth question, the respondents, in the context of expressing their personal evaluation of the most effective form of adult education, do not appear confident about their answers, as they do not in most cases choose the "very much" answer, even in the proposals related to their decision to participate in a distance learning technology-supported program. The seventh question inspects the personal assessments of respondents about what they perceive as

success in adult distance education. From their responses, it was found that they considered, to a degree of either "very" or "extremely", that all the suggestions given in the questionnaire could potentially be the success factors of a distance learning adult education program, which demonstrates that the participants are well aware of the basic principles and practices that should govern an educational process.

The eighth question goes over the psycho-emotional status of the respondents in their participation in a web-based distance education program, assisted by modern ICTs. The participants (53.2%) are happy to attend the program, which they face as a new challenge to their professional and personal lives, while they feel impatient to join the educational process by 41.7%.

In the ninth question, where respondents are asked to prioritize the most effective methodological approaches in the distance and lifelong education of adult educators, they maintain a positive attitude towards the new technological educational setting. They recognize the effectiveness of modern distance learning-videoconferencing at 72.9%, with asynchronous tele-education being preferred by 31.4%. The tenth question demonstrates the positive attitude of learners towards collaborative learning and program operation. They support at a large percentage (58.3%) that trainers and trainees are jointly responsible for defining objectives, selecting sources of information and setting time limits for the program, while 24.5% of respondents point to the importance of the role of the program manager. In the eleventh question, respondents replied that a distance learning program should be flexible, engaging the active participation of trainees and encouraging creative interaction between them. In the twelfth question, the respondents ranked the three most important interactions in a technically supported training program and indicated that the relationship between the trainer and the trainee is catalytic. In the thirteenth question, in the same way, the participants responded that the greatest possible autonomy in the distance learning environment is achieved mainly when the trainee sets his or her own professional goals and secondly when conducting audits and evaluating the progress of the training.

In the fourteenth question, the trainees ranked first the choice of reflection with 28.6% as regards the ways in which the participants get motivated in a distance learning program with ICTs. In the fifteenth question, the respondents consider that the trainer of a distance learning technology-based program should play the role of a technical adviser on ICT issues at an overwhelming percentage (98.6%), while also acting to encourage learners.

In the sixteenth question, the respondents said that the trainer should be friendly and communicative while at the same time that he or she must be properly prepared for the learning and teaching process. In the eighteenth question related to the educational material, a wide range of responses was observed. The most popular option collects a low percentage (31.4%). In particular, the respondents believe that the training material of a distance learning program should lead to the acquisition of new knowledge and skills, as this is the reason for its training character. In the inductive analysis conducted to see the differences as regards the respondents' gender, age and educational responses, women were more positive about the educational value of alternative types of education, they were more tolerant of the factors they considered to be catalytic for the success of the program, they attach great importance to collaborative learning and modern tele-education, highlight the role of the administrator and do not evaluate positively the

acquired knowledge. Instead, male participants believe in group co-operation, do not think the trainer should be a motivator, positively evaluate trainer-trainee partnerships, have more experience in teaching, are more confident in their knowledge, more restrained and with more "appetite" for the educational process. As far as age is concerned, the younger ones would be more likely to communicate with a technician or a fellow student to solve technical problems before the teleconference, they choose as an effective form of adult education the in-house programs, they appear more anxious and impatient. On the contrary, older participants are more confident about themselves and their knowledge, they choose as an effective form of adult education the distance education of mixed-type online programs, they consider more likely the active participation of trainees to contribute to the success of the program, and they perceive creative learning as an effective factor in distance and lifetime education.

Finally, with regard to the educational level of the respondents, it was found that holders of postgraduate degrees appreciate their technological knowledge more positively, are more familiar with the distance learning process, maintain a positive attitude towards the effectiveness of forms of alternative education "Laboratories" and "informal forms of education", consider that the chances of success of a distance education program increase when taking into account the training needs of trainees. On the contrary, graduates of higher education/technical educational institutes appear more prepared to face technical problems in the operation of multimedia, are readier to follow technological developments, seem to be more concerned about the adequacy of their knowledge and have a longer experience in teaching.

### The impact of gender and age

As for the inductive statistical analysis carried out to check the significant differences in respondents' answers as regards the gender and age, the following were found:

#### Firstly, with regard to the sex of participants, the following variations were observed:

- In the question of effective forms of adult education, the significant statistical differences between men and women are due to the fact that the latter maintain a more positive attitude towards the educational value of the mentioned types of learning, training and acquiring further education ( $U=1898,500$ ,  $p=,023$ ).
- In the question of the success factors of a distance learning program for adults, the significant differences between the two sexes lie in the fact that women are more atypical towards the proposed factors, which they believe can contribute to the success of a program. In contrast, men are more restrained and stricter in their estimates ( $U=1542,000$ ,  $p=,000$ ).
- In the question about the emotional status of respondents for possible teaching in a distance learning online program using modern ICTs, women seem to be more anxious than men who are more confident, while at the same time the former seem to be facing distance education as a routine procedure compared to the latter ( $U=1826,000$ ,  $p=,033$ ).
- In the question that explores the experience of the respondents in distance education, the significant

differences found between the two sexes are due to the fact that men have taught at a higher percentage than women ( $\chi^2(1)=7,077$ ,  $p=,008$ ).

- In the question of identifying the three most effective methods of approach to online adult lifelong learning, the important statistical differentiations in regards to the gender, are found in the fact that women do not seem to consider of equal importance group co-operation learning and teleconferencing-modern tele-education as men ( $\chi^2(1)=3,725$ ,  $p=,049$ ).
- In the question about the most important factors in the design of distance learning, there are significant statistical differences in the gender of respondents. Specifically, men argue that the most important factor is the involvement of trainers and trainees, while women think it is the program manager ( $\chi^2(3)=24,585$ ,  $p=,000$ ).
- In the question about the principle that the organization of a distance learning program should be based on, the difference between men and women is related to the "assessment of the acquired knowledge" proposal. In particular, women do not consider this principle-action important, unlike men who disagree on this position ( $\chi^2(2)=6,872$ ,  $p=,032$ ).
- In the question about the role of the trainer in a distance learning online program, the differences identified by gender are that men do not think that the trainer should be a motivator, unlike women who disagree ( $\chi^2(2)=6,691$ ,  $p=,035$ ).

#### **As far as the age of the participants is concerned, the following differentiations were identified**

- In the question about the technical knowledge of the participants, where prior to the teleconference and especially for the functionality of the microphone and the computer camera, the differences in respondents' answers in regards to their age indicate that the younger ones would be more likely to speak to a technician or a colleague than the older members of the sample ( $H(3)=7.634$ ,  $p=,050$ ).
- In the question related to effective forms of adult education, statistical variations based on age are identified in the option "in-business programs". In particular, the younger respondents consider this form of education to be effective as compared to older people. In the case of the selection of "distance mixed-type online programs", the situation differs with the older participants being positively affiliated to it and the younger ones not showing similar attitudes ( $H(3)=9.285$ ,  $p=,026$ ).
- In the question of the success factors of an adult distance learning program, the variations in respondents' responses, depending on their age, are found in the category  $>49$  of the participants who consider making time for questions from their trainees to have a positive contribution to the success of a program. In this respect, older and younger respondents agree or maintain a more moderate attitude. In the same question, respondents of the age of  $>49$  also argue that it is more likely that the active participation of trainees will contribute to the success of the program compared to those of other ages who do not particularly agree ( $H(3)=7.969$ ,  $p=,047$ ).
- In the question where respondents' feelings are being explored in view of their participation in a distance online

technologically supported adult education program, it is generally stated that as the age of the participants increases, their concern decreases, with the only exception of the oldest members of the sample ( $H(3)=9,648$ ,  $p=,022$ ).

- The exact same picture also appears with regard to the expectation of the start of the program, where the degree of impatience decreases, as the age of the sample members increases, with the exception of those aged over 49 ( $H(3)=11,501$ ,  $p=,009$ ).
- In the question related to effective methods of approaching online lifelong learning, the statistical differences of respondents' answers lie in the proposal for creative learning, in which older age groups perceive creative learning as an effective factor, as opposed to the younger ones ( $\chi^2(3)=7.820$ ,  $p=,050$ ).

#### **Conclusions**

The analysis of the data of the bibliographic review and those who emerged from the research, as far as the use of information and communication technologies in distance education of adult educators has revealed that this is a form of education aimed at individuals interested in training in an open and flexible learning environment. Their first priority is not the use of ICTs, but they are the means to deliver a training course tailored to their individual needs, desires and aspirations. For this reason, their responses are more marked by a tendency that refers to the principles of formal education than to those of multimodal learning. The fact that their motivation to participate in a distance learning program does not lie with the integrated technological means and tools is demonstrated by their modest attitude in terms of the adequacy of their technological knowledge and their uncertainty as to whether they will be able to respond successfully to the requirements of the program. However, the most intense concern of trainees in a Lifelong adult education program is related to its attractive and innovative character, which should contribute to provoking interest in learning and participation. The trainees recognize the important role of the trainer, who should be both a partner, a technical consultant, a motivator, a good and friendly teacher who adheres to the basic principles of modern pedagogical science. Similarly, trainees in second-chance schools place great emphasis on the role of the Director (Digaletou & Moustakas, 2019). The main motivation for the participation of learners in adult education is their personal pursuit of continuous training and professional development in the ever-changing environment of formal and non-formal education. This research confirms the Moustakas and Karagianni (2018) and Digaletou and Moustakas (2019) surveys, which show that adult participation in training and further training programs stems from the personal need to develop professionally. Most of the above findings reveal the significant influence of gender (Moustakas & Karagianni, 2018) and age (Moustakas, 2018), factors that significantly influence and differentiate the views of adult educators in our sample. These discrepancies in the responses and attitudes of participants in Adult Education programs are theoretically included in qualitative methods that demonstrate that respondents' views vary according to gender or age (Moustakas & Fokiali, 2017; Moustakas & Moustaka, 2019).

**Suggestions for future research:** Although the survey's positive findings include the fact that it contains a significant sample in numbers, that it gathers data that have been utilized

with the use of reliable statistical methods, and that the demographics of the participants match those of other surveys conducted in Greece and abroad, it cannot be fully reliable. This is because the quantitative method fails to examine the complexity of human experience and perception, and since a non-probability sample was used, the generalized expectations are not allowed. In this context, the very interesting aspects of the use of ICTs in distance and lifelong education programs for adult educators emerged from this research, can and should serve as a springboard for more extensive research, which will be multi-methodical and will be carried out with the participation of a much larger sample of probability, which will lead to unambiguous generalizations.

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