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Research Paper

Investigation of educational needs and attitudes of teachers of secondary technical and vocational education in Arcadia regional unit for training in new technologies

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ABSTRACT: *Advances in the field of new technologies, the admission of these new means in Secondary Vocational Education as well as the need for training among those working in the field of education have triggered the need for the present research project. The research was conducted with the use of both quantitative methods via written questionnaires and qualitative methods via focused interviews in order to thoroughly analyze the data obtained from both methods. According to the research findings, among the parameters, i.e. gender, experience, teacher specialty, school unit and previously-held knowledge on new technologies, examined, teacher specialty turned out to be of prime importance. Specifically, teacher specialty is shown to influence a) teacher attitude on the issue of admission of interactive whiteboards in schools, b) teacher attitude on the issue of their involvement in alternative training methods regarding the use of new technologies and c) the degree of use of the facilities of the social software by teachers, according to their training level. Finally, it is shown that none of the above-mentioned independent variables drastically influence the need for training of the teachers who participated in this study.*

KEYWORDS: ***Teachers, Training, New technologies, Attitudes, Educational needs***

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I. INTRODUCTION

Nowadays there is a continuous technological development both in social and economic level which contributes to the creation of new data and new opportunities for the progress, prosperity, and simplification of everyday life. The above-mentioned developments have also impact on education. More specifically, the new pedagogical methods strongly challenge teacher-centered teaching and support participatory education and learning through practice. Therefore, modern technologies are an important tool for teachers in the effort to apply new methods. Also, the use of new technologies in school is judged, according to [1]: as imperative, as it surpassed the model of the teacher who transferred knowledge, taught, demonstrated and explained. The teacher now needs to be less of a carrier of knowledge and more of a coordinator of the educational process, a counselor of the learners, the one who will give them triggers and guide them to explore the learning objects themselves, to look for sources, to process the knowledge and the experiences they have and learn by doing. Based on these challenges, it seems that in recent years an evolution of the role of teachers is taking place and the use of all available tools is required. Computers, multimedia, projectors and related school infrastructure are often important supplies for today's teachers. The treatment of teachers, however, in the face of modern technological means, varies. Characteristically on this subject, the author in [2] emphasizes that: "*the positive views of teachers are expressed, for the most part, at a theoretical level only. When they are called to implement with their participation the use of new technologies in the teaching of the courses, they are particularly cautious*". In Greece, the following measures have been taken for the smoother preparation of the application of computers in the field of education: First, the strengthening of the infrastructure of school units with systems of new technologies. Second, the operation of the centers of information technology and new technologies (KEPLI.NET) per prefecture, with the aim of the proper operation of information systems in schools. Third, the creation of the National school network as an exclusive internet provider, in all schools of the country. Fourth, the training of primary and secondary school teachers through the information society program, in the use of

computer and network systems for the teaching of their cognitive subjects with the help of specialized educational software.

II. LITERATURE REVIEW

First of all, in [3] the interviewed teachers summarize the conditions for the success of the training programs as follows: a) to have the appropriate educational material, b) to have well-trained instructors and c) to delve into specific didactic and practical issues during the duration of the training sessions. Moreover, another research work in [4] proves the following: First, that positive teachers seem to use new technologies more widely than theoretical teachers who make minimal use of them. Second, that teachers of theoretical subjects show a reluctance to participate in training programs for new technologies. Also, in three surveys conducted in [5] in secondary schools, he found the following: First of all, the majority of teachers are in favor of the use of new technological means and at the same time state that they are familiar with them. At the same time, however, they consider the equipment as old, and the process of training teachers so far as problematic.

In the research work conducted in [6]: it initially emerged that the attitude of the teachers in the sample is positive in terms of the integration of new technologies in the educational process. At the same time, however, teachers consider the training process as unsatisfactory and therefore require better training and continuous information, as well as the development of infrastructure so that new technologies are actively integrated into teaching practice as a means of knowledge, research and learning. Finally, especially philologists and foreign language teachers do not seem to apply the new technologies in educational practice at all. Moreover, in a relevant study conducted in [7] regarding the training of teachers, the following was found: First, that teachers must play an active role in their training, so that then the conditions for self-education are created. Also, they proved how training can lead to the connection of educational theory with educational practice, as well as research with teaching. Finally, according to the author in [8], modern teaching supervisory tools lead to the achievement of teaching objectives.

Papaconstantinou in [9] emphasizes the distance that scientific research has in relation to the daily educational practice. However, a basic condition for the application of scientific research is the thorough training of current teachers in new technologies and new educational methods. Furthermore, in [10]: the attitudes that teachers have towards new technologies are characterized by ambivalence, as although they recognize the usefulness they have, they nevertheless have negative expectations for their use. As such, the authors propose an organized and systematic training in new technologies, the restoration of infrastructure problems and computer equipment, the production of appropriate educational material, the creation of multimedia rooms and the encouragement by the state for further use of educational technology by them. current teachers. Additionally, the training process of Greek teachers, according to [11], is distinguished by uncoordinated and fragmentary character and does not take into account the principles of adult education. Moreover, it does not show versatility and flexibility as it simply provides a seminar training. Finally, the content of the training sessions does not come as it should after consultation between trainers, participating trainers and organizers in order to build a training process with maximum positive results.

According to the research of Koronaios [12]: the traditional way of teaching is beginning to decline. Instead, new pedagogical methods using new technological means are constantly being introduced. Therefore, the contribution of teacher training is considered a vital issue. In another research work in [13] the following were observed: First of all, the teachers considered the training programs so far as fragmentary, since they are not part of a wider plan for the integration of ICT. in education. Also, teachers of all specialties are in favor of conducting training programs. Finally, the majority of teachers surveyed stated that they did not gain much confidence in the use of new technologies, as several pedagogical scenarios for the use of new media were not conducted. The positive attitude of teachers towards the implementation of a distance education program is described in [14]. Moving on, in a research work [15] it was noted that: First, the respondents associate the issue of training with the successful implementation of the educational project, as well as with the implementation of innovations in education. They also raise as an important issue the level of knowledge of those who train teachers in new technologies. Finally, they note the strong disposition of today's teachers for self-education. Also, in another research [16], teachers of all specialties consider the use of ICT. in education as positive and useful and raise the issue of their training in new technologies. Nevertheless, they state that they do not often use new technologies in everyday educational practice. It is worth noting that this phenomenon is more pronounced among women teachers, as well as teachers with many years of service. Also, the author of [17], proved that the majority of teachers use new technologies and in general that they are positive towards them. He also emphasizes, at the same time, that teachers find it difficult to fully integrate new technological means in the learning process, mainly due to lack of space and appropriate infrastructure. Finally, he points out that, especially philologists, do not make use of new technological means in practice.

Next, in a research conducted in [15], the views of education executives regarding the training needs of Greek teachers were studied and it was noted that: First, the respondents associate the issue of training with the

successful implementation of the educational project, as well as with the implementation of innovations in education. They also raise as an important issue the level of knowledge of those who train teachers in new technologies. Finally, they note the strong disposition of today's teachers for self-education. Also, in another research study) [16], teachers of all specialties consider the use of ICT. in education as positive and useful and raise the issue of their training in new technologies. Nevertheless, they state that they do not often use new technologies in everyday educational practice. It is worth noting that this phenomenon is more pronounced among women teachers, as well as teachers with many years of service. Also, Goufas [17], in a research he did, proved that the majority of teachers use new technologies and in general that they are positive towards them. He also emphasizes, at the same time, that teachers find it difficult to fully integrate new technological means in the learning process, mainly due to lack of space and appropriate infrastructure. Finally, he points out that, especially philologists, do not make use of new technological means in practice. Finally, it is found that mathematicians: a) consider the training process so far as insufficient, b) are in favor of the introduction of new technologies and c) do not make practical application of ICT. Moreover, in [2], the state-offered teacher training programs in computer use are evaluated negatively by the interviewed teachers, as the inadequacy of their perfect introduction to technological literacy is pointed out. For this reason, they suggest that the training programs in the future be enriched and organized, in a different way, in order to give a better result. Finally, it is found that philologists are negative both in the introduction and application of new technologies in secondary education.

Additionally, in [18, 19], the teachers positively judge the introduction and use of ICT in schools. At the same time, however, they consider both the available educational software and the offered logistical infrastructure as deficient. Finally, they argue that a more effective ICT training is required. in combination with continuous pedagogical and technological support. Also, the author in [20], initially shows that all teachers consider training as necessary for their professional development. They also prefer training programs to be optional and fast-paced. Finally, they consider the contents of the training programs in which they participated to be incomplete.

In [21], teachers express strong dissatisfaction with the limited training opportunities within the service. They also suggest the axes around which an effective education and training can be built. In a relevant research of the Observatory for the Information Society (2009) [22], it was found that today's teachers face a deficit in electronic skills towards students. The solution to this problem is provided by the continuous training of teachers on the use of new technologies. As for the current school, according to Aslanidou [23], it must use all available technological means. Only in this way can the school change and create imaginative students rather than passive listeners. Of course, teachers have an important share of responsibility in the direction of improving the educational function, who should be constantly trained both in new methodologies and in the continuous use of new technologies and multimedia. Finally, in the research conducted by the Pedagogical Institute (2010) [24] the teachers state the following: First of all, that they are not satisfied with the training programs that they have attended from time to time. Secondly, that they prefer fast-paced seminars conducted using new technologies. Therefore, the form of training should be more organized, systematic, on a regular basis and aimed at fully familiarizing teachers with new educational technologies. Moreover, the research works [8-10, 12] emphasize the need for systematic teacher training. This is achieved through special measures to ensure that the use of information technology is included in all initial teacher education programs and that all teachers have access to appropriate in-service training tailored to their specific needs. Teachers should receive ongoing support and counseling and, at the same time, should have the necessary time to familiarize themselves with the tools available, integrate the technology into their own inspirational lesson plans and exchange views and experiences on its use. technology with their other colleagues.

III. METHODOLOGY

The research methodology begins with the identification of the research goal of the study, which is as follows:

- the examination of the training needs of technical education teachers, regarding the application of modern educational tools and methods offered by new technologies in education.

This is a very topical issue, as technological progress is constantly increasing the demands of teachers, resulting in them reacting in different ways. The following is the second stage of the research process where it is defined as a population - target of the research: teachers of all specialties, regardless of gender, years of service and previous technological knowledge who serve in the three vocational high schools of the prefecture of Arcadia. Then in the third step it is selected as the way of data collection. The questionnaire was given personally by the researcher to the sample of teachers interviewed, in order to avoid unanswered questionnaire sheets. Thirty-two closed-ended questions were selected, the first five of which are of a demographic nature. The next twenty-seven questions, however, correspond to the research questions and are answered based on the five-point Likert scale. This interview is focused and includes thirteen open-ended questions. In the seventh

phase of the research, the data were collected and analyzed. For better processing of the questionnaire data, the SPSS program was selected, and tables, histograms, graphs and bar graphs were produced for the thirty-two questions, which are listed in the appendix of this paper.
The objectives of this research paper are:

- The precise investigation of the training needs and attitudes of the sample teachers, in the new technologies depending on the gender, the years of service, the school unit, the specialty and the pre-existing knowledge in ICT.
- The determination of the real level of knowledge in the new technological means, of the teachers participating in the research.
- The notification of the results to the teachers' associations of the school units of the sample, in order to encourage the interviewed teachers in the use of ICT.

IV. RESULTS AND DISCUSSION

A comparative or descriptive analysis of the study based on results, on previously studies, etc. The results should be presented in a logical sequence, given the most important findings first and addressing the stated objectives. The number of tables and figures should be limited to those absolutely needed to confirm or contest the premise of the study. The authors should deal only with new or important aspects of the results obtained. Material from the Results section should not be repeated, nor new material introduced. The relevance of the findings in the context of existing literature or contemporary practice should be addressed. Seventy-eight teachers participated in the quantitative research, of which forty-four were men and thirty-four women (Fig. 1). Of the specific teachers, thirty-three served in EPAL. Tripoli, the twenty-four in EPAL. Megalopolis and the twenty-one teachers at EPAL (Fig. 3). From the sample of teachers from twenty-one and more years of service had: six teachers, between sixteen and twenty years of service: four teachers, between eleven and fifteen years of service: seventeen teachers, from six to ten years of service: twenty-two teachers and from five and less years of service had: twenty-one teachers (Fig. 2). Also, the participating teachers belonged to the following branches: WP01-Theologians: two, WP02 -Philologists: nine, WP03-Mathematicians: six, WP04-Natural sciences: eight, WP06-English: five, WP09-18-Economics: five, WP17-12-Engineers / Technologists: twenty-four, WP18-Health-welfare eight and WP19-20-Informatics: eleven (Fig. 4). Finally, prior knowledge in new technologies comes from: a) graduation school for thirteen teachers, b) teacher training program for twenty-seven teachers c) self-education and seminars for seventeen teachers, d) graduation school, self-education, seminars and teacher training program for four teachers, e) teacher training program, self-education and seminars for seven teachers and f) graduation school and teacher training program teachers (Fig. 5).

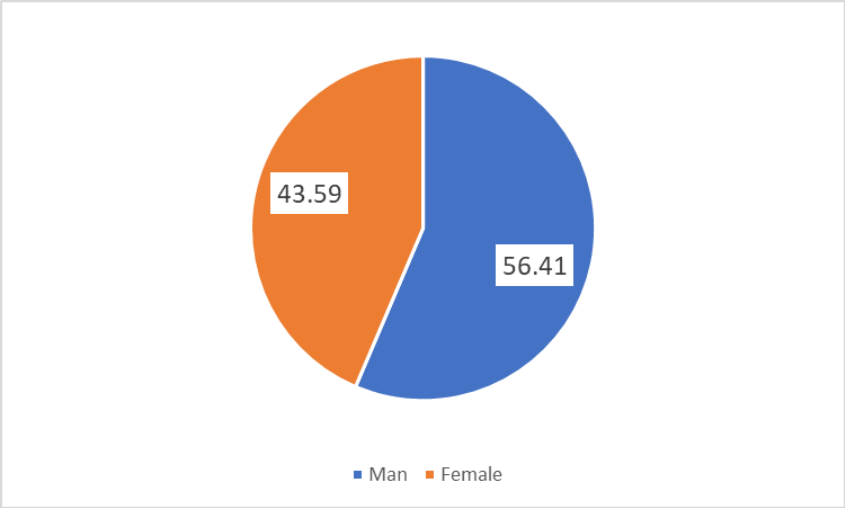

Figure1: Sex distribution in survey

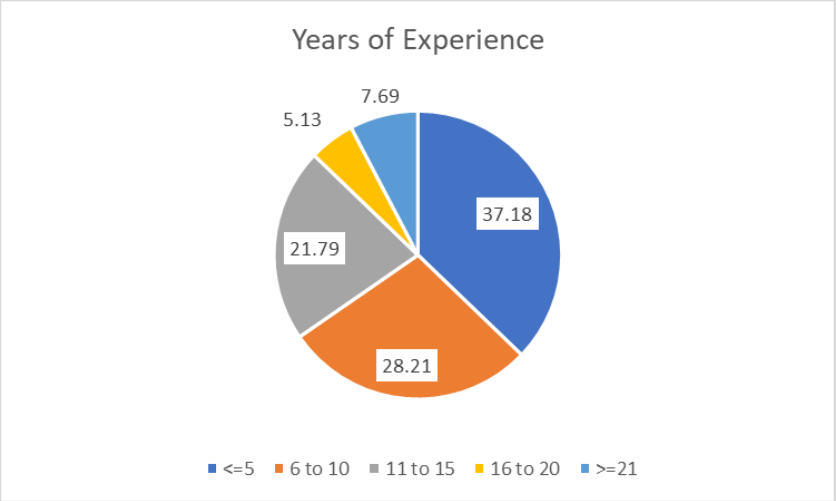

Figure2: Years of Experience

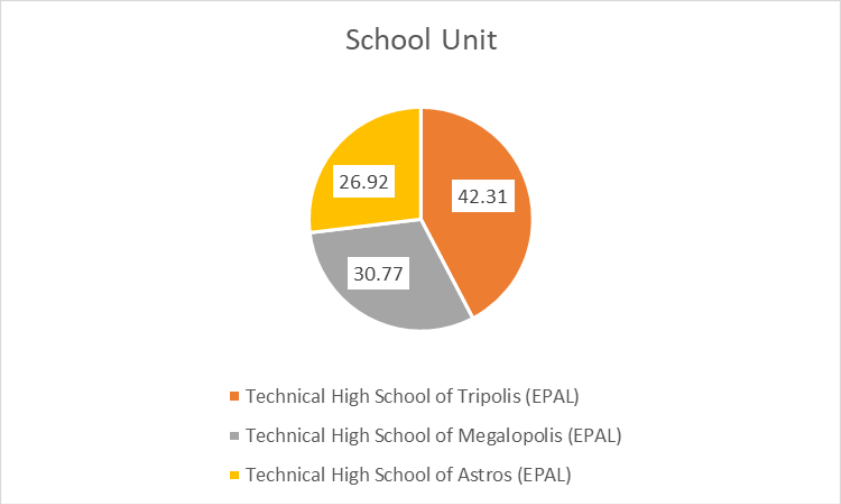

Figure3: School Unit

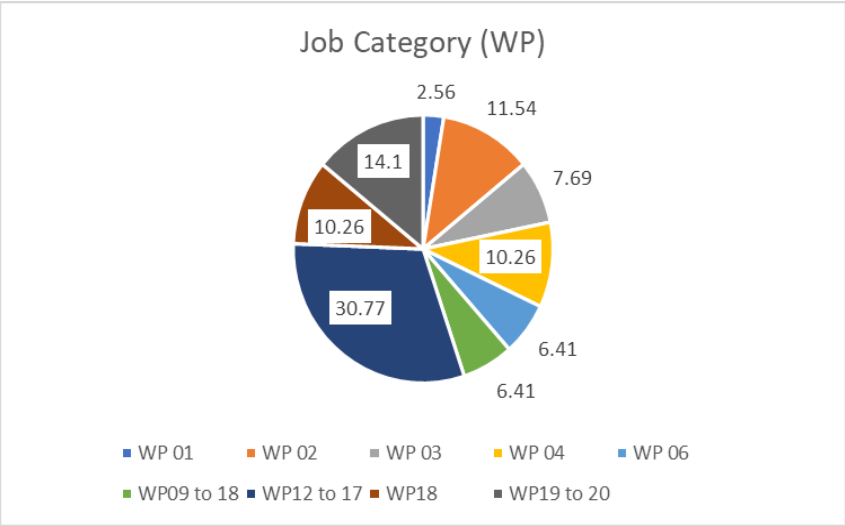

Figure4: Job Category

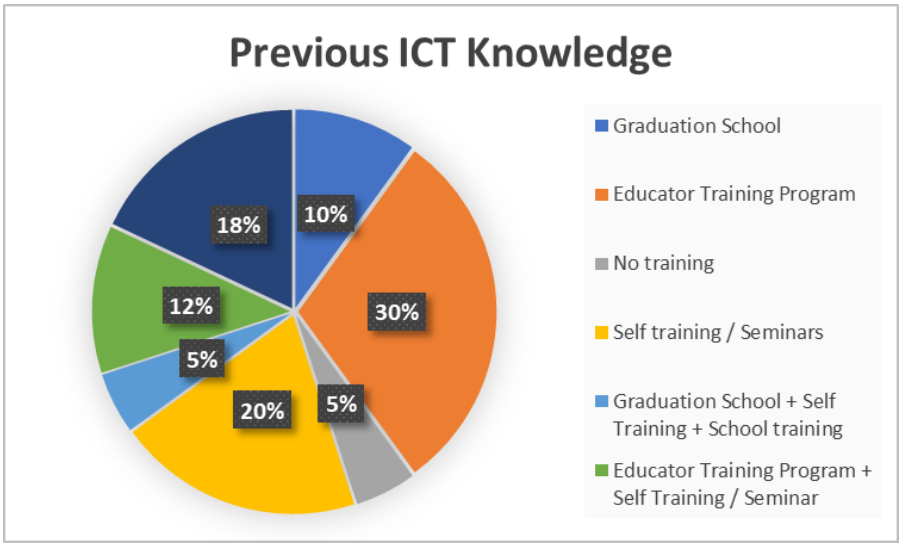

Figure5: Previous Information and Communication Technology (ICT) Knowledge

The correlation of the findings of the first research question with the conclusions of the bibliographic review revealed the following: tools, such as interactive whiteboards in secondary vocational education. Secondly, how the issue of strengthening the insufficient material and technical infrastructure per school with the appropriate machinery and educational programs is raised by all teachers. Third, all teachers emphasize the lack of integration of technology, such as interactive whiteboards in curricula by specialty, so as to make appropriate use of new technologies per subject. It is therefore concluded that the findings of the first research question agree with the findings of previous research. The correlation between the findings of the second research question and the conclusions of the literature review revealed the following: Theologians and PE02-Philologists who do not make any use. Also, that teachers, with the exception of PE19-20-Informatics teachers, as they do not have sufficient training in new technology issues, avoid contact with computers and consequently do not use even innovative programs, such as social software applications. Therefore, it is concluded that the results of the second research question coincide with the findings of previous studies.

The correlation of the findings of the third research question with the conclusions of the literature review revealed the following: First of all, that teachers regardless of specialty state that they are not convinced about the effectiveness of training in new technologies. Secondly, that they are often trained in already known subjects or receive delayed training with the result that they are again indifferent. Third, many educators characterize training in new technologies as a theoretical process that is not substantial and practical in nature, with the result that the knowledge provided by the training seminars does not have a positive impact on the real improvement of classroom teaching. Finally, many interviewed teachers expressed the need for training with appropriate educational software per specialty, in order to acquire specialized professional qualifications.

The correlation of the findings of the fourth research question with the conclusions of the literature review revealed the following: First, teachers are skeptical about attending alternative training programs, whether they are optional or distance. On the contrary, it is found that they prefer lifelong and mixed training programs. If, nevertheless, they participated in a distance program, they consider e-mail as the best way to communicate with their trainer. It should be noted here that the result of the research does not agree with the findings of previous research which clearly showed a more positive attitude of teachers in the perspective of distance education. Finally, the issue of self-education is proving to be part of the wider professional development of teachers, which, however, cannot have a primary, but a secondary role for teacher education. It should be emphasized here that WP01-Philologists and WP03-Mathematicians are skeptical about the idea of self-education.

It is concluded that although all the interviewed teachers recognize the educational value of new technologies, the application of modern technological means is done mainly by the teachers of technological and positive sciences. In contrast, theory teachers often say they are unprepared to make systematic use of new technological tools in the classroom. Also, it seems to the majority of teachers to consider on the one hand the infrastructure of the schools in places equipped with electronic means limited and on the other hand the training they have received in the field of new technologies as incomplete, with the consequence that they cannot use computers. social software and interactive whiteboards as key supervisory and learning tools in teaching.

V. RECOMMENDATIONS

This section contains theoretical and practical recommendations, further research ideas, new approaches, suggestions and concerns regarding potential social and cultural impacts, etc. Given that the findings of the present research are not generalizable, because they concern the teachers serving in the vocational high schools of Arcadia, it is proposed to implement the following in the schools of the respondents: a) to design short-term in-school training programs in the field of new technologies take into account the special needs of teachers through the completion of some questionnaires, for the shaping of the programs, b) to use the school laboratories of the schools for the implementation of the seminars, c) to participate voluntarily for teaching in the seminars those of the IT teachers in want, c) to strengthen the problematic logistical infrastructure of vocational schools in new technology devices with the help of some sponsorships from local communities and d) to encourage teachers at the end of the seminars in which they participate, to continue to educate and receive place in modern and flexible distance learning programs.

VI. CONCLUSION

The creation of the institution of an organized support and guidance program through "mentor" is considered as the ideal for the smooth integration in the profession on the one hand and on the other for the ideal development of the physiotherapist whose goal is to improve the quality of life of our fellow human beings.

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