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The use of ICT in educational organizations: A quantitative analysis

Georgios Raftoulis*
University of Murcia, Principal in 2nd Primary school of Giannouli, Greece

Dimitra Koniari
University of Murcia, Principal in special secondary school of Larissa, Greece

***Corresponding Author:** demyapr81@gmail.com

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Abstract
The main goal of this research is analyse the use of ICT by principals of vocational training institutes and schools of second change in Greece in the administration of these organizations. Especially, it would be examined whether leaders use ICT in their administration as well as the extend of its use. In this survey took part, total 187 directors, both of institutes of vocational training and of schools of second change. This survey was conducted in Greece during the period April- June 2020. This period was the period of Covid-19 and one of the reason that was used only the questionnaire via e mail was the above reason. For the purposes of this survey was used the the quantitative method using through a structured questionnaire so as to examine systematically the use of ICT. The purpose of the quantitative analysis is to discover the causes of the changes of this phenomenon through objective measurement and numerical analysis. This method through the use of numerical data, contributes to the generalization of the above, under examination topic. Having analyzing the results of the survey, it has emerged the following results: Firstly, the adequate use of ICT in administration of lifelong learning structures (LLL in advance) is considered important so as each organization can keep pace with the modern digitalized conditions. Furthermore, it leads to the reduction of unemployment as well as to the opening of each one educational organization to society the following conclusions emerged The optimist aspect is that the majority of these educational leaders judge positively the use of ICT in administration of LLL structrures. This research contributes to the acquisition of new knowledge and a better appreciation of the issue of ICT in educational organizations.

INTRODUCTION

Firstly, it is an indisputable reality that every person from its nature has the predisposition το know, learn, discover and obtain new skills and qualifications so as to be adapted to new evolving conditions. Among these continuous and demanding social and economic situations every active citizen must obtain new skills as it has been mentioned above through the LLL (Eggelmeyer, 2010; Kapsalis & Papastamatis, 2013; Moore, 2020; Poquet & De Laat, 2021). The LLL doesn't stop throughout the life of every citizen who desire to be evolved with the current developments. LLL term is distinguished in formal, non-formal and informal learning having no borders so as people can be able to maintain and acquire new skills (Martin, 2019; Looney & Santibañez, 2021; Nygren et al., 2019; Taylor& Neimeyer, 2017).

The knowledge, abilities, skills are more decisive in today's society than in industrial society (Falloon, 2020; Pettersson, 2018). For this reason, Information and Communication Technologies (ICT) is a mean of modernization both in the educational process and in handling the administrative processes of an educational unit. Every educational organization included the LLL organizations make more and more use of ICT so in teaching process as administrative issues. After all, ICT is a mean of social interaction (Aparicio Gómez, 2020; Mielikäinen & Viippola, 2023). The introduction of ICT in

educational process requires disruptive innovations that are challenged to the traditional way of learning and management (Onyekachi, & Mohammed, 2021; Okeke, 2019; Purnamawati et al., 2019).

No one can dispute that the integrity of ICT in administration facilitate learning and administrative improving school administration. activities provides quality education and effective administration. Consequently, ICT can modify the educational culture creating a positive school climate (Granados & Jaramillo, 2019; Okeke, 2019). In order the introduction of ICT in administration to be effective, is required the appropriate technological infrastructure, the administrative support as well as the encouragement of managers and teachers (Noceto, 2022; Saif et al, 2022).

The reality is that, unfortunately, no any other relevant question or problem about this topic has been answered by any of the existing studies or research in this particular area. Especially, in Greece there has not been conducted any other survey before this survey in these specific organizations and for this reason there is an important research gap.

METHODS

Research problem

From all the above literature analysis is proven that the role of ICT in administration of educational organizations is crucial improving the effectiveness of the teaching and organization.

The research problem of this survey is whether the leaders of structures of LLL have introduced ICT in their administrative tasks using ICT in the administrative tasks.

Research Focus

Lifelong learning

Every person begins to be shaped as a personality from the first stages of the development. In this gulf the education of every person starts from a very young age. So every person can be cultivated obtaining a way of thinking that can make him/her better Education allows every citizen to have an income improving its social level and socializing him/her in general . And this, because through education and learning, man receives those supplies that allow him to work and thus have an income, but also to socialize in general. (Aspin et al., 2012; Gouthro, 2019; Isele & Cosgun, 2018; Wals & Benavot, 2017).

Especially, in Greece institutes of vocational training as well schools of second change are included in the LLL structures. Especially:

The institutes of vocational training have as its main goal to provide initial vocational training to those graduates who have completed the compulsory secondary school. Secondly, it aims to facilitate the professional integration of those trainees providing to them the important qualifications and skills of scientific, technical, professional and practical knowledge's (Law, 4763/2020).

Schools of second change according to Greek Law 2525/97 are public schools. They are addressed to young people who have complete the 18 years old and not have completed gymnasium. They provide a gymnasium graduation equivalent it. Trainees attend lessons at evening and its program aims to the acquisition of their basic qualifications and development of their personal skills. Furthermore, its curriculum is open and flexible based on the principles of multiliteracies. It doesn't based on a rigidly predetermined and centrally planned curriculum. For this reason, the lessons are the following ones: Greek language, mathematics, informatics, english, social education, environmental education, cultural-Aesthetic education, elements of technology and natural sciences, orientation – counselling in professional career matters (Hatjinikita, 2021; Taratori, et. all, 2008).

Despite the fact that the Greek educational system is centralized, the schools of second change and institutes of vocational training try to leave from this gulf.

Leadership

The term of lleadership is multidimensional as it aims to affects other people attitudes and behaviours so as to make them capable of achieving certain goals (Yukl, et. all, 2002). In this frame every successful leader must have a vision through it have to create a democratic and open to society

educational unit. Leader must inspire the others aiming at respect and pluralism (Bush & Glover, 2003; Leithwood et al., 2021; Leithwood et al., 2020).

ICT

The increasing complexity of the educational system necessitates the introduction of ICT in teaching and administration. ICT contributes decisively to the improvement of all educational and administrative processes. An educational organization produces, in all administrative levels, a large amount of digital information. Consequently, its effective administrative tasks are made using advanced database management systems, by creating a multidimensional system of collecting, storing and processing information (Håkansson Lindqvist & Pettersson, 2019; Wu et al., 2019).

The use of ICT makes the administrative functions faster and simplifies the daily operation of the administration reforming the communication of the educational community. ICT comes to contribute, both to the educational process and to the organization and administration of the educational units. ICT are the means for the school unit to abandon the stability making it able to follow the changes that are taking place in education field (Ghavifekr & Wong, 2022; Rabah, 2015).

Research Aim and Research Questions

This research aims to examine deeply the extent to which leaders of LLL structures in Greece use ICT in their administrative tasks as well as the effects of its use to educational and administrative field.

From all the above, there have been emerged the following research questions:

1. In which extent do the leaders of LLL structures use ICT in the administration?
2. Do demographic factors affect the use of ICT in administration?
3. In which extend does ICT use affect the administration of LLLstructrures?

Research Methodology

General Background

The research problem of this survey is to investigate the use of ICT by leaders of vocational training institutes and schools of second change in the administration. The main research tool that was used was the questionnaire.

Especially, this research is descriptive and the presentation of the data is presented using pie charts, etc. The questionnaires are grouped to thematic axes, something that helps the researcher to have a complete picture of the answers of the participants. the average of the answers of the questions was based on the averages of the questions that have been grouped in the first stage (George & Mallery, 2016).

Taking into account the above averages as well as the thematic axes, we led to conclusions about the most important answers to the questions. For the purpose of this research, questionnaires were distributed to leaders of institutes of vocational training as well as to those of schools of second change. From the above leaders it taken completed 187 from the first ones and 29 fron the second ones. The questionnaire is consisted of twenty nine (29) organized questions.

Sample/ Participants/ Group

The target group of this specific survey was the leaders of schools of second change and institutes of vocational training of the school year April- June 2020. The sample was choosen randomly among the leaders of this period (Creswell, 2016; Robson, 2010).

Instrument and Procedures

Firstly, the initially questionnaire was sent to 20 leaders of schools of second change and institutes of vocational training of Greece. After making some corrections and improvements it was taken its final formulation.

The final questionnaire consists the following parts: (1) The first part that has questions concerning to demographic elements seek by the participants to choose one of the possible categories (Creswell, 2016); (2) The second part has questions that are related to use of ICT of leaders and,

additionally, it has sub-questions ((Creswell, 2016; Robson, 2010). The questions of third part using Likert scale examines the degree of using ICT as well as the leaders (dis)agreement about its necessity to administrative issues; and (3) The fourth part seeks from the leaders to auto evaluate the use of ICT by themselves. The questionnaire was sent to participants via google forms due to the between the researcher and the participants as well as due to Covid-19. Creswell (2016) rightly argues that the explosion of technology has led to faster and economical collection of data.

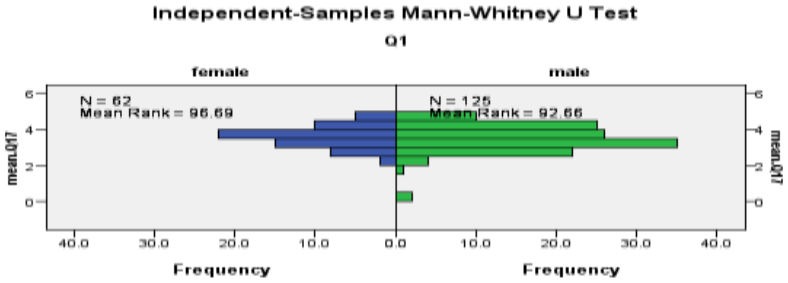
RESULTS AND DISCUSSION

In this survey took place 187 principals of institutes of vocational training and schools of second change. Especially, 72 directors were of schools of second change and 115 of institutes of vocational training. 125, 67% of whom were men and 62 were women, 49%.

It was considered appropriate to be used together the two sexes so as to eliminate the social exclusion and the reduction of unemployment.

Most of the participants belongs to the age group 51-60, in a percentage of 68%. The smallest population group (61+) includes a percentage of 4%.According to leaders studies, it has been emerged that , most of the participants has a postgraduate sdiploma, at a rate of 68%. The majority of participants are director in an institute of vocational training (115 people, 61%). In a rate of 75% the leaders have attended training programs in relation to administration issues and an ICT training program to a rate of 98%.

Initially, it is examined the effect of gender of leaders (Q1) to the extent to which they use ICT in administration. For this reason, it has been made a check between the gender (Q1) and the grouped answers (averages) of question group 17 (extent to which you use ICT) (Figure 1).

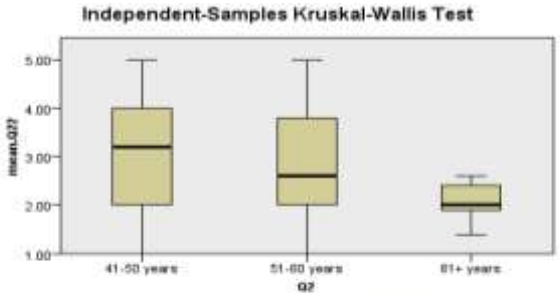


Total N	187
Mann-Whitney U	4,042.000
Wilcoxon W	5,995.000
Test Statistic	4,042.000
Standard Error	348.197
Standardized Test Statistic	.480
Asymptotic Sig. (2-sided test)	.632

Figure 1. Gender and works

From the analysis of figure 1 it has emerged that p-value = 0.632. So, it is greater than the significance level α = 0.05. Consequently there is no statistically significant dependence between the two above questions. The gender of the leaders doesn't affect the use of ICT in administration.

Furthermore, it is then examined whether the age affects their auto evaluation. A check is made between the gender and the grouped answers of question group 22 (How do you evaluate the use of ICT?, mean.Q22).

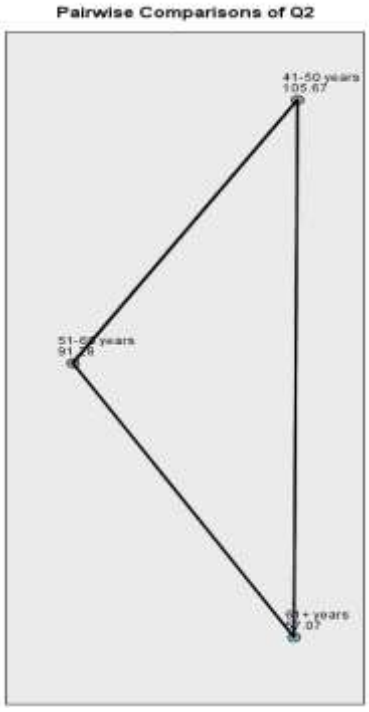


Total N	187
Test Statistic	6.041
Degrees of Freedom	2
Asymptotic Sig. (2-sided test)	.049

1. The test statistic is adjusted for ties.

Figure 2. Age and auto evaluation

From the figure 2, seems that there is there is a statistically significant effect of the age of leaders to their autoevaluation (value of p-value = 0.049, it is less than the significance level α = 0.05) That is, Consequently, it is made a control in order to find out between which age groups there is a statistically significant difference in relation to use of ICT. There is a difference between the age groups 61+ years old and 41-50 years old (p-value = 0.025 (Figure 3).



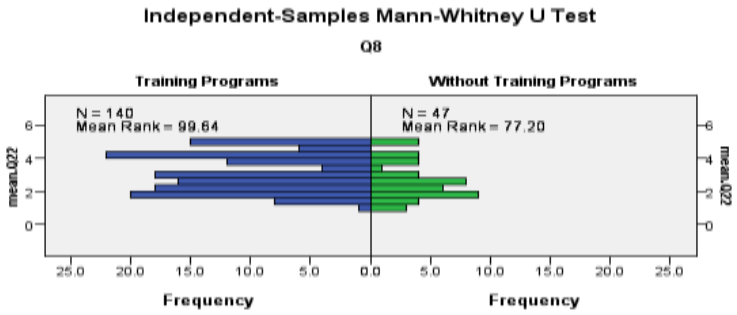
Each node shows the sample average rank of Q2.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
61+ years-51-60 years	34.206	20.939	1.634	.102	.307
61+ years-41-50 years	48.602	21.718	2.238	.025	.076
51-60 years-41-50 years	14.396	8.871	1.623	.105	.314

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Figure 3. Pairwise Comparisons Q2: Age auto evaluation

Moreover, it is examined whether the attendance of training programs affects the use of ICT. For this reason it is made a check these two parameters (Q8 &Q22).



Total N	187
Mann-Whitney U	2,500.500
Wilcoxon W	3,628.500
Test Statistic	2,500.500
Standard Error	319.997
Standardized Test Statistic	-2.467
Asymptotic Sig. (2-sided test)	.014

Figure 4. Training programs

Taking into account the results of figure 4 the value of p-value = 0.014, i.e. that is less than the significance level α = 0.05 it is concluded that there is a statistically significant dependence between these two questions. In other words, training programs affect positively to the use of ICT.

Furthermore, it is made a correlation between the attitudes and views of leaders in relation to use of ICT (mean.Q20) and their evaluation (Q25).

Table 1. Attitudes and evaluation

			Evaluation of digital competence Q25	Attitudes and views of directors mean.Q20
Spearman's rho	Evaluation of digital competence Q25	Correlation Coefficient	1.000	.806**
		Sig. (2-tailed)	.	.000
		N	187	187
	Attitudes and views of directors mean.Q20	Correlation Coefficient	.806**	1.000
		Sig. (2-tailed)	.000	.
		N	187	187

**. Correlation is significant at the 0.01 level (2-tailed).

From table 1, seems that that there is a statistically significant dependence between the two questions. Consequently, as better view leaders have so greater use of ICT they make (p-value = 0.000, especially it is less than the significance level α = 0.05) (cor coeff: 0.806).

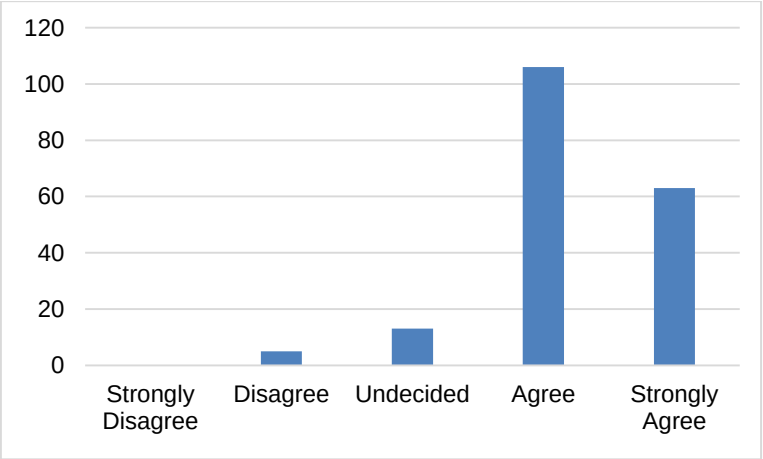


Figure 5. Needs of local community

In figure 5 it is examined whether the use of ICT contributes to the investigation of the needs of the local community. From the examination of answers to question Q20.13 (The use of ICT contributes to the opening to society) it has emerged that the most leaders agree or strongly to this aspect.

The uniqueness of this research relies in the fact that it tries to provide answers to the topic about the use of ICT in LLL institutions. Through this specific research, have emerged unique findings which must be examined by other researchers in order to be checked for its reliability and objectivity.

CONCLUSION

Summarizing, firstly, it must be mentioned that in Greece there isn't many surveys about the use of ICT in the administration of LLL structrures despite the fact that there is a lot about the use of ICT in schools (Anagnou, 2006; Anagnou & Bergidi, 2008; Anagnou, 2011; Christodoulou, 2017).

The gender of the leaders of this research doesn't seem to affect important the use of ICT in the administration in contrary of their age. The survey of Casillas et al. (2017), concluded that men prove higher level in ICT compared to women while the last ones has better attitudes towards it. Leaders of LLL structrures in Greece have positive attitude about the use of ICT recognizing its benefits. From this survey, seems that the majority of leaders have more than 21 years in ICT using it about 2-4 hours every day. The years of administrative experience don't affect their auto evaluation in contrary to years of educational services. Researcers of Galindo-Domínguez and Bezanilla (2021) and Guillén-Gámez et al.(2020), concluded that the gender does not affect the use of ICT. From the other hand, the survey of Guillén-Gámez et al. (2020) highlights that so the gender as the age influences the use of ICT. As higher educational qualifications leaders have, as more the use ICT in administration.

The survey of Afshari et al. (2010) presents the extent to which principals of secondary education in Iran use ICT and other variables that affect the further use of ICT. The high level of access to computer, the strong perceptions for the characteristics of ICT, the high level of digital competence as well as the high level of transformational leadership behavior is the most crucial factors for further use of ICT.

It is worth mentioning that directors of public institutions of vocational training and those of schools of second change has not any important difference accordance to use of ICT in administrative issues.

Further training means better use of ICT. Galindo-Domínguezand Bezanilla (2021) as well as Marín-Suelves et al. (2020) mentions those teachers need more training in order to make better use of ICT.

Additionally, as more directors use social networks, as more they use ICT. According to García-Pérez et al. (2016), there is a moderate level of using ICT in the use of social networks while the teacher's use of ICT in relation to their teaching is not so much developed.

From all the above theoretical and empirical analysis has been emerged the multidimensional role of leaders of LLL structures. After all, as can be seen from the relevant literature, educational leadership is one of the main factors that lead a school unit to efficiency. The effective principal is himself an innovator and the main agent of innovations in the school. ICT can become a valuable educational and administrative tool when there is the right condition. Leaders must be themselves innovative so as to create the these conditions so as an educational organization has easy access to new technologies, freedom to introduce innovations in the curriculum

In order to know and use digital competence in the administration, leaders of LLL must have the right and suitable training. In a survey that took place in Greece it emerged the crucial role of principal as well as his/her possibilities to fulfill training programs for ICT (Demetriadis, et al., 2003). Those principals who have positive attitudes to training programs and provide solutions to problems make better use of ICT pushing and the teachers to their line.

The above survey has many limitations that could be limited through other surveys.

Suggestions for Future Research

In this survey the only tool that was used was the questionnaire. It could be better to have been used and the interview of the leaders. Furtheromre, in future research it could be examined and the use of ICT of trainers in their teaching. Additionally, very interesting would be the examination of opinions of trainees and trainers of public and private LLL structures. Finally, it could be examined the extent to which COVID- 19 has affect leaders of LLL structrures so as to use more or less the ICT.

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