



RESEARCH ARTICLE

ORGANISATION AND MANAGEMENT USING TECHNOLOGIES TO EMPLOYEES AND STUDENTS WITH OR WITHOUT LEARNING DIFFICULTIES

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ABSTRACT

In this paper, it is examined how executives, employees in their workplace and students in the universities with or without learning difficulties can work using technologies. In this investigation, the participants are evaluated on handwritten exercises and on exercising by using technology for development of text and words. This research aims to explore the use of technology in order to improve the organization and the performance of adults with and without learning difficulties. The results were supported the hypothesis that the use of technology improves the organization and the performance of adults with and without learning difficulties in business and education environment.

INTRODUCTION

The new technologies play an important role on shaping business strategy. (Nolan and McFarland, 2005). The new technologies change the way in which many decisions are taken. Nowadays, managers deal with several companies, taking automate routine decisions. By using Information Systems the lower and middle levels of management are strengthened and sometimes the decision is taken by employees and not by managers. In this way, there is a power- redistribution between managers and the Organization as a whole, becomes more simple, accurate, consistent, available and flexible. Indeed, the videoconference interviews are widely used in order individuals find work (Walsam and Sahay, 2006). According to Harasim (2003), the online computer-based training typically is not based on the cooperation between peers. The primary interaction occurs between the apprentice and software. Also, the teaching to be successful must fulfil the following path: To present the information and skills of the course to the user. To understand the information and skills, to exercise in practice, to assess the user's learning worker (May *et al.*, 2004) and the most important to make a

decision, useful mainly to managers. Information technology and learning has an impact on organizational performance in small businesses (Ruiz-Mercader *et al.*, 2006). The information systems of management improve the performance of employees and students with or without learning difficulties (Athanasopoulou *et al.*, 2016). According to Bontis *et al.* (2002), the individual learning is reinforced by focusing, motivation and ability of each person. The skills and the behaviors of each individual will be modified (Garvin, 1993). The information technology facilitates the organizational learning (Chou, 2003).

MATERIALS AND METHODS

In first phase of this research, the participants were solved exercises by hand, on the primary level, for developing text and words, because this level provides sufficient knowledge to employed adults and students with or without learning difficulties. The investigator of this research, counted the correct answers by the sample and recorded their performance as well as the time they are needed, too. The investigator was not assigned to participants the same exercises, but similar exercises of about the same difficulty in order to avoid the risk that could be understood by sample. In the second phase of his research, participants, with or without learning difficulties, were tested in 12 units-tests by using the technology of e-learning@home.gr (in Greek), by publications "Smyrniotakis",

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Table 1. Evaluation on exercising between individuals with or without learning difficulties

Development of text and words						P**	P‡
Teams	Handwritten exercises		Exercises using technology		Change		
	Average±SD	Median	Average±SD	Median	Average±SD		
Team A'	3,7±0,7	4	7±0,7	6,9	3,2±0,9	<0,001	0,852
Team B'	5,5±1	5,5	8,6±0,5	8,5	3,1±1,1	<0,001	
p*	<0,001		<0,001				

*Difference between teams; **Difference between measurements; ‡Repeated measures ANOVA.

Table 2. Evaluation on exercising between students and employees

Evaluation on exercising using technology for developing text and words	Teams				Mann-Whitney U	p
	Students		Employees			
	M (SD)	Median	M (SD)	Median		
Grade out of ten in the development text-words	7,62 (0,89)	7,63	8,02 (1,00)	7,68	788,00	0,155

“MAX PRODUCTIONS” and “ACTION SYNERGY” of primary level. In each lesson, there is a category of solving exercises by developing texts and words and that information system gives a grade and simultaneously the correct answer according to their performance. In this research, the sample was 108 individuals with learning difficulties (Team A') and without learning difficulties (Team B'). They work as executives and employees in the public and private sector and students in University of Athens and the Technological Education Institute of Piraeus, participate, too. For the purpose of this investigation, it was used the descriptive and inductive statistics. The mean values (mean) and standard deviations (Standard Deviation = SD) and / or median (median) were used for the description of the quantitative variables. Absolute (N) frequencies used for the description of qualitative variables. To compare, quantitative variables between two teams, it was used the nonparametric Mann-Whitney test. The ratio was compared with the criterion χ^2 test. The level of significance is bilaterally and statistical significance was set at 0.05. Even used, the correlation coefficient p of "Spearman" is used.

RESULTS

The findings of this research concerning the evaluation of the sample on handwritten exercises and on exercising by using technology for developing text and words are presented in the following table. In the table listed below is presented the total score for participants on handwritten exercises and on exercising by using technology for development of text and words depending on existence or not of learning difficulties (*Averages (M)*, *Standard Deviations (SD)*, *Median*). The individuals without learning difficulties had higher score in comparison with the individuals with learning difficulties in the development of text and words. The score is statistically increased significantly in solving exercises by using new technology from participants. The degree of change in scores did not differ significantly between two teams. In the table below are presented, the evaluation (the averages (M), the standard deviation (SD) and the median) on exercising by using technology for developing text and words, depending on whether the users are students or employees. There are no statistically significant differences in scores for exercises using technology for developing text and words (Mann-Whitney U = 788,00, $p = 0,155$) depending on if the sample is students or employees.

Conclusion

E-learning motivated all participants in this research to improve their knowledge in the development of texts and words. The sample was solved more electronically exercises in comparison with exercises by hand in less time and with fewer mistakes. Chou (2003) states that information systems have a positive effect on the learning organization process. Employees change position quickly in businesses and there is a need, so as the knowledge to be diffused fast to employees throughout the Organization. E-learning is a tool for knowledge management which results to careful planning, so as to be effective. Also, e-learning incorporates the traditional pedagogy of the education with the advantages of the technology in order to share and diffuse knowledge in an organization (Rosemary Wild *et al.*, 2002). The use of information technology support learning and is a tendency in higher education in North America and elsewhere (Alavi Maryam and Gallupe Brent, 2003). The findings show that the satisfaction of students is influenced positively by their perceptions for technology and the autonomous learning mode, too (Drennan *et al.*, 2010). In other researches, it was found that the average, as regards the finding in the accuracy of the word by using the program "Write: Outloud", the rate reached 95.1% and the program "Co: Writer", the rate reaches 95.98% (Stephen and Cullen, 2008). The limitations are that the research in this sector in Greece is at an early stage. The research addressed mainly to children rather than to adults. This assumption is supported by Stephen and Cullen, 2008, that today the research on this area, means that Information Systems is limited and is used, mostly, in schools. Moti (2003) notes that the investigations should be extended more in adults, because surveys have been conducted mainly in children.

As concerns, in Higher Education in Greece, there are not many studies concerning dyslexia (Stampoltzis and Polychronopoulou, 2008). Overall, the findings of this research showed that people with learning difficulties have greater difficulty in correct pronunciation and writing by hand. The use of Information Systems is considered the best method of improving the performance for people with learning difficulties (Athanasopoulou, 2016). Also, Torrisi and Piangerelli, (2010) conclude that e-learning is the best method of ameliorating learning for people with and without learning difficulties. Statistically significant differences were for all research participants between the exercises by hand and the use of technology.

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