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The effect of learning by ICT on Educational Advances among the Students of payam-e Noor University (PNU)

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Abstract

The present study took place to study the effect of ICT and e-learning on educational advances among the students of Peyam-e-Noor University (PNU), Astara-branch. The present research is a semi-experimental study, of the type of pre-test and post-test. The study showed that the average of educational progress variables, self-regulated learning, and educational stimulation among the students who engaged in learning through ICT was by far greater than that of students who learned through traditional method. It can be concluded that ICT is a powerful tool for training and developing the abilities, as well as bringing up the human being talents and a suitable mechanism to create educational stimulation.

*Keywords:I*nformation and communication technology (ICT); strategies for independent learning; strategies of stimulation for learning ;.teaching

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1. Introduction

Each one of the countries in the world, at the present age, is busy learning in different steps of the mixture of information and communication technology in their current works, such as the teaching- learning process.

While the discussion about the real values of approaches such as distance education, electronic learning, and virtual university vs. traditional approach (face to face education and learning) is becoming more heated, perhaps this issue is clear to the public that information and communication technology enjoys much more power to create basic changes in teaching-learning methods[c]. Research by Lois and Manir (2003) showed that in learning process based on ICT, students used extra-cognitive strategies. Study made by Emrod (1998) suggests that education by information and communication technology increases the educational progress among the learners and creates positive approach towards the academic activities in their minds as well. In their research, Mines and Olson (2001) showed that using ICT in educational environment makes the students able to search, gather, and analyze the information and offer them in the form of a practical work, and Kozoma's study (2002) showed that learning through ICT makes the students able to use new strategies in doing their educational homework. Also, results from Shakhter's study (1999) showed that using ICT, causes the learning process to be better, and creates positive approach towards learning, and causes better understanding concerning the abstract subjects.

Taking the studies made about the subject, the necessity for suitable and right use of such a technology in Peyam-e-Noor University is further felt so that right usage of his technology can male the ground ready to develop capabilities search about the talents. It also, causes dynamism and growth among the learners in teaching-learning activities. For this purpose, the present research studies the effect of using information and communication technology on educational progress among the students of Peyam-e-Noor University, Astara branch.

In the I.E. Iran, the responsibility of formal education is undertaken by the following three ministries: Ministry of Education is responsible for pre-primary, primary, lower secondary, upper secondary and adult education. Ministry of Science, Research and Technology of Science, Research and Technology is responsible for academic and higher education. Ministry of Health and Medical Education responsible for medical academic and higher medical education. PNU is a state distance education university with the Headquarters based in Tehran, 10 Regional Centers, 130 Study Centers, 126 Study Units throughout the country and 1Overseas Center. Established in 1987, The University is a legal body under the Ministry of Science, Research and Technology. The nature and scale of its operation make PNU the most flexible and Cost-effective higher education institution in Iran.

The present research is a study about the test result, of the type of pre-test - post-test with two experimental and controlled groups. Statistical population in this research includes all of the 3rd term students of the academic year 2005-2006 and 3rd term students of the academic year 2006-2007 Peyam-e-Noor University, Astara branch. The number of students in 2006-2007 was 170 students. Because of limitation in statistical population all of the subjects were studied. These subjects were almost the same concerning some variables as intelligent quotient (IQ), level of studies, and the amount of parents' income. After selecting the under study subjects, the object of purpose plan was put into force. Work method was as follows: at the beginning of the 3rd term of the academic year 2005-2006, the university professors were asked to use traditional way of teaching in their teachings. This group was considered as the controlled group. After the time that the term was terminated the educational average of the students was calculated. Also, in order to study the amount of educational stimulation and self regulated learning concerning these students, the two standardizes questionnaires of "Elko's strategies of stimulation for learning (MSLQ), and Zimerman's and Ponz's test of strategies for independent learning were used. The reliability of these tests was 0.83 and 0.76, respectively, that were obtained using retesting method.

In continuing the study, in the academic year 2007-2008, the 3rd term students of this year were selected as members of experimental group. In order to educate these students, professors were asked to use the facilities of ICT. Also, the amount of educational stimulation and self regulated learning concerning these students were measured.

At the time when the term was terminated, the educational average of these students was also calculated. At the next step the grades of these two groups of students were compared concerning the educational average, self regulated learning and educational stimulation. The statistical method of t student was used to compare the grades of these two groups.

2. FINDING

From among the sum of 320 under study students 62% were girl students and 48% were boy student. From among these numbers of students, concerning the amount of using the educational sites, 35% of them have selected the option "at all", and 28% have selected the option "more". Also, 24% have expressed that they made educational relationship with their professors via internet. Concerning the compiling of electronic subjects with the help from the professors, also, 40% have selected the option "at all", and 21% have selected the option "more". And concerning the amount of taking the advantages of educational software 19% have selected the option "at all" and 45% the option "more".

Table 1 shows the comparison between the effect of information and communication technology learning and the traditional one on educational progress of the students. Regarding the significance, t test was calculated. At the level ($\alpha = 0.05$) it can be concluded that the average of educational progress among the students who have learned through ICT, is by far more than that of those who followed the traditional way of learning. Only, in case of the psychology field, this difference is not significant.

Table 1- t test for comparing the effect of ICT education and the traditional one on educational progress of the students

Field of study	group	average	Standard deviation	t	The amount of freeness	The level of significance
Mathematics	Learners using ICT	14.67	5.43	2.39	48	0.001
	Traditional education	12.13	2.74			
Accounting	Learners using ICT	15.11	6.54	3.01	67	0.04
	Traditional education	12.74	3.47			
Business management	Learners using ICT	15.04	6.23	2.79	64	0.01
	Traditional education	13.11	3.87			
Psychology	Learners using ICT	14.97	5.94	1.23	56	0.12
	Traditional education	14.07	5.72			
Training sciences	Learners using ICT	14.15	5.23	2.12	66	0.02
	Traditional education	12.04	3.37			

Table (2) shows the comparison of the amount of effect of education through ICT and the traditional way on self regulated learning of the students. Since the amount of the calculated t at the level of ($\alpha = 0.05$) is significant, it can be concluded that the average of self regulated learning among students who have learned by using ICT is greater than that of those who have educated following the traditional methods of learning.

Table 2- for comparing the effect of taking the advantages of ICT and traditional ways of education on self regulated learning among the students

Field of study	group	average	Standard deviation	t	The amount of freeness	The level of significance
Mathematics	Learners using ICT	92.23	22.28	3.58	47	0.001
	Traditional education	71.12	16.17			
Accounting	Learners using ICT	87.13	21.68	3.14	66	0.001
	Traditional education	67.18	15.89			
Business management	Learners using ICT	89.57	22.14	3.23	64	0.001
	Traditional education	88.45	21.73			
Psychology	Learners using ICT	88.45	21.73	3.19	55	0.001
	Traditional education	69.14	15.95			
Training sciences	Learners using ICT	93.14	22.34	3.67	63	0.001
	Traditional education	71.57	16.20			

Table (3) shows the comparison of the amount of effect of education through ICT and the traditional way on educational stimulation of the students. Since the amount of the calculated t at the level of ($\alpha = 0.05$) is significant, it can be concluded that the average of educational stimulation among the students who have learned by using ICT is by far greater than that of those who have educated following the traditional methods of learning.

Table 3- t test for comparing the effect of taking the advantages of ICT and traditional ways of education on educational stimulation of the students

Field of study	group	average	Standard deviation	t	The amount of freeness	The level of significance
Mathematics	Learners using ICT	147.5	29.73	8.24	45	0.001
	Traditional education	98.2	20.47			
Accounting	Learners using ICT	136.4	28.23	8.12	63	0.001
	Traditional education	83.2	19.28			
Business management	Learners using ICT	152.8	30.32	9.25	65	0.001
	Traditional education	101.2	21.27			
Psychology	Learners using ICT	143.3	29.12	8.20	56	0.001
	Traditional education	111.1	21.11			
Training sciences	Learners using ICT	151.4	30.28	9.81	62	0.001
	Traditional education	95.5	20.24			

CONCLUSION

This research showed that educational progress among the students educated by ICT was by far more that that of those who had been learning through traditional way of learning. Vebra's study (2001) shows that education through ICT allows the information to be rapidly processed, and the learning rate and the level of cognition to be increased among the learners. In this way the ground is made ready for their progress in education. Also, the study made by Emrod showed that education through ICT increases the learners' educational progress and creates a positive approach towards the academic activities among them.

The study also showed that education through ICT effects on the procedure of self regulating in learning among the students and makes acquisition be active in relation to learning. Research made by Lois and Manir (2003) showed that in learning based on ICT, students enjoy high rate of self regulation concerning the learning, so that these learners do their own works actively and are always searching for new sources and information.

On the other hand, this research has practiced the comparison between the amount of effect of education based on ICT and traditional way on educational stimulation among the students, so that results from the research showed that the amount of educational stimulation among the students educated based on ICT was by far more than that of those who has experienced traditional way of learning. Fergosen's and Ferman's (2001) studies showed that education on the basis of ICT caused an increase in stimulation among the students and also caused the learner to show more interest in planning and solving the difficult problems. Also, results from Wenglin's and Kaldroni's studies showed that taking the advantage of ICT causes the learning process among the students to be accompanied by stimulation, and increase the self-confidence among them in doing their academic homework.

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