World Conference on Educational Sciences 2009

Computer using levels of pre-school teachers considering their work period

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Abstract

The aim of this study is to determine the relationship between computer using levels, interest in computers, computer concern, level of using computers in education and the work periods and their attitudes towards computers.
For this aim, an inquiry form and Computer Attitude Scale- Marmara which was developped by Deniz (1995) were applied to 80 pre-school teachers who work in pre-schools in Bursa. F % unilateral variance analyse was used to analyse the data which have been received at the end of the study.
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Keywords: Pre-school education; computer using levels; attitudes of pre-school teacher towards computers .

1. Introduction

Pre-school period can be seen as an appropriate period for children to meet and learn computers for it is the term in which the children are the most curious and eager to learn. Besides computer is accepted as a more effective instrument than television in education services. That's why teachers must create a cautionary atmosphere for children by using computers in the classes (Kacar and Doğan,2007).When we look at the life conditions of today, we see that students and teachers are in an intense relation with computers (Çırakoğlu, 2004). Especially in recent years, with the rapid change and extension of information technologies and with the studies of modifying the targets of education programs and integrating the computer technologies with education programs made it essential that computers are used in education as an education instrument. Accordingly the most important duty is of teachers. To use the computers as effective as the other materials in the class, teachers who will bring in the skills about information technologies should have the needed intelligence, be aware of the developments on the computer technology and at least have technology literacy teachers who will bring in the skills about information technologies (Plotnick, 1996; Çağıltay et.al., 2001; Erkan, 2004).

For a high quality education, the teachers should be able to use the computer ant the internet to know about the developments and improvements in the world and carry these over to the class. However, most teachers think that they can not learn technological devices and computers and focus on other education materials. The aim is to

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determine the computer using levels of pre-school teachers considering their work period and the relation between their work periods and their attitudes towards computers. Fdor this aim following questions will be answered:

Is there a difference between the computer (Word, Excel, Powerpoint, Internet) using levels of teachers considering their work period?

Is there a difference between the attitudes of pre-school teachers towards using computers in education considering their work periods?

2. Method

All of pre-school teachers in Bursa form the environment of the study, but the sampling is formed of 84 pre-school teachers who work in pre-schools of elementary schools, independent pre-schools and private pre-schools in Bursa.

2.1. Data gathering tools

In the inquiry form which was developed by the researchers, the school in which the teachers are working, their work periods and how much they know of Word, Excel, Powerpoint, Internet and Operating System were asked in order to determine the computer using levels.

Computer Attitude Scale- Marmara is a scale, which determines the ideas, emotions and attitudes of an individual towards computer, computer using, computer users and the social or personal effects of computers. CAS-M is a likert type attitude scale with 5 grades from "I agree" to "I don't agree at all" formed of 42 suggestions and 3 sub-scales. High total score got from CAS-M implies positive general attitudes; and low total score implies general negative attitudes. CAS-M was used in many researches (Deniz, 1995; 2000; 2001; 2005; Deniz and Köse, 2003; Deniz and Coşkun, 2004).

2.2. Analysis of the Data

In analysis of the data, descriptive statistics including frequencies and percentages, independent group t test, and variance analysis (ANOVA) was used to determenine the difference between groups, and which group(s) the difference takes root from, Turkeys HSD test was used. As signifance levels, .05 and .01 were taken.

3. Findings and Comments

In this section, in the content of general aim of the research, the statistical analysis of the data gathered by inquiry form and Computer Attitude Scale- Marmara to determine the computer using levels of pre-school teachers considering their work period, findings and their interpretations take place. The frequency and percentages of Operating System, Word, Excel, Powerpoint and Internet using levels considering their seniority of pre-school teachers obtained by inquiry form which is made by researchers were given in Table 1.

Table 1:Word, Excel, Powerpoint and Internet using levels of pre-scool teachers and ki square test results

		1-5 years		6-10 years		11-15 years		16-20 years		21-30 years		31-40 years		All of the teachers		Ki-Square Test	
		f	%	f	%	f	%	f	%	f	%	f	%	f	%	sd	p
Word	Advanced	6	18,2	1	7,7	0	0	1	9,1	0	0	0	0	8	10,1		
	Well	18	54,5	6	46,2	2	28,6	3	27,3	4	28,6	0	0	33	41,8		
	Intermediate	8	24,2	6	46,2	4	57,1	2	18,2	5	35,7	0	0	25	31,6	16	0,003 **
	Weak	1	3	0	0	1	14,3	1	9,1	4	28,6	0	0	7	8,9		
	Do not know at all	0	0	0	0	0	0	4	36,4	1	0,7	1	100	6	7,6		
Excel	Advanced	4	12,1	0	0	0	0	1	9,1	0	0	0	0	5	6,4		
	Well	12	36,4	3	25	1	14,3	2	18,2	2	14,2	0	0	20	25,6		
	Intermediate	12	36,4	5	41,7	4	57,1	2	18,2	8	57,1	0	0	31	39,7	16	0,061
	Weak	4	12,1	3	25	2	28,6	1	9,1	3	21,4	0	0	13	16,7		
	Do not know at all	1	3	1	8,3	0	0	5	45,5	1	7,1	1	100	9	11,5		
Powerpoint	Advanced	2	6,1	1	8,3	0	0	1	9,1	0	0	0	0	4	5,1		
	Well	17	51,5	3	25	2	28,6	2	18,2	2	14,2	0	0	26	33,3		
	Intermediate	9	27,3	4	33,3	4	57,1	2	18,2	6	42,8	0	0	25	32,1	16	0,070
	Weak	3	9,1	2	16,7	1	14,3	1	9,1	5	35,7	0	0	12	15,4		
	Do not know at all	2	6,1	2	16,7	0	0	5	45,5	1	7,1	1	100	11	14,1		
Internet	Advanced	12	36,4	1	7,7	2	28,6	1	9,1	1	8,1	0	0	17	21,8		
	Well	17	51,5	10	76,9	2	28,6	5	45,5	5	40,5	0	0	39	50		
	Intermediate	3	9,1	2	15,4	1	14,3	1	9,1	3	24,3	0	0	10	12,8	16	0,035 *
	Weak	1	3	0	0	2	28,6	2	18,2	3	24,3	0	0	8	10,3		
	Do not know at all	0	0	0	0	0	0	2	18,2	1	8,1	1	100	4	5,1		

It was concluded that;

% 41,8 of pre-school teachers included in the research denoted that they can use Word program well. % 7,6 denoted that they do not know Word program at all. Also, % 54,5 of teachers who worked for 1-5 years and % 46,2 of teachers who worked for 6-10 years said that they know the Word program well; % 57,1 of teachers who worked for 11-15 years and % 35,7 of teachers who worked for 21-30 years said the they know the Word program

averagely; % 36,4 of teachers who worked for 16-20 years and %100 of teachers who worked for 31-40 years said that they do not know the Word program at all.

% 39,7 of pre-school teachers included in the research denoted that they can use Excel program averagely. % 11,5 denoted that they do not know Excel program at all. Also, % 36,4 of teachers who worked for 1-5 years said the they know the Excel program well. % 41,7 of teachers who worked for 6-10 years, % 57,1 of teachers who worked for 11-15 years and % 57,1 of teachers who worked for 21-30 years said the they know the Excel program averagely; % 45,5 of teachers who worked for 16-20 years and %100 of teachers who worked for 31-40 years said that they do not know the Excel program at all.

% 33,3 of pre-school teachers included in the research denoted that they can use the Powerpoint program well. % 14,11 denoted that they do not know Powerpoint program at all. Also, % 51,5 of teachers who worked for 1-5 years and % 18,2 of teachers who worked for 16-20 years said that they know the Powerpoint program well; % 33,3 of teachers who worked for 6-10 years, % 57,1 of teachers who worked for 11-15 years and % 42,8 of teachers who worked for 21-30 years said the they know the Powerpoint program averagely; %100 of teachers who worked for 31-40 years said that they do not know the Powerpoint program at all.

% 50 of pre-school teachers included in the research denoted that they can use the Internet well. % 5,1 denoted that they can not use Internet at all. Also, % 51,5 of teachers who worked for 1-5 years, % 76,9 of teachers who worked for 6-10 years, % 28,6 of teachers who worked for 11-15 years and % 45,5 of teachers who worked for 16-20 years and % 40,5 of teachers who worked for 21-30 years said the they know Internet well and %100 of teachers who worked for 31-40 years said that they do not know the Internet at all.

When ki square test is analysed, it can be seen that there is a semantic relation between work periods and Word program ($p < .01$) and using the Internet ($p < .05$).

Unilateral Variance Analysis and Turkeys HSD Test results of Word, Excel, Powerpoint and Internet using levels of pre-school teachers considering their work period were given in the following tables. Also, because the number of teachers who worked for 31-40 years are not enough, the numbers of teachers who worked for 21-30 years and the teachers who worked for 31-40 years were put together to do Variance Analysis better.

Table 2: Variance Analysis results of Word, Excel, Powerpoint and Internet using levels of pre-school teachers considering their work period

	Source of Variance	Sum of Squares	df	Average of Squares	F	p
WORD	Within Groups	21,680	4	5,420	6,374	,000**
	Between Groups	62,928	74	,850		
	Total	84,608	78			
EXCEL	Within Groups	12,524	4	3,131	2,989	,024*
	Between Groups	76,463	73	1,047		
	Total	88,987	77			
POWERPOINT	Within Groups	13,887	4	3,472	3,013	,023*
	Between Groups	84,113	73	1,152		
	Total	98,000	77			
INTERNET	Within Groups	20,285	4	5,071	5,360	,001**
	Between Groups	69,062	73	,946		
	Total	89,346	77			

* $p < .05$, ** $p < .01$

As findings in Table 2 demonstrate, F value which is calculated for Word program was figured as 6.374. This result shows that there is a semantic relation between work periods and using Word program ($p < .01$). F value which is calculated for Excel program was figured as 2.989. This result shows that there is a semantic relation between work periods and using Excel program ($p < .05$). F value which is calculated for Powerpoint program was figured as 3.013. This result shows that there is a semantic relation between work periods and using Powerpoint program ($p <$

.05). F value which is calculated for using Internet was figured as 5.360. This result shows that there is a semantic relation between work periods and using Internet (p< .01).

In the research, done by Akkoyunlu (2001), it was determined that %74 of 685 teachers from 23 elementary schools can not use computers and %65 can not use Internet. The main reason for teachers for not using the computer is "not capable of using computers" (%60) and the main reason for not using the Internet is "not capable of using Internet" (%55).

Table 3: Tukeys HSD Test Results

	SENIORITY	SENIORITY	Variability	Std. Error	p
WORD	1-5 years	16-20 years	-1,2424	,32105	,002**
		21-40 years	-1,1455	,28716	,001**
EXCEL	1-5 years	16-20 years	-1,06061	,356318	,031*
POWERPOINT	1-5 years	16-20 years	-1,0606	,37372	,045*
INTERNET	1-5 years	16-20 years	-1,1212	,33863	,012*
		21-40 years	-1,2121	,31023	,002**

* p< .05, ** p< .01

As seen in Table 3, according to the Tukeys HSD test results, done to find the source of difference between work period and Word program using level, between teachers who worked for 1-5 years, 16-20 years and 21-40 years, there is a .01 disparity on signifance level in favor of teachers who worked for 1-5 years. According to the Tukeys HSD test results, done to find the source of difference between work period and Excel program using level, between teachers who worked for 1-5 years and teachers who worked for 16-20 years there is a .05 disparity on signifance level in favor of teachers who worked for 1-5 years. According to the Tukeys HSD test results, done to find the source of difference between work period and Powerpoint program using level, between teachers who worked for 1-5 years and teachers who worked for 16-20 years there is a .05 disparity on signifance level in favor of teachers who worked for 1-5 years. According to the Tukeys HSD test results, done to find the source of difference between work period and Internet using level, between teachers who worked for 1-5 years and teachers who worked for 16-20 years there is a .05 disparity on signifance level, and between the teachers who worked for 1-5 years and 21-40 years, there is a .01 disparity on signifance level in favor of teachers who worked for 1-5 years.

The statistical values and Unilateral Variance Analysis Results which demonstrate if there is a difference between using computers in education and teachers' work periods, were given at Table 4 and 5.

Table 4: The statistical values which demonstrate the scores of using computers in education and teachers' work periods

	N	Average	Std. Deviation	Std. Error
1-5 years	33	52,.4	7,2	1,.5
6-10 year	15	50,.3	8,1	2,.1
11-15 years	7	50,.8	8,9	3,.7
16-20 years	12	51,.0	6,0	1,.5
21-40 years	17	48,.5	8,5	2,.5
Total	84	51,.1	7,6	,8

As seen in Table 4, the highest score on using computers in education belongs to the teachers who worked for 1-5 years. The second highest score belongs to the teachers who worked for 16-20 years.

Table 5: Unilateral Variance Analysis Results which demonstrate if there is a difference between using computers in education and teachers' work periods

Source of Variance	Sum of Squares	df	Average of Squares	F	p
Within Groups	232,50	4	58,12	,98	,42
Between Groups	4660,4	79	58,99		

Total	4892,9	83

As seen in Table 5, calculated F value was figured as 0.98. This result shows that there is a significant difference between the level of using computers in education and teachers' work periods.

4. Conclusion and Suggestions

It was determined that young teachers who worked for 1-5 years use computers more and they are more capable of using computers. % 41,8 of pre-school teachers denoted that they can use Word program well. While the most capable pre-school teachers who use the Word program are the teachers who worked for 1-5 years, the least capable ones are the teachers who worked for 31-40 years. % 39,7 of pre-school teachers denoted that they can use Excel program well. While the most capable pre-school teachers who use the Excel program are the teachers who worked for 1-5 years, the least capable ones are the teachers who worked for 31-40 years. % 33,3 of pre-school teachers denoted that they can use Powerpoint program well. While the most capable pre-school teachers who use the Powerpoint program are the teachers who worked for 1-5 years, the least capable ones are the teachers who worked for 31-40 years. % 50 of pre-school teachers denoted that they can use Internet well. While the most capable pre-school teachers who use the Internet are the teachers who worked for 6-10 years, the least capable ones are the teachers who worked for 31-40 years. It was determined that while there is a significant relation between using the word program and internet and work periods, there is not a significant difference between work periods and using the operating system; but there is significant difference between work periods and using Word, Excel Powerpoint programs and Internet. Also, the highest score on using computers in education belongs to the teachers who worked for 1-5 years. It was determined that the second highest score belongs to the teachers who worked for 16-20 years and there is not a significant difference between the levels of using computers in education and teachers' work periods.

The pre-school teachers should be provided to participate in-service trainings in order to develop computer literacy. There should be a computer laboratory in pre-school education institutions and at least one computer in each classroom and teachers should be encouraged to use them.

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