

Research Article

**THE EFFECT COMPARISON OF INSTRUCTION USING
INFORMATION COMMUNICATION TECHNOLOGY WITH
TRADITIONAL METHOD IN LEARNING MATHEMATICS AND
DEVELOPING ACADEMIC PERFORMANCE IN GRADE IV GIRL
PUPILS IN SHIRAZ MARYAM AHMADI**

Maryam Ahmadi, *Jahangir Mehrafsha and Ali Hemmali Jeshni

*Department of Behavioral Science (Preschool Education), Arsanjan Branch, Azad University,
, Islamic Arsanjan Iran*

**Author for Correspondence*

ABSTRACT

This study aimed to compare the effect of instruction using information-communication technology with traditional teaching method in learning mathematics and developing academic performance in grade IV girl students in Shiraz. This study was a semi experimental method. The correspondent is of the study included thirty six (36) grade-IV girl pupils who were randomly selected from four different schools in Shiraz region II. The research tool was a researcher made mathematics academic performance. The pupils grade-IV was divided into two controlled and experimented group. Both groups were pre-tested then the group was instructed by traditional teaching method and the experimented group by information-communication technology method. The students were post tested after eighteen weeks instruction. The finding of the study showed that: there were significant differences between the grade IV. Girl students learning mathematics and their academic performances using information-communication technology teaching method and traditional teaching method. These differences showed that students who were instructed by information-communication technology method obtain better scores than those who were instructed by the traditional teaching method.

Keywords: *Information-communication Technology Method, Traditional Teaching Method,Learning.....*

INTRODUCTION

Due to the importance of child development the role of new methods of instruction such as information-communication technology has become non-negligible. Now days, In spite of the deep changes in culture and ways of life the people can adjust to these changes with the use of modern information-communication technology (Wheeler, 2002). In fast decade the teaching environment has demanded a new look of new methods of instruction to improve the children's learning and develop their academic performances (Ayeeni, 2007).

In Iran Education system teacher's teaching effectiveness and students' academic performances count a lot of in the success of education (Mehrafshan, 2008). The improvement of students' academic performances make the Students find a better learning atmosphere and use their maximum learning potential to achieve higher education goals (Jones, 2007). At present, it is the aim of all educational systems to improve their educational achievements by the means of information-communication technology method (UNESCO World Report, 2005).

Teaching by the means of information-communication technology method is a new trend in Iran educational system. The ministry of education and most of the school systems are to introduce new educational patterns and structures to spread this method (Afzal-Nia, 2008). A many all courses, learning and developing the academic performance in mathematics is the most concern of teachers and the parents as well (Mohammadi, 2006). Based on the above mentioned facts the researcher attempted to compare the effects of information-communication technology method with traditional teaching method in learning mathematics and developing the grade IV girl student academic performances.

Research Article

MATERIALS AND METHODS

This was a semi-experimental type of study. The correspondents included thirty six (36) grade -IV girl pupils who were randomly selected from four different schools in Shiraz region II. The research tool was a grade-IV mathematics performance evaluation tool the researcher. The validity and reliability of the tool was tested by tryout and some grade –IV mathematics teachers. The pupils were divided into two groups were pre- tested. Then the control group was instructed by traditional and the experimented group by of information-communication technology teaching method for 12 –week then both groups were post- tested and the gathered data was statistically measured and analyzed.

RESULTS AND DISCUSSION

In- order to compare the effect of information-communication technology method with traditional method in grade-IV pupils learning mathematics, the researcher hypothesized the following hypothesis:

1: there is a significant difference between grade-IV pupils learning mathematics, information-communication technology with traditional teaching method.

2: there is a significant difference between grade-IV pupils academic performances using information-communication technology with traditional teaching method.

To verify the hypothesis both control and experimental group were tested by the researcher made grade – IV mathematics evaluation tool after twelve weeks instruction.

The gathered data was then further analyzed by t-test and S.P.S...

Statistical tools. The descriptive statistical information of pupils learning Based on the mean score and standard deviation is presented in table-I.

Table I: Mean score and standard Deviation of both Groups in pupils' Learning Mathematics

Variables	Categories	F	Mean score	Standard Deviation
Mathematics	Control	18	13.15	3.12
Learning pre-Test	Experimental	18	13.23	3.60
Mathematics	Control	18	13.32	3.45
Learning pre-Test	Experimental	18	15.02	4.21

As it is shown in table-I the means score and of Experimental group ($x=15.2$, $sd=4.21$) is significantly different/ greater than the mean score and deviation of control group ($x=13.32$, $sd=3.45$). The descriptive statistical information of pupils academic performances based on mean score and standard deviation is presented in table II.

Table II: Mean score and standard deviation of pupils Academic performances

Variable	Categories	F	Mean score (x)	Standard deviation (sd)
pupils Academic performances	Control	18	14.15	3.12
	Experimental	18	14.83	3.60
pupils Academic performances. Post - test	Control	18	14.27	3.23
	Experimental	18	14.45	4.51

As it is shown in table-II the means score and standard deviation of Experimental group is greatly than control grouping both pre-test and post- test. Furthermore they are significantly different/ greatly in post-test. ($x=16.45 > 14.27$ and $sd= 4.51 > 3.23$).

The analysis... T- test information pupils Academic performances is present in table-III.

Research Article

Table III: The anli.... T- test information pupils Academic performances is present in table-III

Variable	Categories	F(N)	X	SD	T	d.f.	Level of
Pre- test Academic performance	Control	18	14.15	3.12	1.425	34	0.437
	Experimental	18	14.83	3.6			
Post- test Academic performance	Control	18	14.27	3.23	3.54	34	0.001
	Experimental	18	16.45	4.51			

As it is shown in table –III the computed t- value of post test, ($t=3.546$) is greater than the computed t- value of pre-test ($t= 1.425$).

This shows the significant difference of information communication technology compared with traditional teaching method.

The analytical t-test information of pupils mathematics learning is presented in table-IV

Table IV: The Analytical t- test information of pupils mathematics learning

Variable	Categories	F(N)	X	SD	T	d.f.	Level of sig
pupils mathematics learning	Control	18	13.15	3.12	1.231	34	0.345
	Experimental	18	13.23	3.60			
Pre- test pupils mathematics learning	Control	18	13.32	3.45	3.240	34	0.001
	Experimental	18	15.02	4.21			
Post- test							

As it is shown in table-IV the computed t- value of post test ($t=3.240$) is greater than the computed t- value ($t=1.231$) of pre- test. This shows significant difference of information-communication technology teaching method compared with traditional method.

Conclusion

In accordance with the findings of this study and many other researches there are significant differences between information-communication technology teachings with traditional method.

The finding of the first hypothesis showed that: the pupils who were instructed by information-communication technology teaching method had a greater mathematics learning compared to those who were instructed by traditional method. ($x=15.02>13.32$ $t=3.240>1.231$). This finding is parallel to those findings of Shabirzamani *et al.*, (2010). The finding of the second hypothesis showed (2002), that those pupils who were instructed by information-communication technology teaching method Higher academic performances than those who were instructed by traditional method ($x=16.45>14.27$ and $t=3.546>1.425$). This finding sites with those findings of Sattari (2011), Amir (2007) and Golzari (2004).

ACKNOWLEDGEMENT

This article is extracted from my thesis writing. Here by, I would like to appreciate my thesis advisor. Dr. Jahangir Mehrafsha, my thesis consultant Mr. Ahmad- Ali Hemmati and all the teaching and non-teaching staffs of Arsanjan Islamic Azad University. For their assistance. Never the less, I appreciable and dedicate the spiritual value of this article to my beloved parents for their assistance and ... support.

REFERENCES

Afzal-Nai Mohammad (2008). *Planning and Recognition of Materials and Learning Centers* (Samt Publication) Tehran, Iran.

Research Article

- Amir-Teymoori Mohammad (2007).** *Teaching and Learning Medias* (Saralan) Tehran, Iran.
- Ayeni CO and Popoola SO (2007).** Work Motivation, Job Satisfaction, and Organizational Commitment of Library state, Nigeria. *Library Philosophy and Practice*.
- Golzar Zeinab (2004).** The Effect of Educational Planning and Artificial and Soft-ware Researcher Made in Learning Mathematics Compared to Traditional Method, Master Thesis manuscript, Tarbiat Moallem University, Tehran, Iran.
- Jones MC (2007).** Distress, Stress and Coping in First Year Nursing student. *Journal of Advanced Nursing* **26**(3) 475-482.
- Mehrafsha Jahangir (2008).** The Role of Information-Technology in Learning. *Journal of Education*, Shiraz, Iran **30**(8).
- Mohammadi Taleb (2006).** The Relation of Teachers' Achievement with their Job Satisfaction. Master Thesis Manuscript, Tehran University, Iran.
- Sattari Sadr-eddin and Mohammadi Parvin (2011).** The Relationship of Information Technology with Secondary Students' academic performance. *Journal of Information-Communication Technology in Education* **1**(1) 81-96.
- Shabiri Fatemeh (2002).** External Curricular Third year Secondary Level Physics Its Effects on thesis manuscript. Tarbiat Mo-Allem University, Tehran, Iran.
- Wheeler S, Waite SJ and Bromfield C (2002).** Promoting Creative Thinking through Information-Communication Technology. *Journal of Computer Assisted Learning* **1** 367-378.
- Zamani Mohammad and Yusefi Ali (2010).** The Use of Information-Communication Technology in Modern Learning. *Journal of Education*, Shiraz University, Shiraz, Iran **5**(2).