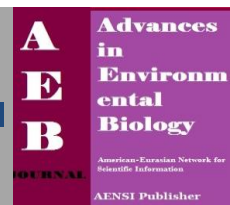




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Effects of Computer-Assisted Instruction on Learning Natural Sciences by 2nd Grade Elementary Students

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ABSTRACT

The purpose of this study was to investigate the effects of computer-assisted instruction on learning natural sciences by 2nd grade elementary students in Bardsir (a city in Kerman Province) in 2012-2013 academic years. To investigate the problem, a quasi-experimental design with two experimental and control group was employed. The sample under study was 54 second grade elementary students (28 students in the experimental group and 26 students in the control group). The participants were selected via multi-stage cluster random sampling method. The instrument used to collect the data was a researcher made test on learning sciences based on Bloom's cognitive levels. The results of analysis of covariance suggested that computer-assisted instruction has a significant effect on learning natural sciences by the second grade elementary students. It was also noted that computer-assisted instruction affects the recall of materials learned in the natural sciences course by the second elementary students. Computer-assisted instruction also affects the comprehension of materials learned in the natural sciences course by the second grade elementary students. Furthermore such instruction can affect the application and the use of materials presented in the natural sciences course by the second grade elementary students. Finally, it was observed that computer-assisted instruction has an effect on the analysis and synthesis of materials presented in the natural sciences course by the second grade elementary students.

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INTRODUCTION

Due to extensive changes in the last century, the basic concepts of life in the world of education emerged Human and the introduction of new technologies has been achieved in the field of information, According to new learning and teaching methods in this area Due to the wide range of education experts and researchers have been attracted to.[4] In this context, the influence of information technology that is a part of computer-assisted instruction the field of education and its effectiveness has been reached on the level of student learning. Given the importance of empirical science and the international assessment results on the state of Iranian students in science, it is essential Education of all measures possible in order to advance students in the sciences to be and investment in this area would be required. [15]. Yet, in recent years the use of new technologies has led to fundamental changes in education in different countries so, one of the main requirements of the application of this research is the lack of students in science [14] .the necessary steps are taken to rectify the deficiencies and shortcomings in order to solve these problems and to think remedy would compensate barbaria. On the other hand, most schools using traditional teaching methods and Iran because of their lack of success, using traditional methods and the learning disabled. [1] Researchers and teachers have found that the use of traditional methods of continuous decrease of understanding by engaging students and their extensive knowledge of all levels of education, and universities are passive. Therefore, the results can be implemented in the field of training and education system of country. Also, all teachers and researchers who are dealing with the education of students can benefit from the results.

MATERIAL AND METHODS

This study is quasi-experimental studies, in this study, independent variables: education, dependent variable: the rate of learning in science. The population consisted of all students in the city of Kerman is Bardsir. In this study, a multi-stage random sampling method was used. Firstly the elementary schoolboys City Bardsir

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two schools that have similar conditions and similar cultural contexts were randomly selected, In the second phase of the accident, one of the schools as the experimental group (n=28) and other schools as a control group (n = 26) are considered Next, based on the second-grade students were chosen as the final model, the ultimate criterion for the selection of second grade students in each school were considered.

Results:

Table 1: Descriptive statistics of students' learning scores for the experimental and control groups at pre-test and post-test

Maximum	At least	Standard deviation	Average	Group	Test phase
11/5	5/25	1/86	8/30	Control	Pretest
10/25	4/75	1/82	7/80	Test	
13/25	10	0/86	11/35	Control	Posttest
16/25	11	1/44	13/70	Test	

Table 2: Summary of t-test between pre-test scores of the two groups in learning.

Significant	T	Significant	F Levine	
NS	-0/999	NS	0/014	Control Experiment

Table 3: Levine test for equality of variance assumptions for the two-stage test.

Significant	Degrees of freedom 2	Degrees of freedom 1	Abundance	Test Science learning lessons	Stage Posttest
0/193	52	1	1/740	Test Science learning lessons	Stage Posttest

Table 4: Summary of covariate effects of computer-assisted instruction on science learning lessons Students.

Significance level	F	Mean square	Degrees of freedom	Square	Source of change
< 0/0001	17/72	19/15	1	19/15	Pretest
	77/39	83/64	1	83/64	Group

Table 5: Results of cognitive levels and learning scores between the two groups of subjects.

Statistical power	Eta squared	Significant	F	Mean square	df	Square	Dependent variable
0/97	0/23	0/0001	15/94	7/92	1	7/92	Reminder
0/97	0/23	0/0001	15/26	8/60	1	8/60	Perception
0/64	0/10	0/022	5/53	1/58	1	1/58	Application
0/54	0/08	0/041	4/37	0/91	1	0/91	Analysis
0/22	0/03	0/233	1/45	0/25	1	0/25	Combination

Discussion and Conclusion:

The present study showed that the use of information technology and computer-assisted process of educational CDs, memory, comprehension, application and analysis to significantly affect students And computer-assisted learning compared to traditional teaching second grade elementary student learning in science to promote In a sub-study to investigate the hypothesis that the results of computer-assisted instruction on cognitive domains of knowledge, recall, understanding, application, content, significant effects of content has been In other words, the cognitive scores among students learn science in the content analysis of computer-assisted learning in higher Traditional trained. The findings of other studies, including consistent. In general it can be said that such subsidiary in connection with the theory of computer-assisted instruction can Cognitive domains (the part of the composition) affect students given the importance of these findings in primary school education, particularly in science reveals second base. The use of computers in education so that students can make three-dimensional images quickly and timely feedback, choice, training, and experience a variety of students, the Also, students can better analyze the use and benefit of computer facilities.

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