

EFFECTIVENESS OF TRADITIONAL METHOD, COMPUTER ASSISTED INSTRUCTION AND COMPUTERIZED SELF LEARNING MATERIAL IN LEARNING OF GEOGRAPHY AT SECONDARY LEVEL

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Abstract

This factual Experimental study measured up to scholastic performance of students at VI standard in one of the Private Schools of Coimbatore city with traditional teaching and Computerised Self learning material in Geography. The plan was the equivalent pre test - post test plan. Two sections of VI standard students were selected and randomly separated in to groups. For the analysis of scholastic performance t-test and F-test were adopted. The findings revealed that Computerised self learning material is more effective than the traditional method.

Key words: *Computerised Self Learning Material, Traditional Method, Learning Geography*

Introduction

Learning of any subject only through lecture method will neither attain the educational objectives (i.e., Taxonomy of educational objectives: cognitive, affective and psycho motor) nor meet the current challenges of education. This is worse in the case of social sciences especially in Geography since it is considered as redundant subject. Therefore Geography as a subject needs to focus on a conceptual understanding rather than a lining up of facts to be memorized for examinations. This can be effectively done with a new strategy of instructional system and technology i.e., learning through computer based multimedia technology.

The new technologies used in the right way can empower education. The discipline of educational technology is an enabling discipline designed to make the teaching more effective. Computer based multimedia is an ideal medium for interactive learning and is effective in self learning. It is imperative to research into existing and new techniques strategies and technologies for solving problems of learning geography and to improve quality of learning Geography. Indian experiments on computer based instruction in schools are at primitive stage and have not yielded expected results. Considering the above aspects and problems in Geography teaching, computer based multimedia as a new method of learning need a thorough investigation. The various elements and components of multimedia in teaching Geography need further investigation on their effectiveness in learning. Therefore the investigators have selected the present study to compare the effectiveness of traditional method and computerized self learning material in learning Geography in the present context.

Review of Related Studies

Rivet, J.R. (2001), Studied students achievement in middle school Mathematics Computer Assisted Instruction versus traditional instruction method, four 6th grade classroom were identified, two classroom within each of two middle schools. Two classrooms used Computer Assisted Instruction as the primary means of content delivery involving mathematical concepts all pertaining to the content area of fractions. Within the same content area, the other two class rooms' primary mode of instruction remained the lecture and textbook. A quasi experimental pre test post test design was used. Following a six week study, difference scores were examined to substantiate the primary hypothesis that the use of Computer Assisted Instruction led to increases student achievement when compares to traditional instruction techniques. Findings: In spite of variability in performance in individual types of fraction operations, the overall improvement scores were significantly greater in Computer Assisted classrooms than in the traditional classrooms. Further, in spite of the achievement difference between schools, the Computer Assisted classrooms performed better than the traditional classrooms at each school.

Aggabao (2002) conducted a study aimed at Developing Individualized Self Instructional Modules on Selected Topics in Basic Mathematics for Instructional use at the Teachers College in Isabela State University. After making use of the experimental method, it was concluded that the students as well as teachers have a positive attitude towards the use of self-instructional materials as a mode of instructions in Basic Mathematics.

Arora & Singh (2005) conducted research on Development and Evaluation of Self-Learning Modules to enhance the Traditional Physiology Class at CMC Ludhiana. The results (post-test average of 84%) indicated that Self-learning Modules were an effective method of studying and reinforcing learning. Comparison with other teaching methods indicated that the students would prefer Self Learning Modules as an additional method of learning but not a replacement for lectures and text-books. Students recommended that SLM experiment should continue and suggested an SLM library for self study.

The Present Study Entitles

Effectiveness of Computerized Self Learning Material in Learning of Geography at Secondary Level

Objectives of the Study

To compare the effectiveness of teaching through the traditional, computer assisted instruction and computerized self learning material on academic achievement of the 6th standard students in context to subject Geography.

Hypotheses of the Study

- There will be no significant difference between the mean scores of pre test and post test achievement scores of 6th standard students learning through traditional method of teaching.
- There will be no significant difference between the mean scores of pre test and post test achievement scores of 6th standard students learning through computerized self learning material.
- There will be no significant difference between the mean scores of pre test and post test achievement scores of 6th standard students learning through computer assisted instruction.
- There will be no significant difference among the post test scores of 6th standard students learning through traditional method, computer assisted instruction and computerized self learning material.

Tool for the study

- i. As a result of the pre-tryout and the pilot study, 50 questions in geography for the final tool for finding out the effectiveness of Teaching Geography through the Traditional Method, Computer Assisted Instruction and the Computerized Self Learning Material at VI Standard Level. The test used to find out the effectiveness of of Teaching Geography through the Traditional Method, Computer Assisted Instruction and the Computerized Self Learning Material at VI Standard Level.
- ii. Computer Assisted Instruction developed in selected topic by the Investigator and modified according to the advice given by experts in Geography.
- iii. Computerised Self Learning Package in selected topic in Geopgraphy by the Investigator and modified according to the advice given by experts in Geography.

Sample

A total of 170 students studying in standard VI were selected by using random sampling technique. Among these 170 students, a total of 55 students were learnt through traditional method, 58 students were learnt through CAI method and another 57 students were learnt through Computerized Self Learning Material method.

Method

The method selected for the present study is equivalent pre test - post test method.

Statistical tools used

Mean, Median, t-test and F-test were used to analysed the data.

Analysis and discussion

Pre test vs Post test (traditional)

Variables	Specification	N	M	SD	t- value
Achievement	Pre test	55	16.03	4.41	1.815 NS
	Post test	55	16.80	4.42	

NS - not significant

From the table, it is evident that the calculated “t” value 1.815 is lesser than the table value. No statistically significant difference at 0.05 level could be noticed between the pre test and post test achievement scores of traditional group. Therefore the null hypothesis, “There will be no significant difference between the mean scores of pre test and post test achievement scores of 6th standard students learning through traditional method of teaching.” is accepted. After the analysis of data it was found that mean of pre test score (16.036) was nearly equal the post test score (16.800) of traditional method group. There is no remarkable difference between the pre test and post test scores because of same treatment employed.

Pre test vs Post test (Self package)

variables	Specification	N	M	SD	t- value
Achievement	Pre test	57	16.175	6.22	17.86*
	Post test	57	27.035	5.80	

*- significant at 0.01 level

From the table, it is evident that the calculated “t” value 17.86 is greater than the table value. A statistically significant difference at 0.01 level could be noticed between the pre test and post test achievement scores of computerized self learning material group. Therefore the null hypothesis, “There will be no significant difference between the mean scores of pre test and post test achievement scores of 6th standard students learning through computerized self learning material” is rejected. After the analysis of data it was found that mean of pre test score (16.175) was less than the post test score (27.035) of computerized self learning material group. It means that students taught with computerized self learning material method showed better performance.

Pre test vs Post test (CAI)

variables	Specification	N	M	SD	t - value
Achievement	Pre test	58	17.621	3.75	14.09**
	Post test	58	32.121	7.04	

** - significant at 0.01 level

From the table, it is evident that the calculated “t” value 14.095 is greater than the table value. A statistically significant difference at 0.01 level could be noticed between the pre test and post test achievement scores of Computer Assisted instruction group.

Therefore the null hypothesis, “There will be no significant difference between the mean scores of pre test and post test achievement scores of 6th standard students learning through computer assisted instruction.” is rejected.

After the analysis of data it was found that mean of pre test score (17.621) was less than the post test score (32.121) of CAI group. It means that students taught with CAI method showed better performance.

Traditional vs CAI vs Self learning - Post Test

variable	Source of Variance	SS	df	MS	F-value
Achievement	Between groups	6839.327	2	3419.663	99.028**
	Within groups	5766.885	167	34.5322	
	Total	12606.212			

** - significant at 0.01 level

From the table , it is clear that the F value 99.028 for the post test scores of traditional, computer assisted and computerized self learning package method groups is significant at 0.01 level. It means there is a significant difference between the three groups after the treatment. Hence the hypothesis stated, “There will be no significant difference among the post test scores of 6th standard students learning through traditional method, computer assisted instruction and computerized self learning material.” is rejected.

Hence it may be inferred from the analysis that the achievement level of students in traditional method, computer assisted instruction and computerized self learning material group differ after the treatment. To investigate as to which method, the achievement level of students differed significantly; t-test was further employed. The results of this analysis are given in the table 1

Table 1

Variables	Specification	N	M	SD	t-value	
					CAI	Self package
Achievement	traditional	55	16.8	4.43	13.920**	10.522**
	CAI	58	32.12	7.04		4.231**
	Self package	57	27.04	5.80		

** - significant at 0.01 level

It is evident from the table 5A that, the calculated t- values for the students belong to the category traditional group vs CAI group, traditional group vs Self package group and CAI group vs Self package group are 13.920, 10.522 and 4.231 respectively. A statistically significant difference is found between the mean values at 0.01 level. Hence it may be inferred from the analysis that, the CAI group students achievement (M=32.12) is significantly higher than self learning package group (M=27.04) and traditional group

(M=16.8). It is also found that the self learning package group achievement (M=27.04) is significantly higher than the traditional group (M=16.8) achievement.

Conclusion

The results of the study revealed that learning through Computer Assisted Instruction and Computerized self learning material helped in improving the achievement scores of students. Hence, it is the need of the day to develop and introduce such methods that may be suitable for Indian schools, for the betterment of all the students.

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