

“EFFECTIVENESS OF COMPUTER AIDED LEARNING MATERIAL (CALM) ON ACHIEVEMENT IN MATHEMATICS FOR STUDENTS OF GRADE SEVEN IN RURAL AND URBAN AREA”

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Abstract

Mathematics is an abstract subject. As per NCF 2005 national curriculum framework (NCF) 2005 the main goal of Mathematics education is to improve student's ability for Mathematisation. If Mathematic education not done by proper methodology, then the subject is not learnt perfectly by students. There is a fear of failure among large group of students in our nation. Mathematics phobia is also quite common among the primary to higher education students. Some students give up early and get early drop out from Mathematical learning.

Researcher is doing Ph.D. in education and also working as a teacher educator in Mathematics. During class room Mathematics teaching and during observing Mathematics practice lesson of trainee's researcher came to know that students are facing difficulties in learning by traditional teaching method.as well as trainee teacher also facing difficulties in presenting lesson in traditional way. So as per main aim of the research was to develop Computer Aided Learning Material (CALM) program. It was developed on Unit of LINE AND ANGLES in mathematics of standard seven. To find its effectiveness researcher done the experiment in rural area as well as urban area. In present study, the researcher taught the topic LINE AND ANGLES one group with use of Computer-Aided Learning Material. Same way the another group was taught by traditional teaching method that we can say chalk and talk method i.e. Lecture method. After the experiment achievement of both group was measured by achievement test prepared by researcher. The comparison between these two groups was done by achievement score gain by students. Both groups ware equivalent before the experiment. In two equivalent groups, only post-test experimental design was applied.

After the experiment, researcher found that Computer Aided Learning Material (CALM) program was found more effective teaching tool than the traditional teaching method i.e. chalk and talk method i.e. lecture method in Mathematics of standard seven in rural area as well as urban area.

There is large material available in the form of software and apps in market. But mostly material developed in English language. This software is prepared in Gujarati language for the unit of 'LINE AND ANGLES' in mathematics of standard seven. This type of teaching or study material is not easily available in Guajarati language. So this CALM program will be very useful for primary students of grade seven, primary school mathematics teaches and also for B.Ed. or D.El.Ed. students.

1.0 Introduction of study

Today information technology is used widely in our education system. Twenty first century is the century of information and technology. In this century methods of teaching and learning changing rapidly in the world. Life style of human being also changed and affected by these IT changes. It is difficult to find such area in which there has been no use of information and technology. When the present time line every student's or person's daily life has been directly or indirectly influenced of information and technology. So It is our duty to take advantage of this situation every and to make every individual to get educated.

As per national curriculum framework (NCF) 2005, the main goal of Mathematics education is to develop children's ability for Mathematisation.

National focus group on Mathematics of NCERT (2006, page 16) mention in their document on position paper that, "At Upper Primary Stage, Mathematics is amazingly compressible. Mathematics at this stage can address many problems from everyday life and offer tools for addressing them".

To make mathematics interesting and student friendly so student can learn without burden. we have to try to reduce students fear of failure. For that we have to use IT in mathematics education. Keeping this in mind this research paper has been prepared.

2.0 Statement of the study

"Effectiveness of Computer Aided Learning Material program on Achievement in Mathematics for Students of standard Seven in rural and urban areas"

3.0 Objectives of The Study

1. To study the effectiveness of Computer aided learning material on students' achievement in Mathematics of grade 7 in rural area.
2. To study the effectiveness of Computer aided learning material on students' achievement in Mathematics of grade 7 in urban area.

4.0 Hypotheses of the Study

In present study, null hypotheses H01 and H02 are specified according to objectives as under

H01 There is no significant effect of teaching method on achievement score of Experimental group and Control group students of standard 7 in rural area.

H02 There is no significant effect of teaching method on achievement score of Experimental group and Control group students of standard 7 in urban area.

5.0 Area of research

Area of research was use of information and technology in class room teaching

6.0 Type of research

This was an Experimental research. Experiment was done on students of grade seven in rural area and same way in urban area.

7.0 Sample

Total 168 students from different govt. primary schools of rural and urban area were selected. which of them 100 students were from rural are and 68 students were from urban area.

TABLE 7.1

SAMPLE OF RURAL AND URBAN AREA

GROUP	EXPERIMENTAL	CONTROL	
TREATMENT	TEACHING BY	TEACHING BY	TOTAL
AREA	CALM PROGRAMME	TRADITIONAL METHOD	
RURAL	52	48	100
URBAN	34	34	68

8.0 Tools

Post test was used for data collection of the study. Post test was developed by the researcher. Students were examined by this post test, which was conducted after the experiment

9.0 Data Collection

In this experiment we were interested to know the effect of the treatment i.e. independent variable i.e. teaching method, on a response variable (dependent variable) i.e. achievement in post-test. After completion of the treatment with both the groups, they were examined through the post test, which was conducted after the experiment. Mean achievement score of both the groups at the post test was calculated, in order to examine the effectiveness of a particular teaching method.

10.0 Data Analysis

In order to compare both group after the parametric t test was calculated as under.

TABLE 10.1

Mean, S.D. and t value of achievement score of experiment group and control group in rural area

RURAL AREA	N	Mean	Std. Deviation	t value
EXPERIMENT GROUP	52	37.98	7.45	7.49
CONTROL GROUP	48	17.62	7.52	

significant at 0.01 level *significant at 0.05 level $t_{0.01} = 2.56$, $t_{0.05} = 1.96$

It is observed from table 10.1 that mean of experiment group was 37.98 and that of control group was 17.62. t value was calculated 7.49 which is significant at 0.01 level. Hypothesis H01 was rejected. It means that the mean difference in achievement is not negligible. Hence, it is implied that both the group were not equal after the treatment.

Hence Thus it is proved statically that both the groups were not matched group after treatment. i.e. teaching by CALM was more effective then teaching by traditional method in rural area.

Table 10.2

Mean,S.D. and t value of achievement score of experiment group and control group in urban area

URBAN AREA	N	Mean	Std. Deviation	t value
EXPERIMENT GROUP	34	30.91	4.79	3.98
CONTROL GROUP	34	19.55	6.78	

significant at 0.01 level *significant at 0.05 level $t_{0.01} = 2.56$, $t_{0.05} = 1.96$

It is observed from table 10.2 that mean of experiment group was 30.91 and that of control group was 19.55. t value was calculated 3.98 which is significant at 0.01 level. Hypothesis H02 was rejected It means that the mean difference in achievement is not negligible. Hence, it is implied that both the group were not equal after the treatment.

Hence Thus it is proved statically that both the groups were not matched group after treatment. i.e. teaching by CALM was more effective then teaching by traditional method in urban area.

11.0 Result and Findings

Null hypothesis was tested and details are as under

Table 11.1
Hypothesis and result of it

Hypothesis	Result
H01 There is no significant effect of teaching method on achievement score of Experimental group and Control group students of standard 7 in rural area.	The null hypothesis H ₀₁ was rejected. Therefore, there is enough evidence to claim that the population mean is significant. . i.e. teaching by CALM was more effective then teaching by traditional method in rural area.
H02 There is no significant effect of teaching method on achievement score of Experimental group and Control group students of standard 7 in urban area.	The null hypothesis H ₀₂ was rejected. Therefore, there is enough evidence to claim that the population mean is significant. . i.e. teaching by CALM was more effective then teaching by traditional method in urban area.

It is observe that there is influence of teaching method on achievement of the student. Teaching with CALM program was more effective then teaching with traditional method in rural area as well as urban area/

12.0 Suggestions

- CALM program can be developed in other topic of Mathematics of grade seven and also for other subject.
- CALM program can be developed in Mathematics of other standard.
- CALM program can be made more user friendly modifying by the help of IT experts.
- GCERT and State Universities can motivate teachers for developing this type of program as per their need.
- Collection of this type of program for Mathematics can be made and circulate them to school for utilization as

per school need.

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