A COMPARATIVE STUDY OF TRADITIONAL METHOD AND COMPUTER ASSISTED INSTRUCTION METHOD ON SECONDARY SCHOOL STUDENTS

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ABSTRACT

In this study an attempt has been made to study the academic achievement of 9th class students by teaching them with traditional method and computer assisted instruction. The sample consists of 100 students studying in private English medium secondary school. The investigator has used self-made questionarie for pre-test and post-test for testing the achievement of the students and Mathematical Interest Scale(MIS-TUPA) by Dr. Uma Tandon and Ashok Pal. The data were analysed by using Mean, S.D. and 't' value. The finding of the data reveals that there is slight change in teaching of Mathematics by both the methods (Traditional method and Computer Assisted method).

INTRODUCTION

The role of education is the most important factor in the development of a nation. The remark made by the Kothari Education Commission(1964-66) “The destiny of India is being shaped in the classroom” throws light on the importance of education in modern India. No country can progress unless it focuses its attention on the education. This education needs to be of high quality, because only quality education can bring the desirable changes among the people. If the education needs to be qualitative, it should continuously be in track with the contemporary changes and developments in the society. That is why there is a current cry for the changes needed to update, asses and restructure the existing system of education. Teachers of today realize the need for presenting different learning experiences to suit the individual differences among pupils and make attempts to use media and method generated by educational technology.

In 1963, IBM established partnership with Stanford University Institute for Mathematical studies in the Social Science (IMSSS) to set standard for computer-assisted instruction CAI. It led to the development of the first computer based learning package, a tutorial programme was introduced in school curriculum in Calfornia (USA).

The National Policy on Education(1986) has laid special emphasis on the use of computers of 'Educield of programme educational Technology' for improving quality of education.

Computer can be used as enabling tools for all students including students with special needs. Students who have difficulty with writing , spelling, mathematics, organization,
and sequencing find that computers make these tasks easier. We can use applications such as word processing programs, database programs, spreadsheets, and graphics programs as instructional tools. Such applications may help students overcome programs that interfere with learning.

Computer-assisted instruction (CAI) is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place.

According to encyclopedia “Computer Assisted Instruction(CAI) is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place. CAI uses a combination of text, graphics, sound and video in enhancing the learning process.”

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OBJECTIVES OF THE STUDY

1. To find out the instructional effect of CAI on the achievement of the students.
2. To find out the instructional effect of Traditional Method on the basis of the achievement of the students.
3. To compare the effectiveness of the CAI and Traditional Method on the achievement of the students.

HYPOTHESES

In order to achieve the objectives following hypotheses are formed

1 The CAI used method is an effective method of teaching and it gives good results in achievement in Mathematics.

2 The Traditional method of Mathematics teaching also brings good achievement in Mathematics.

3 The CAI and Traditional Method differ significantly in the results of the achievement of Mathematics.

4 There is no significant difference in mathematical interest of secondary school students in relation to their gender.

DELIMITATION

The purpose of study was delimited with respect to method, sample and tools.

However, some of the delimitations listed below:

1. The study was delimited to the achievement of students by using Traditional Method.
2. The study was delimited to the achievement of students by using CAI.
3. The sample was delimited to 100 students.

METHOD

The instructor adopted comparison method in testing knowledge of students through pre- test and post test.

SAMPLE

The sample of study comprised of 100 students studying in private English medium Secondary School.

TOOLS USED

The selection of tools is very important in research. The investigator used the following tools for the study.

1. Pre- test and post-test was considered for the comparison method in testing achievement of the students.
2. Mathematical Interest Scale(MIS-TUPA) by Dr. Uma Tandon and Ashok Pal.

STATISTICAL TECHNIQUES USED

For analysis of data Mean, Standard Deviation and t-test were used.

ANALYSIS OF DATA

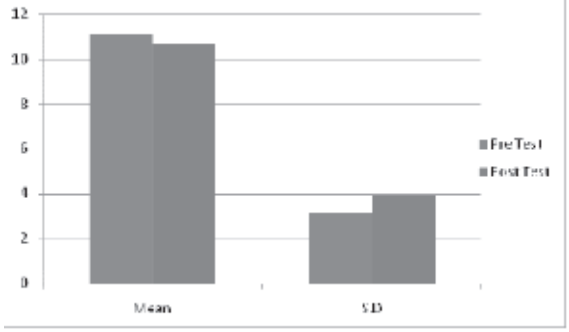
The analysis and interpretation of data presentation of the obtained results related to the hypotheses are:

1. The researcher discussed the inventory of mathematical interest and Gender of secondary school students and found that there is no significant difference between Mean and S.D. of boys and girls. All the students have equal mathematical interest. So, we can say that there is no significant difference between mathematical interest and Gender of secondary school students.
2. The traditional method of mathematics also brings good achievement in mathematics. The researcher discussed all the questionnaires of mathematical interest and the traditional method and found that there is an improvement in the grades of the students.
3. The comparison shows that CAI group is slightly effective than the traditional method.

Hypothesis I : The CAI used method is an effective method of teaching and it gives good results in achievement in mathematics.

Pre Test		Post Test		't' value
Mean	S.D.	Mean	S.D.	
12.28	3.05	10.66	3.94	2.3

Graph showing mean and standard Deviation of Boys and Girls of secondary school students :



Thus, graph shows that there is no significant difference between the mean and standard deviation of the students in pre- test and post-test.

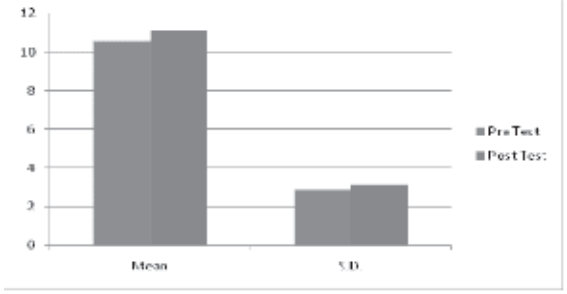
Hypothesis II: The traditional method of teaching mathematics also bring good achievement in mathematics.

The given table showing the difference between the mean, S.D., 't' test aspect of mathematical interest of secondary school students in relation to traditional method.

Pre- Test		Post- Test		't' value
Mean	S.D.	Mean	S.D.	
10.6	2.9	11.14	3.19	0.9

The researchers discussed all the questionnaires of mathematical interest and the traditional method and found that there is an improvement in the grades of the students .

Graph showing mean and standard Deviation of secondary school students :



Thus, the graph shows a slight difference in the Mean and S.D of Pre Test and Post Test of the students by teaching them through traditional method.

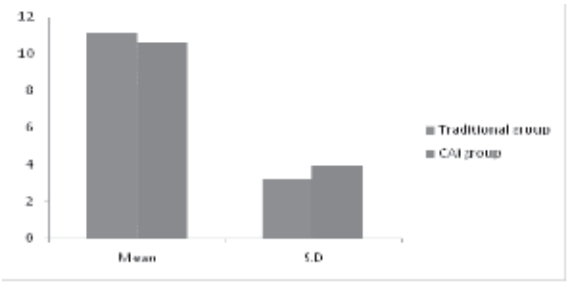
Hypotheses III : The CAI and traditional method differ significantly in the results of the achievement of students in mathematics.

The given table showing the difference between the mean, S.D., 't' test aspect of mathematical interest of secondary school students in relation to CAI method and Traditional method:

Test	Summary	Traditional Group	CAI Group
Pre Test	Mean	10.6	12.28
	S.D	2.9	3.05
Post Test	Mean	11.14	10.66
	S.D	3.19	3.95

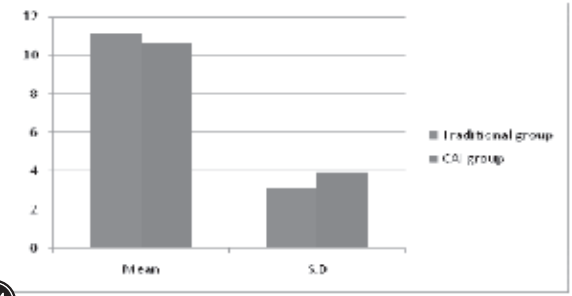
The above comparison shows that CAI group is slightly effective than the traditional method taught group.

The following graph shows the comparison between traditional group and CAI group in Pre Test:



The above graph shows that there is a slight difference in the CAI group.

The following graph shows the comparison between traditional group and CAI group in Post Test:



Thus, the above graph shows that there is a difference in the mean and S.D of traditional group and CAI group of post test.

Hypothesis IV: There is no significant difference in mathematical interest of secondary school students in relation to their gender.

The table shows the interest of Boys and Girls in Mathematics

Data	Boys	Girls
Mean	99.06	100.4
S.D.	13.6	10

The table shows that there is slight difference in the mean of the boys and girls mathematics interest. The D value is 2.35 and 't' value is 0.57which is not significant at the levels of 0.01 and 0.05. So, we can say that both boys and Girls are equally bright in mathematics. Both, boys and girls have equal interest in mathematics.

There was no significant difference between the mathematical interest and gender of the students. The 't' value is 0.52 which is not significant at levels of 0.01 and 0.05. So, we can say that both boys and Girls are equally bright in mathematics. Both, boys and girls have equal interest in mathematics.

CONCLUSION

At the end of the study, the researchers concluded that there is slight change in teaching of Mathematics through Traditional method and Computer Assisted Instruction method.

It can also be concluded from MIS test that girls are no less than boys in any work. There is a stereotype in our society that boys are far better in mathematics than boys. But, from the present study, it is clear that Girls are equal in mathematical ability. And, sometimes even Girls are much better than boys. They can equally explore in every field and can attain success.

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