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RESEARCH PAPER

The Effect of Audio-Visual Aids in Teaching Mathematics at B. Ed. Colleges in Murshidabad

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ABSTRACT

Teaching aids effect or organs of audibility and sight are called "audio-visual aids". 'Good' Dictionary of Education speaks of audio-visual aids as "Anything by means of which learning process may be encouraged or carried on through the sense of learning or sense of sight." The purpose of this study was to examine the effect of Audio-Visual Aids in teaching Mathematics at B.Ed. colleges in Murshidabad. The objective of this study is to access the impact of use of audio-visual aids in the achievement of mathematics concepts at the B.Ed. Colleges, investigate the use of audio-visual aids in teaching Mathematics at B.Ed. colleges in relation to gender, location variations. In this study the researcher has used the "pre-experimental design (Two groups, static design)". For this purpose the investigator constructed a Questionnaire on "Achievement Test in Mathematics" containing four dimensions for 20 students (10 boys and 10 girls) of B.Ed. second semester chosen from the different strata of society for try-out purpose to collect the data. The researcher has selected colleges from rural and urban areas of Murshidabad district, Domkol block. The impact of use of audio-visual aids in the achievement of mathematics concepts at the B.Ed. colleges is better than the traditional method.

Key words: *Achievement Test, Audio-Visual Aids, Traditional Method, Experimental Design.*

INTRODUCTION

Teaching aids effect or organs of audibility and sight are called "audio-visual aids". 'Good' Dictionary of Education speaks of audio-visual aids as "Anything by means of which learning process may be encouraged or carried on through the sense of learning or sense of sight."According to Gandhiji, "True education of the intellect can only come through a proper exercise and training of bodily organs hands, feet, eyes, ears and nose."Concerning audio-visual aids Kothari Education Commission (1964-66) said "The supply of teaching aids to every pool is essential for the improvement of the quality of teaching. It should indeed bring about an educational revolution in the country."National Policy on Education (1986) has recommended the use of teaching aids, especially impoverished aids, to make teaching learning more effective and realistic."

THERE ARE THREE TYPES OF AUDIO-VISUAL AIDS

- **Visual Aids:** The aids which use sense of vision are called visual aids. For example actual objects, models, pictures, charts, maps, flash cards, flannel board, slides, epidiascope, over hand projector etc.
- **Audio Aids:** The aids involving the sense of hearing are called audio aids. For example radio, tape-recorder, record player, etc.
- **Audio-Visual Aids:** The aids which involved the sense of vision as well as hearing are called audio-visual aids. For example, Television.

Another Categorization of Audio-Visual Aids is as under

Projected Aids: Aids which help in their 'projection on the screen is called projected aids. For example films strips, slides, films projector, slide projector, epidiascope etc.

Non-Projected Aids: Aids which do not help in their projection on the screen are called non-projected aids for example chalk-board, charts, actual objects model, radio, tape-recorder etc.

OBJECTIVE

1. To have an appraisal of teaching aids available in the College.

2. To investigate the use of audio-visual aids in teaching Mathematics at B.Ed. Colleges in relation to location.
3. To estimate the teaching competency of Mathematics teachers in using audio-visual aids.
4. To ascertain the frequency of use audio-visual aids in classroom situation by the teachers during the classes of Mathematics.
5. To access the impact of use of audio-visual aids in the achievement of mathematics concepts at the B.Ed. Colleges.

HYPOTHESES

H_{01}: All colleges are not equally counted in respect of the availability of teaching aids.
H_{02}: There is no significant difference in achievement of mathematics due to the use of audio-visual aids according to gender variations.
H_{03}: There is no significant difference in achievement of mathematics due to the use of audio-visual aids according to location variations.
H_{04}: There is no significant difference in achievement of mathematics due to the use of audio-visual aids and other traditional methodology of instruction.

DELIMITATION OF THE STUDY

- **Sample:** The researcher intended to analysis the effect of audio-visual aids in teaching Mathematics. The student of two Colleges in the Murshidabad district were selected.
- **Class:** The class selected for applying the tools was B.Ed. second semester since most of the students are facing the problem of loosing concentrate.
- **Area:** The Colleges were selected from rural and urban areas of Murshidabad district, Domkol and Aurangabad Suti II block were considered.
- **Number of Colleges:** Two colleges were selected in which one situated at rural area and another in urban area.
- **Number of Students:** The tools were administration on 20 B.Ed. second semester students.
- **Sex:** Out of 20 students 50% were girls and next boys.
- **Area of Content:** Various types of multiple of questions were put to measure different dimension of knowledge, understanding, application and skill by the achievement in Mathematics were followed.
- **Tools Used:** To measure the achievement test of Mathematics a self made standardized questionnaire were followed.
- **Techniques:** Out of several method the t test and test-retest method were followed.

METHODOLOGY

For this research, researcher has used Experimental methodology for his requirement and the need of work. Experimental research provides a logical and systematic method in which the researcher manipulates certain variables and observes how the condition or behavior of subject of affected or changed. In this context the researcher has used this methodology where he created a control class and observed systematically the effect of audio-visual aids on the achievement of Mathematics students of B.Ed. second semester. For this research researcher has tried to determine between traditional method of instruction and instruction with audio-visual aids which one was effective for students.

DESIGN

There are various types of experimental design. In this study the researcher has used the "pre-experimental design (Two groups, static design)". Pre- experimental design provide little control or situational variables. Now a day there used in the study in Education problems. There are two types of pre-experimental designs. Here the researcher used control group and experimental group of students in which control group were taught by traditional method and experimental were taught audio-visual aids and got the score or result where analised statistically.

TWO GROUPS, STATIC DESIGN:

Group	Independent Variable	Post-Test
Control	Teaching through traditional method	T_1
Experimental	Teaching through audio-visual aids	T_2

SAMPLE

By the purposive sampling, it is enough to select colleges where the researcher more systematically and easily. The test was administered on 20 students (10 boys and 10 girls) of B.Ed. second semester chosen from the different strata of society for try-out purpose.

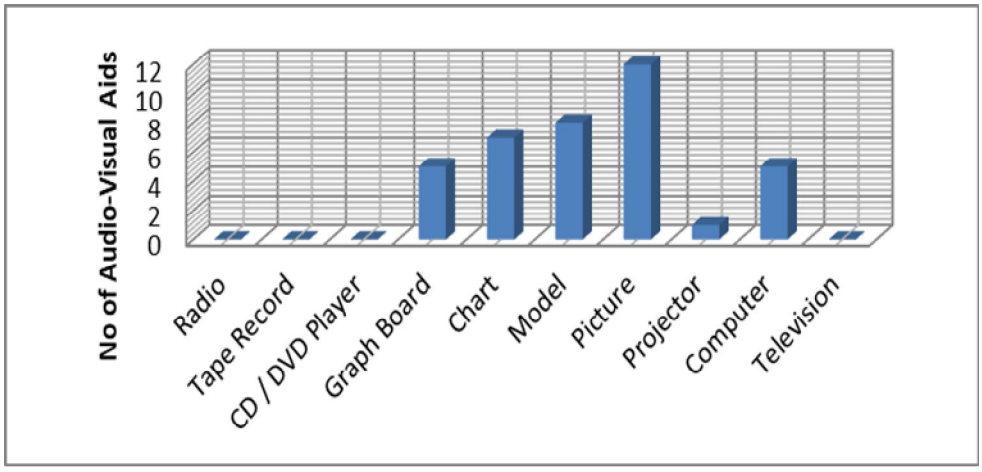
TOOL

To measure the achievement test of Mathematics a self-made standardized questionnaire were followed by researcher containing knowledge, understanding, application and skill. The reliability of the tools is 0.906 which was highly significant at 0.01 levels using test-retest method. And for contain validity the item were judge by experts and then tried out a small sample of the subject.

DATA ANALYSIS

Table 1: List of Mathematics Audio-Visual aids in Education College.

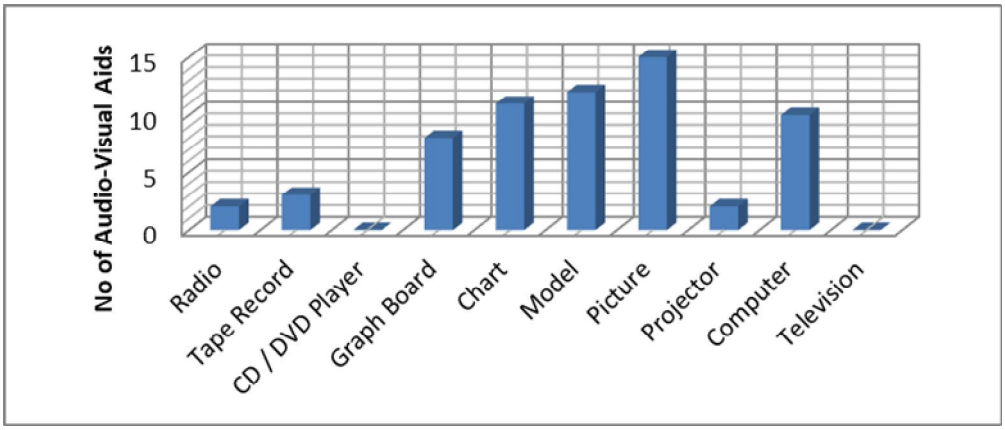
Audio Aids	No of Aids		Visual Aids	No of Aids		Audio-Visual Aids	No of Aids
Radio	0		Graph Board	5		Computer	5
Tape Record	0		Chart	7		Television	0
CD / DVD Player	0		Model	8			
			Picture	12			
			Projector	1			



Graph 1: Bar chart showing the Audio-Visual Aids for Mathematics in Education College.

Table 2: List of Mathematics Audio-Visual aids in Aurangabad B.Ed. College.

Audio Aids	No of Aids		Visual Aids	No of Aids		Audio-Visual Aids	No of Aids
Radio	2		Graph Board	8		Computer	15
Tape Record	3		Chart	11		Television	0
CD / DVD Player	0		Model	12			
			Picture	15			
			Projector	2			

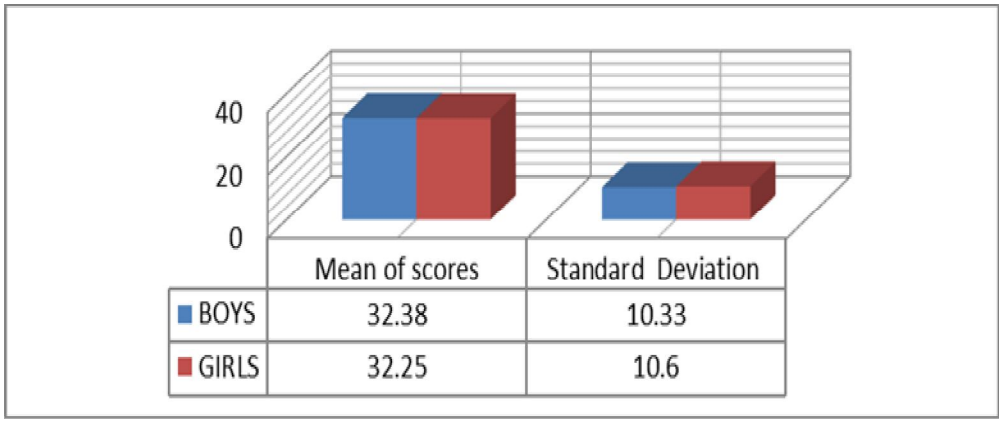


Graph 2: Bar chart showing the Audio-Visual Aids for Mathematics in Aurangabad B.Ed. College.

Table 3: Particulars of measure of test scores in Mathematics Achievement between Boys and Girls students

	BOYS	GIRLS
Number of students involved	10	100
Mean of scores	32.38	32.25
Standard Deviation	10.33	10.60
Standard error of the scores	1.63	1.68
Difference between means	0.13	
Standard Error of the different between means	2.34	
Value of t	0.05*	

* Not Significant at 0.05 level.

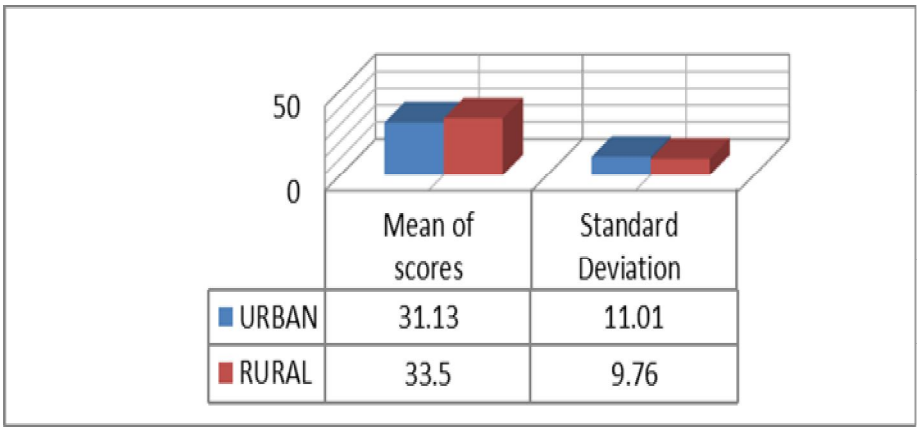


Graph 3: Bar Chart showing the achievement of mathematics due to the use of audio-visual aids according to gender variations.

Table 4: Particulars of measure of test scores in Mathematics Achievement between Urban and Rural students

	URBAN	RURAL
Number of students involved	10	10
Mean of scores	31.13	33.50
Standard Deviation	11.01	9.76
Standard error of the scores	1.74	1.54
Difference between means	2.38	
Standard Error of the different between means	2.33	
Value of t	1.02*	

* Not Significant at 0.05 level.

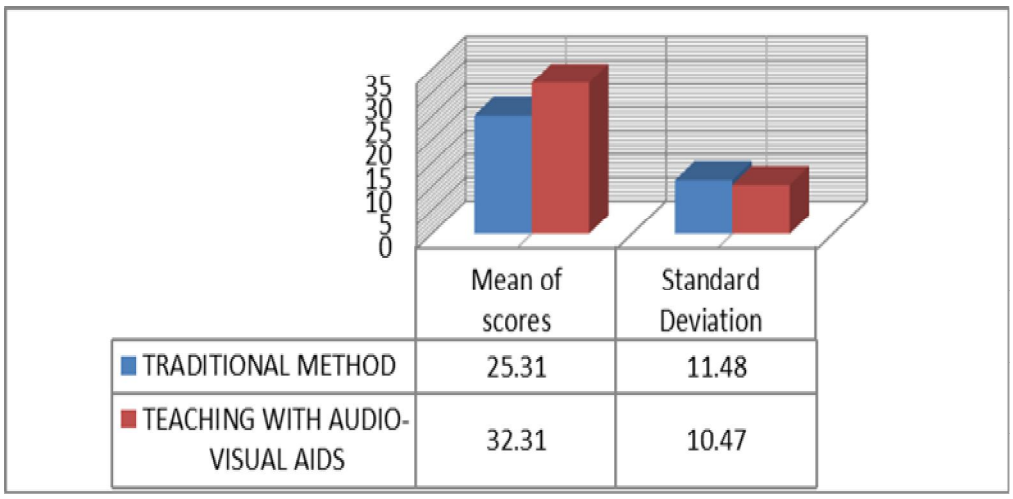


Graph 4: Bar Chart showing achievement of mathematics due to the use of audio-visual aids according to location variations

Table 5: Particulars of measure of test scores in Mathematics Achievement between Traditional Method and Teaching with Audio-Visual Aids

	TRADITIONAL METHOD	TEACHING WITH AUDIO-VISUAL AIDS
Number of students involved	10	10
Mean of scores	25.31	32.31
Standard Deviation	11.48	10.47
Standard error of the scores	1.28	1.17
Difference between means	7.00	
Standard Error of the different between means	1.74	
Value of t	4.03*	

* Significant at 0.01 level.



Graph 5: Bar Chart showing achievement of mathematics due to the use of audio-visual aids Graph and other traditional methodology of instruction

DISCUSSION

For Null Hypothesis 1, the availability of teaching aids in two Colleges was presented by list of available Audio-Visual Aids and the table had shown with the bar chart. The presentation clearly state that the all College is not equally counted in respect of availability of teaching aids. Therefore Null Hypothesis 1 is accepted. It was evident the above table the obtained value of "t" ratio in case of gender variation on achievement of mathematics due to the use of audio-visual aids is 0.05

which was less than the table value that is 1.99 at 0.05 level. So the obtained value is notsignificantat 0.05 levels. Therefore the null hypothesis 2 was accepted.
And the "t" ratio in case of achievement of mathematics due to the use of audio-visual aids according to location variations is 1.02 which was less than the table value that is 1.99 at 0.05 level. So the obtained value is not significant at 0.05 levels. Therefore the null hypothesis 3 was accepteAt last the "t" ratio in case of achievement of mathematics due to the use of audio-visual aids and other traditional methodology of instruction is 4.03 which was greater than the table value that is 2.64 at 0.01 level. So the obtained value is highly significant at 0.01 levels. Therefore the null hypothesis 4 was rejected.

FINDING

1. All Colleges are not equally counted in respect of the availability of teaching aids.
2. There is no significant difference in achievement of mathematics due to the use of audio-visual aids according to gender variations.
3. There is no significant difference in achievement of mathematics due to the use of audio-visual aids according to location variations.
4. There is significant difference in achievement of mathematics due to the use of audio-visual aids and other traditional methodology of instruction.

Therefore the impact of use of audio-visual aids in the achievement of mathematics concepts at the B.Ed. Colleges is better than the traditional method.

CONCLUSION

the above discussion, there is no significant difference in achievement of mathematics due to the use of audio-visual aids based on gender, location variations and the impact of use of audio-visual aids in the achievement of mathematics concepts at the B.Ed. Colleges is better than the traditional method. The Audio-Visual Aids help to create interest, give the reality to the learning situation, motivate the learner for learning etc.

RECOMMENDATION

Some suggestions were stated to improving the instructional strategy:

1. The teachers should used by adequate and frequent Audio-Visual Aids during teaching.
2. Innovative teaching learning materials and modern technologies should used by the teachers in the class room.
3. During the teaching learning processes the teachers should used an easy and leasable language for communication.
4. A well-equipped and well-managed class room and library should be essential for Mathematics.

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