

The Effect of Audio-Visual Aids on the Achievement in Science and Technology of X Standard Students

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Abstract

Present research study aimed to study the effect of Audio-Visual Aids on the Achievement in Science and Technology of X Standard Students. For present research study experimental research method was used to study the effectiveness of teaching unit Metals and Non-metals of subject Science and Technology for Std.X

Main conclusions are there is a significant difference in the achievement of male students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X. The difference in the achievement of female students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X is also significant.

Also the difference in the achievement of total students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X is significant.

Introduction

Educational Technology offers solution to many problems of educational process and teaching learning process. To tackle any problem concerned with teaching-learning process in the form of individual differences among the students Audio-Visual Aids is one of the best solutions.

The development of Audio-visual Aids, its use in teaching and integration in the classroom has remained almost completely unexplored.

So with the intension of developing the Audio-visual aids and its effectiveness the researcher developed a module on Metals and Non-metals unit of Science and Technology of standard X.

Need of the Research Study

Because of poor understanding the average students and slow learners find difficulties in understanding the unit Metals and Non-metals in Science and Technology. It is main area of Science and Technology which challenges the average and slow learners. Hence it is necessary to develop and use of the audio-visual aids for effective learning of students. Audio-visual aids may help the students to achieve the better learning outcomes.

Audio-visual aids are used for effective teaching-learning process. Instructing the students using audio-visual aids is better for clarity; it helps students to express their imagination.

Statement of the Research Study

The Effect of Audio-Visual Aids on the Achievement in Science and Technology of X Standard Students

Operational Definitions Important Terms

1. Audio-visual Aids: Educational devices that simultaneously stimulate audio-visual sensation of pupils for making learning process of pupils and teaching process of teacher more effective.
2. Science and Teaching: Compulsory subject for learning at secondary level of education.
3. X Std: Class belongs to secondary level of education.

Objectives of the Research Study

1. To develop Audio-Visual Aids for teaching unit Metals and Non-metals of Science and Technology for Std. X
2. To verify the effectiveness of audio-visual aids prepared for unit Metals and Non-metals of Science and Technology for Std. X

Hypotheses

1. There is no significant difference between the mean scores of male students in post test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X.
2. There is no significant difference between the mean scores of female students in post test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X.
3. There is no significant difference between the mean scores of total students in post test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X.

Research Methodology

For present research study experimental research method was used to study the effectiveness of teaching unit Metals and Non-metals of subject Science and Technology for Std.X

Variables

Independent Variable: Teaching by Audio-Visual Aids

Dependent Variable: Achievement in Post test

Sample

By using lottery method of random sampling method 100 students of X standard from Pethe Highschool Cidco, Nashik was selected as a sample. On the basis of academic performance two equivalent groups were made, out of which one was controlled group and other was experimental group. Each group comprises of 25 male and 25 female students, i.e. each group are of 50 students.

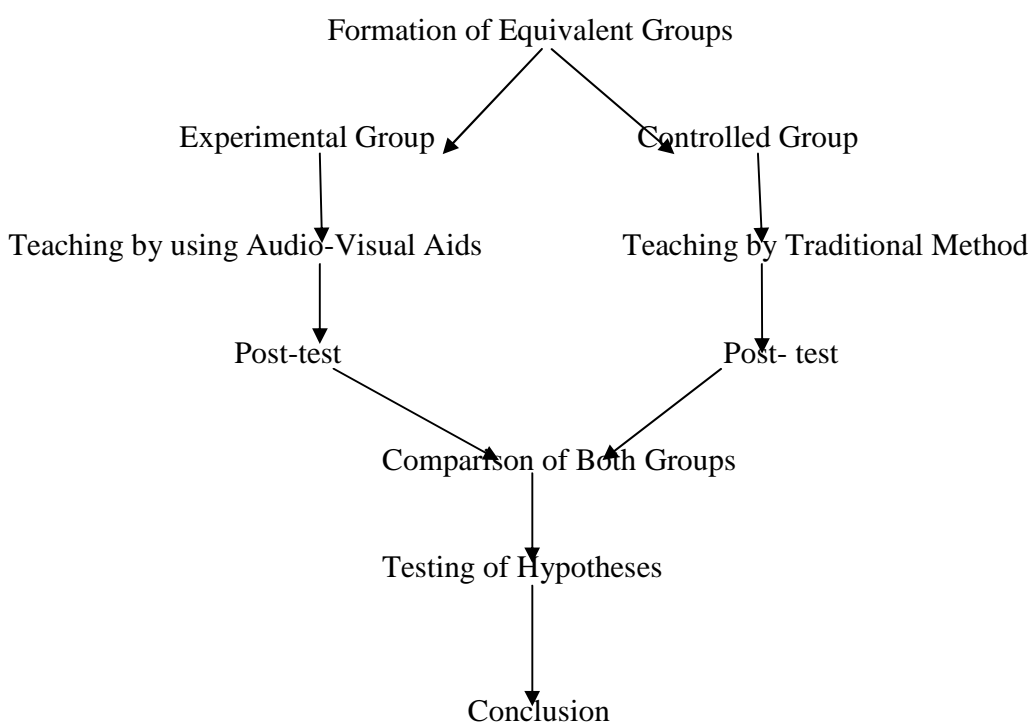
Tools used for present Research Study

Teacher made achievement test was used as a tool for present research study. The test is of 25 marks and comprising of 25 objective type questions.

Procedure of the Present Research Study

The experimental group is exposed to the effect of audio-visual aids, the controlled group not. Observation is made to determine as to what difference appears on what modifications occurs in achievement in the experimental group as contrasted with controlled group.

The Designs of this research study is as follows-



Statistical Techniques Used

The following statistical techniques were used in the study

1. Mean
2. Standard Deviations
3. t-test was applied to analyze the differential hypothesis

Testing of Hypotheses

Hypothesis-1: There is no significant difference between the mean scores of male students in post-test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X.

Table-1: Table showing the mean scores of male students in post-test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X.

Group	N	Mean	S.D	t-value	Level of Significance
Controlled Group (Male Students)	25	8.16	6.01	6.98	0.01
Experimental Group (Male Students)	25	19.68	4.05		Significant

For df= 48, at 0.01 level the table t-value is 2.71 and calculated t-value is 6.98. The calculated t-value 6.98 is greater than the table t-value, hence it is significant. Therefore the hypothesis-1: There is no significant difference between the mean scores of male

students in post-test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X is rejected.

Hence it was inferred that the difference in the achievement of male students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X is significant

Table-2: Table showing the mean scores of female students in post-test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X.

Group	N	Mean	S.D	t-value	Level of Significance
Controlled Group (Female Students)	25	11.09	6.79	5.80	0.01
Experimental Group (Female Students)	25	21.13	3.98		Significant

For $df=48$, at 0.01 level of significance the table t-value is 2.71 and calculated t-value is 5.80. The calculated t-value exceeds the table t-value, hence it is significant. Therefore the hypothesis-2: There is no significant difference between the mean scores of female students in post-test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X is rejected.

Hence it was inferred that the difference in the achievement of female students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X is significant.

Hypothesis-3: There is no significant difference between the mean scores of total students in post-test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X.

Table-3: Table showing the mean scores of total students in post-test of controlled and experimental group on unit Metals and Non-metals of subject Science and Technology for std X.

Group	N	Mean	S.D	t-value	Level of significance
Controlled Group	50	9.6	4.13	6.70	0.01
Experimental Group	50	20.4	3.18		Significant

Findings

1. The difference in the achievement of male students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject science and Technology for std. X is significant.
2. The difference in the achievement of female students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X is significant.
3. The difference in the achievement of total students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X is significant.

Conclusion

The present investigation shows that there is a significant difference in the achievement of male students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X is significant.

The difference in the achievement of female students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X is significant. The difference in the achievement of total students in post-test of controlled group and experimental group on unit Metals and Non-metals of subject Science and Technology for std. X is also significant.

Hence, it is clearly shown that the use of audio-visual aids for teaching the unit Metals and Non-metals of subject Science and Technology of Xth standard is influencing factor in the academic achievement of the students.

References

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