

# Chapter III

## **METHODOLOGY**

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#### 3.1 INTRODUCTION

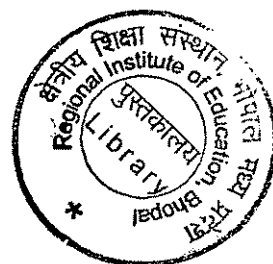
This chapter concerned with the methodology use to achieve the objective of the study mentioned. Sampling and tool development has been done according to objective of the study. This chapter includes discussion upon research design, sample, tools used for research. Methodology decides the planning of whole research.

#### 3.2 Design of the Study

The study adopts two groups pre-test post-test design. Two groups consist of 69 students study in VII<sup>th</sup> standard in same school were taken. Here, one group of students called experimental group were taught through multimedia approach while control group were taught through traditional approach. Before and after the treatment period the pre-test and post-test was administered.

Table 3.1 Schematic Representation of the study

Activity group formation	Experimental Group	Control group	Time
Pretest	Achievement test	Achievement test	35 min
Treatment	Lesson will be taught through multimedia approach	Lesson will be taught through traditional approach	40 min each
Post testing of the variables	Achievement test	Achievement test	35 min



### 3.3 Sample

In present study purposive sampling is done. Sample of the study were drawn from one school. The population of the sample were 69 students studying in VII standard under CBSE board Syllabus Demonstration multipurpose school, Bhopal(M.P). The sample includes both boys & girls.

**Table 3.2** **Detail of sample**

<b>Group</b>	<b>Boys</b>	<b>Girls</b>	<b>Total</b>
Experimental group	17	18	35
Control group	23	11	34
Total	40	29	69

### 3.4 Variables

A variable is something that varies. Variables are the conditions or characteristic that experimenter manipulates, controls, or observe there are following types of variables

**Independent variable-** present study Multimedia approach of teaching are independent variable.

**Dependent variables-** In this study students' science achievement was dependent variables.

### 3.5 Tool Used

To select the proper tool for the research is the main mechanism of educational research. Sometimes researcher uses tool constructed by other, in this study tools constructed by researcher. Tool constructed according to the requirement of the study. It is an achievement test. This test focused on some chapter of related subject.

## **Construction of tool**

Science achievement test, the syllabus of science for class VII was analyzed keeping in view objectives of teaching science and competencies of the student the chapters “waste water story” and “water as a precious resource” was not taught so this particular chapters was opted to preparing multimedia program.

The achievement test consists of following components of “waste water story” and “water as a precious resource”.

1. Basic needs of water
2. What is waste water
3. Scarcity of fresh water
4. Cleaning of water
5. What is sewage, contamination, types of impurities present in water
6. Treatment of polluted water
7. Waste water treatment plant
8. Sanitation and diseases
9. Better housekeeping practices
10. Alternative arrangement for sewage disposal
11. Forms of water
12. Evaporation
13. Rain water harvesting
14. Drip irrigation
15. Conservation of water
16. Water cycle

**Table 3.3 Tool Description (achievement test of waste water story)**

S.No.	Name of the section	No. of Questions	Marks Allotted
1	Fill ups	10	10
2	Choose the correct option	5	5
3	Name the following	5	10
4	Long answer	1	5
Total		21	30

**Table 3.4 weightage to the objective of Achievement test of waste water story**

S.No	Objectives	No. of questions	marks	Percentage of marks
1	Knowledge	10	12	40%
2	Understanding	7	10	33.3%
3	Application	4	8	26.6%
4	Skill	0	0	0
Total		21	30	100%

**Table 3.5 Tool description (Achievement test of water as precious resource)**

S.No.	Name of the section	No. of Questions	Marks Allotted
1	Fill ups	9	9
2	True and false	5	5
3	Long answer	2	6
Total		16	20

**Table 3.6 weightage to the objective of Achievement test of water as a precious resource**

S.No	Objectives	No. of questions	marks	Percentage of marks
1	Knowledge	4	4	20%
2	Understanding	8	8	40%
3	Application	3	5	25%
4	Skill	1	3	15%
Total		16	20	100%

### **Multimedia Tool**

Two multimedia packages was taken based on VII class syllabus consist of animated videos related to the content of the chapters.

### **3.6 Data Collection**

Data collection is essentially an important part of the research process so that the inference, hypothesis generalized tentatively, study of entire population become difficult so researcher should use sample from population, appropriate use of tools, techniques, and sampling make useful and effective research. Experimental method was used for present study. Firstly the researcher selected a target population, for the present study the target population was VII<sup>th</sup> student of D.M.S section A taken as a control group and section B taken as an experimental group then pretest test were administered to both the groups then after the pretest intervention was done by the teacher then after that data were collected by conducting posttest in both the classes.

### 3.7 Statistical Technique

After collecting data for primary result proper statistical technique should be used. Selection of statistical technique depends upon the nature and the objective of statistical methods are extensively used in educational research they provide useful tools for collecting, organizing, analyzing, and interpretation of data which expressed in numerical forms, sampling style decide that what type of statistical should be used. In present study mean, standard deviation and ANCOVA statistic used to analyze data.

