

CHAPTER-III
METHODOLOGY

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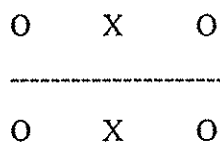
3.0.0 INTRODUCTION

The present chapter is devoted to the description of sample of study, design of the study, tools that were used to test the variable employed in the study, procedural details of data collection and the statistical technique used. The purpose of the methodology chapter is to address the design and implementation of the quantitative research study.

3.1.0 DESIGN OF THE STUDY

The present study was quantitative in nature. Pre-test Post-test Non equivalent control design was employed. The two different section of class VII were taken as groups assigned to the treatment. The treatment in the study had two levels, namely instruction through using 5-E model of constructivist approach and traditional method (lecture method). The group which received treatment through 5-E model named as experimental group, the group which received treatment through traditional method was designated as control group.

Non equivalent control group design



3.2.0 SELECTION OF THE SAMPLE

While selecting the sample for the present study, the researcher adopted purposive sampling method. Then researcher gave pre-test for selected sample. Then by purposive sampling method researcher divided the class in two groups. One was experimental and other was control group. After dividing class in two groups

researcher gave treatment to both the groups. For experimental group, researcher used constructivist approach (5-E Instruction model) and for control group traditional method.

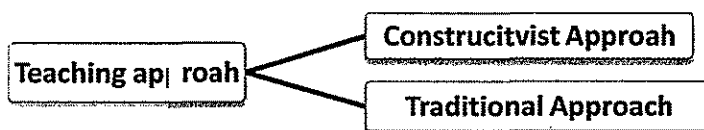
TABLE 3.2: GROUP-WISE AND GENDER - WISE DISTRIBUTION OF SAMPLE

Sr. No.	Group	Male	Female	Total
1.	Experimental	13	10	23
2.	Control	14	11	25
	Total	27	21	48

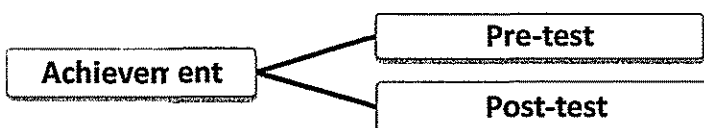
3.3.0 VARIABLES

Following variables were studied:

Independent variable:



Dependent variable :



3.4.0 TOOLS USED FOR THE STUDY

The variables measured in the study were Achievement in mathematics. It was assessed with the achievement test developed by the Investigator.

3.4.1 Achievement test: For assessing the achievement in mathematics of students' in achievement test were developed by the investigator. The achievement test was related to the "Visualising Solid Shapes" which was covered during experimentation.

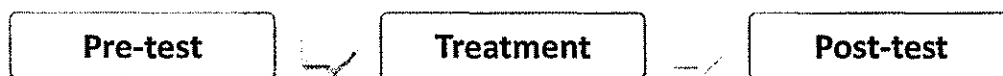
3.4.2 Reaction scale: To find out the reactions of the students' towards the approach the reaction scale was generated by the administered. The reaction scale consisted of 10 statements to be filled out by students'. For each items, there were five options that is strongly agree, agree, undecided, disagree and strongly disagree.

3.5.0 PROCEDURE FOR DATA COLLECTION

Out of 48 student's, 23 (13 male and 10 female) were in experimental group and remaining 25 (14 male and 11 female) were in control group. Firstly all the student of both experimental and control group were pre-tested by administering achievement test.

After completing the pre-testing of student's, the first lesson was taught to the experimental group through the material developed on the lines of 5-E model emphasizing on its five phases: Engagement, Exploration, Explanation, Elaboration and Evaluation. On the other hand, same lesson w s taught to the control group through traditional method on the same day.

This procedure continued till all the lesson plan of the Unit "Visualising Solid Shapes" was completed. After completion of the unit, the post-test was administered to both the experimental and control group immediately.



3.6.0 STATISTICAL TECHNIQUES FOR DATA ANALYSIS

The obtained data was analyzed by following statistical techniques:

- 1) Mean
- 2) Standard deviation
- 3) 2×2 Factorial design of ANCOVA of unequal cell size.
- 4) Percentage