CHAPTER III

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3.0.0. INTRODUCTION

The introduction, background of the study, descriptions on the collaborative concept mapping, significance of the study along with the objectives, hypotheses and the delimitations of the present investigation are given in the chapter- I. Chapter-II is devoted to the review of related literature. The following chapter deals with an outline of the steps followed by the researcher during the course of the study. It is a summary of all the methods implemented to gather data and how the actual research work has been done. In this chapter, the essential steps of methodology such as selection of the sample, design of the study, variables, tools of the study, and the procedure of data collection have been elaborated. Also the scheme of analysis for the data has been mentioned.

3.1. 0 Design of the Study

The present study is quasi experimental in nature. A control group pretest posttest design was used. Intact class of VIII was considered as experimental and control group. The treatment in the study had two levels. i.e. teaching through collaborative concept mapping and through traditional method. The group that received the treatment through collaborative concept mapping was considered as experimental group whereas the control group was taught in the traditional way.

3.2.0 Variables

The study intends to observe the effect of independent variable on the dependent variable.

Independent Variable: The independent variable in the present study is teaching technique which has two levels. One is the traditional method and the other is through the usage of collaborative concept mapping.

Dependent Variable: The dependent variable in the present study is comprehension of content in science (the ability to understand the concepts and to reason out for quarries).

3.3.0. Sampling

A sample of 54 students was selected from the population purposively. There were two sections of class VIII, namely, VIII A and VIII B with 27 students in each section. Since, it was not possible to employ randomization which would have disturbed the school schedule, the class as a whole was taken as the group. Further, one of the sections was treated as control group and the other as experimental group.

Table - 3.1. Group wise Distribution of the Sample:

GROUP	NO.OF BOYS	NO. OF GIRLS	TOTAL
CONTROL	11	16	27
EXPERIMENTAL	12	15	27
TOTAL	23	31	54

3.4.0. Tools for Data Collection

The tool administered for the study is an achievement test for comprehension of content in science. The tool was self-developed and focused mainly on the comprehension skill of the student. Although the test carried some weightage of knowledge and application, but the larger part was based on the comprehension of the content. It was prepared from the chapter **Cell: Structure and functions**, from NCERT textbook of class VIII. The tool was used as pretest and posttest in the study. The pretest and posttest were similar in the difficulty level and content analysis was done so as to establish the maximum reliability.

Table - 3.2: Division of Marks according to the Objectives

NO.	OBJECTIVES	MARKS
1	Knowledge	5
2	Understanding	7

3	Application	6
4	Evaluation	4
5	Synthesis	3

3.5.0 Procedure of Data Collection

Obtaining permission: For the experimental research there was a requirement of ten days of treatment and it was impossible without the consent of the school authority. So, permission was taken from the headmaster of the school well before the research by providing all the necessary details.

Decision for the experimental and control group: The study being an experimental research required the division of the sample into two equal groups. A purposive sample of 54 VIII class students was taken. Since it was not possible to employ randomization which would have disturbed the school schedule, the class as a whole was taken as the group. Further VIII A was treated as control group and VIII B as experimental group.

Pretest: To test the previous understanding of the subjects pretest was administered to both the groups at the beginning of the experiment. The pretest was of 25 marks carrying a greater emphasis on the understanding of students.

Treatment: A treatment of ten days was given to the subjects.In which the experimental group was taught through collaborative concept mapping. First the students were acquainted with the concept mapping technique and then were divided into groups of 4. The students were asked to prepare concept maps in groups under the guidance of the researcher. Also the concept maps so created were circulated among other groups for their feedback. The control group was taught using the traditional method of teaching which was comprised of lecture cum discussion, also teaching aids were used in this method. Here the researcher followed the method that was followed by the school teacher in the daily routine,

Posttest: After a treatment of ten days a 25 marks posttest was administered to the experimental and the control groups. There by checking the effect of both the

ways of teaching on the comprehension of content in science of students. The posttest was of similar difficulty level as of the pretest.

Observation: Along with the treatment and tests an observation diary was maintained by the researcher in which the response and involvement of students were maintained on daily basis. The observation was an unstructured one in which the researcher kept a note of any significant behavior of the students

3.6.0 Statistical Techniques Used for the Analysis of Data

The posttest scores obtained from the control and the experimental group of the students was subjected to ANCOVA so as to find out the significance of difference between the means of both the groups. Pretest scores were taken as covariate.