CHAPTER-III

3.3 Population: -

Frankel (73): The group to which the researcher would like the results of a study to be generalized is called population. It includes all individuals with certain specified characteristics (P. 554) According to the above definition, the ideal population for the study is considered as the all the students studying mathematics in Vth standard due to various resource constraints like availability of finance and time the population was restricted to Vth class students of only one school, i.e. In this D.M.School, R.I.E. Bhopal. The researcher basing purely on the convenience aspect selected the DMS School. The DMS School is in the RIE campus and this being an experimental study, the needed expert help of guide, for such study, was readily available. And moreover and the school was easily reachable.

The objective behind selecting class Vth students, primarily, was that these students would soon be promoted to class VI. They would be entering into the upper primary level form the primary level and the difficulty level for them would be increased. The learner learner interaction method, if found effective in this study, might help the students in their learning at upper primary level. Secondly, the 2-member group formation for learner-learner interaction was possible without in habitations regarding sex. The students were free in mutual interaction without any concerns as to being a girls or a boy.

3.4 Sample: -

According to Borg & Gall (1983), "The larger group we wish to study is called a population, Where as the smaller group we actually study is called the sample" P (238). Thus sample is a portion of the population, which represents the population, is question.

The most scientific technique for selecting the sample is the random selection technique in which each individual has a chance to be included in the sample. However this technique could not be used in the selection of the sample for present study on account of limited number of students on that two sections of the school under investigation i.e. D.M. School R.I.E. Bhopal.

Sample: -

The subjects of the study were the students of class V. The pretest was administered to all the students of class V. On the basis of pretest results, It was

METHODOLOGY

3.1 Introduction: -

This chapter deals with the methodology employed to achieve the objectives of the study mentioned in chapter one. The content below presents Research design, selection of the sample, variables & their definition, Development of tools (preparation of material for teaching students through learner-learner interaction methods), steps involved in collection and analysis.

3.2 Research Design: -

According to Borg & Gall (1983), " Research design refers to the procedure used by the researcher to explore relationships between variables to form subjects into groups, administer the measures, apply treatment conditions and analyze the data."

As the present research was an experimental research, the researcher used randomized groups pretest-posttest design to find out the influence of learner-learner interaction approach on mathematics achievement on students of class Vth of, D.M. School, R.I.E., Bhopal. To study the influence of learner-learner interaction on mathematics achievement, on the sample selected, pretest and post test data was collected and analyzed. The experimental group was exposed to learner-learner interaction strategy and the other one i.e. the control group was taught by the conventional method of teaching.

The following table presents a birds eye view of the research design.

Table 3.2 (a)

Characteristics	Control Group	Experimental Group
Entry status	Pretest	Pre test
Treatment	Traditional Teaching	Learner-rnerinteraction Strategy
Terminal	Posttest	posttest

found the existing groups are equal as for mean or average ability of student is concerned. Hence on group section "A" was randomly selected to be experimental while the remaining other group Section "B" formed the control group. The entire sample consisted of 62 students. The experimental group has 31 and 31 for control group. There were 8 girls and 23 boys in both the experimental and control group. Following table show the details of the sample.

Table 3.4. (a)
Sample of the Study

Group	Boys	Girls	Total
Control group	23	8	31
Experimental group	23	8	31

Luckily, equal numbers of both the gender were found in the two sections.

3.5 Variables: -

According to kerlinger: Variable is a property that takes on different variable is something that varies................ is a symbol to which numerals for values are assigned. (P-32)

In this study the following variables were studied.

* Independent variable was gender and learner-learner interaction strategy.

* Dependent variable was mathematics achievement .

The following table shows the variables type.

Table - 3.5(a)

S.No.	Name of variable	Type of Variable
1-	Gender	Independent variable
2-	Learner-learner interaction strategy	Independent variable
3-	Mathematics achievement	dependent variable

According to Best (77), variable are the conditions or characteristics that the experiments manipulates controls of observes. The independent variables are the conditions of characteristics that the experimenter manipulates in his or her attempt to ascertain their relationship to observed phenomena. The dependent variables are the conditions or characteristics that appear disappear, or change as the experimenter introduces, remove or changes independent variables.(P-59-60)

3.5.1 <u>Definitions of variable</u>: -

1- Learner-learner interaction strategy: - means that after giving the concepts on the decided topic, the interaction on the topic by the two or more pupils is called learner-learner interaction. It can also be defined as the modified co-operative learning situation, attaining dyadic interaction (among learners) leading to the teacher suggested task completion.

2- Mathematics achievement: - Scores obtained by the students in the mathematics test paper is taken as achievement of the students & performance in school or college in a standardized series of education tests. The term is used more generally to describe performance in the subjects of curriculum.

Some variable called extraneous variables were not directly under investigation, but can affect the study if not controlled properly. These extraneous variables were discipline, disturbance and anxiety.

To control these extraneous variables the investigator took following steps: -

*Discipline: -

Discipline cans pose a serious problem to the study if it is not maintained property. Initially, there was curiosity among the students, regarding the new approach of learning and about the investigator whom they saw for the first time. The investigator explained the purpose if this research and its importance in their learning process and the students were disciplined and cooperated in this research work.

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*Disturbance: -

Occasionally, when some teachers were not present in other classes the students of those classes were making a lot of noise, which could disturb the learning process. To control this variable the investigator requested the headmistress of the school to help in controlling noise of the students and he was very cooperative in this matter.

*Anxiety: -

Anxiety, which may be these for different reasons, can affect the learning process of the students. Anxiety may be due to new learning approach or an account of some family problems. To control this extraneous variable the investigator used to talk to students regularly and tried to solve their problems if possible. Research students in the west have revealed that taking helps reduce stress. The investigator also realized that telling to students helped them to feel comfortable.

3.6 <u>Tools</u>: -

Tool is a device through which data is collected. It is always better to use standardized tools or instruments because the test makers establish their reliability and validity. In order to find a suitable standardized achievement test, various books were searched, but no suitable achievement tests but they could not be used for the purpose of this research. In addition to books other standardized achievement test were also examined and were found unsuitable for this study. Therefore the investigator decided to develop a tool in accordance with the needs of this study.

The tool used for the present study was the assignment based on one competency. Total 5 assignments were made. The concept of triangle was selected for making these items. A pretest & a post test, these were achievement tests in Geometry. The concept of triangle was selected for making different test items. Positively worked and negatively worked items were included in the test.

While planning about the test items in the tool specific objectives kept in mind. Accordingly the investigator. Prepared the test items. The items were discussed with the headmaster, teachers of the school in which study was conducted and the supervisor to establish the validity of achievement test.

3.7 Administration of Test: -

Before starting the study the students were explained about the pretest that they were supposed to take. The experimental group was exposed to learner-learner interaction strategy. The control group was taught by traditional method. They were given achievement test asked to answer. Clear instructions were given to students as how to perform test. Pretest to experimental and control groups was conducted separately. After completing the test, the test papers were collected.

The experimental group was given treatment of learner learner interaction learning approach, where as control group was taught through traditional metho9d. After completion of the treatment both the experimental and control group were given posttest to measure learning gains if any.

3.8 Methods of Data Analysis: -

The achievement test of each individual was scored. After that the data so collected was subjected to analysis by computing mean, standard deviation and gain score. The significance level for testing the hypothesis given in chapter fourth.