

## **CHAPTER - 4**

### **RESEARCH DESIGN**

#### **4.0 Introduction**

This chapter deals with details of research Plan and procedures of the present study. Educational research is often guided by abstract principle or theory, hypotheses or tentative explanations of how things work, are proposed and examined, data collected is analysed and conclusions are drawn.

Research workers need a formal plan of action Research design is concerned with planning of a study. The design clarifies the purpose of the study, how samples are selected and analyses to be made. According to Selltiz and Jahoda et al., (1965) a research design is the arrangement of conditions and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. However, whatever may be the problem studied, research design is an art as well as science.

Hence a broad objective of developing the research designs is to improve the precision of the data obtained and to reduce the errors arising through measurements selections of subjects, data analysis and other sources.

Again considering the interesting approach to educational research broadly, one can term them as either quantitative or qualitative. Bryman (1989) describes "It is tempting to conceive of the distinction between quantitative and qualitative research in terms of presence and absence of quantification. This would be misleading on two accounts : 1) Qualitative researchers are not averse to quantification as such and often

include some counting procedures in their investigation similarly, quantitative researchers sometimes collect qualitative material for their investigation. 2) There is considerably more to the contrast that the relative importance of quantitative data and associated data collection procedures. The most central characteristics of qualitative, in contrast to quantitative research is, its emphasis on the perspective of individual being studied, whereas quantitative research is propelled by a prior set of concerns whether deriving from the theoretical issue or from reading of the literature in a particular domain. The present study is more of quantitative approach.

#### **4.1 Methodology of the study :**

Research designs are largely classified under the following categories ;

- 1) Experimental
- 2) Survey
- 3) Qualitative
- 4) Case study and
- 5) Action Research

The present study adopts survey design. Methods employed for different designs are chiefly categorised as under :

- 1) Self administer questionnaire
- 2) Structured Interviews
- 3) Participant observation
- 4) Unstructured Interviewing

- 5) Structure Observation
- 6) Simulation and
- 7) Archival sources.

Survey research employs generally method of self administered questionnaire structured interviews on a constellation of variables. The objective of survey research than is to examine patterns of relationship between the selected variables.

Bryman (1989) describes “Survey research entails the collection of data on a number of units and usually at a single Juncture in time, with a view to collect systematically a body of quantifiable data in respect of number of variables which are then examined to discern pattern of association”.

The word ‘Survey’ indicates the gathering the data regarding current conditions.

Survey studies collect three types of information (Sidhu 1987) :

- 1) Of what exists by studying and analysing important aspects of present situation.
- 2) Of what we want by clarifying goals and objectives possibly through a study of the conditions existing elsewhere.
- 3) Of how to get there through discovering the possible means of achieving the goals on the basis of experience of others.

The present research proposes to study the student’s participative behaviour, teacher’s encouraging behaviour and parent’s behaviour. The researcher attempted to study each variable seperately, keeping in view the sub variables mentioned later on in the objectives of study in this chapter. In addition impact of independent variable of

teacher behaviour is studied on dependent variable of students' participative behaviour at various levels of their status.

Only deviation on the present researcher adopted is that in place of self administered questionnaire, the structured observations were employed as method of data collection largely alongwith structured interviews and documents analysis.

Keeping in view the present study was designed on the basis of direct observation of teacher and student behaviour in classrooms. In a typical example of research on teaching, the researcher limits to the manipulation on study of antecedents and consequents of whatever happens in the classrooms while the teaching itself is going on.

To reiterate as stated earlier the present study is entitled as follows :

#### **4.2 Statement of the present study :**

“A study of Students' Participation in School Programmes - A Cross Cultural Study”.

#### **4.3 Explanation of the Terms Used :**

For the present study the terms are used with the emphasis explained below:

1. **Students' Participation :** Students' participative behaviour means the extent, to which students in the classroom paid attentive, or were actively engaged in the process of learning. In the present study, student's participative behaviour refers to : student's responding behaviour, student's activities and student's cooperative behaviour in the teaching - learning process.

2. **School Programmes :** School programmes refers to the different activities organized in grades one to sixth for learning language, mathematics and environmental science.
3. **A Cross Cultural :** A cross cultural study, refers to a study, in different cultural groups. That is, India and Jordan are studied on the selected variables in the present study.

#### **4.4 Objectives of the Study :**

The study is conducted keeping in view the following objectives :

1. To study teacher's encouraging behaviour in the classroom, in terms of
  - (a) management skills used by teacher in the classroom;
  - (b) explaining and teaching behaviour of teachers;
  - (c) the use of instructional materials by teachers;
  - (d) teacher's attending behaviour;
  - (e) management of discipline by teachers;
  - (f) teacher's responding behaviour
  - (g) the use of reinforcement and rewarding behaviour by teachers;
  - (h) teacher's personality; and
  - (i) teacher's direction and checking behaviour.
2. To study student's participative behaviour in the classroom, in terms of;
  - (a) student's responding behaviour in the classroom;
  - (b) student's involvement in learning activities in the classroom; and
  - (c) student's cooperative behaviour in the classroom.

3. To study parent's encouraging behaviour at home in terms of;
  - (a) physical facilities provided by parents to their children;
  - (b) parent's caring behaviour for their children's learning and
  - (c) first hand experience provided by parents to their children for learning.
  
4. To study the relationship between teacher's encouraging behaviour and student's participative behaviour.

In the present study there are three variables under investigation, namely,

- i) Teachers' encouraging behaviour
- ii) Students' participative behaviour
- iii) Parents' encouraging behaviour

#### **4.5 Hypotheses :**

It is assumed that variable of student's participative behaviour is dependent on teachers' encouraging behaviour and parents' encouraging behaviour. Hence the major hypothesis is formulated as follows :

##### **4.5.1 Major Hypothesis :**

“There will be no relationship between teacher's encouraging behaviour, and student's participation in school programmes in (a) Baroda city and (b) Irbid city.

This hypothesis has been formulated to test the relationship between teacher's encouraging behaviour and student's participative behaviour in school programmes in the selected schools.



#### 4.5.2 Subhypotheses :

There are nine subvariables of teacher's encouraging behaviour, and there are three subvariables of student's participative behaviour. The relationship of each subvariable of teacher's encouraging behaviour is studied with each subvariable of student's participative behaviour. Thereby twenty seven subhypotheses are formulated for the same purpose. The following subhypotheses are formulated for the present study:

1. There will be no relationship between management skill of teacher and student's responding behaviour in (a) Baroda city and (b) Irbid city.
2. There will be no relationship between management skill of teacher and student's involvement in learning activities in (a) Baroda city and (b) Irbid city.
3. There will be no relationship between management skill of teacher and student's cooperative behaviour in (a) Baroda city and (b) Irbid city.
4. There will be no relationship between explaining and teaching behaviour of teacher and student's responding behaviour in (a) Baroda city and (b) Irbid city.
5. There will be no relationship between explaining and teaching behaviour of teacher and student's involvement in learning activities in (a) Baroda city and (b) Irbid city.
6. There will be no relationship between explaining and teaching behaviour of teacher and student's cooperative behaviour in (a) Baroda city and (b) Irbid city.
7. There will be no relationship between using instructional materials by teacher and student's responding behaviour in (a) Baroda city and (b) Irbid city.

8. There will be no relationship between using instructional materials by teacher and student's involvement in learning in (a) Baroda city and (b) Irbid city.
9. There will be no relationship between using instructional materials by teacher and student's cooperative behaviour in (a) Baroda city and (b) Irbid city.
10. There will be no relationship between teachers' attending behaviour and students' responding behaviour in (a) Baroda city and (b) Irbid city.
11. There will be no relationship between teacher's attending behaviour and student's involvement in learning activities in (a) Baroda city and (b) Irbid city.
12. There will be no relationship between teacher's attending behaviour and student's cooperative behaviour in (a) Baroda city and (b) Irbid city.
13. There will be no relationship between management of discipline by teacher and student's responding behaviour in (a) Baroda city and (b) Irbid city.
14. There will be no relationship between management of discipline by teacher and student's involvement in learning activities in (a) Baroda city and (b) Irbid city.
15. There will be no relationship between management of discipline by teacher and student's cooperative behaviour in (a) Baroda city and (b) Irbid city.
16. There will be no relationship between teacher's responding behaviour and student's responding behaviour in (a) Baroda city and (b) Irbid city.
17. There will be no relationship between teacher's responding behaviour and student's involvement in learning activities in (a) Baroda city and (b) Irbid city.
18. There will be no relationship between teacher's responding behaviour and student's cooperative behaviour in (a) Baroda city and (b) Irbid city.
19. There will be no relationship between reinforcement and rewarding behaviour of teacher and student's responding behaviour in (a) Baroda city and (b) Irbid city.

20. There will be no relationship between reinforcement and rewarding behaviour of teacher and student's involvement in learning activities in (a) Baroda city and (b) Irbid city.
21. There will be no relationship between reinforcement and rewarding behaviour of teacher and student's cooperative behaviour in (a) Baroda city and (b) Irbid city.
22. There will be no relationship between teacher's personality and student's responding behaviour in (a) Baroda city and (b) Irbid city.
23. There will be no relationship between teacher's personality and student's involvement in learning activities in (a) Baroda city and (b) Irbid city.
24. There will be no relationship between teacher's personality and student's cooperative behaviour in (a) Baroda city and (b) Irbid city.
25. There will be no relationship between teacher's direction and checking behaviour and student's responding behaviour in (a) Baroda city and (b) Irbid city.
26. There will be no relationship between teacher's direction and checking behaviour and student's involvement in learning activities in (a) Baroda city and (b) Irbid city.
27. There will be no relationship between teacher's direction and checking behaviour and student's cooperative behaviour in (a) Baroda city and (b) Irbid city.

#### 4.6 **Sampling Procedures :**

The researcher has designed the present study by using purposive sampling techniques. Erlandson et al., (1993) describes "Purposive sampling is preferred to random and representative sampling because the researcher's major concern is not to generalise findings of the study to a broad population or universe but to maximise

discovery of the heterogenous patterns and problems that occur in the particular context under study. Purpose and directed sampling through human instrumentation increases the range of data exposed and maximises the researcher's ability to identify the emerging themes that take adequate account of contextual conditions and cultural norms.

”Patton (1990) writes “The logic and power of purposeful sampling lies in selecting information rich cases for study in depth, which will illuminate the questions under study”.

Another aspect of purposive sampling is sample size. The basic rule is “there are no rules for sample size”, In this technique one is looking for more quality than quantity more for information richness than information volume. Thus, the total four schools are selected for indepth observations of classroom interactions in place of large representative sample.

As the present study is a cross cultural study, the sample has been drawn from two countries i.e. India and Jordan. In India, the sample was drawn from Baroda city and in Jordan the sample was drawn from Irbid city. As the purposive refers to a non-probability sampling design, the investigator uses his own judgement in selecting the most appropriate cases. While selecting samples from Baroda, the schools with English medium are considered only. And from Irbid city, the schools with Arabic medium are considered as all the schools are Arabic medium. In the present study, there are four types of sample units: schools, students, teachers, and parents. The following section describes the details of the sample selection.

#### 4.6.1 Selection of the Schools :

In the present study, total four schools are selected for data collection, two schools from Baroda city, India and two schools from Irbid city, Jordan.

In Baroda city, there are largely two types of schools, i.e. English medium schools and Gujarati medium schools. There are small number of Hindi medium schools, Marathi medium schools and Sindhi medium schools. The total number of various types of primary schools in Baroda city in 1995-1996 was 388 as shown in table No. 4.1.

**Table No. 4.1**

**Mediumwise total number of various types of primary schools in Baroda city in 1995-1996.**

Type of school according to Medium of Instruction.	Government	Private	Total
English medium school	-	52	52
Gujarati medium school	108	188	296
Hindi medium school	010	005	015
Sindhi Medium school	005	003	008
Marathi medium school	014	002	016
Special school	001	-	001
<b>Total</b>	<b>138</b>	<b>250</b>	<b>388</b>

Source : Vadodara Urban Development Authority

The total number of primary schools in Baroda city are three hundred eighty eight (Vadodara Urban Development Authority). Only English medium schools are selected for the present study precisely due to the fact that the researcher is not well versed with Gujarati and any other Indian languages. There are fifty two English medium schools in Baroda city. The researcher selected randomly five schools for the pilot study and out of these five schools, two schools purposively are selected for the present study later on. These two schools are selected, because the researcher during his pilot study found that among the five schools, these two schools are fully cooperative and supportive to conduct the final study (as described in the table no. 4.1).

In Irbid city, there is only Arabic medium schools. There are eighty nine primary schools in Irbid city. Out of these, there are seventeen complete primary schools only having grades from first to sixth grades. Out of these seventeen complete schools, two schools are selected as per the advice of educational department office in the city for the purpose of the study.

#### **4.6.2 Selection of the Students :**

In the present study, four schools have been selected from Baroda and Irbid city. There are more than one section of each standard in each school. Six classes from each school, ranging from 1<sup>st</sup> to 6<sup>th</sup> standard were selected as per the advice of the school principal. The total number of classes selected from Baroda city is twelve, and from Irbid city also twelve. Hence, the total number of classes from both the cities is twenty four. The students of these selected classes formed the sample of the present study. The total number of students from Baroda city is seven hundred twenty eight, while four

hundred ninety six is from Irbid city. Hence the total number of students from both the cities is one thousand two hundred twenty four (Details are given in table no. 4.2).

**Table No. 4.2**

**Number of selected teachers, students and parents from sampled schools of Baroda city, India and Irbid city, Jordan**

**(A) School No. 1**

	Baroda city-India			Irbid City - Jordan		
	No. of Teachers	No. of Students	No. of Parents	No. of Teachers	No. of Students	No. of Parents
1st Standard	1	63	-	1	43	-
2nd Standard	1	62	-	1	45	-
3rd Standard	1	57	-	1	42	-
4th Standard	1	61	-	1	43	-
5th Standard	4	62	6	4	40	6
6th Standard	4	63	6	4	40	6
<b>Total</b>	<b>12</b>	<b>368</b>	<b>12</b>	<b>12</b>	<b>253</b>	<b>12</b>

**School No. 2**

	Baroda city-India			Irbid City - Jordan		
	No. of Teachers	No. of Students	No. of Parents	No. of Teachers	No. of Students	No. of Parents
1st Standard	1	59	-	1	38	-
2nd Standard	1	60	-	1	40	-
3rd Standard	1	60	-	1	42	-
4th Standard	1	62	-	1	40	-
5th Standard	4	64	6	4	42	6
6th Standard	4	55	6	4	41	6
<b>Total</b>	<b>12</b>	<b>360</b>	<b>12</b>	<b>12</b>	<b>243</b>	<b>12</b>

**(B) Overall Break up of Samples is**

	<b>Baroda city</b>	<b>Irbid city</b>	<b>Total</b>
No. of Teachers	24	24	48
No. of Students	728	496	1224
No. of Parents	24	24	48

**4.6.3 Selection of the Teachers :**

The teachers who are selected for detailed observation for the present study, are involved in teaching 1st to 6th standard in the sampled schools as shown in table No. 4.2.(A) From first to fourth standard, one teacher is teaching all the subjects in each standard. While for the fifth and sixth standard four teachers are teaching different subjects. The total number of teachers observed in each school is twelve and the total number of all the teachers who were observed by the investigator in the present study is forty eight from the four sampled schools.

**4.6.4 Selection of the Parents :**

During the data collection, while observing the teachers' behaviour and students' behaviour in the classroom, the researcher identified three kinds of student's participation, namely, highly participative, moderately participative and lowly participative behaviour of the students. Later on, the researcher selected only fifth and sixth standard from each school, and selected two students from each level of participation. The total number of parents of the selected students from each school is twelve. The total number of parents selected from Baroda city is twenty four similarly from Irbid city also twenty four parents are selected as sample. The total number of parents from all the four sampled schools is forty eight.

The next section describes procedures of tools preparation used for collecting the data from the above mentioned sample as per the objectives of study. To achieve the objectives 1,2, 3 and 4 the following tools were developed.

#### **4.7 Tools & Techniques of Present Study :**

Tools in educational research are devices used for quantifying different qualities. They are instruments that help to obtain greater understanding of relationships among variables in selected units. They represent the measurement mode of research and help researcher in measuring characteristics that are of his interest. Tools are instruments that are employed to gather relevant facts and new fields and therefore the success of any research study depends on the suitability and quality of tools prepared selected for data collection.

The investigator for the present study used structured observation technique for data collection, which has attracted the attention of researcher since early 1970s. Sometimes it is called as systematic observation. This techniques adopts the direct observation of individuals in field settings and the recording and encoding of observation according to a previously formulated schedule like a forced choice questionnaire or interview schedule, the researcher decides in advance the items of interest and prepares the observation schedule to reflect these predetermined foci. Most research studies based on this technique tends to be undertaken along the lines of the quantitative research process.

Alongwith structured observation the researcher employed interview technique Dexter (1970) describes interviews as a conversation with purpose. It allows the

researcher and respondent freedom to move back and forth in time, to reconstruct the past, interpret the present and predict the future. Thus, interview is not one person asking question and another answering.

The present study designed the observation schedules and checklists for collecting the information using aforesaid two techniques to a great extent alongwith document analysis using secondary sources like books, reports and records.

The following tools are developed by the researcher for structured observations of classrooms and interviews of teachers, students and parents.

1. Observation checklist of Teachers' Encouraging Behaviour;
2. Observation checklist of Students' Participative Behaviour; and
3. Checklist of Parents' Encouraging Behaviour.

The preparation of tools is done in a phased manner and the description of each phase is presented below :

#### **Phase I. Overviewing the related studies in classroom teaching :**

The researcher reviewed related studies and identified the different factors affecting classroom interaction in teaching-learning process. These factors are : Teachers' encouraging behaviour, students' participative behaviour and parents' encouraging behaviour.

The researcher reviewed related studies and identified different factors related to teacher's encouraging behaviour affecting students' participative behaviour in the

classroom. These factors are : accepting student's feeling, attitudes, attending to student's needs, consistency and equity, clarity, fostering cooperative behaviour, firmness, adjusting to student's need, personalizing instruction, mobility, monitoring students' progress, encouraging student's involvement, focusing student's attention, providing symbolic models, using rewards, explaining and teaching properly, giving, direction, checking home work, managing student's problem, etc.

The researcher also reviewed related studies and identified different factors related to students' participative behaviour. These factors are : reading, writing, following teacher's direction, listening to each other, helping each other, going out with permission, using materials, answering when called upon, raising hands, responding to the teacher's explanation, etc.

The researcher reviewed related studies and identified the different factors related to parent's encouraging behaviour which may affect student's participative behaviour in the classroom. These factors are : providing materials such as : books, note books, pencils, pictures, etc. teaching their child, assisting in doing home work, expressing warmth to their children, taking health care, sitting with their child, praising the child, listening to the child, visiting the school, trusting the child, taking the child out side. etc.

## **Phase II. Pilot Study :**

The researcher visited five primary schools in Baroda city and interviewed the teachers and asked them, what they were offering to the students in the classroom, in order to encourage the students to participate in the classroom activities. The researcher observed the classroom interaction in those schools, ranging from 1st to sixth standard, in

each of the five schools. The researcher observed six periods for each standard, the total periods observed by the researcher are seventy two. These interviews and classroom observations had helped the researcher to identify the other dimensions of teacher's encouraging behaviour in classroom interaction process. These dimensions are such as : facilitating learning by providing materials, using charts, blackboard, maps, praising, distributing questions to all students equally, calling student's attention, ignoring student's mobility, encouraging student's cooperation, asking students to read aloud, asking students to come out to the blackboard, checking that each students has brought required materials, etc.

The researcher also, during classrooms visits observed students' behaviour in the classroom and identified the other dimensions of students' behaviour in the classroom affecting the quality of students participation in the classroom activities. These dimensions are : listening to the teacher carefully, writing from the blackboard, coming out to the blackboard to answer questions, moving in the classroom, playing with their things, talking with each other, keeping unnecessary things in front of them etc.

The researcher during his pilot study interviewed the teachers and asked them, what should the parents do in order to encourage their children to participate in school programmes and also interviewed the children and asked them, what do your parents provide to you at home for helping in your study. These interviews helped the researcher to identify the other dimensions of parent's encouraging behaviour. They are : visiting the school, taking the child to zoo, providing coaching materials, explaining the importance of learning, guiding the child, helping the child to choose his friends, behaving fairly with child, providing learning games etc. Another significant point need

to be emphasized is that the researcher in the pilot phase developed competency for observation through consistent practice of recording the observations as the number of classes observed are about seventy two. A detailed description of classroom interactions were recorded by the researcher. Later on, those points were helpful in the development of subitems of the three observation checklists prepared by the investigator. The next section gives the details about the developed checklists.

### **Phase III. Experts Suggestions, Validation and Finalisation :**

The review of related studies and the pilot study had helped the researcher to identify the different factors affecting the teaching-learning process in the classroom interaction. Thus, the researcher developed the three checklists as earlier stated (Refer appendix no. 1 - First draft) :

The researcher showed the three checklists mentioned above to ten experts (refer Appendix No. 3) for content validity. On the basis of the suggestions, some items were deleted and some items were added to the checklists, and the three checklists were finalized and used for the present study as aforesaid stated (Refer Appendix No. 2 final draft).

#### **4.7.1 Tools Description and Scoring Procedures :**

All the three checklists are developed on 5 point rating scale. All the statements are to be responded by either Never, Seldom, Some times, Most of times, and Always. The scoring points awarded to each response category is shown as under for all the three checklists.

<u>Responses</u>	<u>Points</u>
Never	1
Seldom	2
Sometimes	3
Most of times	4
Always	5

**Tool-1 Observation Checklist of Teacher's Encouraging Behaviour :**

This checklist consists of nine subitems. Each subitem contains different number of statements. The details are given in following table No. 4.3. The total number of statements for each subitem, the minimum and maximum possible scores for each subitem are also shown in the same table.

**Table No. 4.3**

**Total number for statements of each item, minimum and maximum possible scores for each item of teacher's encouraging behaviour**

	Items of Teacher's Encouraging Behaviour	Number of Statements	Minimum Possible Score	Maximum Possible Score
i.	Management skill of teacher	8	8	40
ii.	Explaining and teaching behaviour of teacher,	10	10	50
iii.	Using instructional materials by teacher,	5	5	25
iv.	Teacher's attending behaviour,	21	21	105
v.	Management of discipline by teacher	5	5	25
vi.	Teacher's responding behaviour,	7	7	35
vii.	Reinforcement and Rewarding behaviour by teachers,	15	15	75
viii.	Teacher's personality and,	6	6	30
ix.	Teacher's direction and checking behaviour	6	6	30

**Tool-2 Observation Checklist of Student's Participative Behaviour :**

This checklist consists of three subitems. Each subitem contains different number of statements. The details are given in following table No. 4.4. The total number of statements for each subitem and the minimum and maximum possible scores for each subitem are also shown in the same table.

**Table No. 4.4**

**Total number of statements of each item, minimum and maximum possible scores for each item of student's participative behaviour**

	Items of Students' Participative Behaviour	Number of Statements	Minimum Possible Score	Maximum Possible Score
i.	Student's responding behaviour	7	7	35
ii.	Student's involvement in learning activities	29	29	145
iii.	Student's cooperative behaviour	12	12	60

**Tool-3 Checklist of Parent's Encouraging Behaviour :**

This checklist consists of three subitems. Each subitem contains different number of statements. The details are given in the table No. 4.5. The total number of statements for each subitem, the minimum and maximum possible scores for each subitem are also shown in the same table.

**Table No. 4.5**

**Total number of statements of each item, minimum and maximum possible scores for each item of Parent's Behaviour**

Items of Parents' Encouraging Behaviour		Number of Statements	Minimum Possible Score	Maximum Possible Score
i.	Providing physical facilities	6	6	30
ii.	Taking care and interests	19	19	95
iii.	Providing first hand experience	5	5	25

#### **4.8 Procedure of Data Collection :**

The primary purpose of gathering data, is to gain the ability to construct reality in ways that are consistent and compatible with the constructions of a setting's inhabitants. This requires that the researcher be able to experience what the "natives" experience and to see that experience in the way that they see it. For this purpose, the respondents are observed in their daily activity so that the researcher can begin to see the operational meaning of what they have said. Naturalistic research involves utilizing what one comes into the world with i.e., the five senses plus intuition to gather, analyze and construct reality from data. The primary instrument in this type of research is the researcher himself or herself. Relying on all its senses, intuition, thoughts and feeling, the human instrument can be a very potent and perceptive data gathering tool (Erlandson, Harris, Skipper and Allen 1993).

Hence for data collection, the researcher observed the classroom interaction in the two selected schools each in India and Jordan, during the month of August 1995 in

Baroda city and in October 1995 in Irbid city. The classroom interaction process from standard first to sixth were observed, with the help of the checklists prepared, in all the selected schools from both the cities. Thus as shown in table No. 4.2, the total number of twenty four classes, one thousand two hundred twenty four students and forty eight teachers were observed in the four sampled schools.

The researcher had been to the sampled schools and observed, directly by sitting in the classroom, the classroom interaction of the teaching-learning process and recorded every thing related to teacher's behaviour and student's behaviour on a plain paper items where there was a need to got data from the teachers and students, interacting with them, the researcher conducted the structured interviews and recorded, the relevant data and later on, he studied carefully what he recorded and transfered the information by putting a tick mark on the observation checklists (Refer Appendix No. 4A, 4B, 4C and 4D for sample observations conducted).

Observation is one of the sources of data collection. Marshal and Rossman (1989) define observation as "the systematic description of events, behaviour and artifacts in the social setting chosen for study". Observation allows the researcher to discover the here and now interworkings of the environment via the use of the five human senses.

The teaching learning process of twenty four teachers and their classrooms in each city of the sampled schools were observed and the data were collected for teacher behaviour and student behaviour in naturalistic setting.

For collecting data from parents, the researcher had personally visited the residence of the parents, by taking prior appointment and by the help of the checklist, the

investigator interviewed the parents, and recorded it directly on the checklist and thus the data were collected. Most of the parents were very cooperative and well behaved.

#### **4.9 Data Analysis Procedure :**

In this stage data is tabulated and the tabulated data are specifically and systematically studied in order to determine underlying inherent facts and relationships. During this stage, the existing factors are broken down into smaller and simpler parts, then these parts are put together in new order so as to synthesize and interpret them.

#### **Statistical Analysis :**

In the present study two types analyses techniques are adopted :

1. Descriptive analysis
2. Inferential analysis

#### **Descriptive analysis :**

This type of analysis is necessary to establish normality of the distribution of the data so that the appropriate techniques can be employed to test the null hypothesis. Descriptive is useful in studying the characteristics of a particular group of individuals. The generalizations made by such descriptive analysis of one group of individuals cannot be extended beyond that group. The statistical techniques used by the researcher for descriptive analysis are :

- A) Measure of central tendency - mean, median and percentages
- B) Graphical methods which include frequency polygon graphs and bar diagrams.

### **Inferential analysis :**

This is also used as the testing of hypothesis. It involves the use of statistical techniques in order to arrive at generalizations and conclusions about the nature of data and relationship between various aspects of the sample. Chi-square test was used to find out differences and impact of teacher behaviour on student behaviour subvariablewise. Each variable was analysed independently and studied in the detailed manner.

The behaviour underlying each statement was measured using a five point scale with 5 indicating most desirable and 1 indicating lowest level of desirability. The following are the analyses techniques objectivewise.

#### **1. Teacher's Encouraging Behaviour :**

For analysing data related to teacher's encouraging behaviour, total scores were calculated for each subitem. The mean scores were used as a cut off points for the frequency distribution of teachers having above and below the mean scores. Total number and percentage of teachers scored above and below the mean were tabulated and the percentage of responses was categorized into three levels i.e. high, moderate and low.

#### **2. Student's Participative Behaviour :**

For analysing data related to students' participative behaviour, total scores were calculated for each subitem. The mean scores were used as a cut off points for the frequency distribution of classes having above and below the mean scores. Total number

and percentage of classes, second above and below the mean were tabulated and the percentage of responses was categorized into three levels i.e. high, moderate and low.

### 3. **Parent's Encouraging Behaviour :**

For analysing data related to parent's encouraging behaviour, total scores were calculated for each subitem. Average scores were calculated for the frequency distribution of total number of parents in each of three level categories i.e., low, moderate and high. The analysis was carried out simply to find out parent's level of encouraging behaviour to their children under the five point scale, the responses falling under 1 and 2 categories were considered low, 3 moderate and those falling under 4 and 5 categories were considered as high, representing parent's encouraging behaviour.

4. For testing the null hypothesis from the data of teachers' encouraging behaviour and students' participative behaviour, total scores were calculated subitemwise, mean scores were used as cut off points and the resulting four fold table (i.e. as shown in table No. 4.6) was used for analysis using Chi-Square to find out the relationship between teacher's encouraging behaviour and student's participative behaviour. Pattern of teachers' encouraging behaviour of each subitem studied in its relations to all the three subitems of student's participative behaviour. The following formula was used for Chi. Square test.

$$X^2 = \frac{N(N-1)^2}{(A+B)(A+C)(C+D)(B+D)}$$

The coefficient of contingency as well as percentages were calculated. This analysis provided an approach to test the hypotheses.

**Table No. 4.6**

**Teacher's encouraging behaviour and student's participative behaviour**

		Student's participative behaviour			
		H	A	L	B
Teacher's encouraging behaviour	H →	9	A	1	B
	L →	3	C	11	D

**4.10 Summary**

In this chapter, the methodology of the present study was discussed. Hypotheses for studying the objectives were drawn, explanation of terms were given, selection of the sampled schools, teachers, students and the parents was described, procedure of developing tools were described, procedure of analysis and scoring also was described.

In the chapter that follows, the analysis and interpretation of the data will be presented objectivewise and hypotheseswise.