

Chapter -III
Method of the Study..

CHAPTER – III

METHOD OF THE STUDY

In the preceding chapters the problem, its statement and description of the tools was discussed. This ongoing chapter focuses around tools, sample, design and procedure of the study. A descriptive survey method has been used for the study.

Tools

The following tools were used for the study:

- **Cognitive Competence Test Battery:** Prepared and validated by the investigator on different cognitive skills in Language (English), Mathematics, and Environmental Studies (Including Social Studies and Science), separately for grades-I, II & III.
- **Parental Involvement Scale:** Developed and Standardized by *Tiritha and Rao (1978)*, Parental Involvement Scale for primary school children.
- **Scale of Social Skills:** Adapted from *Wray's Behaviour Scale (1969)*, improved and modified for the present study & validated by the investigator.
- **Primary Classroom Interaction Observation System:** An observation system for classroom interaction for primary classes based on *Flander's* classroom interaction and reciprocal and category systems, develop and validated by the Investigator.

Sample

The sample has been selected at four levels viz:

- The sample of schools.
- The sample of students.
- The sample of teachers.
- The sample of parents.

The technique has been used purposefully.

➤ **Sample of the Schools**

A list of primary schools that come under the jurisdiction of Chandigarh Administration was procured from DEO's office and atleast four schools were randomly chosen to be included in the sample. The principals of these schools were contacted for their permission and cooperation of school. One of the school was busy in preparing for annual function whereas another was busy holding monthly tests. Hence, these two principals expressed

their inability to permit data collection at that time. The other two principals promised to cooperate. So out of random selection two schools were left where data were collected. Both these schools were affiliated to CBSE Board. It is worthy to mention here that the school climate, teacher-taught ratio, fee-structures, and other physical facilities were almost the same, since both the schools came under the same administration, and were affiliated to the same board.

➤ **Sample of the Students**

The sample of students was comprised of 241 primary school children of grades-I, II and III, ranging from 5 to 6; 6 to 7 and 7 to 8 years of age groups respectively. Intact sections of grades-I, II, and III were taken from each school and initially the number of students included into the investigation was 253. The process of data collection was tedious and long, and was done at three levels, the students, teachers and parents. Because of some deficiencies in the data due to either dropout of the students at one or the other stage of furnishing incomplete information or due to absence from the school on specified days, these students were excluded from final sample. The final analysis was therefore done on 241 students.

The following table shows the distribution of students sample schoolwise.

Table No. 3.1

Distribution of Students Sample Schoolwise

Grade	Govt. Model Senior Secondary School, Sector-16, Chandigarh		Govt. Model Senior Secondary School, Sector-22, Chandigarh		Total	
	Initial Sample	Final Sample	Initial Sample	Final Sample	Initial Sample	Final Sample
I	43	42	41	37	84	79
II	40	38	44	43	84	81
III	42	40	43	41	85	81
Total	125	120	128	121	253	241

Forty three students were selected from grade-I, 40 from grade-II, and 42 from the grade-III, of Govt. Model Senior Secondary School, Sector-16, Chandigarh total being 125. However, 5 students dropped out at one or the other stage of data collection, so that 120 remained for the final analyses. Similarly from Govt. Model Senior Secondary School, Sector-22, Chandigarh, 41 students from grade-I, 44 from grade-II, and 43 from grade-III, comprised the initial sample. Out of this total of 128 students, 7 dropped out and only 121 remained till the completion of data collection. All the students fall in the age range of 5+ to

8+. Almost equal number of boys and girls were included in the final sample. Since govt. model schools cater to a wide range of population covering almost all socio-economic stata, the sample was free from SES bias. Also intact sections of the schools were taken for study in which students from all levels of intelligence were included.

➤ **Sample of the Teachers**

In all 54 teachers were included in the sample of teachers. Out of which 48 teachers were selected on the criterion of their *teaching* these classes. It was taken care that at least two teachers were selected for each subject and from each grade of I, II and III. Actual classroom interactions of these teachers were observed at least twice for each teacher. Six teachers in the teacher sample were included on the criterion of association of these teachers as being their *classteachers*. These teachers were also observed for their classroom interactions. All the 54 teachers were involved in the ratings of children on social skills also. The following table shows the distribution of teacher sample .

Table No. 3.2
Distribution of Teachers Sample

Schools	School-1			School-2			Total
	I	II	III	I	II	III	
Language	3	3	4	3	2	2	17
Mathematics	3	4	2	2	3	3	17
Environmental Studies	2	2	3	2	3	2	14
Class In-charge	1	1	1	1	1	1	6
Total No. of Teachers	9	10	10	8	9	8	54

➤ **Sample of the Parents**

Sample of the parents consisted of 241 parents. The parents of all the 241 children who were included in the students sample were contacted. A parent-child- interaction scale was got filled from these parents. The proforma was sent to the parents through the children alongwith a request from the investigator and a note from the classteachers, why and how they should fill the form and send it back to the class-teachers. The investigator collected these forms from the class incharge. However, there were at least 17 such parents who did not fill up the form inspite of requests twice or thrice. The addresses and telephone numbers of these parents were collected from the school office and they were personally contacted by visiting their homes and thus on persuasion they were ready to do so. They had to be

convinced that the information is being collected only for the sake of research and not for school records. After collecting data at parents levels, the scoring of parental involvement scale was completed with the help of scoring key and a cumulative score of parental interaction was computed. The scores were arranged into a frequency distribution and Q_1 and Q_3 were computed and the parents were classified into highly involved, moderately involved, and less involved. The distribution of parents sample has been presented in the following table:

Table No. 3.3
Distribution of Parents Sample

School	Grade	HIP	MIP	LIP	Total
School-1 GMSSS (Sector 16)	I	15	19	08	42
	II	13	16	09	38
	III	12	17	11	40
School-2 GMSSS (Sector- 22)	I	10	19	08	37
	II	13	20	10	43
	III	10	12	19	41
Total		73	103	65	241

HIP = Highly Involved Parents
MIP = Moderately Involved Parents
LIP = Less Involved Parents

This parents sample consisted of labour class, shopkeepers, class four employees, teachers, doctors, and administrative officers. This indicates that there was wide variation of occupational background of the parents. Similarly the levels of educational qualifications also varied and ranged from illiterates to post-graduates and other higher professional qualifications. These parents had either nuclear or joint family.

Design of the Study

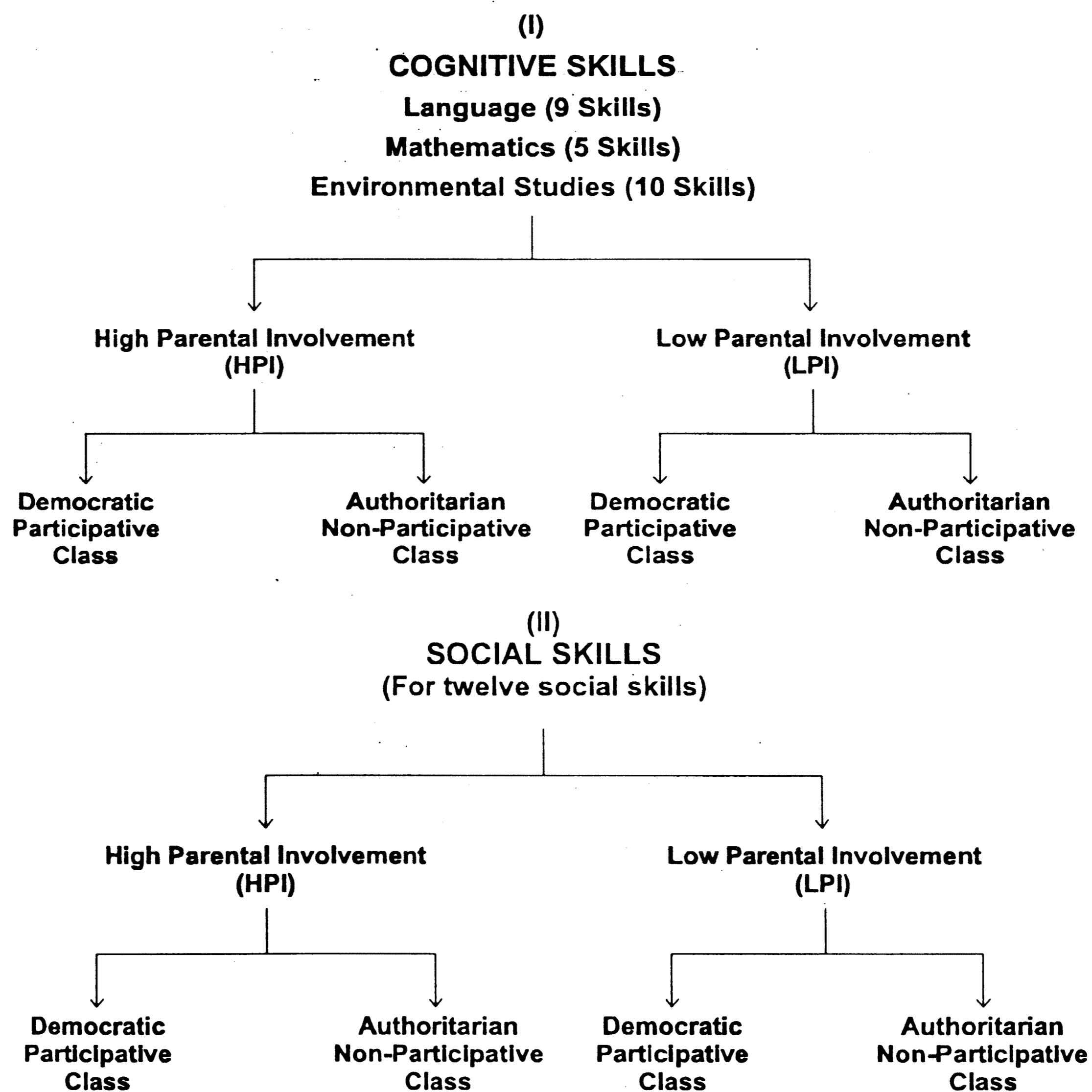
The study employed an ex-post-facto design of research, where the educational intervention treatment was already implemented by the school, and accepted by the children and parents in accordance with their plan of education.

Parental Involvement was independent variable whose impact on social and cognitive skills was studied through separate analyses. Parental involvement was studied at two levels viz. *High Parental Involvement and Low Parental Involvement*.

School Intervention was another independent variable under study which was investigated through class climate based on classroom interactions. Class climate was derived and studied at two levels viz. *Democratic/Participative Class Climate* and *Authoritarian/Non-Participative Class Climate*.

The investigation was focussed around two dependent variables viz. Cognitive skills and Social skills. **Cognitive Skills** were studied for three subjects viz.: *Language (English)*, *Mathematics* and *Environmental Studies*. As many as nine cognitive skills in English, five Mathematical cognitive skills and ten skills in Environmental Studies were studied individually. The design was replicated 24 times for cognitive skills by employing a 2 x 2 ANOVA on each individual cognitive skill.

Another dependent variable was '**Social Skills**' and as many as twelve social skills were studied. Impact of Parental Involvement and class climate was investigated by employing separate 2 x 2 ANOVA on each individual social skill. The schematic layout of the design has been given below:



Procedure of the Study

The procedure of the study has been explained under two headings in the following paragraphs:

➤ Selection of sample

The list of schools was obtained from DEO's office of the Chandigarh. Investigator selected four model schools randomly.

- (i) Govt. Model Sr. Sec. School, Sector-16, Chandigarh.
- (ii) Govt. Model Sr. Sec. School, Sector-19, Chandigarh.
- (iii) Govt. Model Sr. Sec. School, Sector-22, Chandigarh.
- (iv) Govt. Model Sr. Sec. School, Sector-37, Chandigarh.

In Sector-37 school the Principal expressed her inability to allow data collection at that stage, since the school was preparing for annual function. Sector-19 school was busy with an examination schedule, hence these two schools could not be included in the final sample. Principals of Sector-16 and Sector-22 schools promised their cooperation. The investigator visited these schools personally and had an informal discussion with the Principal and the teaching staff especially those teachers who were associated with primary classes. The teachers assured their full cooperation and hence these two schools were finally selected for the data collection.

➤ Collection of data

After selecting the sample the next task was the collection of data. The data collection was completed in five phases.

- **Phase-I: Administering Child Competence Test Battery for Cognitive Skills**

Before the final collection of data the subject teacher's of the selected schools were contacted. A time schedule was fixed. Keeping in view the convenience of the teachers and schedules of these schools, grades-I, II & III were allotted to the investigator and a time was adjusted for the investigator to contact children accordingly.

The investigator went to visit the classrooms and introduced himself through an informal introduction and informally procured their introduction and chatted with them for establishing a rapport with them in the presence of their teacher. Then it was ensured that the physical facilities like seat arrangement, lighting etc. were adequate. The investigator took notes regarding, spontaneity, enthusiasm, initiative, mannerism of individual students.

On the second day the first part of the competence test battery, that is a test on cognitive skills in Language was administered. For the grades-I and II, answersheets

were attached with the test schedule. But in grade-III, separate answersheets were provided. Each child was called individually for oral, observation and communication items. A small dictation was given to check the handwriting of the children. Investigator was present there all the time to remove the doubts of the students regarding any item. All attempts were made to make the child feel easy and relaxed while answering the questions.

On the next day, second part of the competence test i.e., a test on cognitive skills related with Environmental studies (including social studies and science) was administered to the children. It was ensured by the investigator, that the complete work was done in an informal and relaxed climate and children enjoyed while responding to the questions.

On the third day, third part of the competence test a test of cognitive skills related with Mathematics was administered to the children. The response sheets were collected and some toffees were distributed to all the children on all the three days after completing their tests.

- ***Phase-II: Administering Parental Involvement Scale***

For collecting data pertaining to the parental involvement a 'Parent-Child Involvement Scale' was given to each child alongwith instructions to get it filled up by their respective parents. The class-teacher was also requested to write a note in the daily diary of these children and explain the purpose of getting those proformas filled and also to ensure the return of the form. Majority of the parents returned the schedule after filling it up properly, while some parents failed to fill up the schedule as it was prepared in English and these parents did not have acquaintance with English language. In such cases the investigator obtained the addresses of those parents from the school records and took appointment with them either telephonically or by visiting personally. The investigator visited their house and helped these parents to fill up the scale. In a few cases the investigator himself wrote their responses for them.

- ***Phase-III: Administering Scale of Social Skills***

This was the most difficult part of the data collection. Since for social skills learning outcomes and learning activities cannot be designed exactly the way cognitive skills can be designed hence this non-cognitive dimension was measured through day-to-day observation of child behaviour.

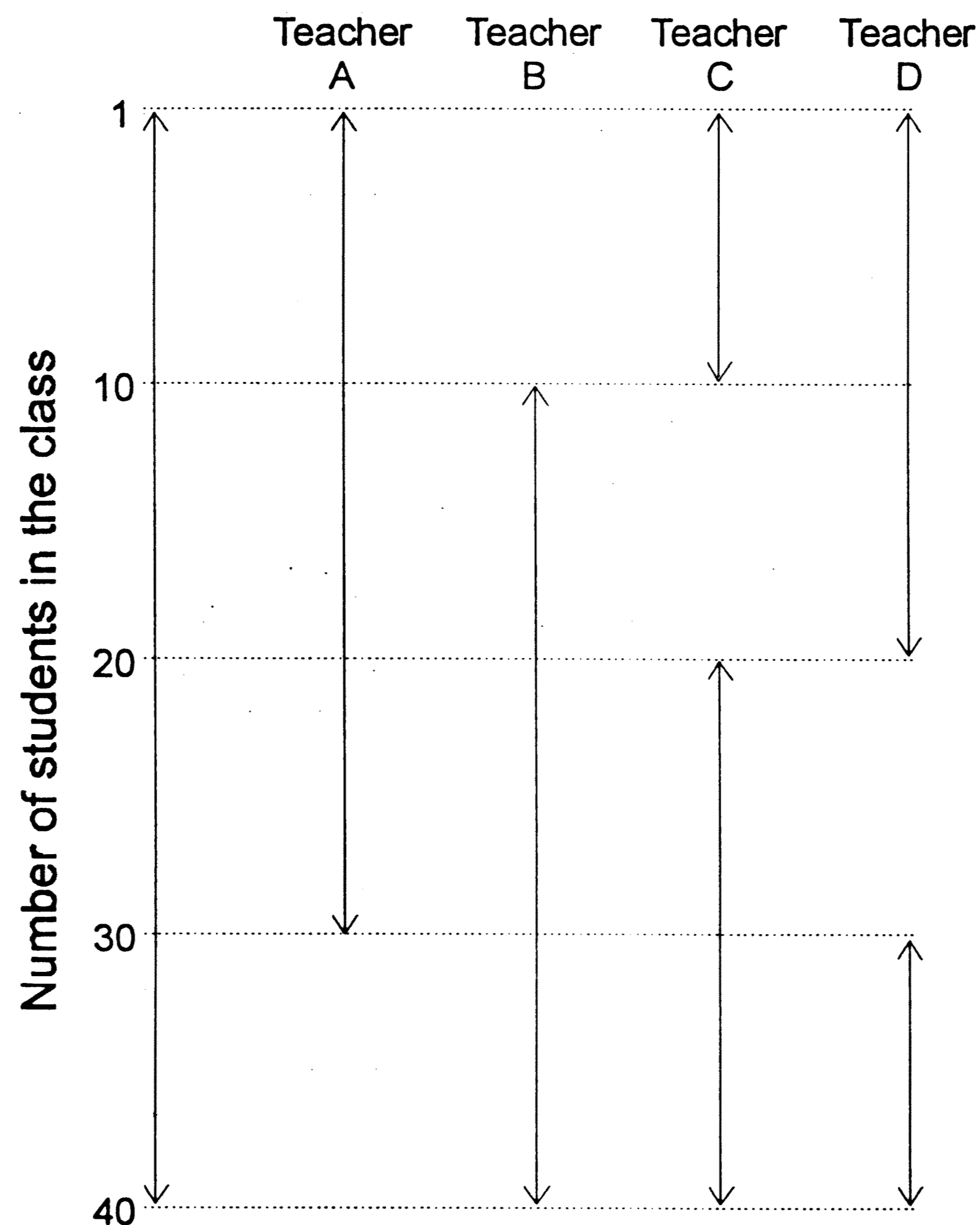
In order to assess the social skills of the children a rating scale was prepared by the investigator. Basically, it was an eleven point rating scale, consisting of twelve social skills such as: *Submissiveness; Attention; Communication; Cooperation; Courage;*

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Courteousness; Leadership; Obedience and Popularity. The class teachers of concerned classes were given a detailed introduction about the scale. Then proper instruction was also given to them regarding how to fill up the form. This responsibility was entrusted upon the class-teachers because of their close familiarity with the students. The investigator took a special care of the situation in order to ensure that the teachers were not biased towards certain students. Three more ratings were procured from three subject teachers in each grade. In all each child was rated on social skills by atleast three subject teachers and one class teacher.

Each teacher rated atleast 30 students in the class of 40 students Teacher A rated 1 to 30 students, Teacher B rated 10 to 40, Teacher C rated 20 to 40 and 1 to 10 and Teacher D rated 30 to 40 and 1 to 20. This was done to exclude teacher bias and also to ensure that each child was rated at least three times by three different teachers.

The ratings were collected according to the following scheme.



- ***Phase-IV: Study of Classroom Interaction and Physical Environment of the School***

The physical environment of the school was studied through personal observations by the investigator. Classroom interaction among teachers and children were studied by regularly visiting the schools for collecting data with the help of the observation system that was developed by the investigator specifically for primary classroom interactions. A segment of classroom behaviour for nearly twenty minutes each was observed by the investigator. The investigator sat in one corner of the class and recorded the code numbers of interaction behaviours occurring in the class. These behaviours were recorded after every three seconds. So that nearly 400 code symbols were recorded on classroom interaction observation sheet. These lessons were also audio taped simultaneously, so that any discrepancy in the observation may be checked later. While recording the code symbols, the investigator also recorded any characteristic description of the class like, teacher taught ratio, kind of media being used, any peculiar event occurring in the class etc. Each teacher was observed two or three times on different days. Also it was made sure that teachers teaching Mathematics, Language and Environmental Studies were specially included in these observation data. Interpretation matrices were later pooled teacher wise, all the two/three lessons on one pooled millage matrix and then subjectwise separately for Language, Mathematics, and for Environmental Studies teachers. Such millage matrices (having common denominator of 1000 observations) were pooled grade wise also. A set of nine ratios was computed separately for each master millage matrix based on observations of teachers gradewise separately for grade-I, grade-II and grade-III. This helped in interpreting data pertaining to class-room interactions and make comparisons among grades-I, II and III.

The class-room interactions that were pooled subject-wise helped in finding differences in ratio/percentages of behaviours occurring in Mathematics classes, Environmental Studies, Language classes (based on pooled observation of grades-I,II and III).

The interpretation matrices, when pooled gradewise included observations of 17 teachers for grade-I, 19 for grade-II and 18 for grade-III. When pooled subjectwise, there were 17 teachers of Language, 17 for Mathematics and 14 for Environmental Studies 5 class teachers were taught EVS and pooled in the subject of EVS and one class teacher pooled in the Mathematics though he was taught Mathematics. The pooled millage matrices subjectwise and gradewise have been given vide *Appendices-2.V-a,b,c,d,e,& f.*

- **Phase-V: Scoring of Tools**

All the tools mentioned above were scored with the help of respective scoring keys developed by the investigator. The scores thus obtained were subjected to statistical treatment.

Statistical Techniques Used

Following statistical techniques were used to analyse the data:

- Means and Standard Deviations were used wherever required.
- Non-parametric statistics like (Chi-square) χ^2 were used to analyse data pertaining to association of home factors with Parental Involvement, Cognitive Skills and Social Skills separately.
- Classroom Interactions were analysed through Primary Classroom Interaction Observation System and nine ratios/percentages were computed grade-wise and subject-wise. t-ratios were also computed to find their differences.
- Class Climates were derived by ranking occurrence of a category behaviour or otherwise and then assigning a score.
- Graphic presentations were also done.
- Two way analysis of variance was used to analyse data pertaining to impact of parental involvement and school intervention on each of the 24 cognitive skills and 12 social skills separately and individually.
- Each significant F-ratio was followed by t-test.