

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

INTRODUCTION

The main aim of this chapter is to present an analytical picture of the problem selected and to infer results after applying statistical technique. The method adopted for this purpose is to relate the analysis with the hypothesis that were formulated and test their tenability. In order to systematize the presentation of analysis of the present study, it has been presented in three parts. The first part describes the technique used to analyse the variables like, classroom climate, pupils' psyche, the second part describes the detailed analysis and interpretations of teacher behaviour, the third part gives a closer look of few classrooms when the variables are used to see its pattern in innovative classrooms, which is the basis of the present study.

To study the effect of innovative classroom on certain chosen variables such as classroom climate, pupils' psyche - which has preadolescent initiative, classroom trust, junior index of motivation, social relationships as its components and teacher behaviour in innovative classrooms and the type of climate of classroom present in an innovative classroom. A scale to identify the innovative classrooms was developed by the investigator which is the basis for the study and later these innovative classrooms were considered as a unit to which were chosen from the larger unit of a school. To these classes certain tests were administered to know the effect of innovative classes on climate of these classes, to know the effect of innovative classes on pupils' psyche and also on teacher and pupil behaviour or in other words the classroom interactions in these innovative classes.

To identify the innovative classrooms, as it has already been stated the scale which was developed by the investigator was administered to teachers of 14 selected schools who taught the core subjects and languages to pupils of VIII and IX standards. This scale has two sets of questions which can be called as open ended and closed ended questions. Teachers were further given instructions

to answer the questions and the consolidated score of two groups of questions were taken into consideration of each teacher and further all the teachers who handle various classes of VIII and IX standards, their scores were also taken into consideration to arrive at the total score of these schools. Based on these scores, further these fourteen schools were divided into two groups viz., the high innovative and the low innovative classes. High scores, low scores and mean of the scores obtained by these schools were taken into consideration to categorise the schools as high innovative schools and low innovative schools. Seven schools out of these fourteen schools were grouped as high innovative schools, seven schools were grouped as low innovative schools. Later the scores of all the variables used in the study were given a statistical treatment of these high and low innovative schools to arrive at the present result. Each group of low and high innovative classroom scores, were treated separately. The data on each variable for two sets of schools were studied in terms of means, standard deviation and the significance of differences among each variables were taken into consideration to arrive at the results of the study. Besides 't' test was used to arrive at the exact level of significance. Groupwise comparisons were made on all the components of the variables to see the effect of innovative classrooms on other variables and its components. The social relationships were analysed on the basis of the sociometric ratings given by pupils for all their groupmates at varying intensities. This was done in terms of the mutual total positive choices, their first, second and third preferences of their groupmates were also analysed, the data for which was obtained by asking the pupils to mention three names in order of preference from amongst their classmates for activities like study, play and to make friends. First preference of each pupil for each activity mentioned above were taken into consideration, because it was considered to be the stable one and this is exhibited in the sociogram. The classroom cohesiveness index was calculated on the basis of mutual positive choice given in the class. Further modes of behaviour of teachers and pupils in each of these groups of classes were recorded

to see what type of pattern of teacher and pupil behaviour existed in innovative classrooms. These observations of teacher and pupil behaviour in each of the group were analysed in terms of categorywise percentages and averages of pupil and teacher behaviour. After the analysis of teacher behaviour of these fourteen schools comparisons were made among the high innovative and low innovative schools to know the pattern of teacher behaviour prevailed in these schools.

Details regarding the analysis of these data and their results in respect of hypotheses stated are presented in the foregoing sections.

INNOVATIVE CLASSROOM SCALE

The basis for the present study is the innovative classrooms, the effect of which was studied through various variables used in the study. Hence, to identify these innovative classrooms, as mentioned in Chapter III in detail, a scale was prepared which was administered to teachers and the consolidated scores for each school was obtained and the mean score was taken into consideration to categorize the schools into high innovative and low innovative schools. The mean score obtained by the schools is 147.5. Hence, schools obtaining this score and above are grouped as high innovative and schools obtaining less than the mean scores are grouped as low innovative. The mean scores obtained by the schools are presented in the table No.1.

Data obtained on dependent variables like classroom climate, classroom trust, pupils' initiative, pupils' motivation, and social relationships which are components of pupils' psyche are measured in terms of scores and the scores of the above mentioned variables according to the groupings of schools like high innovative and low innovative were interpreted in terms of mean scores and their standard deviations. The means and standard deviations of all the 14 schools variablewise is presented here in the table No.2(a) and 2(b) below.

Table No. 1

Mean scores on innovative classroom scale

Sl.No.	Name of the school	Total score obtained	Grouping	Mean score
1.	Viveka Junior College High School	162	High	
2.	Viveka Girls' High School	161	High	
3.	Sophia Girls' High School	158	High	
4.	St. Aloysius Boys High School	158	High	
5.	Stella Maris High School	151.5	High	
6.	Chetana High School	148.5	High	
7.	Lady Hill Girls' High School	148	High	147.00
8.	Nirmala High School	145.28	Low	
9.	K.R.E.C. High School	141.67	Low	
10.	St. Ann's High School	142	Low	
11.	St. Gerosa High School	142	Low	
12.	Kendriya Vidyalaya	142	Low	
13.	Janatha Girls' High School	134	Low	
14.	Janatha Girls' High School	132	Low	

Table

The mean scores and standard deviations of 7 high innovative classroom initiative classroom trust, and JIM.

Name of the School	No. of pupils	Authenticity (A)		Legitimacy (L)		Productivity (P)	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
1.Viveka Junior College High School.	51	47.32	8.38	48.06	6.93	49.65	8.41
2.Viveka Girls' High School	60	48.28	6.32	53.18	5.49	52.42	6.46
3.Sophia Girls' High School	36	49.41	4.47	50.00	3.72	50.47	3.41
4.St. Aloysius High School.	48	41.43	7.97	45.31	7.01	46.70	8.96
5.Stella Maris High School	42	48.30	6.69	49.07	5.81	48.02	5.89
6.Chetana High School	34	47.85	5.47	48.08	4.74	47.47	5.90
7.Lady Hill High School.	48	46.33	6.22	47.45	5.91	46.68	6.26

No. 2(a)

in variables like Authenticity, Legitimacy, Productivity and Preadolescent

Classroom Climate		Classroom Trust		Initiative		JIM	
Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
151.70	21.81	9.55	2.66	50.41	5.47	94.45	17.58
161.18	15.98	9.43	3.11	50.93	3.83	88.52	15.08
156.91	6.32	14.33	1.49	52.00	2.69	104.02	6.48
104.20	21.99	7.89	3.11	47.18	5.54	82.68	15.56
152.2	14.82	12.00	2.88	49.33	8.44	104.00	8.62
150.00	11.79	13.73	1.34	50.82	4.71	99.64	10.67
147.66	14.65	11.97	2.17	48.29	6.77	106.0	21.44

Table

The mean scores and standard deviations of 7 low innovative classrooms classroom trust and JIM.

Name of the School	No. of pupils	Authenticity (A)		Legitimacy (L)		Productivity (P)	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
1.Nirmala High School	41	40.37	7.06	42.43	6.56	44.32	7.11
2.K.R.E.C.High School	46	41.19	8.44	38	9.64	38.58	8.39
3.St.Ann's High School	41	34.41	5.48	39.02	7.36	39.26	6.34
4.St.Gerosa girls' High School	50	44.02	7.50	43.57	8.79	43.42	8.80
5.Kendriya Vidyalaya	32	45.19	7.89	44.56	9.16	41.43	10.69
6.Janatha Girls' High School.	40	41.12	11.36	41.58	10.65	38.75	12.69
7.Janatha Girls' High School.	33	49.07	7.15	49.2	12.02	47.05	8.44

No. 2(b)

in variables like Authenticity, Legitimacy, Productivity and Initiative,

Classroom Climate		Classroom Trust		Initiative		JIM	
Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
133.61	18.46	8.51	2.91	47.73	4.48	97.76	16.35
123.56	21.02	7.54	2.74	49.82	4.76	96.5	13.27
119.43	17.25	10.95	2.65	50.21	4.60	84.19	18.86
138.46	21.30	9.37	2.54	51.04	3.32	91.26	11.50
137.53	20.12	11.16	2.82	50.21	7.33	107.31	16.51
128.96	29.79	11.41	1.90	45.24	9.05	96.33	16.90
153.22	17.33	11.83	1.95	50.8	5.92	103.2	9.82

4 : 1 CLASSROOM CLIMATE AND INNOVATIVENESS

The first hypothesis stated in the present study is: "Class-room climate is independent of innovative classrooms". Giving a glance at the table No.3 one can understand that every classroom has a distinctive and unique climate. It can also be observed that high innovative classrooms have high climate or open climate. As it is a general ideology of large majority of people that innovative classroom means that which is susceptible to a lot of dynamism and flexibility and it is more open. Classroom climate is a combination of so many factors varies from class to class. It is the atmosphere that influences the growth of pupils. It is also observed that within the class different 'climates' can be seen with the different teachers. Hence, it is said that climate of a class has a deep impact on the pupils' growth. Studies of Desai (1979), De Sales (1977), Sundarlakshmi (1980) reveal that classrooms can be "growth centres" for pupils if they are more open besides they have also revealed that climate of the classroom varies. The present study supports the same and has revealed the same. Table No.3 presented below gives us the candid picture about the variation of classroom climate in two different intensities of innovative classroom; and proving that classroom climate is subject to variations depending on the type of students and teacher it consists of. It also proves that the level of significance when subjected to statistical treatment gives the result that it is significant at 0.01 level. Thus, rejecting the formulated hypothesis.

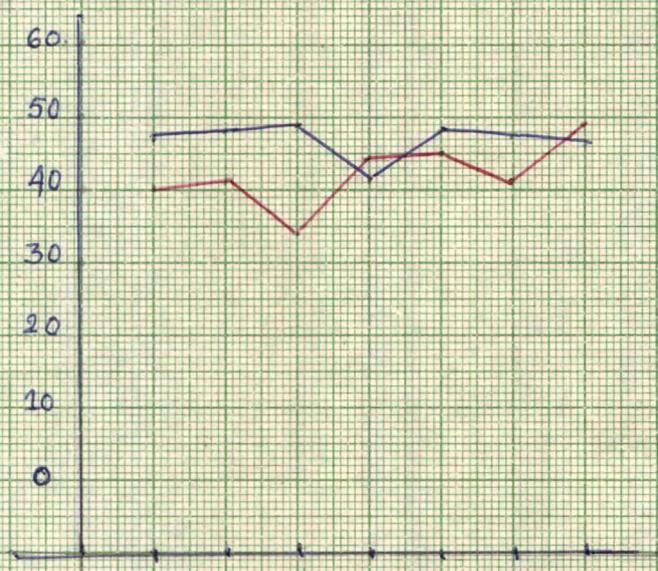
Table No.3

Significance of difference between Means of Classroom Climate in High and Low Innovative Classrooms

Innovative classrooms	No. of pupils	Mean	S.D.	't' value	Level of significance
High innovative	319	151.13	30.21	8.45	Significant at 0.01 level
Low innovative	283	133.05	20.45		

authenticity

**Mean Scores of Authenticity -- A component of classroom
Climate in High and Low Innovative classrooms**



GRAPH 1.

Studies conducted by Marie De Sales (1978), Thangam (1980), Desai (1979), and Soundarraja Rao (1976) have revealed that authenticity - pupils' involvement in classroom activity which is a major component of classroom climate is high in open classrooms rather than in the closed classrooms, hence the present study is also in line with the results revealed by other researches thus rejecting the hypothesis formulated for the present study "authenticity is independent of innovative classrooms".

Table No.4 presented here reveals the mean score and the level of significance of Authenticity - a component of classroom climate. Here the results of other researches are further supported revealing that the high innovative classrooms have higher mean scores on authenticity -- a component of classroom climate than in low innovative classrooms where authenticity is less.

Table 4.

Significance of difference between Means of Authenticity: a component of classroom climate.

Innovative classrooms	No. of pupils	Authenticity		't' value	Level of significance
		Mean	S.D.		
High innovative	319	47.24	11.54	5.92	Significant at 0.01 level
Low innovative	283	41.97	10.21		

Variations of the authenticity scores in high innovative and low innovative classrooms can be observed through GRAPH 1.

Mean Scores of Legitimacy -- A component of Classroom
Climate in High and Low Innovative Schools



GRAPH 2.

Table No.5

Significance of difference between Means of Legitimacy: a component of Classroom Climate in high and low innovative classrooms.

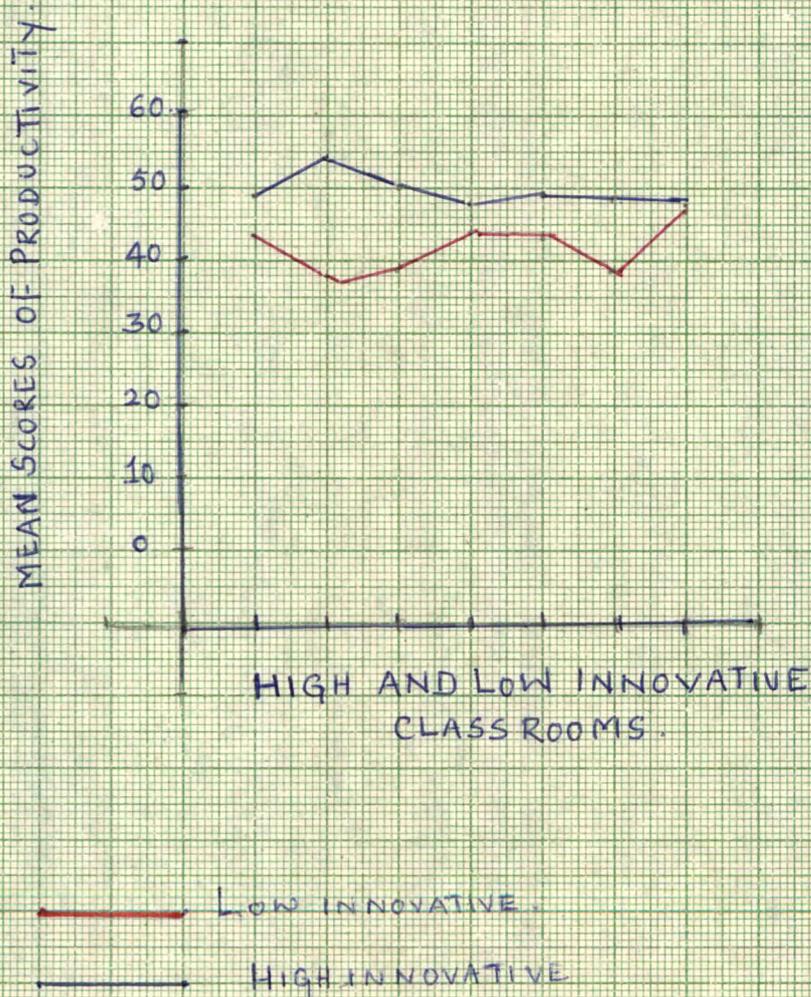
Innovative classrooms	No. of pupils	Legitimacy		't' value.	Level of significance
		Mean	S.D.		
High innovative	319	49.05	3.86	10.46	Significant at 0.01 level
Low innovative	283	42.77	9.85		

The table presented here shows the difference between means of Legitimacy a component of classroom climate in high and low innovative classrooms. Legitimacy is that type of activity or programmes through which pupils have satisfaction of doing. Hence, they get deeply absorbed in the activity. Here it can be observed that the legitimacy is independent of innovative classrooms; which reveals that high innovative classrooms have high level of legitimacy and low level of innovative classrooms have low level of legitimacy. Legitimacy-component of classroom climate when subjected to statistical treatment and specially the 't' value, level of significance is at 0.01 level.

Thus, rejecting the formulated hypothesis "Legitimacy a component of classroom climate is independent of the innovative classrooms". To support this many studies conducted in the area of classroom climate have proved that open classrooms do have high level of legitimacy. Hence, this component studied by the investigator is similar to that of the other studies they are De Sales (1978), Madhu Puri (1977), Dholakia (1978), Choksi (1976).

Variation in the mean scores of Legitimacy - a component of classroom climate can be observed in graph 2.

Mean Scores of Productivity -- A component Classroom
Climate in High and Low innovative classroom



GRAPH 3

Table No.6

Significance of difference between Means of Productivity: a component of classroom climate in high and low innovative classrooms.

Innovative classrooms	No. of pupils	Productivity			Level of significance.
		Mean	S.D.	't' value	
High innovative	319	49.36	1.69	16.59	Significant at 0.01 level.
Low innovative	283	42.06	7.57		

Productivity is the action orientedness of a class. Productivity is that which makes pupils to have some type of action or activity through which goal attainment is done. It unfolds and develops the potentiality of the child.

The table presented above reveals that productivity - a component of classroom climate when subjected to statistical treatment that it is significant and the level of significance is at 0.01 level. Thus, it rejects the hypothesis, which is formulated in this way "Productivity-a component of classroom climate is independent of innovative classroom". The high innovative classrooms have high productivity and the low innovative classrooms have low productivity.

Studies done in the field of classroom climate reveal the same type of results viz., there is high level of productivity in open climate classrooms and low level of productivity in classrooms where climate is low, hence the present study is in line with the conclusions of previous studies conducted by Puri (1977), Desai (1979) and Marie De Sales (1978).

Graph No.3 shows the variation in mean scores of productivity - a component of classroom climate in high and low innovative classrooms.

4 : 2 PUPILS' PSYCHE

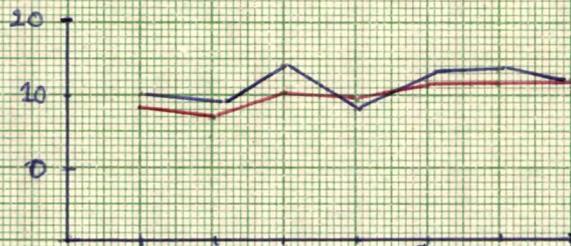
Present study made an attempt to study the pupils' psyche in innovative classrooms. As described in Chapter III few components of pupils' psyche like pupils' initiation, pupils' trust, classroom social relationships and the motivation of pupils were studied making use of the standardized tools prepared by Pareek, et.al (1977), De Sales (1977), Frymier (1970).

Preadolescent initiative scale (PAIQ) was developed by Pareek (1977) is a situational test, that is statements of these situations are woven in such a manner that it invited pupils to come forth with their initiative tendency according to the level of initiation with which they are endowed with. It consists of six situations. It is an open ended questionnaire which encourages pupils to give answers according to their perception of the given situation. Pupils are asked to guess the answer imagining as he himself is the person given in the situation. The score for each situation ranged from 0 to 3 which indicated the level of initiation in individual pupil, that is for very high level of initiation pupils get a score of 3 and for moderate level 2, low level 1 and for lack of initiation score will be '0'.

This variable was measured through PAIQ which obtains scores on a range of '0' to 18. On the basis of the individual scores of pupils the mean for the group is worked out as the index of initiative for the class.

It can be observed from the table No.7 given below that the Mean Scores are high in high innovative classroom when compared with the Mean Score of low innovative classrooms, which is low. These scores were further subjected to statistical tests of significance; accordingly the significances among means, among each group was tested with 't' test. It was hypothesised that preadolescent initiative a component of pupils' psyche is independent of innovative classroom was rejected and reveals that the level of significance is significant at 0.01 level.

Mean Scores of Initiative -- A component of Pupils' psyche
in High and Low Innovative Classroom



GRAPH 4

Table No. 7

Significance of difference between Means of Initiative: a component of pupil psyche in high and low innovative classrooms.

Innovative classrooms	No. of pupils	Mean	S.D.	't' value	Level of significance
High innovative	319	11.31	1.07	7.28	Significant at 0.01 level
Low innovative	283	10.00	2.91		

Interpretation of the results obtained can be done by stating that the pupils of high innovative classroom are more initiative than that of the pupils of low innovative classroom. Though it is a common ideology that pupils in high innovative classrooms are bound to be high in their initiative score, hence, this is again justified when it is put to statistical treatment. It still again justified by getting a support from other interventional studies conducted by De Sales (1978), Desai (1979), Choksi (1974) and Lakshmi (1982). The conclusions of the present study is in line with the conclusions of the above mentioned studies.

Graph No.4 shows the variations in mean scores in Initiative - a component of pupils' psyche as one of the variables of the study, in high and low innovative classrooms. This attribute of classroom climate was measured through the classroom trust scale which gives a range of scores from 15 to 60. Each individual has individual trust score the mean of which was taken as the group index.

Naturally accepted fact is that in an open climate classroom, the trust of the pupils towards their classroom and their teachers will naturally be high. It also depends on trust placed by pupils towards teachers and vice versa.

Studies on classroom trust by other researchers, Pareek (1971) Kokila (1973) and Choksi (1976) have also proved that a higher trust was generated by pupils who were better adjusted to their teachers. But the present study does not give any evidence to the above mentioned results of other researchers. When this variable was given to statistical treatment and when 't' value was computed it reveals that the difference between the means of classroom trust — a component of pupils' psyche among high and low innovative classroom, is not significant at either .01 level or at .05 level. Table 8 given below depicts the level of significance. Hence, the hypothesis formulated is not rejected but rather it is accepted. Hypothesis formulated was "Classroom trust is independent of innovative classrooms".

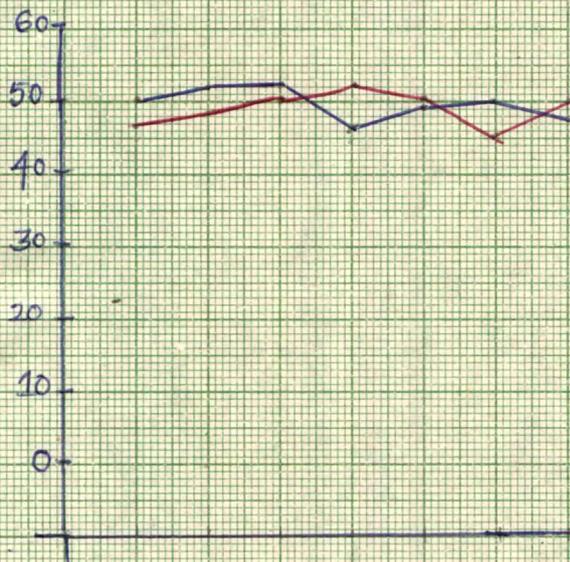
Table No.8

Significance of difference between Means of Classroom Trust in High and Low innovative classrooms.

Innovative classrooms	No. of pupils	Mean	S.D.	't' value	Level of significance
High innovative	319	46.70	15.27	0.65	Not significant at 0.01 level.
Low innovative	283	45.81	17.21		

Since classroom trust a component of pupils' psyche is such a phenomena that it gets influenced by very many things like, trust towards teacher, trust towards classmates and trust towards classroom activities. So it is the confirmity the pupils have in all these areas. Classroom trust can also be either increased or decreased; it depends upon the opportunity the individual has to interact with these three areas. It is also believed and it is tested that the classroom trust can be influenced by the type of teacher behaviour.

Mean Scores of Classroom Trust -- A component of Pupils' psyche in High and Low Innovative Classrooms



GRAPH 5

Graph 5 shows the variation in Mean Scores of classroom trust, a component of pupil psyche in high and low innovative classrooms. Pupil motivation was studied in the present study as a component of pupils' psyche. A number of researches conducted by other researchers like Desai (1969), Choksi (1975), Desai (1979) shows that motivation of pupils can be enhanced, it varies from one type of socio-economic background to another there is variation in motivation amongst sex. Besides the above mentioned researches have proved when statistically treated that the significance of difference is at 0.1 and 0.5 level. When it was correlated with teacher behaviour it gave the result that indirect teacher behaviour had favourable effect on motivation level of pupils.

In the present study the null hypothesis formulated states the motivation of pupil is independent of innovative classes has not been rejected. The table No.9 given below gives a glance of the significance of difference of pupils' motivation in both high and low innovative schools.

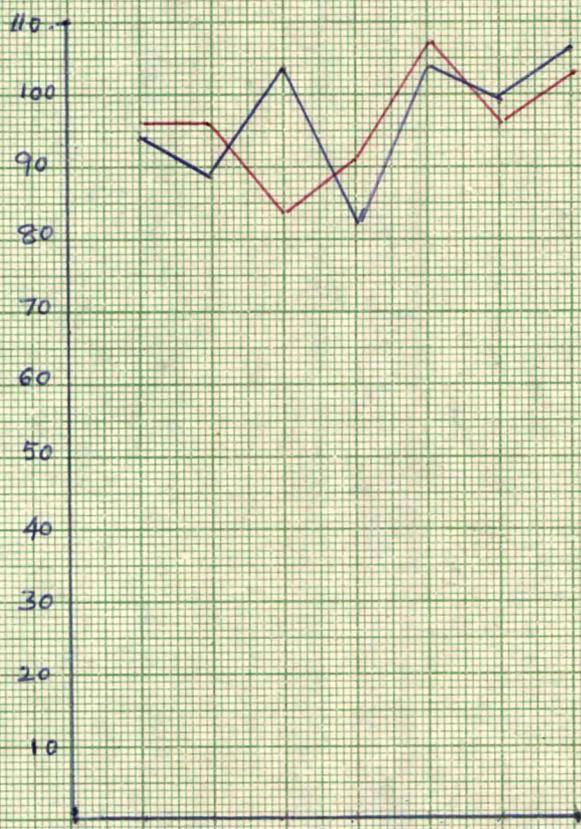
Table No.9

Significance of difference between Means of Pupils' Motivation (JIM): a component of pupils' psyche in high and low innovative classrooms.

Type of school	No. of pupils	Mean	S.D.	't' value	Level of significance
High innovative	319	94.04	28.23	0.4	Not significant at 0.01 level.
Low innovative	283	92.73	42.91		

The present study reveals that pupil motivation (JIM) a

Mean Scores of Pupil Motivation in High and Low Innovative Classrooms



GRAPH 6

component of pupil psyche when treated statistically gives the result of not significant either at 0.01 level or a 0.05 level. Thus it does not have the support of other researches in the same area. But, however, when one glances through the mean scores of pupils' motivation which is studied as a component of pupils' psyche reveals that the mean scores of high innovative classrooms is higher than that of the mean scores of low innovative classrooms, thereby one can say that the opinion one has about an innovative classroom holds good in this aspect that is innovative classrooms are usually more open and positive in their out look and dealings.

Graph 6 shows the variation in Mean Scores of pupil motivation in High and Low Innovative Classrooms.

TEACHERS' BEHAVIOUR.

CONCEPT AND MEASUREMENT IN TEACHER BEHAVIOUR

Definitions of Teacher Behaviour:

Henry Adams a philosopher observed that "A teacher affects eternity; he can never tell where his influence stops". The lay public and the professional educators generally agree that the 'goodness' of an education programme is determined to a large extent by the teaching. The identification of qualified and able teaching personnel, constitutes one of the most important of all educational concerns. It is considered that although schools may have excellent material resources in the form of equipment, buildings and text books and curricula may be appropriately adapted to community requirements if the teachers are misfits or are indifferent to their responsibilities the whole programme is likely to be ineffective. Hence, a great educator and philosopher rightly said that "teacher is like a candle who lights thousand other candles who are his pupils".

It is said that teaching is effective to the extent that the teacher acts in ways that are favourable to the development of basic skills, understanding, work habits, desirable attitudes, value judgments and adequate personal adjustment of the pupil. But even such an operational-appearing definition really is very general and abstract and is not easily translatable into terms relating to specific teacher behaviour.

Teacher behaviour is a social behaviour, that is in addition to the teacher there must be learners who are in communication with the teacher and with each other and who are influenced by the behaviour of the teacher. Relationship between teacher behaviour and pupil behaviour is of reciprocal nature. It is also understood that not only teachers influence pupils, but also pupils influence teacher behaviour as well.

Teacher behaviour is relative, teacher behaviour is that what does is a product of social conditioning and is relative to the

cultural setting in which the teacher teaches. Teacher behaviour is characterised by some degree of uniformity that as Mill put it "there are such things in nature as parallel cases, that what happens once will under sufficient degree of similarity of circumstances happen again". It means to say that teacher behaviour is not haphazard or fortuitous, but instead is consistent or reliable and therefore, is capable of being predicted.

John Dewey said "the teacher is a guide and director, he steers the boat, but the energy that propels it must come from those who are learning".

Teacher behaviour refers to the verbal and non-verbal patterns of teachers' total behaviour which directly or indirectly influences the behaviour of pupils and is an important variable causing classroom climate.

Teacher behaviour means teacher classroom behaviour, that is teachers' influence patterns which they exert in the classroom while teaching. According to Ryans (1960) teacher behaviour may be defined simply as the behaviour or activities of persons as they go about doing whatever is required of teachers, particularly those activities which are concerned with the guidance or direction of the learning of others.

Teacher behaviour means teachers' influence patterns which he exerts in the classroom while teaching.

When one closely observes a classroom can definitely find out two different sets of activities are taking place simultaneously, one group of activities which are exhibited by the teacher himself like, asking questions, clarifying, listening these activities in the class by the teacher has been recognized by Smith and Meux (1962) as teacher behaviour. In response to these activities the activities the pupils exhibit are recognized as pupil behaviour. Teacher behaviour includes the activities done by the teacher in the classroom to stimulate certain responses from the pupils which result in learning on their part.

George C Homans (1950) conceptualize interaction in the following terms. "When we refer to the fact that some unit of activity of one man follows or if we like the word better, is stimulated by some unit of activity of another, aside from any question of what these units may be, then we are referring to interaction.

Interaction may be verbal or non-verbal. Interactions may be mixed; partly verbal, partly non-verbal. But the classroom is an arena in which a great amount of talking occurs which can be referred to as verbal interaction.

Measurement of Teacher Behaviour:

Measurement of teacher behaviour in the classroom has become the great concern of educators in the present day. Because it has been studied by a number of researches that the influence of the teacher on pupils has a long way to go in pupils' achievement and also in either debilitating or facilitating the pupils psychological growth.

There is much truth in the statement that "as the teacher so is the school". Numerous experimental and observational studies confirm the fact that pupils learn what a teacher is as well as what he says. Pupils absorb his attitudes, they reflect his moods, they share his convictions they imitate his behaviour and they quote his statements. What pupils learn, whether academic knowledge, social behaviour or personality is a matter of slow accumulation. The effects of one teacher may be cancelled by another; there are temporary effects. But in many cases the impact of teachers personality persists for years.

There are three styles of teaching that is usually practised in a classroom. They are 'laissez-faire' style, 'authoritarian' style and the 'democratic' style. The class which is conducted in an 'authoritarian' way is centred on the teacher. He wants all

the strings firmly under his control that is the web of communication and interaction is strongly centralized. He maps out each step in the pattern of work and lays down firm rules which is to be employed in the work. He directs the course of work. This is believed that such a type of teaching style observed by Flander et. al. (1970) exhibit tension and anxiety on the part of the pupils which they label it as 'Direct behaviour'.

Similarly, in a democratic, non-authoritarian style of teaching the pupils are not only intimately engaged in the details of the work but also in posing the problem and devising a method of enquiry. The teacher is not so much the focal point of the class, it develops its own dynamics and practises its social control. But whatever may be the specific styles of teaching followed by the teacher one thing is certain that the teacher is a vital factor in the classroom who sets in patterns of behaviour to bring about desired changes in the students. The democratic or non-authoritarian style the teacher uses can also labelled as the 'indirect' type which is supported by both experimental as well as emperical studies that indirect behaviour of the teacher enhances pupil achievement and pupil psychological growth which is supported by studies of Marie De Sales (1979), Pavanasam (1975), Thangam (1980).

With these above mentioned convictions about the styles of teaching one is motivated to think as how one can arrive in labelling the teaching styles as 'direct' and 'indirect'. This makes one to think that some type of systematic observations of teacher behaviour are necessary which enables one to know exactly what pattern of behaviour the teacher uses in the classroom and how it influences the pupils' behaviour also. Hence, several studies have attempted to evolve suitable measures to record teacher behaviours and classroom climate.

Visiting classrooms of different teachers is an enlightening experience. It is amazing how unique and individual the environment

of one classroom can be from that of another. Thelen (1974) emphasizes this fact by saying that each classroom has its distinctive culture and way of life.

The climate or 'life' in a classroom is merely an abbreviated reference to those qualities that consistently predominate when pupils in a class live and work for about six hours daily together under leadership of the teacher. If the teacher promotes a positive environment in the classroom it will encourage and sustain vitality growth and fulfilment in pupils. The teacher will find himself discovering ways and means to improve the physical, social and instructional atmosphere in his classroom. Further more in such an environment the spontaneous spirit of the pupils will have the freedom to express itself on the other hand a negative psychological environment will hang like a deadening cloud over the whole classroom hampering the growth of children.

The systematic observation of the classroom helps in measuring the patterns of classroom behaviour of teachers when they teach and pupils when they learn. In some studies in the past classrooms were visited by observers who knew what to look for, how to record it, how to score what they observe such studies have revealed something significant about classroom behaviour.

The earliest attempts to obtain objective measurements of classroom behaviour seem to have come since 1914 by Horn. The purpose was to ascertain the distribution of participation of pupils in lesson. Land Sheere (1971) viewed classroom interaction in terms of the nature of teacher verbal behaviour which can be broadly seen as indicative of several functions a teacher has to perform in classroom. Considering these functions the De Land Sheere system was developed which clustered teacher behaviour to nine categories of functions; they are: controlling function, impositive functions, content development functions, personal responses, functions of positive feed back to pupils, functions of negative feed back,

function of concretisation functions of positive affectivity, functions of negative affectivity. A 9 x 9 matrix similar to the one for FIACS can be drawn using these principles. This system focuses only on teacher behaviour and the pattern of pupil behaviour is only to be inferred.

Flanders (1960) has developed the most sophisticated technique for observing climate thus far, one which is unique in that it preserves a certain amount of information regarding the sequence of behaviour using the system of 10 categories, the observer at the end of each three second period decides which category best represents the "communication behaviour".

Extensive work of Flanders (1963) states that teacher behaviour is the most important criterion for assessing and understanding classroom interaction. He explains that the nature of influence the teacher creates in the classroom decides to a great extent the climate of classroom. These influence can be either 'direct' or 'indirect'. 'Direct' when teacher's own opinions and ideas are stated, 'indirect' when teacher motivates pupils, invites their participation through questioning. Flanders developed interaction analysis category system which has ten categories emphasizing on teacher behaviours. To make interaction analysis meaningful FIACS provides for categorising student talk as responsive to teacher and self initiated. Anything not included in the first nine categories is categorised as silence or confusion.

Scale developed by Muriel J.W. (1967) has two dimensions -- one on affective dimension and the other on cognitive dimension. Cognitive dimension focus on both pupil and teacher behaviour.

A study by Roka (1976) was an experimental study where one of the experiment group was provided an additional training in the use of the selected verbal teaching behaviour patterns, observational category system (OCS) a modified version of FIACS was developed the investigator for the purpose of measuring the classroom observations.

Studies done on various aspects of to know the pattern of behaviour of teacher in the classroom, like, pupils performance, teachers personality, demographic factors have used FIACS, Flanders interaction category system revealed very many significant ideas about classrooms. Studies which have used FIACS as a measuring instrument are conducted by Santhanam, (1972) Malhotra (1976) was on teacher behaviour pattern and age of the teacher. Teachers personality in general (Quraishi, 1972), men and women teachers do not significantly differ in their indirect behaviour (Malhotra, 1976, George, Mehta, 1976). Indirect teacher behaviour positively affects classroom organisation and climate (Patel, 1974, Marie De Sales, 1979). It is also found that the indirect behaviour of the teacher positively affects the psychological growth of pupils (Patel, 1974). It was found through study conducted by Marie De Sales (1979) using FIACS as an instrument to measure teacher behaviour along with other standardized tools reveal that variables like initiative, trust, adjustment motivation were more positive, when teachers behaviour was found to be of 'indirect' in nature.

An extensive of observation of all the studies conducted in the area of teacher behaviour and its influence reveals one thing which is common in all the studies, that is the instrument that these studies have used to know the pattern of teacher behaviour is the FIACS, which has been understood that it takes only the verbal interactions of pupil and teachers. Since it was learnt that in classroom interactions it is not merely the verbal aspects count most there is something else which one can observe when the process of interaction is going on. Hence, the instrument used by Denny (1969) which focussed its attention to observe the relationship between teacher behaviour and pupil creativity on time-sampling, rating-type schedule, had three dimensions viz., climate, teaching learning structure, and specific structuring.

This procedure used by Denny (1969) was taken as a base to formulate categories for observing teachers' classroom behaviour which exhibits positive and negative behaviour and simultaneously the pupils' behaviour also. A critical scrutiny of different instruments used in observing teacher behaviour indicated that the behaviour of teachers as well as the pupils can be grouped on two extremes of positive and negative. An empirical observation helped in identifying eight pairs of positive and negative behaviours for both teachers and pupils. These pairs of categories of pupils and teachers behaviours emerged after observing series of social studies classes, and reliability of the schedule was also established. This scale which is used by the investigator for the purpose of observing pattern of teacher and pupil behaviour was developed by Sundaralakshmi (1980) consists of eight categories for teacher behaviour and eight categories for pupil behaviour and these categories were further grouped into four clusters namely informative, responding, persuasive and supporting. These clusters of behaviour helps one to know in which cluster the teacher behaviour dominates and correspondingly what is the type of pupil behaviour he influences.

Procedure of observation of Teacher Behaviour:

For the purpose of the present study investigator used the scale prepared by Sundaralakshmi (1980). Present study's observation style is a little different to that of the original observation schedule. That is in the original observations recordings of the behaviour of both teacher and pupil were made for a period of 2 minutes time-sampling. But investigator felt that 2 minutes time duration is too short a period, hence extended the observation to five minutes time-sampling for 35 minutes duration. It was also felt by the investigator that this five minutes time-sampling would present a more vivid pattern of the teacher and pupil behaviours.

The observation schedule used to record the observation has seven columns denoting the number of time-sample. Teacher and

Pupil observations were recorded separately in different cards. Recordings were made by marking in the respective columns whenever the observations occurred. Later for the purpose of analysis and interpretation these frequencies of observations were taken into consideration and were converted into averages for both positive and negative groups of behaviour separately for teachers and pupils. These averages are again converted into percentages according to the categories and clusters separately. A specimen copy of the observation schedule used in the study along with the actual recordings is given here. Another schedule which is used as a base for recording the observations in the classroom is also given here in which the statements are given according to the categories which are again having the clusters, which are categorised as informative, responding, persuasive, supportive.

A closer look at classroom activities:

The data for the teacher-pupil interaction as one of the variable of the present study was obtained by using an "classroom interaction observation schedule" developed by Sundaralakshmi (1981). Through this schedule teacher was observed for a period of 45 minutes and similarly pupils were also observed. Observations both positive behaviours and negative behaviours of pupils and teachers were recorded on a schedule. The typical recording of the observations were done by entering it in rows marked on the card. At the end of every five minutes of both the positive and negative columns in teacher categories and pupils categories are made this requires the observer to put numbers in each column. The purpose behind making such recordings throw light on the amount of teacher, pupil behaviours and the nature of these behaviours in terms of positive and negative. These observations are further analysed to get global picture of the exact behaviour of teacher and pupils. The entire recorded observations are treated in this way.

As it has been discussed earlier that the entire observation schedule has eight clusters for teacher behaviour and eight clusters for pupil behaviour which includes positive and negative behaviour.

Name:

School:

Standard:

Date of observation:

Subject:

CLASS ROOM INTERACTION OBSERVATION SCHEDULE (CIOS)

		TEACHER BEHAVIOURS (POSITIVE)					TEACHER BEHAVIOURS (NEGATIVE)						
Category No.	Total Score	OBSERVATIONS					Category No.	Total Score	OBSERVATIONS				
		1st 5'	2nd 5'	3rd 5'	4th 5'	5th 5'			1st 5'	2nd 5'	3rd 5'	4th 5'	5th 5'
1							1						
2							2	a					
								b					
3							3	a					
								b					
								c					
4							4						
5							5						
6							6	a					
								b					
7							7						
8							8						
		Total					Total					Total	

Grand Total

PUPIL BEHAVIOURS (POSITIVE)						PUPIL BEHAVIOURS (NEGATIVE)						
Category No.	OBSERVATIONS					Category No.	OBSERVATIONS					
	1st 5'	2nd 5'	3rd 5'	4th 5'	5th 5'		Total Score	1st 5'	2nd 5'	3rd 5'	4th 5'	5th 5'
9 a						9 a						
b						b						
10						10						
11 a						11 a						
b						b						
12						12						
13						13						
14						14						
15						15						
16						16						
Total						Total						

Grand Total

Each cluster can be classified and labelled. The teacher behaviour categories are broadly classified into four clusters, the first cluster is stated as "explaining" which includes the categories 1, 2a, 2b. The second cluster is stated as "responding" which includes categories 3a, 3b. The third cluster is stated as "Motivating" or "persuasive" which has 4, 5 categories and the last and the fourth cluster is "Supportive" behaviour which has 6, 7, 8 categories. Similarly the pupil behaviour categories were clustered as "responsive" (9a, 9b, 10, 11), "initiative" (12a, 12b, 13) and "Co-operative" categories (14, 15, 16).

The daily recordings were consolidated by finding the averages for the total frequency under each category both for positive and negative groups separately. These were then converted into percentages both for individual categories and for the clusters too. In order to understand the pattern of behaviour of both teacher and pupil under each category the table has been given which helps one to get a clear view of the pattern. Further these frequencies are converted into averages for each categories and then were given in terms of percentages separately for categories and four main clusters. By this one can really have the vivid picture of the observations both in the superficial level as well as in indepth. The use of making such detailed observations of teacher behaviours and pupils behaviours category and clusterwise, one is also benefited by presenting the result of observations in a more eye catching way of presenting it in graphs.

TEACHER BEHAVIOUR IN INNOVATIVE CLASSROOM

The term innovation is used to refer to changes which are deliberately planned or adopted. They may not be new in absolute sense but are perceived as new by the members of the community into which are introduced.

In the words of Richland (1965) "innovation is.....the creative selection, organisation and utilisation of human and material source in new and unique ways which will result in the

attainment of higher levels of achievement for the defined goals and objectives".

Any innovative institution tends to be called "innovative" if it has manifested tendencies for progressive change. Since it tends to follow innovative ideas. Innovations tend to bring personal advancement for the individuals involved in it, and prestige for their institutions.

Innovativeness refers to "A healthy system would tend to invent new procedures, move towards new goals, produce new kinds of products, diversify itself and become more rather than less differentiated overtime. In a sense, such a system could be said to grow develop and change, rather than remain routinized and standard.

Educational innovation is a complex subject because it must be studied at several levels: at the level of individuals being changed or changing others, at the institutional level, at the community level and in the wider environment in which some innovations are acceptable while others conflict with existing values.

By and large it is an accepted fact that an innovative institution is one whose system is so flexible and congenial that it tries to take in new things which ultimately helps in the total growth of the institution. But this is not totally true, because wherever individuals are there, there is bound to be conflicts, conflicts which blocks the growth of the institutions, conflicts which never allows an innovator to introduce change, amidst of such complexities still institutions do take in a number of things which helps it to grow.

Innovative classrooms means which are open to a number of activities and ideas. It also means that it has high degree of trust, initiative, motivation, social cohesion. It is also a place where the behaviour of teacher influences the pupils growth in a

positive way. Studies done on various aspects of teaching where teaching occupies a prime position, where teaching is considered to be the prime factor which changes many things in the process of learning if carried on properly. Group of studies by Sharma, Padma, Shaida, Roy and Chakraborti, 1972, 1975, 1976, 1976, 1977) have tried to look at classroom teaching in terms of different teaching patterns, styles and that could be adopted by the teacher to make his teaching effective. Majority of the studies conducted mostly have tried to find out the effectiveness of teaching styles used, questioning styles in teaching Kumar (1980) different methods of teaching, different treatments given to the teachers interaction styles to improve teaching (Mehta 1972, Santhanam, 1972). It also studies the relationship of classroom climate using different variables (Marie De Sales, 1975, Sundaralakshmi, 1980, Aram, 1979). Studies on case studies of innovative institutions have also been conducted with reference its adoption, discontinuance (Purushotaman, 1978, Satyavathi, 1980). But very few research have been conducted to know what is the reality in a classroom which we call as 'innovative'. So the present study is just a humble attempt to know what an innovative class is with reference to certain selected variables.

In this endeavour teacher behaviour is selected as an important variable. As it has been mentioned earlier a tool developed by another investigator is used. The records of the observation in toto gives this picture of the classrooms. Teacher behaviour in school which has been taken as an example, teachers have used category 1, 2a, 2b. Most of the time during their teaching which implies that they were using informative cluster which means they were initiating, explaining and asking questions and giving direction for work or assigning some work for the pupils. For this type of teacher behaviour corresponding pupil behaviour was they could be plotted on the positive side of the interaction schedule. they resorted to category (11b and 13) most of the time which implies

students were actively taking part in the classroom teaching and activities. They were attentive to teachers activities in the class, this indicates that such situation is most common and expected behaviour responses in any classroom and so much so in an innovative classroom.

Of the total number of schools observed teachers of 9 schools used positive categories more often in their classroom dealings and only teachers of five schools used negative categories of behaviour. This aspect of teacher pupil interaction gets the support of other studies conducted in the field of teacher behaviour and specially using the Flander's interaction analysis category which states "the more indirect categories the teacher uses in her/his classroom dealings the better will be pupils achievement". (Santhanam, 1972, Thangam, 1980).

Observations made in 14 selected classrooms reveal that the teachers of 9 schools who used positive categories used more often; these categories 1, 2a, 2b which means they were more informative in their dealings than any other categories. They predominantly were using explanation, giving directions to pupils, illustrating and questioning. Similarly the pupil behaviour of the nine schools exhibited a variety of behaviours that is it was not very much stereo-typed by clinging to a specific category. Students behaviour varied from using categories (9a, 11a, 11b, 13). Category 9a represents the willingness to respond to teachers activities. Category 11b also represents to either just to listen to or to observe the activities of the teacher. It is observed the pupils interaction category 13 was used more frequently than other categories. This category is that which makes the pupils to raise questions and get clarification for the doubt they get during the process of instruction. This seems to be a healthy climate which also depicts that students are having more confidence in the teacher hence they voluntarily ask questions for which the teacher gives clarification too.

In the schools observed pupils behaviour was not always positive.

There were occasions in which the pupil observations tended to be negative at times. In eight school out of 14 schools observed pupils behaviour was negative. But out of 14 schools observed for teacher behaviour only teachers of seven schools exhibited negative behaviour. It is surprising to know that though in one school the teacher behaviour is not negative, pupils have exhibited negative behaviour. The reasons for which may be due to the factors like the teacher may be a more authoritarian type or she/he may be one who nags the pupils or criticizes the pupils. It may also be for the reason that the very facial expression of the teacher might influence the pupil in exhibiting the negative behaviour.

A natural rather a common convention is that when there are two groups which are engaged in the process of interaction when one group exhibits negative behaviour the other group also or for most of the time exhibits negative behaviour. But in the schools observed in three schools even when the teacher behaviour is negative the corresponding pupil behaviour instead of being negative tended to be more towards positive which again makes one to think that pupils may be either liking the subject or they are indifferent towards both the subject and the teacher which the observer was not in a position to observe such minute happenings in the classroom.

When observations are interpreted across the classes one can clearly see that teachers have used only (1, 2a, 2b) categories very often. Here the teacher is more of an "initiator" rather than making the pupils become the "initiators". So it is positive but an element of authority can be seen in the dealings of the teacher in the class. When teacher observations and pupil observations are made with reference to the clusters that is the 1, 2a, 2b categories are clustered and are labelled as informative behaviour. Teacher behaviour is predominant in this cluster which on an average has about (52.00 percentage) of

occurrences. The next predominant clusters in teacher behaviour were Responding, Persuasive and Supportive in order of preference that is (50.12%, 51.02%, 51.05%) which means that the teacher was not particular in using any of the categories but he was giving attention to all aspects simultaneously that is he was responding to pupils' questions, inviting pupils to participate providing opportunity for the pupils to work by themselves. It is observed that the teachers by and large have used many other categories in the negative side but when observation is focused it discloses that only one teacher out of 56 teachers observed used category 5, which means that the teacher listened to the statements of few students and acted accordingly which again means the teacher has some 'favourites' in the class.

A sample of the teacher behaviour and pupil behaviour observed is given here:

TABLE: 10. ANALYSIS OF CLASSROOM INTERACTION IN HIGH INNOVATIVE SCHOOLS

High innovative schools	TEACHER BEHAVIOUR								
	Informative			Responding			Persuading		
	1	2a	2b	3a	3b	3c	4	5	6
1.Positive	28.28	28.9	14.48	1.39	4.18	2.07	2.75	2.07	6.90
Negative	-	7.40	9.25	23.0	9.25	50.12	-	-	-
2.Positive	29.34	18.84	12.04	7.85	3.14	7.39	4.71	-	10.40
Negative	18.75	6.25	-	-	-	43.75	31.25	-	-
3.Positive	19.39	27.13	18.60	0.77	-	2.32	12.40	3.87	5.97
Negative	-	-	10.52	21.05	10.52	47.0	10.52	-	-
4.Positive	29.77	17.55	19.84	3.81	4.85	3.81	1.57	2.29	10.04
Negative	6.25	6.25	-	18.75	9.37	-	15.62	-	25.0
5.Positive	19.42	18.70	14.79	7.19	3.95	5.39	5.39	7.91	10.00
Negative	4.05	1.35	-	12.16	20.27	18.19	12.16	-	16.20
6.Positive	23.48	34.09	10.66	1.51	6.06	1.51	10.60	-	11.0
Negative	6.25	6.25	12.50	25.0	18.75	18.75	-	-	12.50
7.Positive	24.0	24.0	18.66	2.0	-	3.33	6.66	6.66	8.0
Negative	-	9.0	-	40.0	18.18	31.9	-	-	-

TABLE: 11. ANALYSIS OF CLASSROOM INTERACTION IN LOW INNOVATIVE SCHOOLS

Low Innovative schools	TEACHER BEHAVIOUR								
	Informative			Responding			Persuading		
	Categories	1	2a	2b	3a	3b	3c	4	5
1. Positive	25.54	24.6	12.15	0.86	2.16	3.03	3.03	3.03	5.0
Negative	28.59	6.57	5.26	20.84	7.89	15.78	3.94	-	9.20
2. Positive	11.20	15.94	4.31	8.62	4.09	6.63	7.0	6.46	8.06
Negative	24.24	27.0	9.09	9.09	15.15	9.09	-	-	6.06
3. Positive	22.71	19.41	17.58	8.45	5.19	6.39	4.39	1.46	6.95
Negative	-	-	-	16.66	11.11	44.44	-	-	-
4. Positive	17.5	25.83	11.66	2.5	1.66	2.50	8.33	-	9.0
Negative	18.75	-	12.50	20.0	20.0	18.75	-	-	-
5. Positive	11.50	12.75	10.46	1.16	2.37	3.48	5.81	8.19	6.80
Negative	-	-	-	20	60	-	-	20	-
6. Positive	20	33.87	10.70	8.06	-	-	7.25	1.61	4.88
Negative	24.39	12.19	4.88	-	-	-	32.14	-	14.63
7. Positive	22.70	15.65	4.34	5.28	1.78	-	11.30	3.47	7.0
Negative	26.47	-	5.88	14.70	-	-	29.41	-	14.7

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PUPIL BEHAVIOUR

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Supporting	Categories		Responsive			Initiative			Co-operative		
7	8	9a	9b	10	11	12a	12b	13	14	15	16
-	8.96	14.15	4.15	12.8	-	15.92	-	31.85	2.65	-	8.89
-	-	-	10	-	-	-	-	70	-	20	-
-	5.79	16.33	19.88	6.53	9.80	15.68	2.61	24.18	0.65	0.65	4.57
-	-	-	-	15.38	-	-	38.46	15.38	-	15.38	15.38
4.65	5.42	5.43	20.65	2.17	3.26	23.91	1.08	33.69	2.17	2.17	5.43
-	-	-	21.42	21.42	-	-	-	7.14	-	28.57	21.49
3.05	3.81	4.68	26.56	3.12	6.25	7.81	-	37.50	3.12	-	10.98
-	18.75	-	12.0	-	-	24.0	8.0	40.0	8.0	8.0	-
1.09	6.47	22.51	11.25	11.25	6.62	9.93	5.96	17.88	7.28	1.32	5.96
5.40	9.45	1.49	11.49	8.95	7.0	9.40	5.95	13.43	4.47	11.0	10.44
0.75	0.75	17.50	30.83	7.50	3.33	-	3.33	32.50	-	4.16	-
-	-	-	12.5	12.5	25.0	-	25.0	12.50	12.5	-	-
1.33	6.66	16.49	31.50	8.21	9.59	10.95	-	20.54	-	-	2.73
-	-	7.38	12.19	14.63	17.07	-	-	17.0	4.88	12.19	14.63

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PUPIL BEHAVIOUR

Supporting		Responsive		Initiative				Co-operative			
7	8	9a	9b	10	11	12a	12b	13	14	15	16
-	3.46	12.56	15.28	10.19	0.63	4.45	9.55	31.0	0.63	1.27	7.0
2.63	11.84	22.80	17.54	24.56	10.52	5.26	-	7.01	1.75	-	10.5
4.74	5.60	3.87	25.58	9.30	3.87	0.77	6.20	12.40	16.27	13.95	-
-	-	20.0	-	-	40.0	-	-	-	-	20	20.0
-	7.69	13.92	12.03	8.86	4.43	15.82	5.69	24.05	3.79	-	13.6
27.0	-	-	16	8.0	-	-	8	32	20	16	-
15.0	4.16	19.40	5.97	7.46	5.97	2.98	36.70	-	3.72	-	10.9
-	-	28.57	14.28	-	-	14.28	-	42.85	-	-	-
4.65	4.65	-	10.07	-	12.96	27.77	3.70	20.37	1.85	5.55	3.7
-	-	-	14.28	-	-	14.28	-	42.85	-	-	-
-	-	8.86	10.12	13.92	16.45	-	15.18	31.16	-	-	3.7
-	4.88	-	37.5	-	50.0	-	-	-	-	-	12.5
6.0	5.21	5.97	10.44	26.86	37.31	-	16.41	-	-	-	2.0
-	-	20.0	-	-	30.0	-	20.0	10.0	-	-	20

Teacher behaviour has tremendous influence on pupils. The pattern of teacher behaviour which is present in the classroom either influences or debilitates the type of behaviour in pupils. Teacher behaviour is considered to be one of the most important factor in the classroom which influence the pupil behaviour. In the present study teacher behaviour is studied as one of the variables and it is also studied what pattern of teacher behaviour prevails in innovative classrooms. It is also observed that which categories in the classroom interaction schedule is used by the teachers in an innovative classroom. Passi and Padma (1975) and Withall (1949) tell us that teacher behaviour is the most important factor which creates classroom climate. Analysis of classroom interaction presented here clearly indicates the style of teacher behaviour and pupil behaviour in high innovative and low innovative classrooms. It also indicates that teachers of high innovative classrooms have used positive categories more often than the negative categories; whereas the teachers of low innovative classrooms have used negative categories more often. This observation not only rejects the hypothesis formulated, that teacher behaviour is independent of innovative class but also is in line with the conclusions of other studies which have observed the teacher behaviour as one of the variables viz., Marie De Sales (1976), Soundarraja Rao (1975), Lakshmi (1981).

It is also observed that teachers of innovative classrooms have used the informative and supporting cluster which includes the categories 1, 2a, 2b and 7, 8 respectively. 1, 2a, 2b category means teacher explain, clarifies, (1 category). Questions specifically (2a category) gives directions assigns tasks (2b category). Corresponding to that the teachers of low innovative classrooms have used negative categories more often viz., Categories 3a, category 7 are used more frequently. Category 3a means (not attentive to pupils, curbs pupils' initiative). Category 7 is (minds his own work while pupils are at work.).

Pupils behaviour in high innovative classroom tended to be positive and the pupils behaviour in low innovative classroom tended to be negative. This result is again in line with the study conducted by Sundarlakshmi (1981), which also reveals that in a classroom where the climate is more open and where teachers encouraged pupils to take part in activities and appreciated their work pupils responded similarly in a positive way.

In the present study if analysis of pupil behaviour of both high and low innovative classrooms clusterwise is made it gives a clear picture that pupils of high innovative classrooms use 9a category in a greater percentage than that of the pupils of low innovative classroom who use the same category 9a in a lower percentage. Whereas, the low innovative classrooms use 9a, 9b categories of the negative group in a higher percentage than that of the pupils of high innovative classroom. From the given table it is clear that the pupils of high innovative classroom have expressed their feelings or reactions to the teacher behaviour by using the category 13 more often and the percentage of this category is also higher. But in the low innovative classroom pupils have also used the same category more often but the percentage level of this category is considerably less in low innovative classroom. Category 13 indicates at the positive side activities like raises questions and issues; whereas, on negative side activities like distracting others.

Categories 9a, 9b, and 10 have been clustered as responsive where pupils behaviour on positive side refers to positive reaction to teacher. The particular category No.10 is more often used by pupils of high innovative class rather than that of pupils of low innovative classroom. Percentagewise also pupils of high innovative classrooms totally used a higher percentage than that of the low innovative classroom. The negative side of this category is "negative reaction to teacher" was not used much by the low innovative classroom. This is slightly an uncommon observation. Negative reactions were also more by the high innovative classroom pupils. Pupil behaviour according to category 14 can be identified as "helping

each other" on the positive side and on the negative side it can be labelled as "co-operates for defying tasks". It is observed that both high innovative classrooms and low innovative classrooms have used category 14 very sparingly. Even the percentage wise both positive and negative categories were very meagrely used. Similarly, categories 15 and 16 which are the categories of "Co-operative cluster" has been predominantly used by pupils of high innovative classrooms. Where percentage being 38.67 and low innovative classroom it is less that is the percentage being 33.41.

In the present study teacher observation was observed as a variable of the study. Further no special treatments were given either to improve teacher behaviour or pupil behaviour. In spite of this the result of the study reveals that teacher behaviours and corresponding pupil behaviours is high in high innovative classrooms whereas, in low innovative classroom teacher behaviour tends towards negative and pupil behaviour is not very encouraging thus it exhibits more of negative behaviour and even this behaviour is not consistent and there is lot of fluctuations.

S O C I A L R E L A T I O N S H I P S

Classroom as a group comprises of many individuals who try to interact with each other either for goal attainment or for affective satisfaction. Social relationship is also another important component of the classroom climate, study of which will enable the teacher to know how pupils in the class group interact and it also gives him an idea to regroup this group for pursuing learning as a group activity. Study of the group will enable one to arrive at a conclusion that where relationships are congenial mutual acceptability will be more with greater acceptability cohesiveness within the group will also be great. Hence, an attempt was made to study the group cohesiveness in terms of interrelationship, to know the mutual or cross choices made by each pupil. This was studied by using a simple technique of sociometry by asking each pupil in the class to mention three names of pupils of their class whom they prefer to choose for activities like, study, play, to make friends, in the order of preference. This particular tool was devised by Pareek (1971). The preference of each pupil was made as I choice, II choice and III choice for the above mentioned activities.

The choices made by each pupil were plotted and a matrix was obtained which gives an idea about the number of choices each pupil has made. The intimacy or the 'nearness' and the 'distance' at which the choices are made as also shown. In the present study choice I and II is considered to be the intimacy or nearness and the III preference is considered to be the distance. When two pupils prefer each other at the same level is considered as "mutual choice". The cross choices the pupils make at different level, i.e., making choices at different levels viz., pupil A choose pupil B at the first preference and pupil B choose pupil A at the II or III choice, such a choice is considered as "cross Choice". The present study do not make the pupil to give the names of pupils in choices as "disliked". The plotting is made only on positive basis and not on negative basis.

Sociograms are depicted to high light the relationship of the group in a diagramatic way in which each child is denoted by a serial number. Boys and girls are represented on the sociograms by giving circle and triangles which is a most conventional way of depicting it. The lines joining these symbols indicate mutual choice. The total mutual positive choices made in the class were used to work out the 'cohesiveness index' which was done by calculating the percentage of the mutual positive choices offered to the total possible choices. The level of "acceptability" is also found out by calculating the percentage of mutual choices and cross choices offered to the total mutual possible choices. The total mutual possible choices were taken to be the squared sum of the total number of pupils in the class minus the total number of pupils i.e., $N^2 - N$.

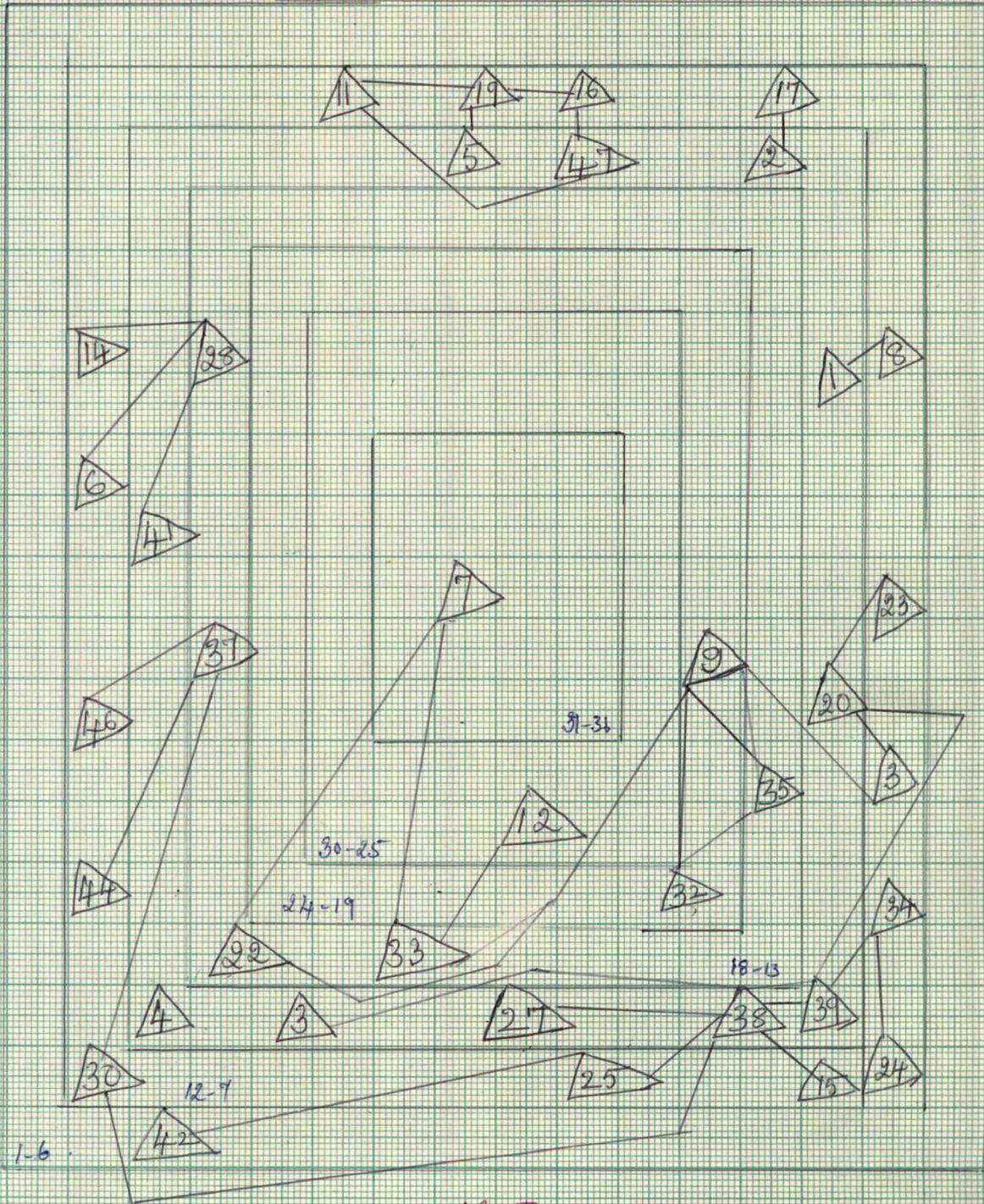
Placement of pupils in the sociogram has been done in a slightly different way, to that of the conventional way of plotting it. Here the total maximum score and the minimum score obtained by the pupils are taken into consideration and these maximum and minimum scores are then converted into class intervals and accordingly pupils who get maximum score are placed in the inner most square and those who obtain minimum score are placed in the outer most square. Pupils who have mutual acceptance are plotted by means of a straight line which connects these two individuals. In the present study "mutual choices" at all levels viz., first preference, second preference and third preferences are taken into consideration for the preparation of sociogram.

A detailed analysis of the social relationship that is present in few amongst the high innovative classrooms and few amongst the low innovative classrooms are given in the foregoing section.

TABLE: /2 Distribution of Social Relationships in High Innovative Classroom

School	Mutual possible choices	Mutual choices	Cross choices	Total	Cohesive-ness index	Acceptability
St.Aloysius High School	2256	48	386	434	2.12	19.23

SOCIOGRAM.



MUTUAL CHOICES.

N=48

Above mentioned table reveals the social relationship that prevails in this high innovative school. The total possible choices are 2256, out of this the mutual choices are 48 and 386 are cross choices and the total choices are 434. Mutual choices are much less than cross choices. This indicates that these cross choices are much better than no choices. The cohesiveness index is also very less, i.e., 2.12. This is not a good indication. because the commonly accepted notion is that in a high innovative classroom the cohesion should be more or it should be considerably high. The acceptability is 19.23 this percentage though not very satisfactory yet considerably good because the group is revealing that though there will not be mutuality they try to accept each other. This is a healthy indication through which teachers can build up or bring about considerable amount of cohesion.

Sociogram presented here gives a picture of clustering of persons who are mutually accepted. The pupil who get maximum mutual acceptance is represented in the inner most square which is prepared by converting the maximum score into convenient class intervals. This particular class is not mixed class. Hence the symbol used here is just triangles only. In this group few triads are found amongst numbers like 9, 35, 21, 9, 20, 3, 9, 21, 3. No. 7 is placed in the inner most square because of the maximum choices it received which may of any preferential level. That is 1st, 2nd or 3rd preference. No. 7 gets only 2 mutual choices. 17. No pupils are placed in the outer most square which represent the minimum scores the pupils have received. They have been in the 6-1 square which explains two things firstly these 17 pupils receive minimum scores and secondly these scores range between 6 to 1 thus it has been converted into convenient class interval. 12 pupils are placed in the 12-7 square; 4 pupils are placed in 18-13 square. Only 2 pupils are placed in 24-19 square and one pupil each in 30-25 and 31-36 square which indicate the more number of choices the pupils have received from different preferential order. Though mutual choices seems to be moderately good, yet the global picture

the classroom presents is rather a unitary one, that is a number of sub-groups are distinctly seen. There are a number of dyads, to present few 1,8, 17,2, 24, 34, 23, 34. 7, 33, 22 is another distinct triad which can be observed in this social relationship.

In conclusion few sub-groups have been formed, this can be interpreted as sub-groups can be utilized for the purposes of a number of worthwhile classroom activities; many dyads are there and triads also there which indicates that smaller groups are really useful for conducting any type of experiments or introduce anything new. Hence these sub-groups, dyads and triads are good sign in a group and the social relationships are moderately good which is one of the characteristics of an innovative classroom.

TABLE:13 Distribution of Social Relationship in High Innovative Classroom.

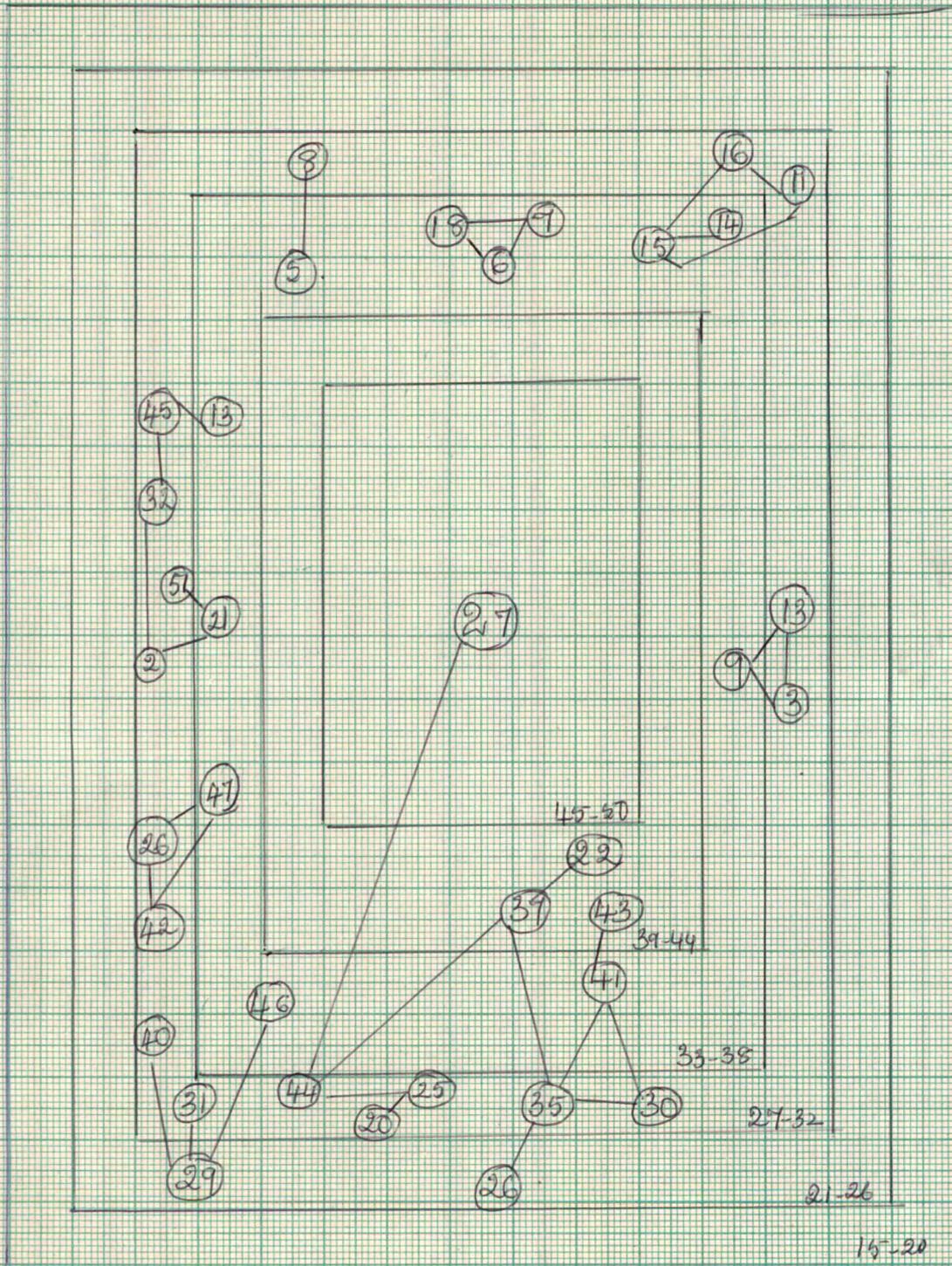
Mutual possible choices	Mutual choices	Cross choices	Total	Cohesive-ness Index	Acceptability
2550	47	968	1015	1.84	39.80

This table presented above gives the description about the social relationship that is present in the high innovative classroom which was observed for the purpose of the present study. There are about 1015 total choices which includes both mutual choices as well as cross choices against 2550 mutual possible choices. There are just 47 mutual choices and 968 cross choices. Cross choices are more than mutual choices. But there would have been more number of mutual choices. The classroom cohesiveness index is just 1.84 which is again not a satisfactory index. But the acceptability of the classroom is satisfactory, because there is at least good amount of acceptability is there among the pupils, which is a good sign.

SOCIOGRAM

MUTUAL CHOICES

N=60



The sociogram presented here gives a vivid picture of the actual placement of pupils according to their relationship with others and also the amount of maximum and minimum scores the pupils have secured and these scores are converted into class intervals which would clearly give an idea about the amount of scores the pupils have got. As indicated earlier inner most square involves the person with maximum scores and the subsequent squares involve the pupils with lesser scores. It also shows the persons who form the cliques, or smaller sub-groups etc. This is again a girls schools hence the symbol used is 'O'. There are few triads 9, 13, 3, and 16, 11, 15, 18, 6, 7, which are placed between 33-38 and 27-32 class interval. There are few dyads, though from the broader observation it appears as though it is a part of sub-group, ultimately by a closer observation it can be said as a dyad only for e.g., 44, 27, 31, 21, 8, 5, 45 and 16. The No. 27 which has been placed in the inner most square has a single mutual choice. This may be possible because No.27 must have received a number of other preferences which has helped him to score maximum but No.27 and No.44 are mutually drawn.

This can be concluded that some measures can be taken to make more number of triads than dyads which are more useful for classroom activities.

TABLE: 14 Distribution of Social Relationships in High Innovative Classroom

Mutual possible choice	Mutual choices	Cross choices	Total	Cohesive-ness Index	Acceptability
1122	33	216	249	2.94	22.19

The above mentioned table gives a clear picture of the social relationship that prevails in a high innovative classroom.

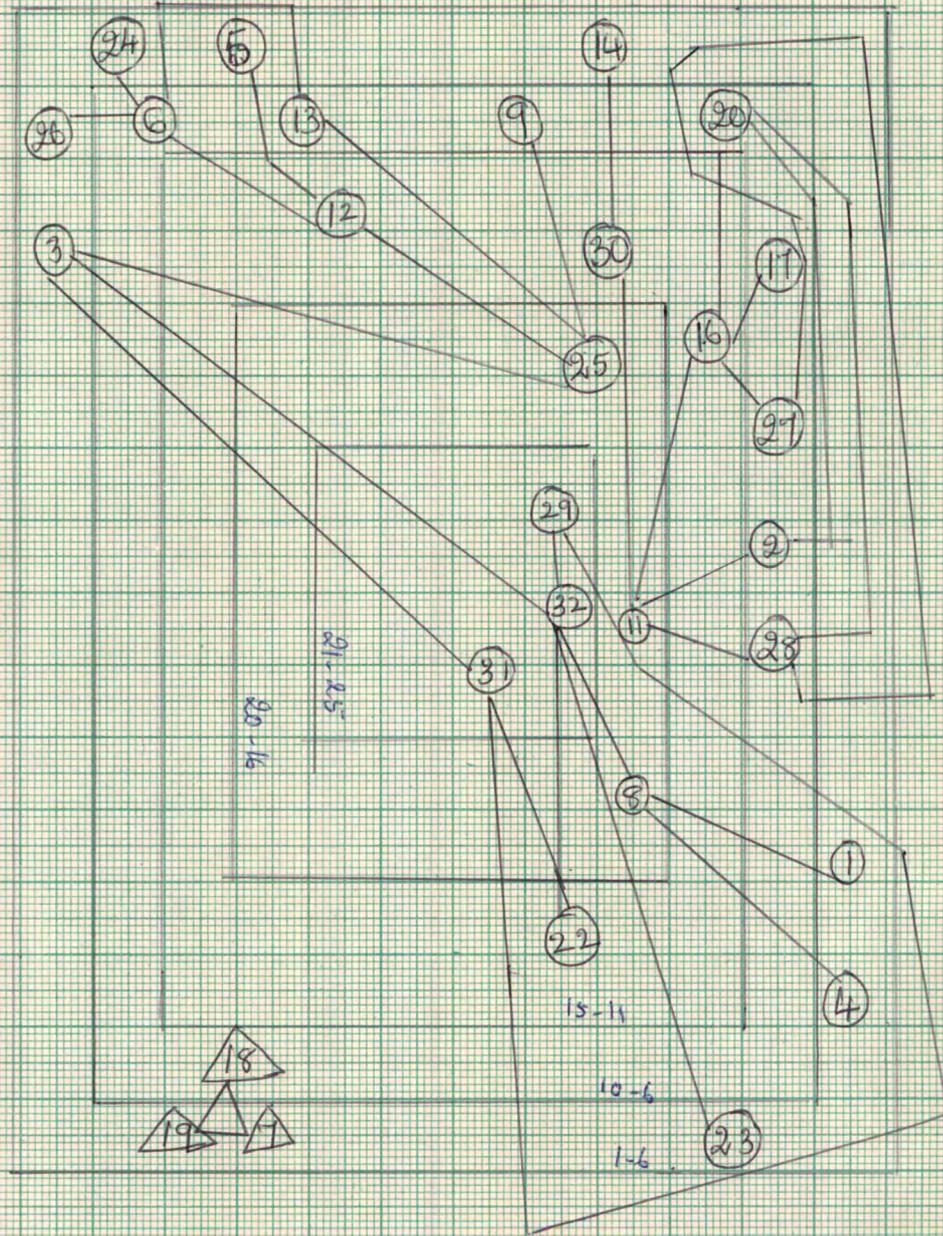
Similarly, the sociogram presented also gives a picture of the mutual relationships that exist in the classroom. It can be observed that the cross choices are more (216) than the mutual choices (33), though the cross choices are also considered to be positive ones. In this particular school, to prepare the class interval the maximum and minimum choices pupils have received has been taken into consideration. Here the maximum choices of all the levels that a pupil has obtained is 35 and the minimum is one (1). So class interval of 6 has been prepared and the pupil who has obtained 35 choices has been placed in the inner most circle and the remaining students were placed according to their choices obtained in a gradation order, that is from inner to outer square.

As per the convention, pupils have been represented through \triangle for boys \circ for girls. Again through the sociogram it can be clearly understood that the choices made by boys and girls is distinctly different; that is boys have not chosen girls and girls have not chosen boys for any academical activities. Pupil (13) has 5 mutual choices, hence his placement is in the inner most square. Similarly, pupil (4) has four mutual choices. But her placement is in the 4th square. There is one triad formed amongst boys (13, 1, 33). But no such triad is formed amongst girls. The cohesiveness index is 2.94 which is considered to be very low, but the acceptability level is 22.19 which indicates that classroom as a group has more of acceptability than of cohesion.

There is only one person in the inner most square, 9 persons in 1-6 class interval square, 5 persons in the 7-12 class interval square, 3, in 18-13 class interval square, 2 in 24-19 class interval square and one in 30-25 class interval square.

This class being the innovative classroom there could have been more cohesion but cohesion is not seen here. This can be improved by means of organisation of activities in the classroom by the teacher.

SOCIOGRAM



MUTUAL CHOICES.

N=32

TABLE: 15 Distribution of Social Relationship in Low Innovative Classroom

Total possible choices	Mutual choices	Cross choices	Total	Cohesive-ness Index	Acceptability
1406	43	225	268	3.05	19.06

The above mentioned table shows the social relationships of pupils in less innovative classroom. According to the table the possible mutual choices are 1406. Against which mutual choices are 43 and cross choices are 225 only. There are 268 choices for 1406 possible choices where cross choices are more than the mutual choices. Total number of pupils present in the class are 32. The cohesion in the classroom is not very satisfactory. It is just 3.05 and acceptability is also not very encouraging. Acceptability percentage is just 19.06. This is an indication that it is due to some reason or the other classroom relationships are not very closely knit. It is also true that pupil have a very low level of acceptance with each other. But still they continue to exist in the same class.

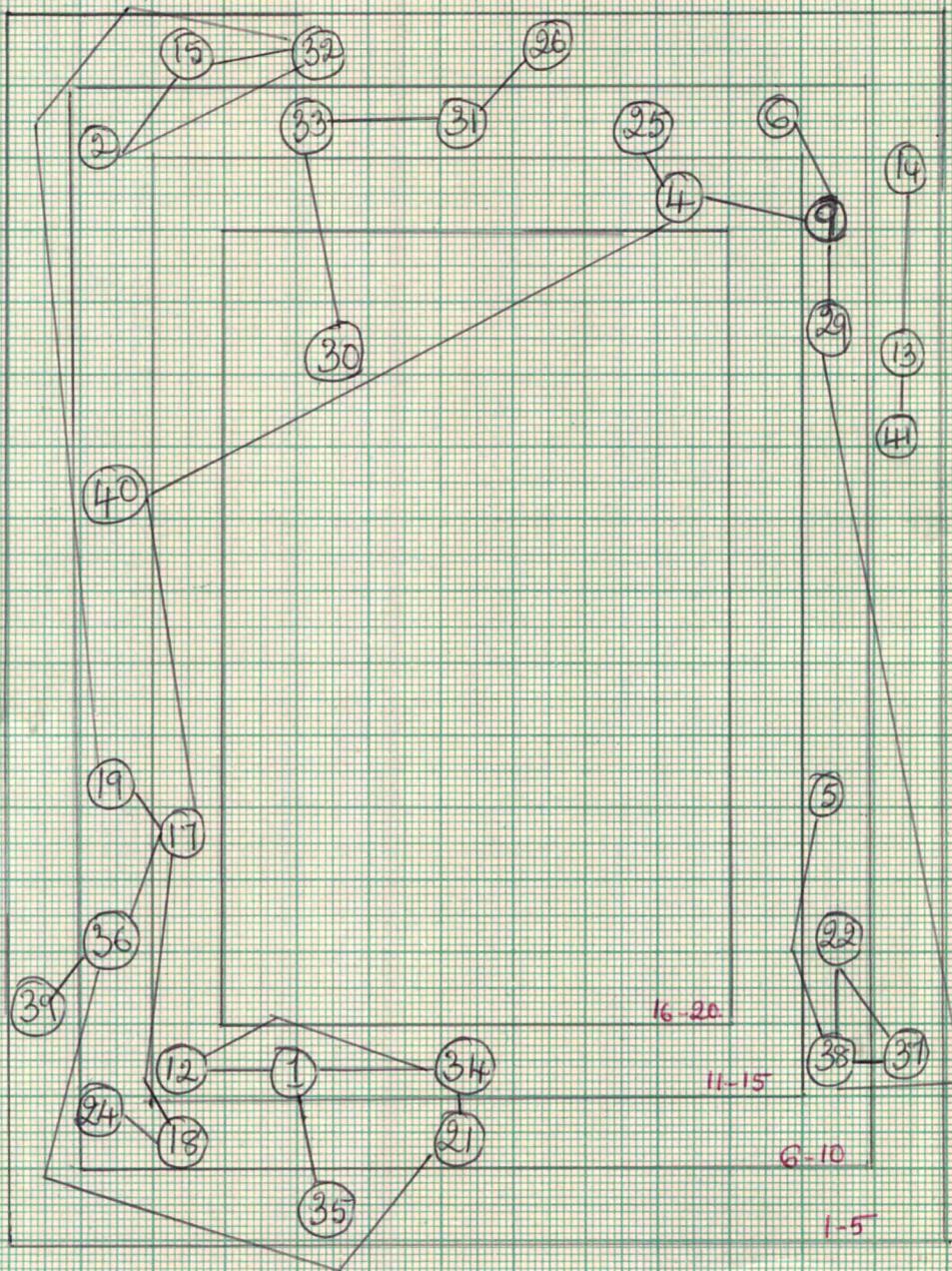
The sociogram presented here reveals: The pupils who have scored maximum choices from their classmates vary between 21 to 25 which has been converted into class interval for convenience sake. There are three persons that is 29, 31, 32 score maximum, hence they have been located in the inner most circle. The sum total of the scores obtained by these pupils is the product of all the preference that are given by the other pupils at various levels viz., 1st preference, 2nd preference and 3rd preference. Even the sociogram shows that mutual liking by two pupil is present. But this liking or preference is not a close knit one. According to convention girls students are represented in Δ and boy students are represented by O symbols; hence in the sociogram it is very

clearly indicated that the mutual preference between boys and girls is not present. On the other hand preference is "single tracked" that is boys have preferred only boys and girls have preferred only girls. There is no 'double tracked' preference namely boys preferring girls and girls preferring boys. No.19, 18, 7 have a very close knit preference.

There is mutual choices amongst these three persons. They have formed a triad where we cannot see either a dyad or a triad amongst boys. Their preferences are just single tracks. Altogether 9 pupils are placed in the outer most square. 10 pupils are placed in the second square where pupils having 6-10 scores are present. Only 4 pupils are there in the third square, only three pupils are there in the fourth square. The three girls that are present in the class are placed in order most squares but still these three form the triad by mutual acceptance. No.10 finds no place in the sociogram because there is no mutual acceptance at all that is No.10 has chosen 2, 16, 17, 30. But none of these numbers have chosen No.10 at any level. Acceptance among boys is highly scattered, that is, mutual acceptance is there between two persons but there is no cliques or sub-groups but all these boys form a larger group only. There are number of boys who get the single mutual choice, that is, 31, 29. There are few other numbers like 11, 8, 25, where they got more than 4 mutual choices. Another special feature of this group is the No.31, 32, 29 who are placed in the inner most square because of the maximum scores obtained get either a single choice or two mutual choices only.

Thus we can conclude, in a classroom which is low in innovation is likely to have such social relationships which is very loosely knit, but we cannot say that there is no mutual relationship but they are all 'single tracked', where it is supported by the type of cohesive index the group has and also the acceptability.

MUTUAL CHOICE



SOCIOGRAM.

N = 41.

TABLE: 16 Distribution of Social Relationships in Innovative Classroom

Mutual possible choices	Mutual choices	Cross choices	Total	Cohesiveness Index	Acceptability
2256	52	437	562	2.30	24.91

The above mentioned table gives a clear picture about the social relationship in a low innovative classroom. Mutual possible choices being 2256 and there are about 52 pairs of mutual choices and 437 cross choices. Cross choices are more than mutual choices. Cohesiveness Index is 2.30 and the acceptability level is 24.91. Both cohesiveness index as well as the acceptability percentage is considerably less. But acceptability percentage is better than that of cohesiveness index. From this one can state that there is no cohesion among the group but there is a lot of acceptance among pupils. Cross choices are much higher than that of mutual choices. Though this is not a good picture of any classroom yet one can say that these cross choices are much better than no choices. These choices can be to some extent taken as bonds of relationship, but these bonds do not possess the strength of the mutual relationship.

In the sociogram presented here, there are few dyads and few triads. This again reveals that though acceptance is the general nature of the class yet when a deeper observation is made about social relationship of this class room, it exhibits a more candid picture about this aspect. Here, 1, 12, 34, 1, 34, 35, 22, 37, 38 are the triads in this class. No.30 though occupies the inner most circle yet has only one mutual relationship. Few other numbers though they occupy outer square receive more number of mutuals, unlike the serial No.30. The unique feature of this group is, when mutual choices are made few of the pupils have chosen one's own self, specially in areas like 'study'. This can be seen in the sociomatrix that has been presented.

The maximum scores pupils received ranged from 20-1. This has been converted into 5 class intervals. The maximum score obtained that is 20 has been placed in the inner most square and the other scores have been placed in the outer squares in a gradational style. The least score that is 1 obtained has been placed in the outer most square. Through the symbol it can be understood that this is a girls school. 8 pupils have been placed in the outer most square that is 1-5 which is the range of the scores these pupils have received. 16 pupils have been placed in the second outer square whose scores ranges from 6-10, 5 pupils have been placed in the third square the score ranges from 15-11. Only single pupil is placed in the inner most square.

We can thus conclude that these dyads and triads are in a way good indicators for the classroom teacher to know how these can be utilized for making teaching-learning process an effective one. There are many sub-groups which have been formed larger group. When a closer observation is made one can find out that each pupil who has been placed in one of the squares in the sociogram, has got on a minimum of just two choices received and given by them. This is moderately a good relationship the pupils have. As far as the nature of the classroom is considered the type of relationship is OK. The classroom is a low innovative one. Prevalence of such type of social relationship is rather a good symptom in such type of school, which indicates that if efforts are made social relationship can be enhanced.

TABLE: 17 Social relationships in Low Innovative Classroom.

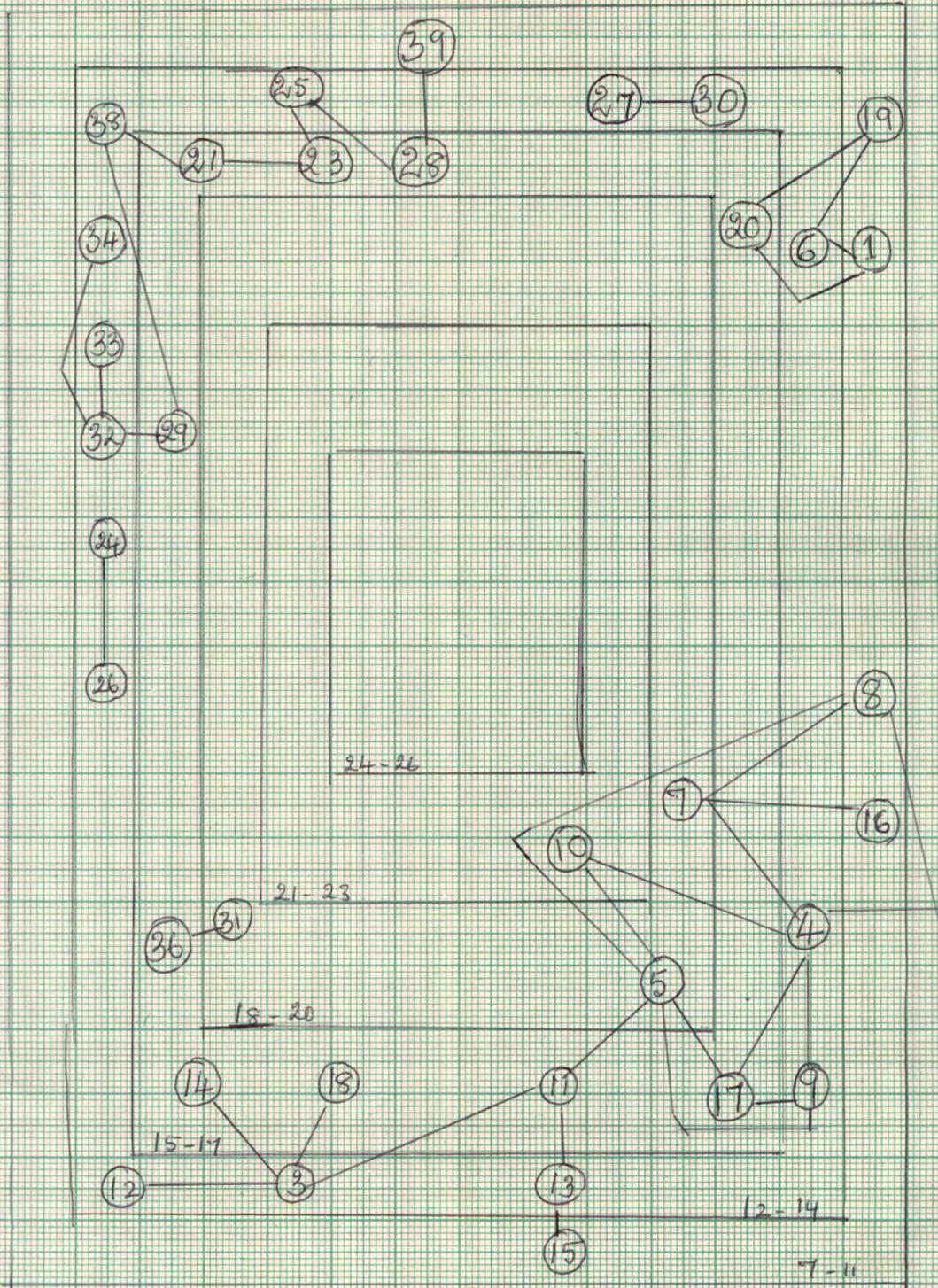
Mutual possible choices	Mutual choices	Cross choices	Total	Cohesive-ness Index	Acceptability
1560	28	110	138	1.79	8.84

From the above mentioned table one can observe the pattern of social relationship in a low innovative classroom. Total choices

SOCIOGRAM.

MUTUAL CHOICES.

N=40



made are 138 against 1560 mutual possible choices. The total mutual choices made are 28. Cross choices 110. Predominate the mutual choice, even then the trend is much encouraging. This indicates the low cohesiveness index obtained (1.79). This is further supported by the sociogram where the actual placement of pupils according to the preferential scores they get is plotted. The acceptability is also correspondingly low (8.84) in this group.

There are few triads and many dyads. 34, 32, 29, 10, 17, 5, 4, 17, 9 are triads of the class and 27, 30, 28, 39, 25, 23, 24, 26, 36, 31 are the dyads. Another unique clustering of a small group of pupils has been formed which has kept on extending from triads to a small sub-group. More number of pupils are found in the 12-14 class interval cluster. There is no pupil who are placed in the inner most square, which has the 24-26 class interval. Again very few persons are there in the outer most square. This may be one of the facts for getting less cohesive index. In the class mutual responses are observed between two persons rather than more. This is again responsible for lower cohesive index as well as acceptability level.

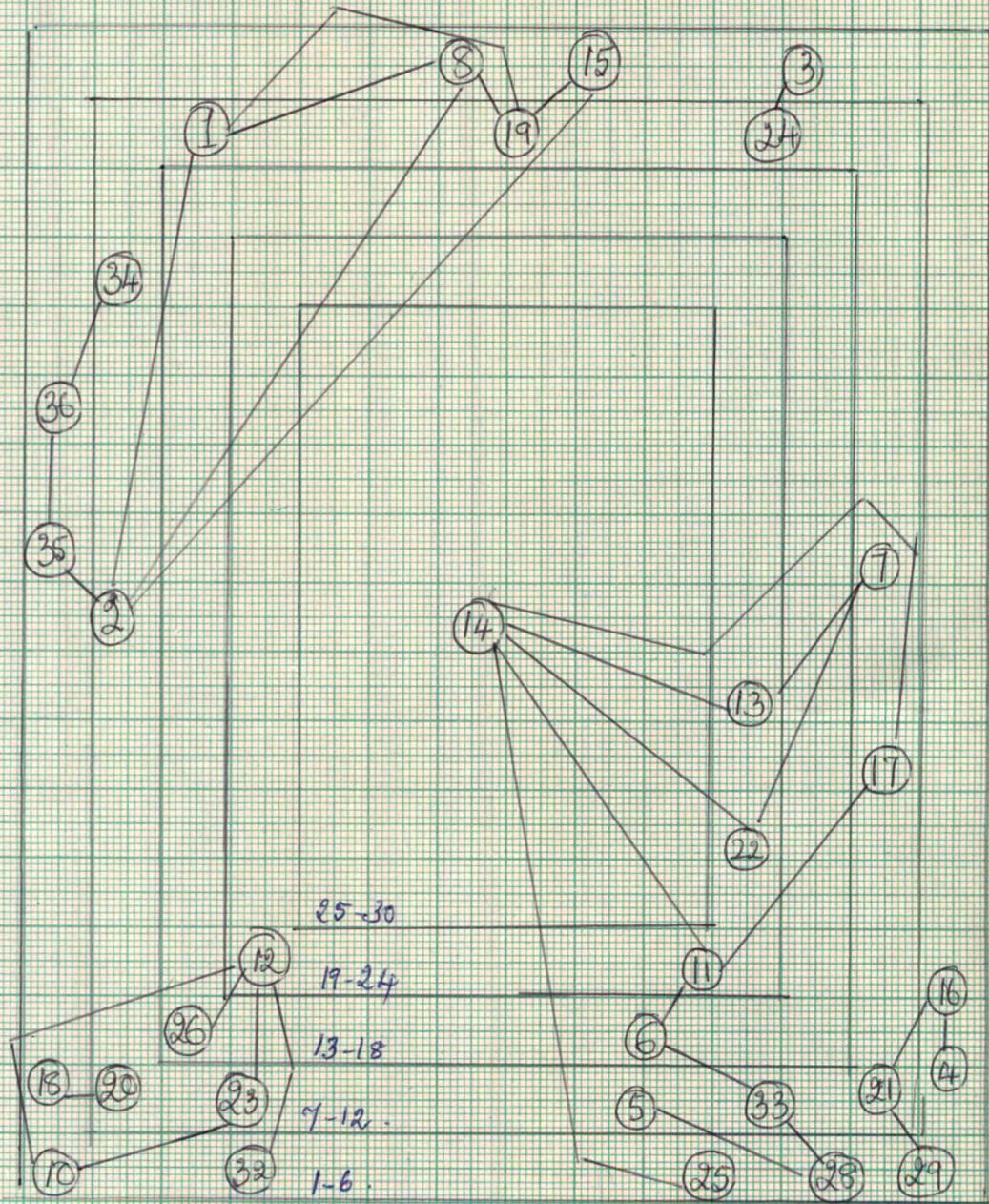
This type of relationship is in correspondence with the low innovative classroom, that is in a low innovative classroom social relationship is bound to be scattered thus giving the result of low index and acceptability level.

Table showing the consolidated information about the social relationships of the other high and low innovative classrooms is given here.

TABLE: 18 Social Relationship in High Innovative School

Mutual possible choices	Mutual choices	Cross choices	Total	Cohesive-ness Index	Acceptability
1260	46	293	339	3.65	26.90

MUTUAL CHOICES.



Sociogram

N = 36

The above mentioned table gives the analysis of social relationship in one of the high innovative classrooms which is the sample used in the study. There are 1260 mutual possible choices of which only 46 mutual choices are there and 293 cross choices are there. Here again cross choices dominate the mutual choice. In this class cohesive index is 3.65 which is comparatively more than other high innovative classrooms, which tells us that better type of cohesion is there in this class. Acceptability percentage is 26.90. This again is not a very satisfactory one but it is not a very discouraging one. Total possible choice is 339.

Serial No.14 gets the maximum score of 26 which comprises of the total of all the preferential scores. Besides No.14 gets 5 mutual choices. In this particular group the type of social relationship seems to be of a considerably higher order because the number of single mutual choices are very less when compared with the social relationship of other classrooms besides many cliques of 4 persons are also there, thus forming small groups which are very useful for conducting classroom activities. These sub-groups are No.29, 21, 16, 4, 2, 15, 19, 1, 8, 35, 36, 34. A very distinct group comprising of just two persons is no. 24, 3. They have not preferred any other person. There are 13 persons in the outer most square and 12 in the second square, 4 in the fourth square and just one in the inner most square. There are few triads viz., 14, 11 and 6, 13, 14, 7, 14, 22, 7, 19, 15, 2. This makes one to think that in this group good amount of cohesion prevails, this is supported by the cohesion index which is 3.65. Even the acceptability percentage is also better, which indicates that these mutuals, triads, dyads have good amount of acceptability. There is one serial No.9 which does find a place in the sociogram because there is no mutual relationship with another person.

Since this is an innovative classroom this type of social relationship is bound to be there. The formation of sub-groups will help the teacher to carry a number of project work and also help the teacher to try out new things. Though cent percent or very

high level of social relationship cannot be guaranteed, this type of social relationships which is present in the classroom studied facilitate the teacher in initiation of new things; hence such type of relationships must be encouraged or motivated in other classrooms too. Thus, the hypothesis formed "social relationship is independent of innovative classrooms", gets rejected. The sociogram of the classroom is given here.

TABLE: 19 Social relationship in High Innovative Schools

Schools	Mutual possible choices	Mutual choices	Cross choices	Total	Cohesive-ness Index	Acceptability
Viveka Junior College	2550	49	925	973	1.92	38.15
Stella Maris High School	1722	48	683	731	2.78	42.4
Lady Hill School	2256	46	837	883	2.03	39.14

TABLE: 20 Social Relationships in Low Innovative classrooms.
(Low Innovative Schools)

Schools	Mutual possible choices	Mutual choices	Cross choices	Total	Cohesive-ness Index	Acceptability
Nirmala High School	1640	38	324	362	2.31	22.07
K.R.E.C. High School	2070	32	426	458	1.54	22.12
Gerosa Girls High School	2450	35	520	555	1.42	22.65
Janatha Girls High School	1056	28	154	182	2.65	16.28

It is clear from the table given here that the social relationship between the high innovative classrooms and low innovative classrooms differ because of so many other influencing factors. It can be understood that 'cohesive index' is high in high innovative schools when compared with the low innovative school. 'Acceptability percentage' is considerably good both from the point of individual classroom and also from the point of high and low innovative classes. In both high and low innovative classes the cross choices dominate the mutual choices. In low innovative classrooms the mutual choices are lesser than that of high innovative classrooms. Cross choices are more in high innovative classes than in low innovative classes. Thus, the hypothesis formulated that social relationship is independent of innovative class has been rejected. Thus, conclusion can be drawn that in an innovative class that social relationship is better than that in low innovative class. Besides cohesion is also better than that in low innovative class.

Social relationship is that type of a variable or a factor which will not be a stable and consistent one till at a particular stage, hence, it keeps on changing. Even the 'mutual choice' pattern which the investigator has tried to study within and across the innovative classroom is subjected to a lot of variations. Because investigator's observation is that, since three situations were given to pupils to give their choices, these choices considerably vary. Though a stand has been taken based on the conclusions of other researchers who have conducted similar type of researches viz., Marie De Sales, Choksi (1976), Lakshmi (1981), Pareek (1971) that the mutual choices are more stable. Hence, it has been taken into consideration.

In conclusion, the high innovative classrooms have high cohesiveness and acceptability; it is low in low innovative. This results is in line with the studies conducted by Choksi (1976), Pareek (1971) who mention that in classrooms with better climates class cohesiveness is also better.

CLIMATOGRAPH: COMPARISON OF CLASSROOM CLIMATE PREVAILING IN HIGH AND LOW INNOVATIVE CLASSROOMS.

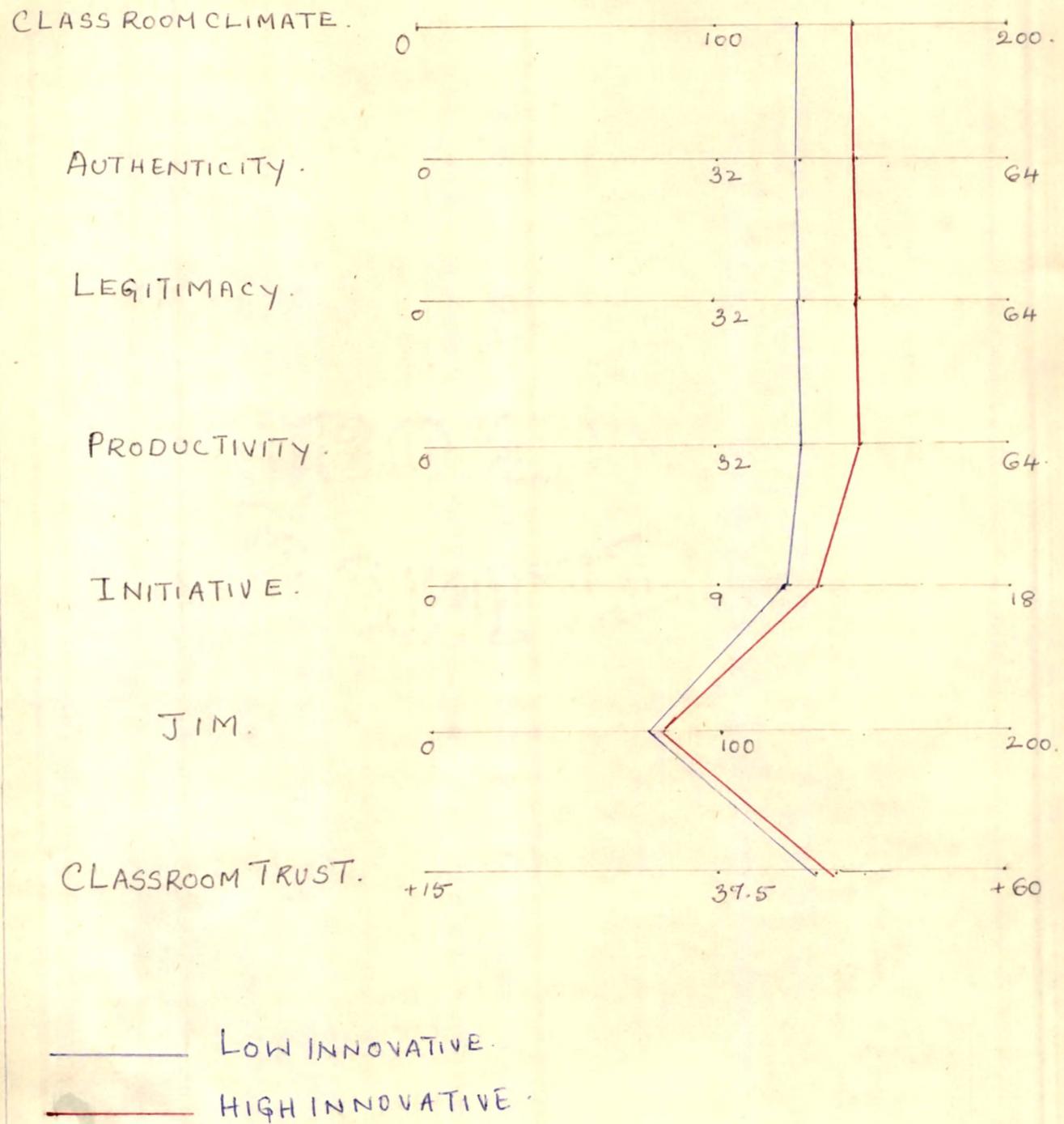


Fig: 3.

In the present study climatograph for both high innovative and low innovative classroom is prepared. Climatograph variable-wise is presented here. (Fig. No.3.).

In this climatograph high innovative and low innovative classrooms can be located referring to the colour. Red line represents the high innovative classroom and blue line represents low innovative classroom. The graph can be interpreted thus: The total score on classroom climate a variable used in the study is high in high innovative classroom and low or less in low innovative classrooms. Similarly components of classroom climate like Authenticity, Legitimacy, Productivity are also high in high innovative classroom than in low innovative classroom.

Initiative a component of pupils' psyche is high in high innovative classroom and it is low in low innovative classroom. But Junior Index of motivation and classroom trust is not high in high innovative classrooms. But, it is high in low innovative classrooms and low in high innovative classrooms.

Hence, to conclude, that the results of variables like components of classroom climate, initiative are in line with the other interventional studies to quote a few, Marie De Sales (1979), Lakshmi (1981), Desai (1979), Thangam (1980). Motivation and classroom trust results of the present study is not in relation with the other interventional studies by (Desai, Choksi, Thangam, 1979, 1976 and 1980), where this variable is considered to be on the positive side.

Hence, a climatograph is therefore, a necessary tool, which enables the teacher to make an indepth study of the specific classroom which are their main work area, and also to know the psychic world of the pupils who are the most important goal for each teacher thus determining to make the pupils grow thus helping his own self to grow, which is the most important process in bringing about quality and meaning in the field of education in general and classroom dealings in particular.

Thus, consolidating the details of Chapter IV which is the interpretation and analysis of data the investigator would like to put it in a nutshell. Analysis of data has been done in three groups as it has been mentioned earlier because of the statistical treatments that are given to three categories of variables that are used in the study. Variables like classroom climate and its components, pupils psyche and its components viz., initiative, pupils' classroom trust, pupils' motivation, and social relationships, teacher and pupil behaviour.

Variables like classroom climate, pupils' psyche were given a quantitative statistical treatment for which hypotheses were formulated. Analysis reveals that hypotheses formulated to test classroom climate and its components were rejected, amongst the hypotheses formulated to test the pupils' psyche two psyche components namely, classroom trust and pupils motivation were not rejected. The other variables like preadolescent initiative hypothesis was rejected. Social relationship tends to be positive exhibiting high cohesive index and high acceptability specially in high innovative classrooms. And variable like Teacher and pupil behaviour showed considerable fluctuation between the high innovative and low innovative classrooms. Besides the hypothesis formulated for this particular variable was also rejected, resulting that teacher behaviour in high innovative classroom is positive and Teacher Behaviour in low innovative classroom tends to be negative. Pupil behaviour is also corresponding to the teacher behaviour that is out of the seven high innovative schools observed it clearly indicated that out of 36 teachers observed 21 teachers used positive categories more often than the other teachers, it was also observed that pupils reaction to such type of behaviour was also positive, through such observations it can be very clearly stated that the formulated hypothesis gets rejected. It was also observed that amongst the teachers of low innovative classrooms many of them used negative categories, but pupils response for such a behaviour was not very much negative. It can be mentioned or discussed at this juncture that doing teacher and pupil observations based on the

time sampling has to be extended for a longer duration than for a shorter period, because it will be rather very difficult to conclude about the observations in a very short period and one may find a lot of fluctuations rather than a considerably consistent or stable type of behaviour.