CHAPTER IV

ANALYSIS OF RESULTS AND INTERPRETATION

In this chapter the results of the present investigation are analyzed and interpreted. In order to determine the relationship between the different perceptual factors and the communication pattern, Pearson's r is used. Relationship of communication pattern with other variables is reported. t test has been used to test the difference between the communication patterns of teachers belonging to different types of schools, sex, etc. Multiple R is used for prodiction of teacher behaviour.

The chapter is divided into five sections. In section I, teachers' communication pattern is discussed. Section II deals with the relationship between communication pattern and demographic variables. Section III deals with teachers' perceptions and the relationship between perceptions and communication pattern. Section IV is concerned with the study on predicting teachers' communication pattern. A general discussion of results obtained in sections I, II, III and IV is given in Section V.

Section I

Teacher's Communication Pattern

As mentioned earlier in chapter III one hundred and fifty teachers were observed — each teacher being observed twice. As a result three hundred sets of observations using FIACS were obtained. From these observations a master matrix representing the teachers' classroom communication pattern was prepared. From this matrix seven measures of teachers' communication pattern viz. i/d, I/D, TRR, TQR, T/S, TT and ST were calculated.

In Tables 4.1 and 4.2 the master matrix containing observations for all the 150 teachers and the percentage master matrix have been given. The interaction patterns derived from the master matrix have been discussed.

The total duration of the recorded interaction is given by the total number of tallies. The grand total of tallies in the master matrix is 1,16,673. Since on an average, the rate of recording the observations is one for every three seconds, i.e. about twenty observations per minute, the total duration of the recorded observation works out to be 97.23 hours. The master matrix includes combined matrices of 150 teachers. The average time for each teacher observed thus comes out to be thirty-nine minutes spreaded over two sessions.

Table 4.1

Master Matrix for 150 Teachers

	1	2	3	4	5	6	7	8	9	10
1	-	-	-	4	11	-	-	-	1	2
2	-	2	-	74	248	11	8	35	-	19
3	-	-	-	1	25	1	1	-	-	-
4	4	9	-	1353	115	145	107	4559	4	868
5	-	10	-	3010	89393	201	83	266	38	1577
6	1	3	-	172	232	47	44	269	-	91
7	-	1	-	158	131	83	194	129	-	55
8	9	367	-	1706	2581	290	218	2796	3	601
9	-	2	28	5	9	1	2	2	1	1
10	1	3	-	606	1833	80	94	595	2	967
TOTAL	15	397	28	7164	94578	859	751	8651	49	4181

Table 4.2

Percent Matrix for 150 Teachers

	1	2	3	4	5	6	7	8
1	-	-	-	.0008	.0094	-	-	-
2	-	.0034	-	.0634	.2125	.0094	.0068	.0299
3	-	-	-	.0008	.0214	.0008	.0008	-
4	.0034	.0077	-	1.1596	.0985	.1242	.0917	3.9075
5	-	.0085	-	2.5798	76.6184	.1722	.0711	.2279
6	.0008	.0025	-	.1474	.1986	.0402	.0377	.2305
7	-	.0008	-	.1354	.1122	.0711	.1662	.1105
8	.0077	.3145	-	1.5307	2.2121	.2485	.1868	2.3964
9	-	.0017	.0239	.0025	.0077	.0008	.0017	.0017
10	.0008	.0025	-	.5194	1.5710	.0685	.0805	.5099
TOTAL	.0128	.3402	.0239	6.1402	81.0624	.7362	.6456	7.4147

The master matrix gives important data to study the teacher-pupil interaction in various aspects. The overall teacher talk and pupil talk will become meaningful, when an attempt is made to assess their quality. This can be accomplished by working out a few ratios which provide information about teacher initiative, teacher response and pupil initiative. Flanders (1970) expects reciprocal relationships between teacher statements and pupil statements. That is, the more the teacher takes initiative, the more likely the pupils are to respond. The more a teacher responds, the more likely it is that pupils will make statements which show initiative. Table 4.3 summarises the various ratios of measures of classroom interaction.

Table 4.3

Interaction Ratios of 150 teachers

No.	Interaction Variables	Teachers
1	Indirect/direct (i/d)	.27
2	Indirect/Direct (I/D)	.12
3	Teacher Response Ratio (TRR)	21.46
4	Teacher Question Ratio (TQR)	7.04
5	Teacher/Student (T/S)	11.93
6	Percent Teacher Talk (PTT)	88.96
7	Percent Student Talk (PST)	7.46

The various measures of classroom interaction shown above are discussed below:

indirect/direct (i/d)

The i/d ratio is content free and reflects affective behaviour of teachers. It is the indicator of the social-emotional climate as generated by the teacher behaviour. The i/d of teachers under study is found to be .27.

Indirect/Direct (I/D)

It indicates the proportion of indirect behaviour to direct behaviour of teachers the emphasis on subject matter included. I/D for the present matrix is .13.

Teacher Response Ratio (TRR)

Teacher Response Ratio indicates the teacher's tendency to react to the ideas and dealing of the students. The ratio provides an index of the emotional climate in the classroom. TRR for the present matrix is 21.46.

Teacher Question Ratio (TQR)

This ratio as the nomenclature indicates points to the tendency of the teacher to ask questions during the more content oriented part of the classroom discussion. TQR in the present study is found to be 7.04.

In the classrooms under study, teachers were found to be talking 88.96 percent of the time, while students got the opportunity to talk 7.46 percent of the time. During the remaining 3.58 percent of the time either silence or confusion prevailed in the classroom. Obviously, the teacher talk 11.93

times more than the students during talking sessions. The percentages of teacher talk, the student talk and silence or confusion for the present study is 88.96, 7.46 and 3.58 respectively.

Section II

In this section the results of descriptive statistics applied to different demographic variables are given. The section also examines the ten hypotheses formulated earlier concerning the relationship between the demographical variables and communication pattern.

A. Demographical Variables

Table 4.4.

Sexwise Mean and SD values of Different Variables Describing the Sample

Variables	M and SD	Sex			
		Male	Range	Female	Range
Age	M	39.92	27-57	33.91	22-56
	SD	9.00		8.53	
Recency of training in years.	M	12.31	3-24	8.95	1-23
	SD	6.35		4.76	
Teaching experience in years.	M	15.10	3-35	8.49	1-25
	SD	8.32		5.08	
Teaching experience of the subject in years.	M	9.42	2-35	5.48	0-20
	SD	7.94		4.15	

Above Table reveals that the mean values for the age of male teachers and female teachers vary between 39.92 and 33.91 and standard deviation vary between 9.00 and 8.53. Age in years ranges between 27 years and 57 years amongst male teachers and

22 years and 56 years amongst female teachers. It indicates that the difference between the lowest and the highest age between the two groups (male and female) is not considerable. Regarding recency of training mean and standard deviation of the distribution amongst male and female teachers vary between 12.31 and 8.95, 6.35 and 4.76 respectively. The range in recency of training in years extends between 3 years to 24 years amongst male teachers and 1 year to 23 years amongst female teachers, which again does not indicate any difference as far as the groups are concerned. As the years of experience in teaching of both the groups are concerned mean and standard deviation range from 15.10 to 8.49 and 8.32 to 5.08. The range in years varies from 3 years to 35 years amongst male teachers and 1 year to 25 years amongst female teachers. The highest difference of years in teaching experience amongst the male members is 32 years and 24 years amongst the female members. Mean and SD values of the distribution, experience of teaching the subject vary between 9.42 and 5.48; 7.49 and 4.15. The range in years varies between 2 years to 35 years amongst the male teachers and 0 year to 20 years amongst female teachers. The difference between male and female teachers is of 15 years, but difference amongst male members is found to be of 33 years and amongst female members of 20 years.

B. The Relationship Between the Demographic Variables and Communication Pattern of Teachers.

The first hypothesis formulated was as under:

Hypothesis I

"There is no relationship between the age of teachers and their communication pattern."

Table 4.5 given below presents coefficients of correlation between the age and measures of communication pattern.

Table 4.5

Relation Between the Age of Teachers and Their Communication Pattern

Variables	Correlation coefficients	Significance
Age - i/d	- 0.02	N.S.
Age - I/D	0.03	N.S.
Age - TRR	0.00	N.S.
Age - TCR	0.00	N.S.

Quite obviously the Table 4.5 reveals that intensity of correlation in all the four measures of communication pattern is zero or very close to zero. Hence the hypothesis is tenable and cannot be rejected. It can be inferred from the results that there is no relationship between the age of teachers and their communication pattern and both the variables are independent of each other. The similar results have been reported by Santhanam (1972). The study reported that there was no evidence indicating any significant relationship between teachers' age and i/d and I/D criteria of teacher behaviour.

Hypothesis II

The hypothesis was:

"There is no relationship between the sex of teachers and their communication pattern."

Correlation coefficients between sex and measures of communication pattern have been presented in Table 4.6

Table 4.6

Relation Between Teachers' Sex and their Communication Pattern

Variables	Correlation coefficients	Significance
Sex - i/d	- 0.08	N.S.
Sex - I/D	- 0.12	N.S.
Sex - TRR	- 0.28	.01
Sex - TQR	0.08	N.S.

The coefficient of correlation between sex and TRR was - 0.28 which was found to be significant at .01 level. It shows that TRR [illegible] related to sex. Further more the negative sign of correlation coefficient indicates that TRR was low in case of female teachers whereas it was high in case of males and vice - versa. Correlation in rest of the three cases, that is i/d, I/D, TQR were found to be not significant, which indicates that these measures are independent of sex. Again signs of correlation coefficients indicate that though not significant, there was

negative relationship between sex and i/d, I/D respectively, whereas the same was positive in case of TQR. Santhanam (1972) has also reported similar results. The study has shown that male teachers responded more (62%) than female teachers (57%). Female teachers made use of questions more (21%) than male teachers(18%).

Hypothesis III

The hypothesis was formulated as under:

"There is no relationship between teachers' qualifications and measures of communication pattern."

Table 4.7 presents correlation coefficients between qualifications and measures of communication pattern.

Table 4.7.

Relation Between Teachers' Qualifications and Their Communication Pattern

Variables	Correlation coefficients	Significance
Qual - i/d	- 0.02	N.S.
Qual - I/D	0.07	N.S.
Qual - TRR	- 0.00	N.S.
Qual - TQR	0.19	0.05

Out of the four correlations only one i.e. between the qualifications of teachers and teachers' use of questions while giving the content (TQR) was found to be significant at .05 level. The sign of coefficient of correlation indicates that higher the qualification, the higher will be TQR. In case of the remaining

three measures of communication pattern the relationchips were found not to be significant. It can be inferred on the basis of these correlations that i/d, I/D and TRR are independent from qualifications. The qualification of teachers and I/D has positive correlation but it is very low

Hypothesis IV

The hypothesis formulated for the present study was:

"There is no relationship between the teachers' recency of training and their communication pattern."

Table given below shows coefficients of correlation between the teachers' recency of training and different measures of communication pattern.

Table 4.8

Relation Between the Teachers' Recency of Training and the Communication Pattern

Variables	Correlation coefficients	Significance
Recency of Tra - i/d	- 0.02	N.S.
Recency of Tra - I/D	0.10	N.S.
Recency of Tra - TRR	0.00	N.S.
Recency of Tra - TQR	0.06	N.S.

All the coefficients of correlation calculated between these two variables were found to be not significant, though the sign of coefficients of correlation shows that whatever may be

the intensity of correlation, it was positive except in the case of i/d. It can be inferred from these results that recency of training and communication pattern are independent of each other. Similar results have been reported by Santhanam (1972). It has revealed that the recency of training has shown no significant relationship with i/d and I/D, the measures of teacher's communication pattern.

Hypothesis V

The hypothesis was:

"There is no relationship between teachers' teaching experience and their communication pattern."

The data pertaining to the correlation coefficients between teaching experience and different measures of communication patterns have been shown in the Table 4.9.

Table 4.9

Relation Between the Teaching Experience of Teachers and Their Communication Pattern.

Variables	Correlation Coefficients	Significance
T. Exp. - i/d	0.02	N.S.
T. Exp. - I/D	0.09	N.S.
T. Exp. - TRR	0.15	N.S.
T. Exp. - TQR	- 0.01	N.S.

The Table 4.9 indicates that all the four coefficients were found to be statistically not significant. It reveals that there is no relationship between teaching experience and communication pattern. As far as direction of relationship is concerned, the Table reveals that though quite low, the relationship except in the case of TQR were found to be positive. Similar trend of results have been reported by Santhanam (1972).

Debnath (1971) has reported that teacher's age, experience, academic achievement and professional training were significantly related to teaching efficiency.

Ryans (1959) on the basis of age with the Survey Sample found no significant differences with respect to attitudes towards pupils, but with the Basic Analysis Sample, significant differences between groups showed that the older teachers scored substantially lower than others.

He has also reported that, there was no significant trend for teachers of different amount of experience to vary in mean score related to attitude toward pupils.

Teacher Communication Pattern and School Type

Hypothesis VI

The hypothesis formulated for the study was:

"The teachers from different types of schools dd not differ from each other with regards to their communication pattern in the classroom."

The total sample of the teachers for the study was divided into three groups on the basis of school type, i.e. boys' school, girls' school and mixed school. Table 4.10 presents t values in relation to teachers coming from different types of schools and their communication pattern.

The Table 4.10 reveals that the teachers coming from boys' schools, girls' schools, and mixed schools respectively, do not differ significantly from each other on all the four categories viz. i/d, I/D, TRR and TQR, except that the boys' schools teachers differ significantly from girls' schools teachers in TRR. Teachers belonging to boys' schools scored significantly high on TRR as compared to teachers from girls' schools and the difference was found to be significant at .05 level. It indicates that response pattern of teachers of boys' schools was different from those of girls' schools teachers. However in all the remaining comparisons no significant difference was observed. Looking at the Table the mean score of teacher from boys' schools though statistically not significant was high than the teachers' from girls' schools as far as the i/d was concerned.

Table 4.10

Table 4.10

Mean Difference of Teacher's Communication Pattern and Different Types of Schools

S.No.	Variable	Group	Mean	SD	df	t	Significance
1.	i/d	I	0.79	1.10	56	1.13	N.S.
		II	0.44	1.10			
		I	0.79	1.10	110	.03	N.S.
		III	0.78	2.37			
		II	0.44	1.10	128	.82	N.S.
		III	0.78	2.37			
2.	I/D	I	0.12	0.20	56	.38	N.S.
		II	0.10	0.09			
		I	0.12	0.20	110	.51	N.S.
		III	0.10	0.11			
		II	0.10	0.09	128	.11	N.S.
		III	0.10	0.11			
3.	TRR	I	28.49	26.83	56	2.32	0.05
		II	15.73	15.22			
		I	28.49	26.83	110	.92	N.S.
		III	22.64	25.67			
		II	15.73	15.22	128	1.55	N.S.
		III	22.64	25.67			
4.	TQR	I	6.82	4.79	56	.94	N.S.
		II	8.39	6.56			
		I	6.82	4.79	110	.24	N.S.
		III	7.17	6.28			
		II	8.39	6.56	128	.99	N.S.
		III	7.17	6.28			

I. Boys' schools, II. Girls' schools, III. Mixed schools.

Teachers' Qualification and their communication pattern

Hypothesis VII

The hypothesis being examined in this study was:

"The graduate teachers do not differ from post graduate teachers in their communication pattern in the classroom."

The subjects of the study were divided into two groups viz. graduates and post-graduates on the basis of their academic qualifications. These groups were compared in relation with different variables, namely demographical, perceptual and communication patterns. Discussions presented below gives details about the analysis and their results.

Graduate and post-graduate teachers were observed separately and compared in relation with communication pattern namely i/d, I/D, TRR and TQR.

Table 4.11

Mean Difference Between Teachers' Qualifications and Their Communication Pattern

S.No.	Variable	Group	Mean	SD	df	t	Significance
1.	i/d	I	.72	2.08	148	.29	N.S.
		II	.58	1.21			
2.	I/D	I	.10	.12	148	.91	N.S.
		II	.13	.11			
3.	TRR	I	21.69	24.36	148	.03	N.S.
		II	21.52	20.76			
4.	TQR	I	6.98	5.55	148	2.30	.05
		II	10.26	8.75			

I. Graduate, II. Post-graduate

Looking to the Table 4.11 given above, it can be said that graduate teachers did not differ significantly from post-graduate teachers when compared on communication patterns except in case of one of the four patterns that is teacher question ratio (TQR). The graduate teachers scored significantly high on TQR as compared to their counterparts and the difference was found to be significant at .05 level. The remaining three values of 't' ratio were found not to be significant. It indicates that the post-graduater teachers made use of questions more while giving the content in the classroom.

Professional Qualifications and Communication Pattern

Hypothesis VIII

The hypothesis formulated was:

"The teachers having degree in professional education do not differ from the teachers having certificate with regards to their communication pattern."

The total sample of the teachers under study was divided into two groups, on the basis of the professional qualifications they had. The two groups, one of those having certificate in teaching and the other having degree in teaching were formed. This section gives details about the comparisons made between these two groups.

Table 4.12

Table 4.12

Mean Difference Between the Professional Qualifications of Teachers and Their Communication Pattern

S.No.	Variable	Group	Mean	Sd	df	t	Significance
1.	i/d	I	.48	.62	146	.30	N.S.
		II	.71	.03			
2.	I/D	I	.10	.09	146	.21	N.S.
		II	.11	.12			
3.	TRR	I	24.53	22.88	146	.29	N.S.
		II	21.83	23.98			
4.	TQR	I	8.27	6.75	146	.34	N.S.
		II	7.46	6.18			

I. Certificate or Diploma, II. Degree

The above Table 4.12 gives data regarding comparisons made in relation with communication pattern. It is obvious from the 't' values given in the Table that the two groups did not differ significantly in case of all the four measures of communication patterns. Furthermore the results reveal that the two groups have used more or less the same pattern of communication while teaching in the classroom.

Subject at Graduation and Communication Pattern

Hypothesis IX

The hypothesis formulated for thestudy was:

"The teachers having history as a subject at graduation level do not differ from the teachers who did not had it in their graduation in connection with communication pattern in the classroom."

The two groups, onehaving history as a subject at graduation level and the other not having history at graduation level were compared with communication pattern.

Table 4.13 gives data regarding comparisons made in connection with communication patterns.

Table 4.13

Mean Difference Between Teachers' having Subject at Graduation and Their Communication Pattern

S.No.	Variables	Group	Mean	SD	df	t	Significance
1.	i/d	I	.57	.92	148	.36	N.S.
		II	.72	2.13			
2.	I/D	I	.09	.09	148	1.03	N.S.
		II	.11	.13			
3.	TRR	I	21.30	22.44	148	.08	N.S.
		II	21.75	24.19			
4.	TQR	I	6.98	6.72	148	.42	N.S.
		II	7.53	6.07			

I. With history subject., II. Without history subject.

It is very obvious from the Table 4.13 that the two groups when compared on four measures of communication pattern,

it was found that mean scores in all the cases did not differ significantly. In other words it can be said that the two groups used the similar communication pattern while teaching in the classroom.

Teaching Methods at Professional Education and Communication Pattern

Hypothesis X

The hypothesis formulated by the investigator for the study was:

"The teachers having history as teaching method do not differ from those who did not had history as the teaching method with regards to their communication pattern."

Table 4.14

Mean Difference Between Teaching Methods offered at Professional Education and the Communication Pattern

S.No.	Variables	Group	Means	SD	df	t	Significance
1.	i/d	I	.71	1.40	148	.08	N.S.
		II	.68	2.53			
2.	I/D	I	.12	.14	148	1.20	N.S.
		II	.09	.09			
3.	TRR	I	20.35	22.39	148	.77	N.S.
		II	23.35	25.61			
4.	TCR	I	8.13	6.80	148	1.55	N.S.
		II	6.56	5.18			

I. With history method, II. Without history method.

The above Table 4.14 reveals that teaching methods offered while under professional training did not differentiate the two groups significantly when compared in relation with the communication pattern used by them in the classroom. Mean differences of these two groups regarding all the four ratios viz. i/d, I/D, TRR and TQR were found to be not significant. Hence observation can be made that the methods offered at professional training does not have significant relationship with communication pattern in real classroom situations.

Section III

This section is concerned with (A) the descriptive statistics applied to teachers' perceptions variables and (B) discussion of the testing of the hypothesis eleven to fifteen concerning the relationship between the teachers' perceptions and their communication pattern.

A. Teachers' Perceptions

The scores on the perception scales of teachers were calculated and mean and standard deviation are given below:

Table 4.15

Mean and SD for 150 Teachers' Various Perceptions

Perceptions	Mean	SD	Maximum scores
Self	161.31	22.75	200
Instr. Roles	98.87	10.73	120
Teaching Prof.	70.49	9.49	90
Instr. Goals	74.11	10.39	90
Students	133.73	20.56	180

The Table 4.15 reveals that on all the perception scales teachers have scored more than 50%. The standard deviation indicates the homogeniety of the group, except that of on teachers' self perceptions and student perceptions.

B. The Relationship Between the Teachers' Communication Pattern and Their Perceptions

The hypotheses formulated earlier in this regard have been examined.

The hypothesis was formulated as under:

Hypothesis XI

"There is no significant relationship between the self perceptions on the part of the teachers and their communication patterns."

Correlation coefficients computed by using Pearsons' r are given in the Table 4.16. It reveals that self perception of teachers is not found to be significantly related to any of the four measures of teacher communication pattern. It shows that the hypothesis given above stands accepted.

Looking into the direction of correlations the Table reveals that self perception though very low, has negative relationship with i/d, I/D, and TQR., whereas it has got positive relationship with TRR.

It has been observed from the lay-out of data on perception scales that the teachers scored high and perceived themselves as confident, capable, progressive, studious, democratic etc. Non-significant results may be because of the fact that these perceptions might not have been actualized in practice.

Table 4.16

Relation Between Teacher's Self Perception and Measures of Teacher's Communication Pattern

Variables	Correlation coefficients	Significance
Self - i/d	- .03	N.S.
Self - I/D	- .03	N.S.
Self - TRR	.11	N.S.
Self - TQR	- .05	N.S.

Hypothesis XII

The hypothesis being examined in this study was as under:

"The perception of instructional roles of teachers do not have any relationship with the communication pattern."

Table 4.17 presents correlation coefficients between the teachers' instructional roles perceptions and the measures of communication pattern.

Table 4.17

Relation Between Teachers' Instructional Roles Perceptions and the Measures of Teachers' Communication Pattern

Variables	Correlation coefficients	Significance
Instr. role - i/d	.07	N.S.
Instr. roles - I/D	- .15	N.S.
Instr. roles - TRR	.08	N.S.
Instr. roles - TQR	.07	N.S.

It is obvious from the Table 4.17 that scores on instructional roles perceptions do not have any significant correlation with the scores on different measures of communication pattern. It indicates that there is no relationship between teachers' perceptions of their instructional roles and their communication pattern in the classroom. The only thing which is reflected from the signs of correlation coefficients that teachers' perception of instructional roles is positively related with communication pattern measures, except in case of teachers' Indirect/Direct influence with the emphasis being put on the subject matter.

The teachers' perception scores with regards to instructional roles are high. They perceive, helping the pupils to discuss, involving students actively in the learning process, providing experience of acceptance and success to pupils, producing situations that stimulate learning etc. as their instructional roles. Lack of actualization of these perceptions in the classroom might have caused low relationship observed here.

Hypothesis XIII

The hypothesis formulated by the investigator for the study was:

"The teachers' perceptions of teaching profession do not have any relationship with their communication pattern."

Table 4.18

Relation Between the Teachers' Perception of Teaching Profession and the Measures of Teachers' Communication Pattern

Variables	Correlation coefficients	Significance
Teach Prof - i/d	.06	N.S.
Teach Prof - I/D	- .18	N.S.
Teach Prof - TRR	- .08	N.S.
Teach Prof - TQR	- .04	N.S.

Looking into the Table 4.18 given above observations can be made that no significant correlation was found between perceptions scores of teachers regarding teaching profession and all the four measures of communication pattern. Thus, the results supports the hypothesis formulated above. However, the signs of correlation coefficients reveal that perceptions of teaching profession was though not significant found to be negatively related with I/D, TRR and TQR whereas the same was positively related with i/d.

Quraishi (1973) in his study has also reported that there is no relationship between teacher behaviour and the teacher's attitude towards teaching profession.

Hypothesis XIV

The hypothesis formulated for the study was:

"There is no relationship between teachers' perceptions of instructional goals and their communication pattern."

The data regarding correlation coefficients between the teachers' instructional goals and measures of communication pattern, have been shown in Table 4.19.

Table 4.19

Relation Between the Teachers' Instructional Goals Perception and the Measures of Teachers' Communication Pattern

Variables		Correlation coefficients	Significance
Instr. goals	- i/d	.05	N.S.
Instr. goals	- I/D	- .24	.05
Instr. goals	- TRR	.06	N.S.
Instr. goals	- TQR	- .05	N.S.

The Table 4.19 reveals that significant negative correlation was found between perception scores of teachers regarding their instructional goals and I/D. The correlation coefficient was found to be significant at .05 level. It further indicates that with the increase in the scores regarding instructional goals the direct influence on the part of teachers will increase whereas indirect influence will decrease and vice-versa.

Amidon and Flanders (1961) found that (1) teachers would be most indirect while goals were being clarified and new content material was being introduced, (2) they would be most direct after goals had been clarified, while work was in progress.

They pointed out that analysis of observation data and of student perceptions of the teacher comparing the clear and unclear

goals treatments showed no significant difference ($P < 0.05$) in teacher behaviour. Also, no significant interaction ($P < 0.05$) effects were found in the analysis of variance.

The instructional goal perception and teacher influence did not yield significant results ($P < 0.05$).

The correlation coefficient in case of remaining three measures of communication pattern i.e. i/d, TRR and TQR were found to be not significant. The signs of correlation reveal that there is positive relationship between instructional goals and indirect/direct influence of teachers in classroom and teachers' tendency to respond respectively, whereas it is negative with teachers' use of questions though the same is very very low.

Hypothesis XV

The hypothesis formulated was:

"The teachers' perceptions of their students do not have any relationship with their communication pattern."

Correlation coefficients given below in the Table 4.20 show that no significant relationship was found between teachers' perceptions scores regarding their students and measures of communication pattern. Thus the hypothesis gets support and stands.

Table 4.20

Table 4.20

Relation Between Teachers' Perception of Their Students and the Measures of Teachers' Communication Pattern

Variables	Correlation coefficients	Significance
Stud - i/d	.09	N.S.
Stud - I/D	- .13	N.S.
Stud - TRR	.05	N.S.
Stud - TQR	- .09	N.S.

Looking from the angle of sign of coefficients of correlation it can be said that teachers' perceptions of their students, though very weak, was positive with i/d, and TRR respectively whereas the same was negative with I/D and TQR.

It is observed that the teachers score high on their perceptions of the students, even though the Table did not reveal any significant relations between the variables.

The similar results have been reported by Qiraishi(1973). This study revealed that there was no significant relationship between teacher behaviour and their attitudes towards pupils.

Section IV

Prediction of Teachers' Communication Pattern

In this section discussion of the results of multiple regression analysis and the multiple correlation (R) are given. This analysis has resulted in developing multiple regression equations to predict relationship between the variables of teacher behaviour and their perceptions. The technique of multiple regression analysis has helped to study the percent of common variance shared between the variables of teacher behaviour and the perceptions of teachers.

The variables included in the regression analysis were selected to include in the regression study mainly on the basis of their correlations with the criterion variables. The predictor and criterion variables are as follows:

Predictor variables — self perception (X_1), instructional roles perception (X_2), teaching profession perception (X_3), instructional goals perception (X_4) and student perception (X_5).

Criterion variables - i/d (Y_1), I/D (Y_2), TRR (Y_3), TOR (Y_4), T/S (Y_6), TT (Y_7) and ST (Y_8).

The multiple correlation coefficients (R) happen to be significant in case of only four criterion variables namely I/D, T/S, TT and ST. The results are given below in Tables 4.21 to 4.24.

Table 4.21

Multiple Correlation and Regression Equation
Between I/D and the Perception Variables

Multiple Correlation $R_2(4) = .24$ df = 1/148 Significant at .01 level

Regression Equation $Y_2 = .315 - .0027\ X_4$

Y_2 = I/D, and X_4 = instructional goals perception

The Table 4.21 indicates the multiple correlation between the criterion variable I/D (Y_2) and the predictor variable of instructional goals perception (X_4). The multiple correlation (in this case it may be called even as simple correlation) between I/D (Y_2) and instructional goals perception (X_4) happens to be .24. This value is significant at .01 level. The common variance shared between I/D (Y_2) and instructional goals perception (X_4) is about 6 percent. The regression equation is established between criterion variable I/D and predictor variable instructional goals perception. The beta value of — .0027 for instructional goals perception (X_4) indicates that I/D decreases to the extent of — .0027 per unit increase in instructional goals perception (X_4). The other four predictor variables, namely, self perception, instructional roles perception, teaching profession perception and student perception are not significantly contributing to the variance in I/D.

The following Table 4.22 shows the multiple correlation and regression equation between the criterion variable of teacher talk and the predictor variables of perception.

Table 4.22

Multiple Correlation and Regression Equation Between Teacher Talk (TT) and Perception Variables

Multiple correlation R_7 (1,3) = .25	df 2/147 Significant at .05 level
Regression Equation $Y_7 = 89.42 - .0924\ X_1 + .2041\ X_3$	
Y_7 = Teacher Talk, X_1 = Self perception, X_3 = Teaching Profession perception	

The multiple correlation between the criterion variable teacher talk (Y_7) and the predictor variables of self perception (X_1) and teaching profession perception (X_3) is shown in the Table 4.22. The multiple correlation between teacher talk (Y_7) and self perception (X_1) and teaching profession perception (X_3) is .25. It is significant at .05 level. The regression equation is formed between criterion variable teacher talk (Y_7) and predictor variables self perception (X_1) and teaching profession perception (X_3). The beta value of — .0924 for self perception (X_1) shows that teacher talk decreases to the extent of — .0924 with per unit increase in the self perception. Teacher talk (Y_7) increases to the extent of .2041 along with corresponding increase of every unit in the variable of perception of teaching profession (X_3). The other three predictor variables, namely, instructional roles, instructional goals and student perception are not contributing significantly to the variance in teacher talk.

Table 4.23

Multiple Correlation and Regression Equation Between Teacher Student Ratio (T/S) and the Perception Variables

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Multiple Correlation $R_6(4) = .22$ df = 2/147 Significant at .05 level

Regression Equation $Y_6 = 75.53 - .7129\ X_1 + 1.028\ X_3$

Y_6 = T/S, X_1 = Self Perception, X_3 = Teaching profession perception

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The above table 4.23 indicates the multiple correlation between the criterion variable T/S (Y_6) and two predictor variables related to perception. The multiple correlation between T/S (Y_6) and self perception (X_1) and teaching profession perception (X_3) happens to be .22 which is significant at .05 level. The common variance shared between T/S, self perception and teaching profession perception is only 5 percent. The regression equation is established between the criterion veriable of T/S and predictor variables of self perception and teaching profession perception. The beta value of — .7129 for self perception (X_1) indicates that T/S decreases to the extent of — .7129 per unit increase in self perception. T/S (Y_6) increases to the extent of 1.028 along with corresponding increase of every unit in teaching profession perception (X_3). The other three predictor variables, namely, instructional roles perception, instructional goals perception and student perception are not significantly contributing to the variance in T/S.

Table 4.24

Multiple Correlation and Regression Equation Between Student Talk (ST) and Perception Variables

Multiple Correlation R_8 (1,3) = .24 df 2/147 Significant at .05 level
Regression Equation Y_8 =6.30 — .0745 X_1 — .1541 X_3
Y_8 = Student talk X_1 = self perception, X_3 = Teaching Profession Perception

The Table 4.24 above indicates the multiple correlation between the criterion variable ST (Y_8) and predictor variables self perception (X_1) and teaching profession perception (X_3). The multiple correlation happens to be .24 which is significant at .05 level. The common variance shared between student talk, self perception and teaching profession perception is only 5 percent. The regression equation is established between criterion variable ST (Y_8) and predictor variables self perception (X_1) and teaching profession perception (X_3). The beta value of — .0745 for self perception (X_1) indicated that the ST (Y_8) decreases to the extent of —.0745 per unit increase in self perception (X_1). ST (Y_8) decreases to the extent of — .1541 along with the corresponding per unit increase in teaching profession perception (X_3). The other three predictor variables, namely, instructional roles perception, instructional goals perception and student perception do not contribute significantly to the variance in ST (Y_8).

While summarizing it can be mentioned that the predictor variables of instructional goals perception, self perceptions and teaching profession perceptions have made significant contribution towards the variance of the four criterion variables of I/D, TT, T/S and ST.

Section V

Discussion of Results

The present study indicates that in the classes where history is taught, about 89 percent of the chances are that the teacher might be talking. This means that the teacher is occupying the stage, as it is he, who rules the classroom. Lecturing is the dominant pattern. Seven percent of the time is spent in questioning. The usual pattern of asking question is explanation followed by questions, followed by pupils' response, again followed by explanation. Similar results have been reported by Buch (1975).

The present study provides a normative data of teachers' communication pattern in the classroom for the metropolitan city of Greater Bombay. The data for the study was obtained in 1973-74 During 1970-71, Buch and others (1975) had undertaken a normative study of teachers' behaviour involving teachers drawn from different parts of India. Earlier Flanders (1970) in his study reported the norms for American teachers. It will be interesting to compare the results (wherever available) obtained from those three studies.

Table 4.25

Table 4.25

Interaction Ratios in the Three Studies

No.	Interaction Variables		Present study	Study by Buch	Study by Flanders
1	indirect/direct	(i/d)	.27	1.24	Not available
2	Indirect/Direct	(I/D)	.12	.21	Not available
3	Teacher Response Ratio	(TRR)	21.46	55.42	42
4	Teacher Question Ratio	(TQR)	7.04	16.32	26
5	Teacher/Student	(T/S)	11.93	3.51	Not available
6	Teacher Talk	(TT)	88.96	68	68
7	Student Talk	(ST)	7.46	19	20

The Table 4.25 above presents the various interaction ratios obtained in the three studies. The i/d and I/D ratios in the present study are lower than that of the ratios found in the study by Buch (1975). TRR shows that the responsiveness of the teachers under study is below than that found in the other two studies. It is higher in the case of study of Buch (1975). TQR in the present study reveals that the teachers' use of questions while teaching in the classroom is lower than the one that was found in the reports of Buch (1975) and Flanders (1970). It can be said from the ratios of T/S, TT and ST that the classrooms under study are marked by the dominant verbal behaviour of teacher talk.

Robert (1971) has also reported that the teachers ask questions which require facts, not ideas. They provide stimulus -- the question to which they require a response -- the answer, no matter how frequently this connection is made.

Teaching in a classroom is a very complex process. To be meaningful teaching has to be directed to the attainment of certain objectives and goals. Ideally, goals are simply ends which members wish to attain; individual motivation to reach these ends depends on personal needs. The classroom theoretically exists to fulfill the varied needs of different students. Unfortunately, in urban classes, student needs often remain unmet because classroom goals are unrelated to individual motivations.

Theoretically, social studies is a subject that can easily assimilate relevant social facts from the children's lives despite a formal curriculum which may provide little of direct concern to them. This should interest the students. However, this interest is stiff and formal because it requires children to answer questions in the usual stiff and formal format.

Little student involvement is demanded in the social studies classes and when it is expected, it is not given. In no case, are the students allowed to help set goals or evaluate their progress towards them. Active participation is seldom required and initiative is often penalised. The nature of information given and sought is primarily factual, not conceptual. None of the drama of history or the value of current controversies is emphasised. The research study by

Roberts (1971) reveals the same. The study has also revealed that teachers' age, recency of training and experience in teaching are also not related with communication pattern, on the part of the teachers as used in real classroom situation. Ryans (1959), Debnath (1971) and Santhanam (1972) have reported similar results. Besides this, the present study has revealed that teacher communication pattern does not have any significant relationship with the variables like teachers' perceptions towards self, teachers' instructional roles perceptions, teachers' perceptions for teaching profession and student perceptions. Furthermore these results do indicate that the communication pattern of teachers is independent of the above variables.

The sex of the teachers has been found to be significantly related to TRR — one of the four measures of teachers' communication pattern. With the remaining three i.e. i/d, I/D and TQR no significant relationship has been found. The relationship between sex and TRR is negative, which indicates that male teachers have been found high on TRR as compared to female teachers. The results of the study of Santhanam (1972) support the above findings. These findings show that the male teachers respond more than the female teachers. The study shows that sex and TQR have no significant relationship. The same is reported by Santhanam (1972). From the analysis given in this chapter the qualifications of teachers have been found to be significantly related with the TQR. The nature of correlation is positive, which indicates that higher the qualification higher will be TQR, i.e. higher would be question

putting competency on the part of the teachers. It may be assumed that the post-graduate teachers have deep knowledge of the subject matter which facilitates in putting questions to the students while orienting the subject matter in the classroom. The teachers' qualifications have not been found related to remaining three measures of teachers' communication pattern i.e. i/d, I/D and TRR, which further indicates that these measures are independent of qualifications. When the groups were compared in relation to different measures of communication pattern, teachers from boys' schools found to differ significantly from teachers from girls' schools in case of TRR. It can be said that the set up of the school influenced the communication pattern of the teachers. It is explained by Mitra (1972) that a teacher should have a cognitive map in his head in which is plotted the subject matter knowledge under consideration. The cognitive map is widely shared by teachers and has more or less clearcut area-wise and stepwise divisions which the learner has to pass to reach mastery. The teacher is supposed to be clear about the end-result and he should consider only those specimens of pupil behaviour which are relevant. The strategy to be followed by the teacher in moving from the present locus of the pupil on the cognitive map to the end point is thus determined by the subject matter and the teacher's knowledge of the subject matter. As far as the relationship between qualifications of teachers and TQR is concerned, the explanation given by Mitra supports the result of the study.

The post-graduate teachers differed significantly from graduate teachers as regards their perception of teaching profession. The intensity of perception was strong in the case of the first as compared to the other group. It is perhaps because the post-graduate teachers have more control over the subject matter than the graduate teachers. Hence, this may change their attitude towards the profession. The post-graduate teachers and graduate teachers were not found to differ in relation to all the four measures of teachers' communication pattern.

Teachers who offered history as a method of teaching at professional training were compared with those who had not offered the same. The results revealed that these groups did not differ significantly on measures of teachers' communication pattern.

The two groups were formed on thebasis of history as a subject offered at graduate level and those who did not offer at graduate level. When these groups were compared in connection with measures of the teachers' communication pattern, it was observed that there was no significant difference between these two groups on this dimension which meant that the teachers having history as a subject did not have significant relationship with the communication pattern of teachers teaching history. This result indicates that the communication pattern of teachers teaching history is independent of the subject offered at any level. It can be said that hard and fast rules to study a particular teaching method for teaching a particular subject may not be given much importance.

The teachers' perceptions towards their instructional goals has been found to be significantly related with I/D - one of the four measures of teachers' communication pattern, though it has been found to have no relation with the remaining three measures of teachers' communication patterns viz. i/d, TRR and TQR. The significant relationship reported here is of negative character which further indicates that higher the intensity of perception regarding instructional goals, lower will be I/D, i.e. intensity of recognition, encouragement and response to the needs of the students and educative culture of the classroom. It can be concluded that the classroom climate is teacher-centred. We do not have many studies showing relationship between teachers' various perceptions and their communication pattern. Amidon and Flanders (1961) have reported that the instructional goal perception and teacher influence did not yield any significant results. Quraishi (1973) has reported that there is no relationship between teacher's attitude towards teaching profession and teacher behaviour. Silberman (1969) in his study "Teachers' attitudes and actions toward their students" has reported that the teacher's expression of attitudes is not completely unbridled. Constraints on attitude expression are partially effective in the case of attachment and rejection. Attitudes of concern and indifference, however, create little conflict in teachers. Teachers, nonetheless, affect the lives of children whether they act directly on the attitudes they hold or not. The teacher's attempts to counteract her attitude toward a student has just as significant an impact as her efforts to express it openly. Students in the same classroom do not share

a common experience simply because the teacher does not feel the same way about them.

A teacher's feeling about a particular student is necessarily shaped by how the teacher perceives that student. Whether a teacher's perceptions will be positive or negative depends, in part, on how the student affects the teacher's work. If a student actively supports the teacher's efforts, his teacher most likely views him in a positive light. Conversely, if a student opposes the teacher's objectives, his teacher will be inclined to ascribe negative qualities to him.

The teachers have scored more than 50 percent on various perception scales of teachers. This means that it should have reflected in their communication pattern in their classroom. Absence of actualization of the perceptions in the classroom might have caused low-relationship or no relationship. As the relationship is not shown, it may be said that perceptions are independent of the communication pattern.

The predictor variables of instructional goals perception, self perception and teaching profession perception have made significant contribution to the variance of the criterion variables of I/D, TT, T/S and ST. F -- ratio in case of teachers' instructional goals perception and TT, T/S and ST is found to be significant. It reveals that the perception regarding instructional goals, self and teaching profession contribute significantly to the teacher communication pattern in the classroom. These variables can be used as significant predictor of teacher communication pattern.