CHAPTER II

THEORETICAL FOUNDATIONS AND PREVIOUS RESEARCHES

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II

THEORETICAL FOUNDATIONS AND PREVIOUS RESEARCHES

1. Foundations of Classroom Climate

Classrooms occupy a pivitol position in moulding the lives of school pupils. If one estimates the number of hours that pupils spend in classrooms, the influence teachers have on pupils in classrooms, the pupils classroom trust, classroom dependency and classroom initiative, one would find the tremendous influence the classroom has on pupils. In fact, the pupils' 'psyche' is shaped in classrooms. But all the classrooms are not conducive to learning. The climate generated in the classrooms decide the activities that take place in them.

(a) What is Classroom Climate ?

The concept of climate is relatively new. It is a concept which describes the role of participants interacting within the sociological and psychological framework of an institution. Any new observer coming into a group for the first time, is able to sense a feeling about the group which is called an 'atmosphere' or a 'climate'. Hence, the term climate refers to the general

feeling - tone of persons in a group towards each other and some of the attitudes they reveal in their behaviour.

Classroom climate may be said to be a compound and not a mixture, where various elements meet, which cannot be separated. Classroom climate may be pictured as a personality sketch of a classroom. Just as personality describes an individual, so the climate defines the essence of a classroom. It is said that there are 3000 to 5000 traits of personality. So too there are several components which create climate in a class. Climate being the result of interaction between diverse personalities, is a much more complex phenomenon.

The Editor Carter V. Good in 'Dictionary of Education' says that:

> 'The learning environment in a classroom includes not only physical environment but also emotional tone. All environmental conditions or qualities that tend to produce a given type of feeling or emotional response, especially the teacher-pupil and pupil and pupil relationships as environmental influences during the teaching learning process.'

M.Mishra (1971) gives the definition of classroom climate as :

> 'The term which refers to generalized attitudes towards the teacher and the class that the pupils share in common despite individual differences. The development of those attitudes is an outgrowth of classroom social interaction. As a result of participating in classroom

activities pupils soon develop common attitudes about how they like their class, the kind of person the teacher is, and how he will act in certain situations. These common attitudes colour all aspects of classroom behaviour, creating a social behaviour pattern or climate that appear to be fairly stable once established. Thus, 'climate' is as merely an abbreviated reference to those qualities that consistently predominate in most teacher-pupil contacts and contacts among the pupils in the presence or absence of the teacher.'

According to Flanders (1970),

'The phrase 'classroom Climate' refers to the generalized attitudes towards the teacher and the class that the pupils share in common inspite of individual differences. These attitudes emerge out of and thus owe their origin to, the classroom social interaction.Through participation in classroom activities, pupils soon develop some common expectations regarding the teacher behaviour and their collective attitude towards their own class. These expectations influence the social atmosphere or climate that appears to be distinctly existent and fairly stable, once established. In this way, the phrase 'classroom-climate' is merely a short hand reference to those qualities that consistantly predominate in most teacher-pupil contacts and in contacts among the pupils in the presence or absence of the teacher.

To Herbert Thelen (1974),

'Each classroom has its distinctive culture and way of life.' This 'way of Life' cannot be directly observed but is inferred from other things that can be observed. The obvious 'other thing' is 'What goes on' in the classrooms and the obvious people from whom to get observations are the ones who make these things happen to the students and the teachers. When a group of people assemble together for an hour or more a day in the same place and for the same general

> purposes, they will come to know what to expect from other, what sort of behaviour will be respected, What sort of pronouncements will be taken as authoritative. In short, the group develops its 'way of life' and thus way of life has basically all the dimensions of the way of life in the family, business or club. But each of these groups has its unique composition and environment.

(b) Components of Classroom Climate :

The classroom climate consists of three components namely, (i) Authenticity (ii) Legitimacy and (iii) Productivity.

(i) Authenticity : An activity has authenticity for a child if : (i) he finds it worthwhile or meaningful, (ii) he can participate in it intelligently and with understanding, (iii) it enables him to relate his past experiences with the present ones, (iv) It makes the child feel alive, challanged and completely involved, (v) Senses the activity as exciting and dramatic.

In activities that are authentic, the child feels that he fully functions, that he has thoughts, feelings, moods, and fantasies. If he is so disposed, that he can examine his experience to find out about himself, others, the nature of ideas and of the world. He admits others as partners and enrichers and not as threats or constrainers. He feels free to make his own decisions and to accept the consequences thereof. Theoretically, the acid test of authenticity would be the

penetration of experience to the 'inner core', to the 'deepest' levels meaning' but in practice classrooms are seldom intended to penetrate to these 'deep' levels.

An activity is not authentic for the child if : (i) he feels that it is artificial, (ii) he finds that the actual purposes are sensed to be different from the purpose it really serves, (iii) he does not know what to make of it, (iv) his past experiences of living can have no bearing on the present situation.

On the other hand, an authentic activity is not necessarily comfortable, easy or familiar.

(ii) Legitimacy : Legitimate activities are : (i) essential and useful for children because through them the children get the training to solve problems, (ii) purposeful and concerned with the academic subjects taught in the class, (iii) necessary for the future career of children and provide them models for the equipment of future.

Legitimate activities animate the process of socialization which is one of the main aims of education.

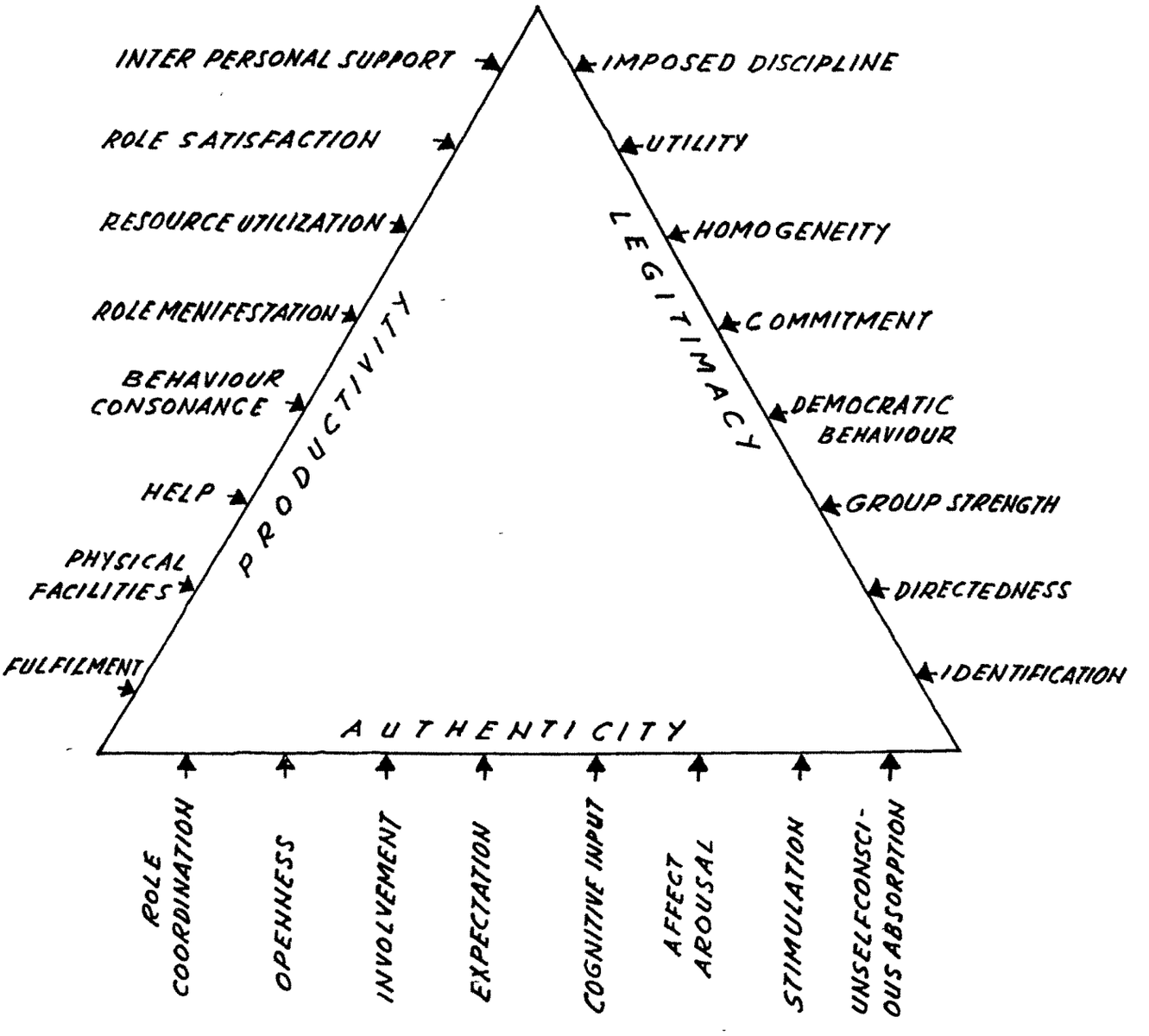
(iii) Productivity : An activity is productive if : (i) it is effective for some purpose or if the given purposes are served by these activities, (ii) it makes the child conscious of its goals and it learns how to achieve them, (iii) it leads the child to self-guidance and self-learning, (iv) it unfolds and develops the potentiality of the child.

All classrooms have some component of productivity. Though some components of authenticity are muted in order to maintain productivity and some legitimating authorities may be suspended in order to enhance authenticity, it is productivity that justifies the existence and functioning of any classroom as a group.

Productivity can be regarded as a characteristic of individual students and/or of a classroom as a group. A classroom is a 'productive group' when it is project or action-oriented. Its efforts would be directed to making things, changing environmental conditions and solving problems. It would act purposively and would consciously obtain feedback, assess the situation and make decisions about how to organise its next effort. It would not only produce, it would learn or develop a methodology of production.

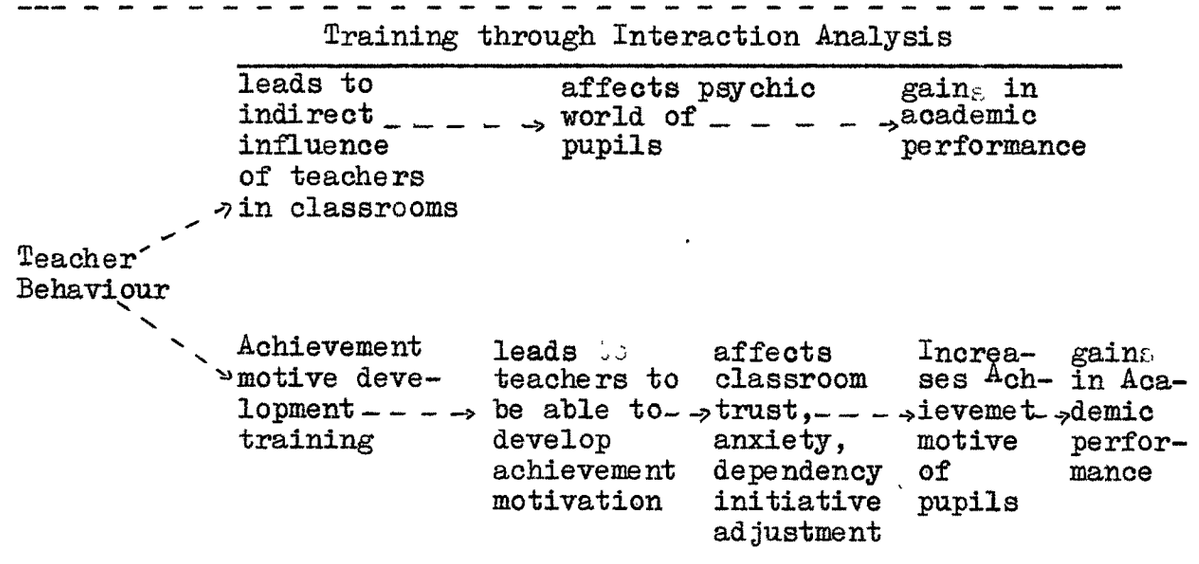
Every classroom has components of ALP constructs. The diagram explaining the components of classroom climate is given on the next page.

CLASSROOM CLIMATE COMPONENTS



(c) What do Studies in Teacher Behaviour in Creating Classroom Climate Convey ?

Can classroom climate be effectively developed ? How can Teacher Behaviour be changed ? Does the training in the teacher behaviour through interaction analysis help to change their behaviour ? If the teachers change their behaviour from direct to indirect, what will be the effects on the psychic world (classroom trust, classroom initiative, dependency, social relations, expectations) will be ? As a result, what will be their gain in Academic Achievement ? The conceptual model will be like this :



The studies cited here provides an answer to this question. The answers are positive and leading to immense possibilities

of improvement in Teacher Behaviour, classroom climate, pupil motivation and there by pupil performance.

How training through Teacher Interaction Analysis Changes Teacher Behaviour ? - and How Changed Teacher Behaviour Affects Pupils' Academic Achievement ?

Various studies in teacher behaviour give us evidence that through indirect teacher influence, the classroom climate can be improved. As an evidence the following studies can be cited.

(1) Pangotra (1972) studied the effects of feedback from different sources on the classroom behaviour of student teachers using the technique of interaction analysis. He gave six different treatments to six different groups of student teachers and they are;

A_1 = Treatment group that made a self appraisal of teaching behaviour and had self directed feed back for continual self improvement.

A_2 = Treatment group that received feed back from the peers.

A_3 = Treatment group that got feed back from the college supervisor.

A_4 = Treatment group that got feed back from the external observer.

A_5 = A control group that was taught interaction process analysis.

A_6 = A control group that did not learn interaction process analysis, but learnt traditional learning theory.

The study revealed that the performance of the treatment groups that received feed back from the college supervisor and the external observer is statistically different from the performance of the control group that was not taught interaction analysis but taught learning theory (Total gain A_3 = 80.322 ; A_6 = 79.303).

The student teachers who made self appraisal of their individual behaviour and those who were observed by an external observer who presented objective information to the members of the group regarding their teaching behaviour and discussed steps for further improvement, attended more to the pupil ideas and integrated them into the class discussion through their own active response statements is different as compared to the control group of student teachers who were just trained in the use of interaction analysis (Total gain A_1 = 83.636 ; A_4 = 83.329 ; A_6 = 80.518).

The study establishes a fact that self appraisal of the trainees help them to improve better than appraisal by

an external observer.

Sudesh Sharma (1973) studied the relationship between patterns of teacher classroom behaviour and pupils' attainment in terms of instructional objectives viz. knowledge, comprehension and application. She studied the relative effectiveness of the four different patterns of teacher classroom behaviour namely (i) narration, (ii) open questions, (iii) narrow questions, and (iv) narrow questions with feed back upon the pupils attainment.

The study revealed that the treatment of pattern III i.e. narrow questions, increased the pupils total attainment (mean score of pattern III 21.405 ; pattern I 17.454 ; pattern II 17.887 ; and pattern IV 17.752). It was also found that pattern III was more effective in the case of comprehension and knowledge. The mean value after treatment of pattern III was significantly higher than those of pattern I (4.706), pattern II (4.735) and pattern IV (4.795).

Jangira (1972) trained a group of student teachers based on FIACS and compared the classroom interaction patterns of this group of student teachers with those of another group of student teachers having undergone

conventional programme of student teaching.

The study revealed that the student teachers with classroom behaviour training scored significantly higher on classroom interaction variables PPT (Pre mean 10.15, Post mean 25.58). TRR (Pre mean 56.38, Post mean 74.52), TQR (Pre mean 10.05, Post mean 18.56), TRR 89 (Pre mean 19.32, Post mean 31.48), PIR (Pre mean 15.23, Post mean 23.82), and MFR (Pre mean 5.66, Post mean 8.89) and significantly lower on PTT (Pre mean 82.71, Post mean 69.90), and PSC (Pre mean 6.38, Post mean 3.92), CCR (Pre mean 78.83, Post mean 65.98) and SSR (Pre mean 82.19 and Post mean 70.84) than student teachers with conventional programme of student teaching. This study suggests that proper teacher training through teacher behaviour analysis system, leads to a change in teacher behaviour.

Lulla (1973) trained some teachers of Class VII from the Municipal Corporation schools of Baroda city, in Flanders' Interaction Analysis category system for indirect behaviour and studied the effect of the training on pupils' achievement.

The pupils of the teachers who were trained in using indirect behaviour scored higher in their achievement (Mean scores varied between 13.92 and 19.21 and P = 6.64). The study also revealed that the indirect teacher behaviour may raise the interaction potential of the classroom climate resulting in free communication and open interaction between the teacher and the pupils.

Singh (1973) trained 20 student teachers of Tilakdhari College, Jaunpur in Flanders' Interaction Analysis category system and in micro teaching. As a result of this training they modified their behaviour in the direction of using more and more acts of praising and encouraging the pupils, accepting, clarifying and building up ideas of their pupils, providing opportunities for flexible inter-communication and pupil initiation.

As a result of the training the indirect behaviour of the teachers rose (Pre I/D mean 1.167, Post I/D mean 8.169). This shows that FIACS given to the teachers did help them to modify their verbal classroom behaviour.

H.B.Desai (1976), Raijiwalla (1975), and Pavanasam (1975) trained teachers in indirect behaviour and studied its effect on the achievement of the pupils in different

subjects.

As a result of the training, the I/D ratio increased (H.B.Desai's study - I/D ratio increased from 0.263 to 3.795, Raijiwalla's study - I/D ratio increased from 0.263 to 3.382, Pavanasam's study - I/D ratio increased from 0.11 to 0.44). The indirect influence affected the academic performance significantly (H.B.Desai - increase in mother tongue - Pre mean 22.125, Post mean - 56.950 ; Raijiwalla - increase in Science - Pre mean 18.585, Post mean 53.060 ; Pavanasam study - English - Pre mean 48.1, Post mean 56.3, Science - Pre mean 51.8, Post mean 63.1, Social Studies - Pre mean 48.9, Post mean 67.5). All these studies show that the change in teacher verbal behaviour will ultimately influence change for the better in pupils' performance.

Roka (1975) studied the verbal teaching behaviour patterns and students' achievement interms of instructional objectives. He trained nine teachers selected from five Hindi medium boys higher secondary schools at Ajmer in FIACS and studied the effects of indirect behaviour on VII grade pupils' performance in General Science. He gave additional training to 2 groups with a view to bring about more of systematic variations in general indirectedness, types of feedback and questioning behaviour.

The study revealed that there is no significant difference in the main achievement scores at knowledge, understanding and application levels between E_1 and C groups of students. There is no significant difference at knowledge level but there is a significant difference at understanding and application level in the mean achievement scores between E_1 and E_2 groups (understanding level 'F' value was 15.89, significant at 0.01 level ; application level 'F' value was 20.26, significant at 0.01 level). The study showed that teachers who provided confirmatory feed back and encouraging and praising students contributed to significant achievement at understanding and application level of the students. The study also revealed that the teachers employed indirect classroom behaviour such as praising, encouraging, feed back, asking questions and less of directions or commands and accepted pupils ideas and these integrated into the classroom interaction.

Major Observations :

These studies reveal the following findings :

1. Self appraisal of trainees help them to improve their teaching.
2. Narrow questions help the pupils in their attainments in comprehension and knowledge, as compared to narration technique and open question.

3. Proper training through interaction analysis system helps the trainees to improve their classroom interaction.
4. The pupils of the teachers who used indirect behaviour gained in their academic performance.
5. All the studies reveal again and again that interaction analysis help the trainees to improve their classroom interaction from direct to more indirect.
6. The studies of Raijiwala, Pavanasam and H.B.Desai reveal that as a result of indirect behaviour of teachers, integrative climate in classroom is produced and the pupils psychic world is affected positively. Finally, the pupils gain in their achievement.

(d) What do studies on Pupils' Motivation Development Convey ?

Various studies in motivation development give an evidence that through indirect teacher influence and through psychological treatment pupils motivation can be developed. As an evidence the following studies can be cited.

1. Developing concerns through incentive treatment (Desai's study 1969).
2. Developing motivation through Mehta's curriculum (Desai's Baroda experiment, 1970).
3. Developing motivation through new curriculum inputs (Desai's curriculum, 1970).

4. Developing concerns and sensitivity in pupils of convent schools through teacher orientation (Desai's JMEA experiment, 1976).
5. Psychological education in primary school children (Choksi's Study, 1976).
6. Developing motivation in teacher trainees (S.Laxmi, 1976).
7. Developing pupils mental health through training teachers for indirect influence (Raijiwala, Pavanasam and H.B.Desai).

(1) Desai conducted an experiment in Kheda district in 1969 and trained teachers in incentive treatment. He developed a model of various verbal and non-verbal incentives to be provided to the pupils for better learning. The incentives included (a) feed back (b) grouping (c) increasing expectation (d) competition and (e) counselling.

As a result of this treatment the pupils' expectation went up as a result they gained in performance. The pupils' performance increased and the teachers indirect influence also increased. The experiment suggests to the investigator that if teachers are trained in indirect influence through FIACS, then teachers manifest indirect in classroom which leads to greater pupil participation, increase in their expectancy and greater score in their academic performance.

(2) An experiment on 'Achievement motivation development in high school pupils of Baroda, using Mehta's curriculum was conducted by Desai (1970-71). He trained the teachers in n-Achievement development of pupils by using more indirect communication.

There were significant behaviour changes in pupils as a result of the training given to the teachers. There was a gain in the mean n-Achievement score (14.8). The students began to construct Achievement related imageries instead of unrelated and task related imageries. The increase of components of achievement motive changed the overt behaviour of pupils and this led to an increase in the scores of their academic performance and a change in their classroom behaviour interms of expectations, goal setting, aspiration etc.

(3) Desai (1971) conducted an experiment on 'Developing motivation through new curriculum inputs' in high school pupils of Baroda. He trained the teachers in achievement motivation programme and studied the gains in various components of achievement motive and the changes in pupils' behaviour.

The treatment affected the achievement motivation level of the pupils. There was an increase in the scores in their academic performance and there was a change in their classroom behaviour interms of expectations, goal setting and aspirations.

(4) Desai (1975-77) conducted an experiment on Developing Achievement Concerns and Sensitivity in pupils of Convent schools through teacher orientation (Desai's JMEA experiment, 1976). He tried out an 'input' model for developing sensitivity and achievement in pupils and studied its effect on certain variables of classroom climate, namely, adjustment, classroom trust, initiative, activity level, anxiety and motivation of the pupils and on their academic performance.

As a result of the training, there was a change in the classroom climate. There was not much difference in the pre-post classroom trust and in the pre-post scores of test anxiety but there was a difference in the pre-post dependency scores.

(5) Choksi (1975) conducted an experiment on 'Psychological education in primary school children of Baroda' (Choksi's study, 1976). She prepared a psychological education input model and studied its

effectiveness on academic performance as well as on certain psychological traits like motivation, adjustment, classroom trust, initiative level and anxiety.

The psychological education inputs increased the performance of the pupils (Control group mean 194.01, experimental group mean 237.87). There was a significant positive effect on certain psychological traits like n-Achievement (Pre mean 1.23, post mean 10.68), adjustment (pre mean 13.23, post mean 21.70), initiative level (Pre mean 8.30, post mean 11.93), classroom trust (pre mean 21.65, post mean 23.60), and test anxiety level lowered (pre mean 10.30, post mean 7.90). After the treatment, the pupils showed high n-Achievement level, better adjustment, moderate anxiety level and more initiative than before the treatment. The treatment also lessened the discrepancy in the Goal supposition of pupils and their supposition came to become reality based. The pupils supposition about themselves came to become reality based. The pupils supposition about themselves went high. There was also a change on pupils' perception and behaviour.

(6) S.Laxmi (1976) conducted an experiment on 'Developing motivation in teacher trainees' (Laxmi, 1976) and studied its effect on their performance. She developed achievement motivation among teacher trainees and also on their self perception and anxiety. She also studied the behavioural changes that occured as a result of n-Achievement development.

As a result of the input programme, the students showed high n-Achievement level and moderate risk taking behaviour. It also improved their self confidence and self perception. There was a significant improvement in the performance of both high gain (170) and low gain (201) intelligent students as a result of the n-Achievement development.

(7) Three experiments were conducted by Raijiwala (1975), H.B.Desai (1975) and Pavanasam (1975) on developing pupils mental health through training teachers for indirect influence. They studied the effect of the teachers' modified behaviour on pupils' adjustment, pupils' initiative, and pupils' classroom trust.

The training and feed back given to the teachers in indirect behaviour affected pupils adjustment towards home, school, peers, teacher, and general adjustment, pupils'

classroom trust. The indirect approach on the part of the teacher, by encouraging and initiating pupil participation enlarged their freedom of expression and resulted in greater learning.

Major Observations

All these studies on achievement motivation development show definite results. Achievement motivation was developed by various techniques. The input models helped the investigator to develop achievement motivation. As a result of the achievement motivation development, the students gained in many psychic factors such as classroom trust, initiative etc. The discussion of such gains is given below.

(e) How do Teacher Behaviour Influence Pupils' Psychic World ?

The integration of cognitive learning with affective learning would be a natural outgrowth of humanistic education. It would require a major change in the role of the teacher who at present mostly tries to shape the students according to the academic goals frequently ignoring the aspects of actualization or growth of the individuals affective domain. The teacher should respect the child as a

human being and should assist him in unfolding his dormant potentialities through appropriate activities. At present schools are doing almost nothing to prepare students psychologically either for life in the school or for life after schooling. There are problems of adjustment, emotional stability and motivation. So the teacher should bring about emotional stability and motivation. So the teacher should bring about desirable changes in the psychological domain of the pupils' personality. This would mean that the teachers classroom work need be restructured and the behaviour of the teacher in the classroom need be changed.

The following are the research results of the changed teacher behaviour on psychological traits of pupils.

Anxiety : Certain amount of anxiety is necessary for any student to achieve. Very high anxiety leads to fear of failure. Very low anxiety leads to lack of concern for excellence. Studies reveal that Indian students are high anxiety ridden. Choksi's study showed that English students score on anxiety is 11, American is 12, Nijihavan's score of Indian sample is 19, and Choksi's score is 18. There is a need to give psychological treatment to lower the anxiety score.

Ohoksi (1975) developed an input programme of psychological education and tried its effect on anxiety level of the pupils. The treatment decreased the test anxiety level of the pupils significantly (pre mean 10.30 ; post mean 7.90).

Laxmi (1976) studied the effects of input programme on anxiety of training college students. The students who were given input programme manifested less anxiety (pre mean 15.44 ; post mean 12.72). They also gained more in n-Achievement than those with high anxiety.

Adjustment : Pupils adjustment to the classroom procedures and teachers, peers and home help them to learn better. Pupils having low adjustment score generally low. Psychological treatment to pupils contribute to increase their adjustment. Greater adjustment of pupils contribute to their academic achievement. The various studies bear an evidence to this.

Jangira (1972) studied the effects of teacher behaviour training of teachers on pupils' adjustment level and found out that due to the experimental treatment the experimental group improved in the score of general adjustment (pre mean 4.34 ; post mean 4.97).

Udai Pareek (1971) studied the effects of teacher indirect influence on pupils' adjustment level. He found out that there was no difference between the adjustment scores of students taught by high I/D and the students taught by low I/D teachers. He also found out that the teachers with high i/d ratios produced better adjusted students than the teachers with low i/d ratios (adjustment score of pupils of high i/d ratio teachers 13.53, low i/d teachers 18.68).

Raijiwala, H.B.Desai and Pavanasam studied the effects of teacher indirect influence on their pupils' adjustment. They found out that the training and feedback given to the teachers have affected pupils' adjustment towards home, school, peers, teachers and total adjustment (Raijiwalla - Pre mean 2.660, post mean 3.605, H.B.Desai pre mean 1.885, post mean 3.495 ; Pavanasam pre mean 18.1, post mean 21.93).

Classroom Trust : Do the pupils develop trust in classroom procedures ? The pupils in India has generally low trust in classroom procedures. Indirect teacher behaviour and psychological treatments generate greater classroom trust. The following studies reveal similar findings.

Udai Pareek (1971) studied the effects of the teacher of high I/D ratios and low I/D ratios on their pupils classroom trust. He found out that the difference (high I/D ratio teachers' mean 21.91, low I/D ratio teachers' mean 21.89) is nggligible and attributable to chance.

Choksi (1976) studied the classroom trust of the pupils after administering a psychological input programme in primary school in Baroda. She found out a significant difference (pre mean 21.65, post mean 23.50) after giving the programme in pupils and they began to trust their teachers more.

Jangira (1972), Raijiwala (1975), H.B. Desai (1976) and Pavanasam (1975) found out that the teachers indirect influence brought about by teacher behaviour training resulted in higher classroom trust level (Jangira - pre mean 17.68, post mean 25.69 ; Raijiwala - Pre mean 22.415, post mean 25.900 ; H.B.Desai - pre mean 22.415, post mean 25.900, Pavanasam Pre mean 24.0, post mean 26.1).

Pupils' Initiative : Classroom procedures are such that pupils lose their initiative. If pupils' initiative is more then they can learn by themselves. They can manifest

so many activities which lead them to greater learning. The following studies reveal the findings.

Choksi (1976) studied the effects of psychological input curriculum on pupils' initiative level and found out that there was a difference in their initiative level positively (pre mean 8.30, post mean 11.93).

Raijiwala (1976), H.B.Desai (1975) and Pavanasam (1976) studied the effects of the training of teachers in indirect behaviour on pupils' initiative level and all of them found out that the training have affected the Initiative of the students positively (Raijiwala - pre mean 11.310, post mean 14.560 ; H.B.Desai- pre mean 11.310, post mean 14.560 ; Pavanasam - pre mean 4.5, post mean 7.3).

Dependency : Should the students depend upon their teachers all the time ? or should they become independent ? Independency leads to better study habits. The final aim of education is to make them independent in their studies. Still however, as the pupils are in secondary school stage, they remain dependent to a certain extent. Can independency be increased ? Can dependency be decreased ? The following researches provide the answer.

Jangira (1972) found out that the pupils independency level increased and dependency lowered by the indirect influence of the teachers who were trained in teacher behaviour. The experimental group scored higher on independency (pre mean 4.68, post mean 12.56) and lower on dependency.

Pavanasam (1976) studied the effects of indirect teacher influence on pupils dependency and found out that the dependency level increased significantly as a result of the teachers modified behaviour (pre mean 11.3, post mean 12.7). He also found out that there was a significant decrease in the independency level (pre mean 5.9, post mean 4.8).

Fear of Failure : Indian students have a high fear of failure. Achievement motive consists of hope of success (HOS) and fear of failure (FOF). The fear of it is high can be decreased. If FOF is decreased, it will contribute to greater learning of pupils.

Rekha (1974) gave fear of failure treatment to pupils and studied the effect of the raise in fear of failure on academic performance, self image and mental conditioning. As a result of the study she found out that the fear of

failure treatment decreased the total n-achievement (pre mean 5.684, post mean 2.447). Their test anxiety level increased significantly (pre mean 9.289, post mean 14.658) but their classroom trust level and adjustment level decreased.

Achievement Motive : Higher achievement motive leads to the pupils towards better learning. The pupils achievement motive in India is generally low. The average score is 40.

Choksi (1975) studied the effects of psychological input programme on achievement motive. As a result of the input programme there was a positive increase in n-achievement (pre test mean 1.23 ; post test mean 10.68).

Laxmi (1976) developed achievement motivation among teacher trainees and studied the effect of achievement motivation on the performance of teacher trainees. As a result of the input programme, the n-achievement increased significantly (pre mean 4.28 ; post mean 24.56).

Self Concept : Self concept is a new area. Ina adult population, if motivation development course is given, it helps the students to develop clearer self concept. Laxmi's study bear an evidence to this.

Laxmi (1976) developed an input programme for teacher trainees and studied its effect on self-perception. The score

in the self scale increased significantly (pre mean 15.08, post mean 16.80). The input programme developed positive attitude towards self, optimism and respect for self. It has also resulted in improving the self confidence and self perception of the teacher trainees. It resulted in an effecting change in the right direction in their attitude towards and perception of self, other people, children, authority, work, reality and parents.

Major Observations :

All these studies lead to one conclusion. The pupils' psychic world can be affected positively and helpfully through indirect teacher behaviour and through motivation development inputs. As a result of this, the pupils gain in academic performance.

2. Other Studies Conducted in India

In India, research in teacher behaviour and in actual classroom is still in its embryonic stage. A manual on classroom behaviour was prepared by Mehta (1963) and was published by NCERT in 1967. This manual discusses the 'dominative' and 'integrative' teacher behaviour and stresses the role it plays in the development of the classroom climate. Further, later in sixties, Mehta organised

a number of Indian Laboratories on Achievement Motivation, training them in goal setting behaviour and helping them to understand and develop suitable classroom instructional behaviour with a view to developing friendly and warm teaching - learning climates.

Pareek and Rao (1970) observed that the main 'teacher talk' category was that of lecturing and that the main 'student talk' category was that of responding to the teacher. This seemed to be the general pattern of influence behaviour of the Fifth Grade teachers in Delhi - schools. Buch and Santhanam (1970) studied the pre dominant patterns of classroom behaviour of teachers teaching English.

Roy (1970) conducted a study on 'changing teacher behaviour through feed back'. This study was confined to the teachers of Social Studies, Elementary Mathematics, General Science and languages of Grade Six of Middle Schools. The important findings of his study were that the pupils' observation and teachers' self rating feed back were most important things in the teaching - learning situation. Those teachers who cared for the likes or the dislikes of the pupils and who introspected or retrospected the teaching learning situation, had better chances of being successful in their professions.

Research attempts were sporadic in the area of teacher behaviour until 1970. It was in the year 1970, that the Centre of Advanced Study in Education, Baroda, took up the area of teacher behaviour as one of its major areas of study. This has resulted in a series of studies on (a) teaching, where the effectiveness of selected classroom behaviour patterns of teachers is investigated and (b) modification of classroom behaviour of teachers, wherein new techniques are tried out to study their effectiveness.

Buch (1970) undertook a study in the area of teacher behaviour under the cooperative project on Productive Teaching, which gives a picture of what goes on in Indian classrooms particularly in Secondary Social Science and Humanity classes.

Pareek and Rao (1971) attempted to find out the association between teachers' classroom interaction (measured by Flanders' technique) and a few dimensions of students' mental health. The indirect - direct influence ratios of both types revealed two different and opposite associations. A higher percentage of students who are well adjusted, more intelligent, high initiative taking, highly

impunitive, less need persistent and more ego-defensive in their reactions to frustrations were found in classes taught by teachers with high I/D ratios as compared to the students taught by teachers with low I/D ratios. However, a reverse trend was observed when the content controlled i/d ratios were used. More percentage of students well adjusted, more intelligent, less extra punitive and intro-punitive but more inpunitive were found in classrooms taught by teachers with low i/d ratios as compared to the students taught by teachers with high i/d ratios.

As a 'presage-process' research, Quraishi (1972) made a study on 'Personality, attitudes and classroom behaviour of teachers'. This study revealed that the teachers' verbal behaviour in the classroom was related in a small measure to their personality and attitudes.

Prayag Mehta's (1967) manual on 'understanding classroom behaviour' is a comprehensive booklet containing interesting information. It shows a blending of theoretical studies and the practical conditions of the classroom. He discusses about the dominative and integrative climate and points out that a study of interactions may be helpful

in understanding (a) pupil involvement, (b) awareness of the goal (c) independent work and (d) indirect influence. He also deals with understanding classroom teaching process, the teachers' role as a leader, innovation in classroom teaching and so on.

Ahuwalia and Bhargava (1968) report that the social acceptance of a pupil has a multiplicity of determinants. The three most frequent reasons given by acceptors for accepting classmates were (a) good habits (b) studiousness and (c) proficiency in games. Moderate correlations were found between sociometric status and (a) mental ability (0.31) and sociometric status and (b) academic achievement (0.27). Different classroom settings were found to have varying patterns of group structure.

Buch and Santhanam (1970) using FIAC studied eleven teachers of English teaching in Six English medium schools in Baroda. Five of them were male teachers. The results indicated the following : (1) about 60% of the time, the teacher talked, (ii) about 21% of the time, the students talked, (iii) 1/5 of the teacher talk was indirect, i/d = 0.2, (iv) 1/10 of the time was spent on silence/ confusion, (v) about 10% of all teacher talk has been

indirect reaction to student talk while as much as 31% of all student talk was immediately followed by teacher talk, and (vi) the pattern of communication seem to be extended - lecture - questioning extended student response - lecture.

Buch and Quraishi (1970) observed 17 male teachers teaching in 10 Gujarathi medium schools in Baroda. Their results showed that most of the teachers were dominant and direct in their influence; teacher talk was nearly 8 times greater than student talk, most of the indirect talk was in the form of asking questions and very little amount of time was spent either on praising or encouraging students or on criticism or justification of authority or on student initiation. They also observed that age, experience, qualification and methods of teaching have certainly an important role in shaping teachers' influence.

Mohan Mathew (1970) has studied the teacher behaviour of 37 teachers of class IV, 50 teachers of class VI, 55 teachers of class VIII and 40 teachers of class IX. The teachers were observed each for a period of 45 minutes by trained observers who rated the teachers on authoritarian traits. The content of the classroom discussions was analysed

for authoritarian tendencies. An adopted version of MTAI was used to measure the attitude of teachers towards teaching, discipline etc. A 25 item sentence completion test was used to test the unconscious attitudes of teachers towards parents, religion, early experience and vocation. The results indicated; restricting freedom of movement in the class, ridiculing and scolding, abusing and addressing children in a mean way, threatening and administering corporal punishments and supressing creative responses of pupils are some forms through which authoritarian teachers expressed themselves.

Vishaw Vijay Upmanya (1970) has made a study of the relationship between socio-metric status of the pupils and his scholastic achievement, using a sample of 85 subjects studying in standard VIII from two schools. Three categories of students - populars, neglectees and rejectees, were identified and the achievement scores analysed. The obtained co-efficient of correlation, 0.33 was regarded low and not statistically significant. Comparison of group means indicated that the difference between the mean scores of achievement was significant at 0.01 level for populars and neglectees. The difference between the populars and the rejectees was significant at 0.05 level.

Gautam (1971) studied the relationship between personal and social variables and sociometric status in classroom situation. He asked the pupils to choose their three classmates in a preferential order with whom they would like to witness a movie, study in the library, and go on picnic. He found out of a class of 238, 20 over chosen and 12 under chosen.

The results showed that age and sociometric status are not so closely related to sociometric status in class, intelligence, achievement and other personality patterns. The rejectors (under chosen) have lower achievement and intelligence, are more aggressive, sensitive and emotional and suffer from mental conflict, anxiety and frustration.

Nardev Trivedi (1971) administered a questionnaire on 296 teachers and 490 students to study the factors related to effective teaching to secondary schools. 54% of the teachers and 53% of the students responded. The analysis of these responses indicated that the following factors were considered to be very essential for effective teaching by the respective groups.

(a) By Teachers : Using teaching aids, using examples and illustrations, motivation, good physical conditions in the classroom, improved supervision, impartial attitude of

of teachers, good physical health of teachers and impressive speech of teachers.

(b) By Students : Use of examples, motivation, congenial atmosphere in the classroom, responsibility in advance, reasonable assignment, good physical health of the teacher, advance flexible planning and understanding the need of the students.

Narendra Nath (1971) has found that training in interaction analysis improves certain aspects of the behaviour of student teachers. In an experiment, the researcher found improvement in 'Student talk', considerable rise in i/d ratio and I/D ratio. The training also had a marked influence on Pupil Initiative Ratio.

Pareek and Rao (1971), experimenting with nine teachers by giving training in and feed back through FIAC found that the training modifies the behaviour of teachers and they tended to use more and more of categories 2, 3 and 4 (praising students, using their ideas and questioning). Training also increased the I/D, i/d ratios. Students exposed to such trained teachers were also found to show more self-initiated talk.

Yashu Mehta (1971) used FIAC to study the classroom influence of teachers' teaching History. Fifteen teachers

were observed teaching History and the results indicate : (i) the nature of influence pattern is very much direct, (ii) most of the indirect talk was in the form of questions, (iii) teacher talk is nearly 7 times greater than student talk, (iv) practically no time was spent in developing student ideas.

The I/D ratio was 0.136, i/d ratio was 0.292, teacher talk was 81.04%, student talk was 13.40% and silence was 5.56% .

Buch and Santhanam (1972) have made an exploratory study to findout the type of association between the 'Drill' and 'creative inquiry' patterns in classroom communication episodes in six subject matter areas. Using Flanders' interaction analysis categories, a sequence of 4-8-4-8-4-8 ... may be interpreted to mean 'drill' pattern and a sequence of 9-3-9-3-9-3... may be indicative of the creative inquiry pattern of behaviour.

On the basis of observations made on 32 teachers from the city of Madras, the authors conclude that there is no significant correlation between these two patterns of classroom behaviour, in any of the six school subjects.

Earlier studies by the same authors indicate that the relative incidence of categories 9 and 3 is quite small

(0.51% and 1.21%). Similarly student response category occurs more often than student talk - initiation (17.91% and 3.25%). Hence the authors plead for further detailed research on the theme.

Sharma R.A. (1972) has attempted to correlate teaching aptitude with the classroom verbal behaviour of the teacher. The results indicated that the aptitude test scores were significantly associated with (a) the indirect influence of the teacher (I/D ratio), and (b) pupil talk.

Jangira (1973), in his study arrived at a model to evaluate a part of the teacher education programme, namely, student teaching. In this model, the classroom interaction patterns of the teachers were modified, in the training institute and their sustenance was studied in the field when the students became regular professional teachers. These patterns of interaction were also compared with the adjustment of the pupils with the change of teachers under study.

The study revealed the following : (a) the student teachers with classroom behaviour training scored significantly higher on classroom interaction variables

(b) the pupils under the trained student teacher scored higher on adjustment, classroom trust and dependency but was not significant on adjustment to home and peers.

Pangotra (1973) studied the effects of feedback from different sources on the classroom behaviour of student teachers using the FIACS. The study revealed the following : (a) FIACS can be an effective feedback mechanism. (b) the teachers of the Experimental Group praised or encouraged pupils' action more than the teachers of the Control Group. (c) pupil's ideas were more accepted than giving directions or commands by teachers in Experimental Group (d) pupils' response and initiation were praised and accepted more by Experimental Group teachers (e) questioning was more and lecturing was less in the case of Experimental Group teachers.

Buch and Santhanam, M.R. (1973) have studied a random sample of 32 teachers from the schools in Madras city. Each teacher was observed twice for spells of 30 minutes each. The observations were made using FIACS. The I/D and i/d ratios were calculated and analysed. The results indicate that I/D ratios differed significantly between subjects and

between teachers. The results were the same with i/d ratios.

Vishaw Vijay Upamanya (1973) repeated an early study conducted by him to investigate the relationship between sociometric status and scholastic achievement using a new sample of 71 students from classes 10 and 11. The study included 40 boys and 31 girls. The results indicate that while the populars and rejectees differ significantly in their scholastic achievement, the comparisons between populars and isolates or between rejectees and isolates were not significant. The co-efficient of correlation between sociometric status and scholastic achievement was found to be 0.36.

Lulla (1974) studied the influence of teacher behaviour on achievement of pupils. This study has revealed that the pupils who were taught by the teachers trained in using indirect behaviour scored higher, as compared to their counter parts studying under the teachers who were not provided any training. Another implication of this study was that the indirect teacher behaviour may raise the interaction potential of the classroom climate resulting in free communication and open interaction between the teacher and the group of pupils.

H.B.Desai (1975), Raijiwala (1975) and Pavanasam (1975) investigated the effects of FIACS on pupils' achievement.

The studies revealed that there was significant increase in the I/D ratios and the teachers had become more indirect. The training increased the achievement of the pupils significantly. The teachers created a better classroom climate which resulted in a significant increase in pupils' adjustment, classroom trust and initiative.

Roka (1975) studied the verbal teaching behaviour patterns and students' achievement in terms of instructional objectives. He trained nine teachers teaching Grade VII of Boys Higher Secondary Schools at Ajmer in FIACS and studied the influence of indirect behaviour on pupils achievement in General Science. He gave additional training to E_2 group with a view to bringing about more of systematic variations in general indirectedness, types of feedback and questioning behaviour.

As a result of the training, the teachers employed more of indirect behaviour categories like praising, encouraging and asking questions and these helped to create an integrated classroom climate.

3. Foreign Researches

In the present investigation, while analysing the literature of other countries, it has been found out that research studies in the area of Educational Psychology have gained momentum since the thirtees. Moreover, the focus of attention of these researches has been on teacher effectiveness. Subsequently, the researches have attempted to identify whether pupils' growth in terms of academic achievement is due to the influence of the teacher. The importance of teachers in shaping the personality of students has been realised gradually. The American Educational Research Association (1952, 1953) states that teacher effectiveness must ultimately be defined in terms of effects on pupils. Hence, the shift of focus has been from teacher effectiveness to teacher behaviour and classroom processes in terms of interaction in the classroom. Since then the research endeavour in this area has enabled one to study certain classroom behaviour of teachers and productive behaviour of their pupils.

To identify the 'classroom climate' and its impact on teaching learning process many studies were undertaken by Hopkin (1941), Lewin (1948), Bovard and Everett(1951). Further, there have been studies like those of Anderson (1939), Lewin, Lippitt and White (1939), Withall (1949) and Flanders (1965) which throw light on the aspects of the influence of contrasting

climate in the classroom. Like wise, studies by Flanders (1951), Cantor (1951), Perkins (1950) and others have emphasised the need for a conducive climate for effective learning and healthy classroom interaction. They recommended a type of indirect teacher behaviour which could generate such a climate.

3.1 Studies on Social-Educational Climate in the Classroom :

(a) Classroom Climate : It is a widely accepted fact that harmonious living in a human society basically requires a kind of school experience for children which emphasises social values. This has generally been taken to mean that school situation, especially in the classroom, must be modelled along democratic principles. Hence, this general position has important implications for classroom teaching. With this idea in mind, Hopkin (1940) developed his theory of democratic interaction. The whole idea is that the classroom situation has been interpreted in different ways by different educationists. The terms like 'classroom dynamics', 'classroom climate' and 'classroom interpersonal relations' have carried by different educationists for understanding classroom situation. The concept of classroom climate or psychological atmosphere has been used by many researchers

besides Anderson (1939), and Lippitt (1943) in the area of psychology and education. Prescott (1938), Lewin (1948) and Rogers (1967) for example, have made considerable use of this concept.

The term 'classroom climate' refers to the generalised attitudes towards the teacher and the class that the pupils share in common, inspite of individual differences. Further, proper attitudes will develop from the classroom social interaction. Pupils develop some common expectation regarding teacher behaviour and also collective attitudes towards their own class through the participation of classroom activities. These expectations influence the social atmosphere that appears to be markedly distinct and fairly stable, if once established. Thus 'classroom climate' refers to those qualities that consistently predominate in most teacher pupil contacts. Therefore, the study of teacher behaviour through interaction analysis becomes a study of classroom climate as well (Flanders' 1960).

Lewin (1948), in his discussion on his explorations of group life and interpersonal relations, uses the concept of group dynamics. The phrase 'classroom dynamics' is the ornamental term of the concept of classroom interaction.

The classroom interaction analysis is a technique which facilitates capturing qualitative and quantitative dimensions of teacher-student verbal behaviour in the classroom. This technique has its limitation i.e. it does not measure everything that goes on in the classroom. Interaction analysis is concerned with only the verbal communication between the teacher and the students. Ned Flanders (1966) developed this technique out of a social psychological theory, designed to test the effects of social, emotional climate of the classroom communication on students' attitudes and learning. In fact, classroom teaching is a social interaction. The teaching acts produce reciprocal contacts between the teacher and students, and this interchange is called teaching. According to Bovard and Everett (1951) the social interaction in the classroom will influence the individual students' perception, feelings and interpersonal relations.

(b) Interpersonal Relations : Some earlier researches have revealed that good personal relations in the classroom depend on the ability of the teacher to relate in some wholesome fashion to students, accepting them emotionally and being capable of understanding their problems and appreciating their aspirations. There are two important dimensions involved in

such relations ; one is the degree of rapport that exists between the teacher and students and the other is, the nature of the relation among the students themselves atleast while they are in the classroom. Moreover, it has been revealed that a good climate for learning in the classroom depends on the type of social relations of the students. This means, not only is acceptance of a student by his teacher necessary for his adjustment and learning, but also to a certain extent, acceptance from his peers.

(c) The Contrasting Climate : Prescott and his associates (1938) have made valuable contribution in research on teacher effectiveness and the like recognising the emotional aspects of the learning process.

Anderson's (1939) classic study in which he assessed the integrative and dominative behaviour of teachers in their contacts with children stimulated further studies in the area of research. Anderson describes teachers' classroom behaviour as (i) socially integrative behaviour and (ii) dominative behaviour, 'Socially integrative behaviour' is the term used to designate behaviour leading to oneness or commonness of purpose despite individual

differences. It is a behaviour of flexibility. It is both, an expression of growth in the person using it, and a stimulus to grow in others.

Some of the more specific indicators of integrative behaviour are occasions of which the teachers ; (i) extends invitation (as opposed to use of order or pressure, or command), (ii) helps the child to advance or refine a problem, (iii) offers approval, and (iv) admits own responsibility, ignorance or incapacity (Anderson, 1946).

The term 'dominative behaviour' was chosen to designate behaviour of a person who is inflexible, rigid, deterministic, one who disregards the desires, judgements, purposes, values and welfare of others, who, when himself in conflict has the answers. Examples are the use of force, commands, threats, shame, blame, and attacks against the personal status of another. Domination is the technique of autocracy or dictatorship, which is believed to obstruct the growth processes in others. It is the antithesis of the scientific attitudes and the mind (Anderson, 1939). He demonstrated that childrens' behaviour was consistent with the kind of personality the teacher displayed in the classroom. His findings is highly pertinent to the hypothesis that the

main direction of influence in the classroom is from the teacher to the pupils. He also concluded from his study that reliable patterns of teacher and pupil behaviour in the classroom can be obtained through categorization of their overt behaviour.

The autocratic - democratic concept presented by Lewin, Lippitt and White (1939) was another precursor of Flanders' concept. They report results of an intensive study of the effects of the leader behaviour on a group of children. Their research discusses findings on group climate obtained in a setting other than the classroom situation, but the inherent hypotheses are intrinsically the same as those tested by Anderson.

Lippitt (1940) in his study organised four clubs of five boys each, and gave each club 'autocratic' and 'democratic' leaders for three consecutive six week periods. Each club was headed by several leaders. Their leadership styles differed with successive groups, keeping specific criteria in mind. Social interaction between group members and leaders was recorded by observers of each club.

The major conclusions of Lippitt's study were as follows :

* different leadership styles produced different social climates and resulted in different group and individual behaviour.
* conversation categories differentiated leader behaviour techniques more adequately than social behaviour categories.
* autocratic leadership elicited either an aggressive, rebelliousness towards the leader or an apathetic submission to the leader.
* leadership style was the primary factor in producing climatological differences and club personnel were of secondary importance.

Lippitt's work represents one of the pioneering and most significant attempts to observe and control the climate variables in a group situation. His findings provide sound basis to use categorization of teachers' verbal behaviour as a major technique in such studies.

Starting from the sound proceedings of teacher's verbal behaviour in regular classroom sessions, John Withall (1949) found that the behaviours tended to fall into 25 types, which he could finally reduce to 7 categories. He could also identify more than 1 continuum embedded in the 7 categories. The climate could be (a) problem centered - person centered (b) objectivity - subjectivity and (c) learner centered - teacher centered. His

study of the development of a technique for the measurement of social-emotional climate in the classroom proceeds on the hypothesis (a) that it is a group phenomenon, (b) that teacher behaviour is the most important single factor in creating climate in the classroom and (c) that teacher's verbal behaviour is a representative sample of his/her total behaviour.

Morris L.Cogan (1956) has attempted to link preclusive, conjuctive and inclusive behaviour of teachers with two categories of pupil productivity - administration of required work and administration of self initiated work. The sample used included 18 teachers of English, 11 of arithmetics, 4 of Science and 987 of VIIIth grade pupils.

The results indicated that there was strong evidence to show that in the individual pupil's perception, the teachers conjunctive and inclusive behaviours were positively related to the pupils' score on required and self-initiated work. The study also indicated that whereas an individual pupil tended to perceive different teachers differently, the group seemed to be in substantial agreement about the behaviours of the same teachers and about the administration of work done for that teacher.

Bales' interaction process categories was primarily designed to observe and understand group process of problem solving. It includes 12 observational categories which could be combined suitably to study (a) social emotional areas including positive and negative reactions, (b) task areas including questioning and attempted answers and (c) dimensions of orientation, evaluation, control, decision making, tension, management and integration. Apparently a lot of evaluative observation is required on the part of the observer using these categories. Yet the categories are comprehensive and provide valuable data for judging and analysing group processes.

FIACS assumes that the verbal behaviour of an individual is an adequate sample of his total behaviour. It includes 10 categories of behaviour showing indirect influence of the teacher, student talk and silence period. Trained observers code the teachers verbal behaviour either through direct observation or through the recordings. The observations are made at the rate of approximately one record per 3 seconds. They are then cast into a 10 X 10 matrix, which highlights the characteristics of the observed teacher. Another line of analysis concentrates on calculating

I/D or i/d or T/S ratios bringing out whether the teacher is more indirect or direct in his influence, whether the teacher is more dominative than the student and so on.

This system has two major advantages. First is its compact nature. It is therefore easy to memorize the categories. Secondly, the system is comprehensive and easy to follow. Observers can be trained quite easily in this system and that helps in getting highly reliable data. The FIACS has also been used widely and many studies in India have been based on the system.

(d) Classroom Climate and Learning :

Teachers are in constant contact with pupils for six hours a day. It is in the classroom that patterns of the thinking should be set, attitudes should be shaped, and participation influences the growth and independence and self direction. Teaching behaviour is the most potent, simple and controllable factor that alters learning opportunities in the classroom (Flanders, 1970).

The meagre information on classroom interaction tends more to support than to deny cantor's opinion. He was rightly concerned about the way teachers use their authority, arbitrarily, that, independence is considered

to be an evil to be punished and that dependence on others and confirmity to outside pressures become the accustomed response to a new experience. Canton was the first to suggest a primitive theory about how teachers should alter their behaviour in a predictable sequence during a cycle in teaching. The sequence suggests a definite shift in the role of the teacher.

An analysis of current average classroom interaction reveals a high degree of teacher domination in setting learning tasks and in thinking through problems so that pupil's ideas and initiative remain under-developed. Consequently, teachers and pupils rarely experience thoughtful, shared inquiry. In classrooms that are above average in positive pupil attitudes and content achievement, the teacher-pupil interaction exhibits a somewhat greater orientation towards pupil ideas and pupil initiation. In spite of these differences in contrasting classrooms, most teachers claim that they want to be attentive to the pupils and their ideas.

Jenkins (1951) pointed out the inter-dependent nature of the pupil-teacher relationship by assessing that scoring will be more effective not only when the pupils' emotional needs are met in the classroom, but also when learners are

made aware of their part in helping fulfil some of the teachers emotional needs in the classroom.

Clidewell (1951) found that a denial of feeling by the leader was accompanied by a reduction of leader effectiveness whereas the acceptance of feelings increased his effectiveness.

McKeachy (1951) points out that more learning takes place when there is less anxiety and if constructive learning activities are provided. He further added that there is greater interaction and spontaneity in the group-centered class.

Perkins (1951) revealed that children tend to be conscious of a warm acceptance by the teacher and to express greatest fondness for the democratic teacher. To him, again, the role of the classroom climate is crucial to the learning process.

Cage and Susi (1951) sought to determine the accuracy of the teachers' perceptions of pupils' dynamic interaction of teachers. They found that pupil favourableness to teachers depended on the accuracy of teachers' social perception of pupils.

Jenson (1955) formulated a rationale for assessing the social structure of the classroom which sums up one aspect of the methods of analysing classroom interaction. Like Thelen (1959), he emphasised the close inter dependence of personal needs and group needs and that unless individual relate effectively to one another in a class, the achievement or social problems cannot be dealt with.

Flanders (1969), in his review of different studies on teacher effectiveness has pointed out the support these research studies give to the indirect influence who makes use of the ideas and opinions of his students.

In various studies, as pointed out earlier, different technology has been used for the same behaviour pattern. They were, for Anderson et al., (1939) 'dominative vs 'integrative', for Lippitt and White (1939), 'authoritarian vs laissez - faire', for Withall (1949), Flanders (1961) and Perkins (1950) 'perclusive vs inclusive'. Later on, Flanders (1965) introduced his nomenclature - 'direct vs indirect' teacher behaviour.

All the studies listed above indicate directly or indirectly that the teacher behaviour in the classroom determines to a great extent how much impact the teacher is going to have on his students and in what direction. These studies also suggest that democratic integrative teachers produce students

with comparatively high achievement and good personality characteristics than teachers showing authoritarian or dominative behaviour.

3.2 Teaching Patterns using Interaction Analysis Techniques :

Teaching is in fact more than talking. But in the normal classroom situation, it is found that the predominant instructional behaviour of the teacher is 'talk'. More than eighty percent of classroom instructional time is found spent in talk either by the teacher or by the pupils. Various techniques are used for recording and analysing the spontaneous classroom verbal behaviour of teachers and students.

Anderson and Brewer (1946) developed a method for observing pupil and teacher simultaneously. Here, teacher behaviour was used to detect possible effects of teacher behaviour on pupils.

Medley and Mitzel (1956, 1958, 1959) developed an instrument called OSCAR (Observation Schedule and Record) for use in a follow up study of teacher education graduates, OSCAR was designed to provide quantitative data regarding behaviour of beginning teachers so that the behaviour could

be correlated with a number of other variables. It was evolved by modifying and combining items constructed by Cornel, Lindwall and Sanpe (1952) and Withall (1949).

Hughes and her associates (1959) developed a set of categories for the classification of teacher behaviour. Though these categories are similar to Withall's, they are not restricted to verbal behaviour. Hughes concluded teachers' behaviour patterns are stable through time, that is, the number of controlling acts exhibited by a given teacher in different situations. However, this is inconsistent with the findings reported by Medley and Mitzel (1958). According to them the variation in teachers' behaviour from observation to observation provided a major source of variability.

Amidon and Flanders (1961) have reported the findings of a study in which teacher effectiveness was studied in terms of achievement of Junior High School students in Mathematics.

Major findings of Flanders (1964) have reported the hypothesis that the students of teachers who are indirect and flexible in their teaching style have more positive attitude towards school and their teachers and achieve more than students of teachers who use a more direct teaching style.

Amidon and Flanders (1967), describe the interaction analysis system which allows observers and teachers to explain, summarize, analyse and draw conclusions about teaching from the data gathered. Flanders (1960) has successfully practiced techniques for training reliable classroom observers and has also laid down a procedure for estimating inter-observer reliability.

3.3 Research Linking Process and Product Variables :

Flanders (1956) consistently found relationship between process and product variables in four of his studies conducted on about 51 teachers. In these studies teachers' making use of the ideas expressed by students was related to constructive pupil attitudes as well as student achievement. The process variables in all these studies were obtained by having a classroom observer code, verbal communication into a set of categories at a nearly constant rate.

Morrison (1966) found significant evidence supporting the same relationship for positive pupil attitude scores, as well as adjusted achievement gain scores of language usage, social study skills and arithmetic computation and problem solving. She observed thirty, Sixth Grade teachers

related from fifteen different school districts.

Lashier (1965) found statistically significant support for the same relationship in Eighth Grade Science classrooms involving 239 pupils and 10 teachers. Nelson (1964) found similar support in a study of the learning of linguistic skills.

Johns (1966) conducted a small study involving six high school English teachers near Detroit. He found out that the pupils exposed to a teacher who made more use of their ideas and opinions, not only had more positive attitude but was found to be more interested in asking thought provoking questions during class discussions. Similar results were obtained by Parakh (1965) in Newyork and Dodl (1966) in California.

Pankratz (1967), located five 'high' and five 'low' teachers of high school physics, from a sample of 30 teachers. He used principal ratings, 'Class Average' or 'Pupil Attitude Inventory' and a 'Teachers' situation - reaction Test', Completed by each teacher. An observer coded verbal interaction for six class periods by a system developed by Hough (1967) who expanded Flanders' ten categories. Five teachers were found more effective by three records and they made use of the ideas and opinions expressed by pupils

at 0.01 level of confidence, than the five less effective teachers.

All the studies revealed that no two teachers can have the same style of teaching. Every teacher had his own natural actions and accents which are revealed while teaching. In all the above studies, teachers with different natural styles were given different treatments. They were taught role playing. They practised it and finally produced two patterns of teacher behaviour in order to create contrasting treatments. In one treatment, the ideas and opinions expressed by pupils were accepted and entertained into the classroom discussions, and in the other treatment this pattern was minimized. Difference in the treatment is confirmed from the systematic coding of verbal interaction analysis. The same process-product relationships mentioned earlier was supported by a series of experiments in this study.

Amidon and Flanders (1961) used this design to show that not all pupils, but only classified as 'dependent' by their scores on a special scale, learned more principles of Geometry when their ideas were made use of. Schantz (1963), in a study of sixty one, Fourth Grade children found the

same support for the relationship of process-product variables from the similar treatment differences. The product variables was verified by analysis of coded verbal interaction. Filson (1967) showed that when the behaviour patterns of role-playing teachers made more use of pupils' ideas and opinions, there was less 'dependence on the teachers'. The task in the Filson's experiment was to make judgements about the form of music being heard.

Flanders et al (1963) showed similar differences during an inservice training project for classroom teachers. In this study, adult pupils developed perceptions of greater independence and self direction, during the five weeks of a nine week inservice programme, indicating that such perceptions probably develop in a cumulative fashion. Adult pupils exposed to an instructor who reacted more often to their ideas and opinions saw themselves as becoming more independent and had higher measures of work output compared with those having the contrasting treatment. To quantify classroom interaction in order to provide process variables, some systematic classroom observations was employed in all the above cited studies.

Miller (1964) experimentally created contrasting treatments on the original work of Hughes (1959) on

responsive-directive dimensions. The pupils of responsive teachers were found having significantly more positive attitudes and used higher levels of thinking than those in the classes given opposite treatment.

Snider (1965), studying classroom interaction in High School Physics classes did not find supportive evidence. Teachers hardly accepted and used pupils' ideas and it appeared that there was very little cultivation of inquiry even in laboratory sessions. There may be possibility of less variation among classroom processes to provide enough contrast treatments to test process-product relationship.

Guggenheim (1961) used the Wrightstone (1935) Teacher-pupil Rapport Scale to identify eleven most 'integrative' and the eleven most 'dominative' classes among fifty, Third Grade classes. Pupil achievement of the matched groups showed insignificant differences resulting from the treatment.

Hoover (1963) created 'teacher-centered', 'pupil-centered' and 'group-centered' classroom climates by role playing. Teachers intentionally adopted different behaviour. He failed to find significant differences on the 'Purdue Rating Scale', which was scored by pupils to produce an attitude product variable.

Reed (1961, 1962) found statistically significant positive correlations between certain types of teacher behaviour as perceived by pupils. Process variables prescribed by pupils were 'warmth', 'demand' and use of 'intrinsic motivation' and 'pupil interest in Science' was the product variable. A thousand and forty five pupils of thirty eight classes of Ninth Grade General-Science were involved in his sample.

Dolins and others (1960) decided from their experiment that varying degree of teacher praise in classroom helped pupils to adjust in the class rather than having any effect on achievement. This experiment was carried out in Fourth Grade Arithmetic classes.

Coats (1966) reanalysed the relationships between pupils attitudes and achievement scores versus measures which can be derived from a 10 X 10 matrix based on Flanders' categories. His step wise linear regression analysis was based on sixty two classes reported earlier by Flanders (1965) and Morrison (1966). These classes consisted of thirty, VIth grade classes, sixteen, VIIth grade core classes and sixteen, VIIIth grade Mathematics classes. In the first phase of his study, he found that

the sixty two class averages in pre-achievement had the correlation of +0.92 with post achievement and that the correlation of each group was +0.99, +0.8, and +0.92 respectively. Similar correlations for the pupil attitude variable were +0.87, +0.69 and +0.73 respectively. The same correlation was +0.78 for all the sixty two classes. Pre-test averages can be used to get accurate prediction of post test class averages.

The second phase of his study was to predict final class averages from the analysis of systematic observation of classroom communication. Initial score was purposely ignored. In such analysis, the predictors included several variables which either represent or are correlated with the teacher making use of ideas and opinions expressed by pupils. With regard to achievement, process variables combined to show correlations of +0.67 for VIth grade, +0.90 for the VIIth grade and +0.70 for the VIIIth grade ; for all sixty two classes this correlation was +0.45. The variation among the first three correlation may reflect the test used to measure achievement. National standardized test was administered to the VIth grade pupils and their performance could have

been affected by watching television or living in a home where children are encouraged to read. The highest correlation in VIIth grade, made use of a test specially designed to measure the objectives of a two-week unit of study about Newzealand. Test performance would have been least affected by outside experience. In the VIIIth grade Mathematics, a two-week unit which was not taught before IXth grade, was taught, but the scores of a few of the brither pupils might have been influenced by experiences outside the classroom. The overall correlation is low and is not unexpected, as the behaviour of teachers correlated with achievement would differ because of self contained VIth grade elementary class, a two hour combined English Social Studies class, and a single hour Mathematics course were taught in typical fashion. Process-product relationship is supported and is prominent in all the four correlationship analysed. The same predictions for attitudes were - VIth grade, +0.63 ; VIIth grade, +0.77 and VIIIth grade, +0.74. For all sixty two classes it was +0.53. These are the highest prediction co-efficients of process-product variables in which pupil achievement and pupil attitude scores are included.

Furst (1967) reanalysed the original data (Bellack et al. 1965) by contrasting the classroom discourse in the high

school classes which scored highest and lowest on achievement. This study analyses the classroom discourse by Flanders' categories and the system developed by Bellack and others. The classes under contrasting teaching treatments had all other facilities similar, such as the unit under study. The high achieving classes differed from the low achieving classes by having more responsive teacher behaviour, less teacher talk, and more extended pupil talk, just as has been found in similar studies which involved the Flanders' categories. In terms of Bellack's categories, the same contrast involved more variety of substantive - logical processes - moderate amounts of teacher structure of the learning activities and moderate pace of teaching cycles. It is evident from both the category systems that the teacher influence was more flexible in the high achieving classes.

Flanders and his team (1960) have worked on a project related to process-product variables. They have compared the situations in which pupils learn sometimes more or sometimes less. Their method of isolating the situations was not to study the teacher behaviour and to administer the achievement test. They assessed spontaneous teacher acts in the classroom

by using interaction analysis technique, and isolated teachers having an above average indirect influence were less flexible than those having atleast average indirect influence. Flexible teachers could be just as direct as the latter teachers in certain situations, but they could be far more indirect in other situations. There was highest achievement under indirect influence.

Secondly, they predicted certain pattern among the more flexible teachers - (1) teachers would be most indirect while goals were being clarified and new contact material was being introduced (2) they would be most direct after goals had been clarified, while work was in progress.

Finally, then prediction was that the students of those teachers who were less flexible would learn less, as measured by achievement tests, and vice versa. Thus the classes of high and low achievement were separated.

The results showed that all types of students learnt more with the teacher having greater flexibility in teaching behaviour. Their other hypothesis that the Mathematics classes might learn more while working with direct teachers and that Social Studies classes would learn more with indirect teacher influence was proved incorrect. Students of the more flexible teachers scored higher on the achievement test in both subjects.

Failure to support their prediction that particular types of students work more effectively towards learning goals with particular types of teachers has not resulted in it being discarded. A series of experts with Geometry showed significant differences indicating that dependent prone students learned more than independent prone students while working with a more indirect teacher. Further experiments may reveal what type of students learn more with direct teachers.

Their data of students' attitudes towards direct and indirect teachers was analysed by factor analysis. The item analysis of the factors in the M.S.A.T. test revealed that different attitudes developed from contacts with different types of teachers, even though these attitudes did not affect achievement in this study.

3.4 Other Studies :

Medley and Mitzel (1963) support Gage's conclusion that much of the work on teacher effectiveness is not related to either the invalid criteria of teaching effectiveness or because of the lack of objective measures of teacher behaviour. After discussing assumptions underlying collection of classroom observational data and limitations of studies utilizing rating scales, they note that more powerful statistical methods will help to identify relationships between behaviour and its effects.

Fattu and Howson (1960) conducting a research on the predictor criteria and teaching effectiveness showed that the researches had failed to link such characteristics as intelligence, age, experience, cultural background, sex, marital status, scores on attitude tests, job interests, voice quality and special aptitutes. There were slight positive correlations between scholarship and teaching effectiveness, although no particular group or groups of courses has been shown to be a predictor. It is found that professional knowledge has proved to be a more successful predictor so far as teaching performance is concerned. Howson reviewed studies using various kinds of rating scales and discusses four kinds used commonly in research (i) self ratings, which have proved of little use because of consistent bias towards over rating; (ii) peer ratings by colleagues, which seemed to be based on marginal evidence; (iii) student-ratings, which seem to be more consistantly and favourably treated in the literature than other ratings, and (iv) supervisor administered ratings, which do not show any relation either with ratings of other supervisors or with other extend measures. Supervisors ratings seem to be highly biased and subjective.

Biddle and Soar (1964) independently reviewed researches on teacher effectiveness and they concluded that there is a need for agreement about the effects that the teacher is to produce in order to determine the components of teacher effectiveness. They differentiate between the research components of teacher effectiveness and the criteria component. Research component, according to them, is the relationship between teacher characteristics and behaviour and desired pupil output. The criteria component measures selection of the devised pupil output components. Both specify the collection of observational data as the most direct method of learning about teaching, and Biddle discusses the practical limitations of this kind of classroom observations.

Smith, B.C. (1962) reviewed four major studies on teacher effectiveness. He declares that the values of these studies lie in their describing what the teacher is doing rather than in trying to name them as autocratic and democratic. He points out that teachers are mixture of both (autocratic and democratic) teaching behaviours.

Rosenshine (1971) reviewed fortytwo studies which contained variables like (a) teacher use of criticism or disapproval, (b) non-verbal approval, (c) praise, (d) teacher acceptance of pupils' ideas (e) combined measures of teacher

approval, (f) ratios of teacher approval statements to teacher disapproval statement and (g) teacher warmth. First six variables were considered as low-inference variables and the last one was considered as a high inference variable. In none of the above categories were there significant results for more than half the studies, but the most consistent trends were for (a) teacher use of criticism, (b) teacher use of student ideas and (c) student or observer ratings on variables which might be considered as measures of teacher warmth.

Thomas V.Busse et al (1972) conducted an experimental study to investigate the influence of enriching the classroom environment on the cognitive and perceptual development of Negro pre-school children. Their findings show that the enrichment significantly altered the classroom environment. Signs of alternation were present in both the cognitive and perceptual development of children. No differences were evident in verbal ability or auditory perception. There was no interaction effect between the amount of teacher encouragement and whether or not a classroom was enriched. The teachers from the experimental and the control groups did not differ in their effectiveness.

Josep A. Cobb (1972) has tried to investigate the relationship between discrete classroom behaviours and academic

achievement using a sample of 120 IVth grade children from two schools. Classrooms were observed for a period of nine consecutive days by trained observers. Out of the 14 categories of behaviours used, only 8 observable behaviours had stability co-efficients above 0.50 and they were used in the final analysis. Achievement was measured using the Standard Achievement Tests. The results indicated that Attention : (pupils doing what is appropriate in an academic situation) and Positive Talk to peers : (pupils talk to peers about academic material) correlate well with academic achievement, in both the schools. The behaviours like self-stimulation, compliance, (i.e. pupil does what teacher requests) and out of chair (i.e. pupil goes out of his seat and not engaged in academic work) also have significant effect on achievement.

Trickett and Moos (1973) have developed a classroom environment scale (CES) to study the social environment of Junior High School and High School classrooms.The final form of the scale consists of 9 sub-scales (dimensions) with 10 items in each dimensions. The nine sub-scales are :
(i) involvement (2) Affiliation (3) Support (4) Task-Orientation (5) Competition (6) Order and Organisation (7) Rule clarity (8) teacher control (9) Innovation.

The results of their study showed that all the scales had acceptable internal consistency. The inter-correlation matrix showed moderately correlated clusters. However, the authors argue that the nine sub scales measure distinct dimensions of the psycho-social environment of the high school classroom.

Houston and Pilliner (1974) classified the verbal teaching style of 44 teachers in Physics classes and found that their teaching style varied across a broad spectrum from open-ended to expository (based upon Flanders I/D ratio).

Pupils taught in an open-ended style achieved the more complex cognitive educational objectives more readily than did those taught in either of the other two styles - intermediate and expository. The effect of teaching style was not distinct on the attitudes of pupils regarding significance of Physics and interest and enthusiasm in Physics on the whole, the 'open-ended' procedure was the most successful in developing favourable attitudes towards Physics.

James D.Mc Kinney et. al. (1975), have used multiple regression procedures to investigate the relationship between classroom behaviour and academic achievement. The findings of this study lend support to the assumption

that overt classroom behaviour is an important determinant of academic progress and suggest that the analysis of classroom behaviour pattern not only contributes to an understanding of the child's present progress but also predicts his progress later in the school year. The child who is attentive, independent and task oriented in his interaction with peers is more likely to succeed academically than the child who is distractable, dependent and passive in peer-group activities.

4. Conclusions

In this chapter, an attempt has beenmade to bring together and review several studies made in India and abroad regarding classrooms, teacher behaviour and other related themes. The review of studies in the teacher classroom behaviour highlight the following :

* Teacher behaviour in the classroom is being studied on an increasing scale by researcher workers in Education.
* Teacher classroom behaviour is instrumental in generating what is known as classroom climate.
* The nature of the classroom climate depends upon whether the teacher behaviour is autocratic or democratic, dominating or integrative, direct or indirect.

* Classroom climate is affected by a multitude of variables which includes environmental variables, variables associated with attitudes of teachers and pupils, variables concerned with sociometric status of the classroom group and those which are related to teacher-pupil interaction.

* Teacher behaviour results in different patterns of teacher pupil interaction.

* Teacher behaviour can be analysed, measured and modified.

* Teacher behaviour, classroom interaction and classroom climate influence pupils' growth, achievement and attitudes.

* Teachers' indirect behaviour, under certain conditions, results in increased learning by pupils.

* Teacher behaviour considerably influence pupils' attitudes.

* Not many studies have been undertaken where teacher classroom behaviour has been used as the predictor variables.

* There is need to undertake a series of studies in the areas of teacher behaviour and its impact on pupils' growth and to replicate them.

* The few studies undertaken to study teacher classroom behaviour and its relation with pupils' growth are characterised by the small size of the sample and the short duration of the experimentation.

All these considerations led the investigator to undertake an experimental study to inquire into the relationship between teacher behaviour and classroom climate. In the next chapter a detailed account of how this was used in the design of the investigation is presented.