CHAPTER II

BACKGROUND AND RELATED LITERATURE
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This chapter, which has been divided into three parts, deals with the research studies and literature that are pertinent to the present study. The first section deals chronologically with the researches which consider the development of instruments (the specific qualities of these instruments have been described in chapter IV, Developing the S.T.B.I.) for measuring classroom behaviour by systematic observation. Emphasis is placed upon those studies which have given particular attention to the classroom behaviour of teacher. Part two of this chapter deals with a discussion of some studies which are related to instrument development and use of the instrument for measuring classroom behaviour. The final section examines those researches which specifically attempt to correlate teacher behaviour in our country.
The concern for observing teacher behaviour in the classroom (for control research or instructional improvement purposes) is again emerging as one way of attaining educational accountability. The issues of what is effective teaching and how does one develop teachers who can activate it, are important concerns. The people, who are charged with the task of observing, assessing and judging classroom teaching behaviours, can avoid the pitfalls of previous observers and assessments if they take close look at the historical development of observation procedures and reasons for utilizing teacher observation instruments.

Classroom observations have been presented in U.S.A. schools since the formation of schools by law in 1642. The first classroom observations were specifically for the purpose of control and inspection. The individuals observing in the classroom were the leading citizens of community. Classroom observations were considered an important part of the schools total programme. Inspectional control of the schools by lay people through classroom observations continued until the civil war.

With the growth of towns and cities, the school population enlarged. The responsibilities assumed by lay people were transferred to the person appointed as Head teacher. The shifting of administrative responsibilities to the head teachers laid the foundation for classroom observations to be made by the individual filling this position.
With the establishment of the administrative positions of principals and superintendent in the 1810's, the responsibility for classroom observations was handed down from the lay predecessors.

In the earlier part of the 20th century the responsibility for classroom observations again shifted to a new position. Staff position in schools included supervisors. Supervisors constructed instruments to aid them in describing the classroom behaviour of students and teachers.

In 1914 Horn proposed that 'a classroom observer should use a seating chart and mark a circle to represent a child's recitation and use a square to represent that a child had responded by doing something. In 1928 Puckett used Horn's idea and developed an instrument to record 14 specific responses of the students.

The National Edu. Association cited an instrument in a research bulletin in 1929 that was used to describe the inattention and attention of pupils.

In 20th century the major purpose for observations was to observe and to describe the teacher's behaviour.

By the 1920's so much emphasis had been placed on the use of rating scales to evaluate the efficiency of teachers that the department of classroom teachers on the national Edu. Association accepted rating scales as standard equipment.
Nutt stated that an observer should be required to use an instrument called an "Evaluation observation outline".

Wagner cited an instrument that 'any school District' could use the observer checked points during his observation concerning, attitudes of teachers, responses of pupils, conditions for working and former suggestions used.

It is clear that up to 1930 the major reasons for conducting observations of classroom teachers were to control teacher behaviour.

In the late 1930's and early 1940's, research was recognized as a new purpose for making classroom observations.

In 1934 Moreno devised instruments for studying classroom behaviours through sociometric techniques.

In 1937 Anderson developed an instrument to be used during classroom observations to describe the effect of the teacher's dominative and integrative behaviour as the use of force, threats, shame, blame and attacks on the personal status of an individual. He defined integrative behaviour as being consistent with the scientific point of view. It designates behaviour that is flexible, growing, learning. Observation of the teacher's behaviour constituted the basis on which each category of the instrument was developed and defined. There were twenty four categories. Categories 1-8 recorded the dominative contacts of the teacher. Categories 9-14 and 24 recorded the various aspects and categories
15 to 23 recorded the teachers integrative contacts.

In 1943 Urban constructed an instrument for the purpose of observing and recording the bad health habits of pupils during an observation.

In 1950 Bales constructed an instrument to observe and to describe small group interaction. The instrument had following twelve categories:

1. Shows solidarity
2. Shows tension release
3. Agrees
4. Gives suggestions
5. Gives opinion
6. Gives orientation
7. Asks for orientation
8. Asks for opinion
9. Asks for suggestions
10. Disagrees
11. Shows tension, and
12. Shows antagonism.

Until the 20th century, observations had been made by lay people and administrators for the purpose of inspection and control. In the early part of the 20th century supervisors used observations for inspection and control but they also constructed instruments and made observations to describe classroom behaviour.

The administrator has continued to use observations for control and inspection. A report submitted in 1957 by Hicks and Jameson summarized the result of questionnaire
that reflected the purpose of administrative observation. Hicks and Jameson received a questionnaire from 70 college and university professors of Edu. Administration, from across the U.S.A. The professors were asked to report what they considered to be the most current practices used by administrators in appraising teacher competencies.

In 1966 Sach reinforced the administrative purpose of classroom observations in his book on Educational administration. He stated that the best way to evaluate the effectiveness of a teacher is to observe his teaching. Sach also suggested that an administrator should have an opportunity to evaluate a teacher's potential for success before hiring him by observing him as teacher.

A research study published in 1968 by the department of Elementary school. Principals of the National Education Association reported that 'For administrative purposes most rating forms are today used primarily to determine whether or not a teacher should be reassigned, given tenure in the school system or released from Employment.'

During the 1950's and 1960's writers of college textbooks in the fields of guidance, in-service education and supervision were including chapters on classroom observations.

One of the new fields using classroom observations was guidance personal. In 1965 observations had been established as an integral part of guidance programmes.
Peters and Van Hoose devoted a complete chapter to this topic in their guidance textbook for college classes.

In 1963 Harris reported that observing classroom teaching is as much a part of supervision as any activity.

In 1969 Horris and Bessent described that classroom observation and instruments used during the observations. He divided instruments for observing and recording into the following four groups:

1. Free response instruments
2. Tabulation instruments
3. Checklist instruments
4. Rating instruments.

A number of recent authors of Educational research such as Borg, Engelhart and Kerlinger, have written about classroom observations. Various types of instruments are suggested to obtain data from the observations.

Complete books have been written about research projects. Certain studies report using classroom observations as only one aspect of their research project, such as Ryan in 1960. Ryan developed an instrument to use in his research project called a 'classroom observation Record'. It was made up of 24 behaviours to assess.

Certain books report research project totally based on classroom observations, such as Bellack and others published in 1966. The instrument Bellack used to collect
data for the project had three different categories as (1) pedagogical moves, (2) teaching cycles and (3) categories of meaning.

Books by Simon and Boyer and Ober Bentley and Miller reviewed instruments and how to use them effectively in making classroom observations. Other books report research findings or cite research findings and describe teaching implications which may be inferred from the findings.

In the revised, 1970 two volume series by Simon and Boyer on observation, student and teacher behaviours are represented.

Professional organizations such as the Association of the Teacher Educators are also developing materials and guidelines for observing and assessing classroom teacher performances. Some of the current thrusts being examined are: the utilization of performance-based observation guidelines in assessing teacher competency, examination of the potential use of interaction, analysis instruments as observation tools in assessing classroom behaviour patterns, an Examination of video tape techniques in assessing non-verbal behaviour patterns of classroom teachers and a myriad of other observation and assessment procedures.

A survey of current research anthologies indicates that interest in classroom observations has continued to develop at a rapid pace. Different chapters of the 'Second Hand Book of Research on Teaching' give a comprehensive
overview of how observations are used to study the teaching act and assess teacher competencies. Chapters develop the point that observations are being used for investigating specialized areas such as early childhood. Other chapters deal with diverse topics such as instrumentation and pitfalls in research concerning observations.

It is difficult to draw conclusions or infer the directions in which classroom observations will move in future years. Historically, the observation process has fluctuated from being a 'tool of lay power' to a 'professional growth process'.

With the current concerns revolving around community involvement, accountability, performance contracting and competency-based education, the role of observation and assessment of teacher performance has again been placed in the forefront of education.

A myriad of observation approaches have been put forth as a part of these concerns. As the authors have shown approaches vary in form, purpose and style. Item checklists of teacher performances, teacher questioning assessment instruments, pupil progress sheets, teacher self assessment instruments, video-tapes of teacher behaviour, and tape recordings of teacher verbal behaviour are just some of the current approaches being utilized to assess the performance of classroom teachers.
It would seem that although the current state of classroom observations of teachers and pupils are caught up in a quagmires of thought, positions, interest groups, and 'professional dialogue', some criteria for developing a viable observation assessment process can be put forth. The following criteria provide an initial point of departure in developing an improved classroom observation procedure for evaluation teacher performance in the classroom.

1. The procedure should be rooted in the instructional setting.

2. The procedure should clearly outline and depict expected teacher behaviour and the way in which these behaviours will be evaluated.

3. The procedure should be initiated cooperatively by the assessor and the teacher with the focus upon self-assessment and self-improvement by the classroom teacher.

4. The procedure should be a continuous part of the professional growth of the teacher being initiated in preservice training and refined in in-service Education programme.

5. The procedure should be continuously revised to include improved techniques of observation and assessment of classroom teaching.

It is clear that the classroom observation of teachers and pupils will continue to play an important role in the educational setting. Classroom observations appear to be encompassing more behaviour than was true in the past. Reasons for making classroom observations may become more controlled by persons who are interested in holding educators
responsible or accountable for accomplishing goals; but no less important may be the thrust from humanistic educators who will use observations to validate the positive affective development of the child in the classroom. Observations for research purposes, a relative newcomer on the scene, will continue to expand its domain and importance.

Studies Outside the Country:
Early work of H.H. Anderson and his coworkers (1):

Anderson and others are among the earliest to have worked in this direction. They were interested in the study of the reaction evoked by the type of contacts used by the teacher with the students in the classroom.

Anderson et al (1939) (2):

Proposed a topology of teacher behaviour in terms of 'Integrative' and 'Dominative' contacts. Their studies found that the dominant or the integrative behaviour of the teacher spreads in the classroom rapidly, persists for a long time in the classroom even in the absence of the teacher, and is even transferred to other students coming after them. They found that pupils of teachers with more integrative contacts showed more spontaneity, initiative, voluntary social contribution, and acts of problem solving and the pupils of teachers with dominative contacts were more easily distracted from school work and showed compliance of teacher's dominance.
In other words teachers who used dominative techniques, produced in their pupils aggressive and antagonistic behaviour which were expressed towards both their teachers and their peers. On the other hand others who used socially integrated behaviours appeared to facilitate friendly, co-operative and self-directed behaviours in the children.

Following illustration will clear the qualitative difference between an integrative and a dominative social contacts.

Behaviour was recorded as 'contacts' and divided into two groups/categories. If a child snatched a toy, struck a playmate or commanded him, or if he attempted to force him in some way, such contacts were included under the term 'domination'. By such behaviours he ignored the rights of the companion, he tended to reduce the free interplay of differences and to lead towards resistance or conformity in responding or adapting to another.

Other contacts were recorded which tended to increase the interplay of differences. Offering a companion a choice or soliciting an expression of his desires were gestures of flexibility and adaptation. These tended in the direction of discovering common purposes among differences. Such contacts were grouped under the term 'socially integrative behaviour'.

The findings of Anderson et al are based on the
study done on the pre-school, primary and elementary school classrooms which involved many different teachers and was extended for several years. Taken altogether, their research has produced a chain of internally consistent and significant findings. First, the domintative and integrative contacts of a teacher set a pattern of behaviour which spreads throughout the classroom. In the classroom it is the behaviour of the teacher than that of any other individual, which sets the classroom climate. This is followed by a rule which states that when either type of contact predominates in the classroom, domination incites further domination and integration stimulates further integration whether the teacher may be present or not in the classroom, it is his tendency that spreads in the classroom. Further more, what type of a pattern a teacher may develop, it is likely to persist in his classroom in the next year with completely different students. Second, when a teacher has a higher proportion of integrative contacts, pupils show more spontaneity and initiative, voluntary social contributions and acts of problem solving. Third, when a teacher behaves in a highly domintative manner, the students are more easily distracted from school work, and show greater compliance to as well as rejection of teacher domination.

Studies by Lippit and White (1943) (8):

The famous study on relative effectiveness of democratic, authoritarian and laissezfaire styles of leader-


ship by Lewin, Lippit and White, demonstrated besides other things that group members in a democratic social climate were more friendly to each other, showed more group mindedness, were more work minded, showed greater initiative and had a higher level of frustration tolerance than members in the other groups.

In the same study it was also found that different leaders playing the same kind of leadership role displayed very similar patterns of behaviour and the group members reacted to the same kind of leadership style in the strikingly similar and consistent fashion.

The laboratory approach used had certain advantages (or disadvantages, depending on teacher's point of view) in studying the effects of the adult leader's behaviour. First, the contrasting patterns of leader behaviour were purified and made more consistent as a result of training and role playing. Second, differences in the underlying personality and appearance of the adult leaders were minimised through role rotation. Third, the effect of the pattern of leader behaviour was intensified, compared to a classroom since there were only five boys to a group. Lippit and White named 'Authoritarian Leadership' consisted of 'dominative contacts', 'Democratic Leadership' consisted of 'integrative contacts' and 'laissezfaire leadership' consisted of irregular and infrequent integrative contacts with an element of indifference to the total group that is seldom found in a classroom and was not present in the Anderson et al studies.
Their studies on the effects of democratic and authoritarian leadership styles in the student groups are also historically significant in focussing attention on the dynamics of the instructional groups.

Work of John Withall (1949):

John Withall developed a seven category index designed to assess the social and emotional climate of the classroom. Withall showed that a simple classification of the teacher's verbal statements into seven categories produced an index of teacher behaviour almost identical to the integrative-dominative (I-D) ratio of Anderson et al.

Bales Work (1950) (8):

Bales was the first to develop a system of categories to measure interactions in small groups. His system of categories is as follows:

A. Emotional Positive Responses:
   (i) Shows solidarity, raises other's status, gives help, reward.
   (ii) Shows tension release, jokes, laughs, shows satisfaction.
   (iii) Agrees: shows passive acceptance, understands, concur, complies.

B. Problem Solving Responses: Answer:
   (iv) Gives suggestion, direction, implying autonomy for other.
   (v) Gives opinion, evaluation, Analysis, expresses feeling, wish.
(vi) Gives orientation, information, repeats clarifies, confirms.

C. Problem Solving Responses - Questions:
(vii) Asks for orientation, information, repetition, confirmation.
(viii) Asks for opinion - Evaluation, Analysis, expression of feeling.
(ix) Asks for suggestion - Direction, possible ways of action.

D. Emotional Negative Responses:
(x) Disagrees, shows passive rejection, formality withholds help.
(xi) Shows tension, asks for help, withdraws out of field.
(xii) Shows antagonism: depletes other status, defends or asserts self.

An observer equipped with this category system, has the task of classifying each act of every member of the group into one of the twelve categories. The unit of observation "is the smallest discernible segment of verbal or non-verbal" which the observer can classify.

Work of Flanders (1959) (8 & 9):

He used inclusive, prescriptive and conjunctive classification of behaviour, demonstrated the good effects of indirect, integrative, democratic or inclusive behaviour of teachers on their students.

He created laboratory situations in which contrasting pattern of teacher behaviour were exposed to one student
at a time. A sustain dominative pattern was consistently disliked by pupils, reduced their ability to recall, later on, the material studied and produced disruptive anxiety as indicated by galvanic skin responses and changes in the heartbeat rates. The reverse trends were noted as pupil reactions to integrative contacts.

Inspired by Bales’s method of interaction analysis and Anderson’s results, Flander’s adopted Bale’s method for use in the classroom to assess the spontaneous verbal behaviour of teachers. Flanders has conducted so many projects in this area. A study on Flanders System has been discussed in next chapter.

In one of his studies he found that demanding directive and deprecating teacher behaviour resulted in withdrawal apathy towards the achievement problems, aggressiveness and hostility on the part of the students of these teachers, while the problem oriented and learner centered teacher behaviour elicited less interpersonal anxiety, more problem solving behaviour and a greater degree of emotional integration.

Study of Read (1961-62) (8)

His study was done on 1,045 ninth grade pupils. He found that there is positive relationship between teacher’s behaviour of praising and encouraging the students and positive student attitudes and achievement.
Cogan's work (1963 & 1968) (5):

He found significant and positive correlation between pupil's perception of the importance of their ideas and opinions in classroom decisions making to work output by these pupils.

Cogan (5) study was conducted on eight grade students, the number was 967 and only paper and pencil was given. It was conducted in 33 classrooms which contained three scales.

(i) A scale was given which assessed student perceptions of the teachers.
(ii) Another scale was given on which students reported how often they did require school work.
(iii) Another scale was given on which students reported how often they did extra, non-required school work.

In this work the items of one pattern were grouped as 'dominative', 'aggressive' and 'rejectant' which correspond to Anderson's dominative and integrative pattern.

His finding was that students reported performing more assigned and extra school work when they perceived the teacher's behaviour as falling in the integrative pattern rather than the dominative pattern.

Parkin's work (1964-65) (8):

His work was combining selected logical aspects of communication with the pattern of teacher influence. Parkin's
studied groups of teachers, organised study the topic of child growth and development. He used Withall's technique. He observed that when there was greater amount of learning about child growth and development occurred and the group working under and integrative type of leader did greater learning than those groups which were led by a dominative type of leader.

Parker Evans 1968 (7):

"An Exploratory study of the verbal and non-verbal behaviour of Biology teachers and their relationship to selected personality traits' was conducted by Thomas Parker Evans in 1968. He selected seven teachers and these were observed through video tape. A category system was developed in an inductive manner. It progressed from a list of individual behaviours to the individual categories and finally into the Biology Teacher Behaviour Inventory. This BTBI was composed of three parts, including a list of categories and sub-categories. The main seven categories are as follows:

1. Management
2. Control
3. Release
4. Goal Setting
5. Content Development
6. Affectivity, and
7. Undecided

Inter-observer agreement i.e. observer's reliability
was calculated and found to be .95 and .93. He also found some significant relationship with personality traits to the categories of B.T.B.I.


A study on Micro-Analytical Procedures and the Multi-dimensional Treatment of classroom Interaction in Science Teaching, was conducted by Johnson in 1971.

A Science education process model was proposed for ultimate use in research on science teaching in Sierra Leone. In this model, classroom interaction was presented as the middle component of a three-phase system which also includes an input (presage) component, and an output (product) component. The classroom was viewed as a 'black box' which is capable of generating intervening variables considered to be essential ingredients in the interaction process.

The on-going process of classroom interaction was viewed in terms of a communications model: interaction exchanges provided communications paths through which symbolic meanings were exchanged. The structure and dimensions of the communication process were considered to be important properties of classroom interaction worthy of analytical study. In order to facilitate this micro-analytical units of classroom behaviour and events were introduced, defined, and guiding rules for their formulations described. The classroom interaction unit called the 'interactum' was used as the basis for studying classroom interaction.
Three instruments were used as 'multi languages' for translating the classroom communications observed and recorded in various classrooms. Each was a uni-dimensional instrument reflecting the cognitive, affective and communication mode dimensions, respectively. The simultaneous use of these instruments reflected both a multi-instrument and multi-dimensional approach, and these were used to code the interact. Eight classroom using inquiry-discovery approaches to science teaching were used as data sources. The Interactum format, together with the procedures used for coding and the design of the study, permits ready computer analysis.

Classroom transactional styles were defined and identified as a valid basis for comparing classrooms. The dimensions of classroom interaction, as reflected by the use of three instruments, were analyzed to produce a reduced number of dimensions (factors) by means of a principal axis factor analysis with verimax rotation.

For each of the two transactional styles observed, six factors were obtained from the original twenty-three variables. An overlap among the factors was found.

Joel, (1972) (12):

A study on "The Development and use of Verbal Interaction System for the Evaluation of the Verbal Teaching Behaviour of Secondary Science Student Teachers with Emphasis on verbal interaction Techniques" was conducted by Joel in 1972.
In this study an observational system Inquiry Interaction Analysis Categories (IIAC) was developed for analyzing verbal teaching behaviours from audio recordings made by secondary science student teachers in the public high school classrooms. The Flanders type instrument consisted of categories some of which were specifically designed to verbal inquiry teaching techniques.

23 secondary science student teachers engaged at the University of Texas at Austin each submitted an age of 116 minutes of audio recordings at the beginning and 112 minutes of audio recordings at the end of their ten years student teaching experience. The Inquiry Interaction and Categories were used for the analysis of these audio-tape.

Two major questions were asked (i) Is there a change the verbal teaching behaviour of the secondary science student teachers between the recordings made at the beginning audio recordings made at the end of the student teaching experience? (ii) Did the student teachers who taught one science discipline differ in their verbal teaching behaviours from student teaching who taught each of the other disciplines? He found a significant change in categories of verbal teaching behaviour recorded at the beginning and at the end of the teaching experience.

He also found the interactive pattern of the teachers were changed with respect to their subjects.
Anderson, John Robert (1972) (3):

He conducted a study on "Classroom Interaction, Academic Achievement and Creative Performance in VIth Grade Classroom".

The purpose of the study was to answer the following two questions: (i) What relationships exist between measures of divergent thought and measures of problem-solving devised for the study? (ii) What relationships are found between measures of classroom verbal interaction and measures of divergent thought and problem-solving performance? The main conclusions of this are as follows:

1. Creative performance can be considered a problem solving product and process.
2. Creative performance of pupils can be facilitated by the quality of the verbal classroom interaction.
3. The promotion of creative performance does not detract from a support of academic achievement.
4. The classroom exhibits flexibility in the use of pupil-initiated ideas, IDEAS and the use of silence and seat-work will facilitate both academic and creative performance.

Studies in India:

India is not a country but a continent, from urban to rural town, it is possible to document material in this area. The difficulties, however, have become less marked with establishment of N.C.E.R.T. and four Regional Colleges of
Education of its Control, Central Advanced Studies in Education, Baroda, SITU, Madras and a few other educational agencies like the state institutes of Education and a quite a few research work scattered all over the country. Among all these agencies, the CASE has done considerable work in the area of Interaction Analysis and Micro-teaching, in collaboration with the British Council, New Delhi. Having said this the following are the most important studies undertaken in the area of Teacher Education, using Interaction Analysis and Micro-teaching. The later two techniques were quite unknown in this country, even about ten years ago. It is not irrelevant to those studies, which have not made use of modern techniques like Interaction Analysis and Micro-teaching. Even this indicate, despite the diverse efforts made by the CASE and Regional Colleges of Education, situated at the different four corners of the country, teaching practice or its improved modified form called the Internship in Teaching, has still remains an organizational concept. The same is more or less true at other colleges of education or teacher training colleges in the country. The table given below shows not only the number of studies conducted in the area of Teacher Education but also whether any given study makes use of either interaction analysis or micro-teaching or both. It is, however, added that the use of Flanders Interaction Analysis Category System has been very popular with all the research workers, all over the country.
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Year</th>
<th>Investigator</th>
<th>Title of the Study</th>
<th>Use of Interaction Analysis/and Micro-teaching</th>
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<tbody>
<tr>
<td>1.</td>
<td>1952</td>
<td>Adval, S.B.</td>
<td>An investigation into the qualities of Teachers under training</td>
<td>No</td>
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<td>2.</td>
<td>1956</td>
<td>Dosajh, N.L.</td>
<td>Imagination &amp; Maturity as factors indicative of success in teaching</td>
<td>No</td>
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<td>3.</td>
<td>1962</td>
<td>Jayamma, M.S.</td>
<td>Construction &amp; Standardization of an Inventory for predicting Teacher efficiency</td>
<td>No</td>
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<td>4.</td>
<td>1964</td>
<td>Manuel, N.Y.</td>
<td>Conditions required for quality teaching</td>
<td>No</td>
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<td>5.</td>
<td>1966</td>
<td>Deva, R.C.</td>
<td>Prediction of Student Teaching Success</td>
<td>No</td>
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<td>6.</td>
<td>1967</td>
<td>Mehta, P.</td>
<td>'Motivation Development' and his necessarily been paying attention to the allied problem of 'understanding and changing teacher behaviour'</td>
<td>Yes</td>
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<td>8.</td>
<td>1970</td>
<td>Prasad, M.</td>
<td>'Evaluation of Professional Efficiency of Primary School Teachers in science'</td>
<td>No</td>
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<td>9.</td>
<td>1970</td>
<td>Roy, B.</td>
<td>'Changing teacher behaviour through feedback'</td>
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<td>11.</td>
<td>1970</td>
<td>Buch, M.B. &amp; Z.M. Quaraishi</td>
<td>'The influence Patterns of the Male social studies teachers as determined by Flanders Interaction Analysis System'.</td>
<td>Yes</td>
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<td>S. No.</td>
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<td>12.</td>
<td>1971</td>
<td>Sharma, A.P.</td>
<td>'An experimental study of B.Ed. Theory course in educational psychology with a view to analyse the potential of carry over to the classroom situations in terms of student-teachers behaviours.'</td>
<td>No</td>
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<td>13.</td>
<td>1971</td>
<td>Sharma, R.A.</td>
<td>'A study of relationship of predictors at elementary level and follow up after one year of training.'</td>
<td>No</td>
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<td>14.</td>
<td>1971</td>
<td>Debnath H.N.</td>
<td>'Teaching Efficiency: Its measurement and some determinants.'</td>
<td>No</td>
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<td>15.</td>
<td>1972</td>
<td>Jangira, N.K.</td>
<td>'Classroom behaviour Training of Teachers and its Relationship with some selected measures of pupils'</td>
<td>Yes</td>
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<td>16.</td>
<td>1972</td>
<td>Pangotra, N.M.</td>
<td>'A Study of the Effects of Feedback from Different sources on the classroom behaviour of student teachers using the technique of Interaction Analysis.'</td>
<td>Yes</td>
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<td>17.</td>
<td>1972</td>
<td>Santhanam M.R.</td>
<td>'A study of the Patterns of Teacher Influence in some selected schools.'</td>
<td>Yes</td>
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<td>18.</td>
<td>1972</td>
<td>Quaraishi, Z.M.</td>
<td>'Personality, Attitude and Classroom Behaviour of Teachers.'</td>
<td>Yes</td>
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<td>19.</td>
<td>1972</td>
<td>Sharma, S.</td>
<td>'Relationship between Patterns of Teacher Classroom Behaviour &amp; Pupils Attainment in terms of Instructional objectives'</td>
<td>Yes</td>
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<td>20</td>
<td>1972</td>
<td>Roka, S.D.</td>
<td>'Using FLACS Study the classroom influence pattern of teachers in relation to some personality variables'.</td>
<td>Yes</td>
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<td>21</td>
<td>1972</td>
<td>Marker, N.S.</td>
<td>'Comparative study of Micro-teaching and conventional practice teaching of pupil teachers of Geography method'.</td>
<td>Yes</td>
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<td>22</td>
<td>1972</td>
<td>Passi, B.K.  &amp; M.M. Shah</td>
<td>'Micro-teaching in Teacher Education'</td>
<td>Yes</td>
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<td>23</td>
<td>1974</td>
<td>Singh, J.P.</td>
<td>'Classroom Interaction Analysis, Micro-teaching and Modification of classroom Teacher Behaviour'.</td>
<td>Yes</td>
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<td>24</td>
<td>1974</td>
<td>Singh, S.K.</td>
<td>'A Study of the relationship between verbal interaction of teachers in classroom and attitude teaching'.</td>
<td>Yes</td>
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<td>25</td>
<td>1975</td>
<td>Vashishtha, K.K.</td>
<td>'An experimental Study of the Change in some characteristics and verbal behaviour of secondary science and mathematics student teachers through the training in verbal interaction technique.'</td>
<td>Yes</td>
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<td>26</td>
<td>1976</td>
<td>Joshi, S.M.</td>
<td>'Effectiveness of Microteaching Technique in the Preparation of Teachers'</td>
<td>Yes</td>
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<td>27</td>
<td>1976</td>
<td>Mahesh, Vimla</td>
<td>'A Study into the classroom verbal interaction pattern of effective and ineffective teachers'.</td>
<td>Yes</td>
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<tr>
<td>28</td>
<td>1977</td>
<td>Passi, B.</td>
<td>'Effect of Instructional Material' and Feedback upon the development of certain Teaching skills'.</td>
<td>Yes</td>
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<td>S. No.</td>
<td>Year</td>
<td>Investigator</td>
<td>Title of the Study</td>
<td>Use of Interaction Analysis or / and Micro-teaching</td>
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<tr>
<td>29.</td>
<td>1978</td>
<td>Goel, Sushma</td>
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<td>Das R.C. &amp; Passi B.K.</td>
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<td>Yes</td>
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Let us consider some of the main findings of the above mentioned studies within the last 30 years or so, in our country. Historically speaking and as already referred to line of attack on the problem is of crucially importance in the writer's study as well, for example, Adval study showed that teachers did possess some general knowledge around them. The study further reveals that love for public service, love for children etc., stimulated the young recruit for teaching profession. The present study does not take this direction and hence significant findings relating to all those studies, which do not make use of Interaction Analysis and Micro-teaching. These are serial numbers in the above table 1 being 1, 2, 3, 4, 5, 6, 12, 13 and 14.

The findings of these studies in their summary form are available in the 'Survey of Research in Education' and Researches in Teacher Behaviour'.

Impressed by the work of Prof. Jean Piaget, Prof.
Rajput and Prof. Vaidya (24) planned and executed for two years a very interesting project little noticed in this country, entitled "The Individually Accelerated Science Teacher Education Project". They believed that it is very necessary to study any given variable in its widest variation.

With the subsequent transfer of Prof. N Vaidya to R.C.E., Ajmer, this was again started. In this experimental project, it is interesting to note, the Science Teacher Behaviour Inventory as developed by the investigator (22), was used informally. Additionally speaking they also did identify certain skills in teaching.

Some work done in the area of Teacher Behaviour have been presented in following paragraphs.

In 1967, Prayag Mehta (4) when he was in N.C.E.R.T. conducted a study of 'Understanding and Changing teacher behaviour', in the light of classroom interaction analysis. He took the Flanders Interaction Category System. All the ideas representing his line of thinking from the content of a booklet published from N.C.E.R.T., New Delhi in the manual form.

Pareek (4) in the year of 1967 or 1968, had project on 'Mental Health and Classroom Behaviour'. The findings of the above research project may well be expected to revolutionise our basic thinking with regard to classroom inter-
action. He reveals very significant relationship between mentally and classroom behaviour, lying latent in the 'interaction manifestations in the classroom situation might be unearthed'.

Quaraishi & Buch (4) conducted a study 'The Influence Patterns of Male Social Studies Teachers as determined by Flanders Interaction Analysis System'. The some main findings are as follows:

The nature of influence of behavioural pattern is more direct than indirect. The teacher uses 17 indirect statements out of 100. Most of the Teacher indirect talk is the form of questions. Very little time is spent on the indirect categories, such as 1, 2 and 3. The age, experience, qualifications and methods plays an important role in the formation of teacher influence.

In 1970, Roy (4) studied the changing teacher behaviour through feedback. He found that the percentage of improvement was fairly high above 60 belonging to teachers bringing changes but not in all the teachers. It was found that the pupil's observation and teachers' self-rating feedback were most important in the teaching learning situation. The observations and peer-ratings data did not help much in professional growth.

A study (4) 'The classroom verbal Behaviour of selected teachers in Baroda Secondary Schools'. He conducted that the tool of observation of classroom interaction, when
used by properly trained personnel, can be more effective, as also more objective. The interaction analysis as an index of teacher effectiveness possess great potentialities both in teacher training programmes, and inservice training programmes where in desired modification of teacher behaviour might be attempted in the light of interaction analysis results.

Next study conducted, in 1970, by Santhanam, Guarashi and Lulla (4). The title is 'Pattern of Influence of Social Studies Teachers'. They take 36 teachers (17 male and 19 female). The main findings are -- (i) rate of communication is fast in female teachers' classes. (ii) Women teachers are more indirect in comparison to male teachers. The teacher talk and the emphasis given on the content is more in the male teacher than the female teachers. The female teachers are having more capacity to change the behaviour and more stringent in the use of 'praise/encouragement' than the male teachers.

Another study, in 1972, 'Classroom behaviour training of Teachers and its relationship with some selected measures of pupils' conducted by Jangira (4b). The major findings are the training in classroom behaviour did change the pattern of interaction in the class. Those student-teachers, who were trained in classroom behaviour scored significantly higher on classroom interaction variables i.e. PFT, TRR, TQR, TRR89, TQR89, PIR and MER and
scored significantly over on PTT, PSC, CCR and SSR. Those pupils undertrained teachers having higher score on adjustment to school, teacher, general adjustment, dependency and classroom trust than the other pupils.

A study in 1972 "Personality, attitudes and classroom behaviour of teachers" conducted by Guaraishi (4). He reveals that teacher's verbal behaviour in the classroom was related in a small measure to their personality and attitudes. Direct and Indirect teachers did not differ significantly on the seven personality traits, implying that personality does not affect teacher behaviour. The value of T/S ratio could not be predicted by any of the 15 predictor variables. The sociable trait was found to be the best predictor of student initiation.

In the year of 1972, Roka using FLACS, studied the classroom influence pattern of teachers in relation to some personality variables. In his study, lecturing was found as one of the most widely used teacher's verbal behaviour. Incidence of indirect influence was found to be very low. No significance difference was found between influence pattern and attitude of teachers towards teaching and child centred practices.

S. Sharma (4) in 1972, conducted a study of 'Relationship between patterns of Teacher Classroom Behaviour and Pupils Attainment in terms of Instructional objectives'. The major findings are as follows:
1. Pattern III was found to be more effective as compared to other three patterns. With respect to knowledge objectives.

2. Pattern I showed comparatively low value of pupil attainment in terms of comprehension objective.

3. Pattern III was found to be the best pattern as regards pupil attainment in comprehension objective.

Marker (13) in 1972, compared the performance of microteaching with that of traditional method. The feedback given through Audio tape. He found, that microteaching is quite effective. Marker conducted another experiment in micro-teaching in stimulated conditions and he found very encouraging results. The results showed the effectiveness of micro-teaching over the traditional method.

The effectiveness of different sources of feedback on the classroom behaviour of the teachers was compared by Pangotra (4b) in 1973 with different three feedback sources as (i) Student herself, (ii) College supervisor and (iii) external supervisor. The Flanders Interaction Analysis system was applied and it was found that self directed feedback teachers were better than the feedback from other sources, i.e. feedback from college supervisor and external observers were also found to be effective when compared to control group which received no feedback.

Singh (20), in 1974, compared the effectiveness of micro-teaching technique and Flanders Interaction Analysis
System with verbal teacher behaviour. The study showed that (i) the teaching through first and second methods changed their verbal behaviour more significantly as compared to traditional method and (ii) teachers trained through micro-teaching changed their verbal behaviour significantly latter than those trained through Flanders Interaction Analysis System or Technique.

In the year of 1974, Smt. Singh (21) studied the relationship between verbal interaction of teachers in classroom and attitude towards teaching. Her study reveals that there is significant relationship between attitude towards teaching and classroom verbal interaction of student teachers. Indirect influence seems to be significantly correlated with teaching attitude and direct influence seems to be negatively correlated with teaching attitude. The teacher response ratio, teacher question ratio, instantaneous teacher response and question ratios appear to be significantly related to teaching attitude, but silence or confusion content-cross ratio, vicious circle, steady state ratio and pupil steady state ratios are negatively correlated with teaching attitude.

Joshi (1974); and Passi and Shah (15) in 1974 found that micro-teaching was effective in developing the skills. These skills of questioning, reinforcement, non-verbal cues and illustration with example had been taken for the purpose the study. Abrahm in 1974 also found that
micro-teaching technique was effective in developing the
skills of fluency in questioning and probing questioning.

Vasishta (23) in 1975 conducted an experimental
study of the change in some characteristics and verbal
behaviour through the training in verbal interaction analysis.
The change of the behaviour was evaluated in terms of
interaction model. The investigator found the training in
verbal interaction technique to contribute significantly
for modification of teacher behaviour and thus contributing
towards teacher effectiveness. The trained student teachers
of PIACS make more ideas, pupil initiation and less use of
lecturing and direction. This is gain in indirectness,
flexibility and loss in restrictiveness and restrictive
feedback. The trained student teachers involve more
creatively towards the teaching models, giving by Flanders,
in their classroom interaction.

Vimala Mahesh (14), in the year of 1976, conducted
an investigation into the classroom verbal interaction
pattern of effective and ineffective teachers. She found
that the effective teachers involve more indirect influence,
student initiation, teacher response ratio, teacher question
ratio and pupil steady state ratio. The ineffective
teachers involve more direct teacher talk, silence or
confusion, steady state ratio and vicious situation in
their classroom verbal interaction through the use of
Flanders Interaction Category System.
Joshi (17), Lalita and Passi (16) and (18) in the year of 1977 compared the effectiveness of micro-teaching technique and conventional approach in namely skill of writing the instructional objectives introducing a lesson, fluency in questioning, Probing questioning, explaining, illustrating with examples – stimulus variation, silence and non-verbal cues Reinforcement, Increasing pupil involvement, using black board. They also found that the micro-teaching was more fruitful and effective than traditional approach in developing the skills.

Dass et al (1977) and Passi (1977) (6) found micro-teaching very helpful in changing attitude of student teachers toward teaching.

In 1978, Sushma Goel (10) had completed a study to explore the behaviour flow pattern of extrovert and introvert teachers in the classroom teaching. She also used the most popular tool i.e. FIACS. She found that the extrovert teachers have greater interchange in the classroom events than introvert teachers. The extrovert teachers have larger transition from student response. The introvert teachers have higher content cross value than the extroverts. They give more emphasis on content. The extroverts tendency is to break the state of silence or confusion by posing the questions whereas introverts provides direction in this situation. The extrovert uses more indirect categories than the extroverts.

It is difficult to compare the findings of the various studies in a nutshell because of the following reasons:

(i) Variety in aims and objectives of investigation
(ii) Mode of sampling
(iii) Tool used

The present S.T.B.I. has the following merits, missing in all the studies, mentioned above. It takes consideration the pupils’ view point as recorded by them on piece of papers between the time interval, the teacher enters in the classroom and leaves the classroom. This setting of the tool is an important with a view to further supplement the views of teachers as well as teacher trainees taking into consideration.

For the sake of the quality and performance, this scale was compared with all the 92 such systems or scales as
mentioned in the 'Mirrors for Behaviour' by Simon and Boyer, and in 'Second Handbook of Research on Teaching' by Travers.

For the purpose of workability, the number of the categories stand reduced to 20 i.e. twice a number of Flanders Interaction Analysis Category System. Using a pocket calculator and Moscal-1207 electronic calculator, attempt is made to determine its mathematical structure through Factor Analysis tentatively.
REFERENCES


