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NATURE AND SIGNIFICANCE
OF THE PROBLEM

1. Introduction

The keynote of democracy is Education - not only that education should be accessible to all, but also that the aims and methods of Education have been thought out afresh. That is why the Indian Education Commission (1964-66) has rightly said that 'the Destiny of India is now being shaped in her classrooms'. In a world based on Science and technology, it is education that determines the level of prosperity, welfare and security of the people. So during the several plan periods, the government have been spending large sums of money on education. 'The government of India are convinced that Education is the key to national prosperity and welfare, and that no investment is likely to yield greater returns than investment in human resources of which the most important component is Education'. (Resolution of the Government of India setting up the Education Commission, No. F. 41/3(3)/64-E1, Ministry of Education).

In spite of all the efforts to expand educational facilities, there is a general feeling that qualitative improvements have not been keeping pace with quantitative expansion. The Indian Education is in need of drastic reconstruction, almost a revolutionary change in the teaching and learning processes. So it is the primary responsibility of educationists and practising teachers to plan and face the challenging problems of education.

2. Importance and Significance of the Problem

Today, one of the serious problems of Education in our country is the low level of scholastic achievement of school children at the primary and secondary stages of education. Pupils' achievement must be considered to be the index of the quality of education. In this regard, the present state of affairs in our country is not encouraging. (In the present condition). A great deal that goes by the name of routine instruction has not been found effective. Therefore, adaptation of classroom instruction to suit the needs of the pupils is of capital importance, if the educational process is to lead to results which are of real value. This is a challenging task not only for research workers and educators, but also to those who are concerned

with educational administration. For more than half a century researchers all over the world have concentrated attention on theories of learning. As a result of these investigations, the basic conditions under which learning occurs have been identified, and the knowledge has been verified by the use of scientific technique.

In the study of learning process, it was expected that classroom teaching would be made conducive to learning. Teaching and learning are undoubtedly the main focus of attention in any educational process. Of these, learning has so far received a major share of attention by researchers in the behavioural sciences. These researches in learning have not in any way significantly increased the effectiveness of teaching. It has been felt by researchers, and therefore, that more emphasis should be laid on the problem of teaching so as to develop and generalize on a comprehensive theory of teaching for effective learning and better classroom dynamics.

The need for a theory or theories of teaching is evident from studies of Educationists like Flanders, Barr, Ryan, Biddle, Gage and others. This has been the principal concern of researchers in teaching for the last three decades. It is

believed that sound teacher education programme with a comprehensive theory or alternate theories of teaching will prove to be fruitful.

Gage (1963) claims that neglect of theories of teaching is specially due to : (1) the belief that the development of such theories implies a science of teaching in contrast with the arts of teaching which is accepted by many writers, and (2) the presumption that theories of learning are adequate for the teacher. It is believed that one cannot neglect the need for research in teaching on the assumption that learning theories should be adequate to develop the art of teaching'.

Burner (1966) feels that in this connection teachers do not need a descriptive theory, which learning theories really are, but a prescriptive theory. 'A theory of instruction, in short, is concerned with how, what one wishes to teach can best be learnt, with improving rather than describing learning'. Learning theorists insist that principles may be drawn into the instructional process from various theories of learning to build a psychological model of teaching (Gathrie, 1935; Skinner, 1953; Spencer, 1956; Gronback, 1963; Gagne, 1965)½ They hold the view that teaching and learning are closely related and an acceptable

and sophisticated learning theory is a pre-condition to developing a theory of teaching. It is believed that educational psychologists working in the area of instructional research have so long worked to derive practical methods of teaching from general theories of learning based on experimental findings. Gage (1964) has, on historical grounds justified the irrelevance of theories of learning to theories of teaching, pointing to the past failure of learning theories to provide a psychologically relevant basis for pedagogical practices. Results of experiments in learning have largely failed to solve many problems of instructional needs. He, therefore, distinguished between the teaching and learning process. Theories of learning help in furthering the understanding, control and prediction of learning behaviour, but not in the development of a science of teaching. Teaching deals with how an individual behaves, thus influencing another individual to learn. According to Gage, what is required is an analysis of teaching, identifying its variables and developing a theory of teaching.

The need to develop a theory of teaching as discussed earlier is of the utmost importance in our country because of our expansive programme to bring school education to the

teeming millions. The task of developing a realistic theory of instruction warrants extensive studies in the area of classroom interaction analysis and teacher behaviour.

The task of improving classroom teaching is also an urgent need of the present times. It is envisaged that the purpose of teaching is to promote learning and pupils' inter - personal relationship. Moreover, to find the change in teacher behaviour and its effects on classroom climate, the present investigation has been undertaken.

3. Classroom as a Nucleus of Change

Considerable attention has been directed during recent years to the techniques of revitalizing classroom teaching in Indian schools. The teacher and what he does inside the classrooms are significant. In order to bring about qualitative improvement in education, it is important to study the teaching - learning procedures as they occur in the classrooms, the physical and psychological conditions as prevailed in the classrooms, the teacher behaviour in the classrooms.

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The classroom is the focus of all educational activity needs no elaboration. The success (or failure) of any educational reform finally rests on the teacher, inside the classroom. This has been realised in Indian Educational field and the Centre of Advanced Study in Education has rightly taken up this as an important direction of research. In his forward to 'Communication in Classroom', Ishwarbhai J.Patel, Chairman of the Gujarat State Board of Teacher Education, has said, 'The major problem in the area of school education is to influence the instructional process. It is only when the instructional process is improved, the benefits of new curricula, new text books, and other innovative ideas will bear fruit. The communication process of the teacher has been mainly found to be responsible for the proper educational growth of the child'.

Thus, we find that what happens inside the classroom has a direct bearing on the quality and standards in education. The classroom is the key place and the study of all aspects of classroom teaching is very essential for furthering the cause of education.

4. The Challenges of the Classroom

The present classroom teaching (i.e. traditional way of talking by the teacher) will cripple a child's chances in the world of tomorrow. Alwin Toffler (1972) says that we have to create super industrial education system for our future taking into consideration the future kinds of jobs, professions and vocations. Assuming the people who live in super industrial societies, will need new skills we have to develop to our students, skills in the crucial areas of learning relating and choosing only from our classroom setting.

Indeed, it is surprising to find that educational researchers have for years, focussed mainly on the improvement of teaching through attempts to identify the characteristics of good teachers or good methods rather than on a process as it generally occurs in the classrooms. However, classroom situations and the teaching process have received scant attention. It seems that educational researchers have slightly changed their concern from effective teachers and effective methods to actual happenings in the classrooms. Now research attempts focussed around the teaching process, which brings teachers and pupils face to face. This area of research that has recently been attempted

is identified as 'classroom communication'.

This research focusses on classrooms by way of interaction between teacher and the pupils and also amongst the pupils themselves. It is over three decades now that the attention of research workers has been focussed on the classroom communication phenomena. The researchers seek to demonstrate the effects of quality teaching on the performance of the pupils in an interactive setting. Some attempts have also been made to investigate aspects of teacher effectiveness.

Although general use of observation systems in research and teacher self evaluation is a relatively recent development, systematic observation appeared in educational literature as early as 1935 with Wrightstone's study of schools in New York using 'Newer Practices'. The many educators who have investigated and developed observational approaches include : Anderson, Withall, Huges, Flanders, Amidon, Ober, Brown, Galloway, Medley and Mitzel, Ryans, Gallagher and Ascher, Combs and so on.

While such studies have gained popularity and importance in U.S.A. and U.K. or other countries, a beginning has just been made in India to investigate

classroom climate. This is brought out by the fact that the Indian year Book of Education analysing the research activities does not include any reference in this field. There is therefore a void and studies of this type are needed.

5. Teacher Behaviour in the Classroom and Its Effect on Pupils

The teacher occupies a leadership position in the classroom. Teacher behaviour plays a major role in determining pupil achievement, pupil growth and development. The study of the teacher and his classroom behaviour is, therefore, of a paramount importance. Attempts have also been made to study one or more aspects of teacher effectiveness. The problem of teacher effectiveness is so complex that no one knows what the competent teacher is or how to study the phenomenon of effectiveness with appropriate research strategy. Teacher effectiveness means the teacher's effect on the realization of some value (Gage 1963). This value usually takes the form of educational objectives in terms of desired pupil behaviour, abilities and habits - in short the dynamics or interaction of the pupils. The ultimate criterion of a teacher's

effectiveness is usually considered to be his effect on the pupils' achievement of these objectives. The effective teachers contribute to pupils gain and pupils growth. Measuring the differences of pupils achievement before and after the teachers' influence help to define such gains. But methods of defining measurable objectives of education are w still in the infant stage. Teachers effectiveness being a complex problem, one is faced with the question of appreciable magnitudes of measurement tasks involved in the evaluation of such activities.

According to Flanders (1970), research on teaching effectiveness attempts to discover the relationship between classroom teaching behaviour and measures of pupils growth. Interaction analysis provides information about the verbal communication which occurred; and helps to explain the results.

Over the last decade research has centered on teacher and pupil behaviour and their interactions rather than on 'teacher effectiveness'. This is an important step in educational research. Relevant and reliable data can be obtained by observing classroom behaviour and by using various technically appropriate measures. According to Hughes (1963), teaching is an interactive setting. The

present attempts seek to develop more and more observational schedules in order to measure this interaction in the classroom. This will result in gaining insights regarding such variables as teacher - pupil interaction, teacher internal processes, pupil internal processes and other environmental factors which influence pupils and teachers and end results such as change in the cognitive, affective and skill domains of pupil behaviour.

6. Classroom Interaction Analysis

An analysis is a system seeking to observe and codify spontaneous verbal communication between a teacher and his pupils. The assumption underlying this is that teaching behaviour and pupils' responses are expressed primarily through the spoken word, as a series of verbal acts which occur one after another. These events are identified, then coded so as to preserve the observed sequence, and tabulated in such a way that it represents a sample of the spontaneous teacher influence.

The critical problem is decoding the data. Decoding is a process of displaying coded data in order to make appropriate statements about the original behaviour which were codified, even though one may not have been present

when the data were collected.

A system of interaction analysis will usually include:

(a) a set of categories, each defined clearly, (b) a procedure for observation and a set of ground rules governing the coding process, (c) steps for tabulating the data in order to arrange a display which aids in describing the original sequence of events, and (d) suggestions which can be followed in some of the more common applications (Flanders, 1970). Interaction analysis is a chain of classroom events laid out in such a manner that ^{each} event is taken into consideration.

Classroom interaction analysis system seeks to abstract communication by centering on certain essential characteristics. The loss is more than off set by keeping an accurate record of the number of times that a teacher attempts to elicit verbal responses from pupils. It is conceded that the procedure makes no sense at all when what is lost by the process is more important than what is gained. That is, the procedure is meaningful only when keeping an accurate record of the verbal expressions encoded is crucial to some investigation. Therefore, this highlights the need for establishing usefulness, interms

of appropriateness of the observational system to the problems under investigation.

Classroom interaction analysis would provide reasonably objective information which helps the teacher to read fast his behaviour, and to develop strategies of teaching behaviour.

Teacher - classroom behaviour can be studied through actual observation of classes in natural settings. The process of teaching can be perceived as a series of verbal events occurring one after another. The chain of verbal events reveal the relationships between teacher behaviour and the nature of the classroom dynamics. The nature of these relationships help in measuring educational outcomes associated with teaching. It also provides a method of quantifying concepts which refer to spontaneous behaviour, which can be measured indirectly interms of pupils' attitudes and achievements. Recently, more reliable and valid observation techniques have been developed to provide exact quantification and scientific analysis of classroom communication and these new methods are capable of more objective and reliable assessment of teaching efficiency.

7. A Felt Need - Classroom Communication

The classroom is the focus of all educational activity needs no elaboration. The communication and interaction in a classroom between teacher and pupils and amongst pupils play an important role in determining the achievement of pupils. Recent researches has focussed attention on what transpires in the classroom by way of interaction between teacher and pupil and also between pupils themselves. Classroom interaction is the process of verbal interchange between the teacher and the pupil and also among pupils themselves. It is a process through which the teaching - learning task takes place. Effective teaching is said to occur when the teacher and the pupils interact among themselves. The interaction in the classroom is usually teacher initiated as the teacher occupies a leadership position. The study of classroom interaction, therefore, would be of no significance without observing the classroom behaviour of the teachers and its implications. Classroom interaction and teacher behaviour are thus, inter-dependent and related to each other.

8. The Statement of the Problem

In India, at present, research studies on teacher behaviour are of paramount importance. An indirect verbal behaviour on the part of the teacher by encouraging and

inviting pupil participation, enlarges their freedom of expression, which in turn, results in better classroom climate. It is the concern of educational research to make the classroom life of pupils successful. The only way to achieve this objective of education is to probe into teacher classroom behaviour and classroom interaction analysis.

Recently studies in the areas of teaching have been experimental taking teacher verbal behaviour as an independent variable and linking it with pupil outcomes. To identify the variables related to teacher behaviour and the outcome of his behaviour in creating the classroom climate, the investigator has taken up the problem 'An Experimental Study of Classroom Climate'.

9. Definitions of Terms

Certain terms are used in this study. Hence it is necessary to define them.

Classroom Climate :

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

'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' is merely a short-hand reference to those qualities that consistently predominate in most teacher-pupil contacts. Thus, study of teacher behaviour through classroom interaction analysis becomes a study of classroom climate as well.'

Classroom climate is considered in this study, to refer to conditions prevailing or developing in the classroom as a result of the teacher - pupil interactions during teaching learning situations. The assessment is made on the basis of observation of teacher behaviour and student behaviour in the classroom.

Teacher Classroom Behaviour :

The phrase 'Teacher Classroom Behaviour' in the present study means 'teachers' influence patterns which he exerts in the classroom while teaching'. The basic premise of interaction analysis is the belief that the teachers' classroom verbal behaviour creates a particular type of social emotional climate in the classroom which has a direct effect on the attitude and behaviour of pupils (Flanders, 1970).

Direct Influence :

'Direct Influence' consists of stating the teachers own opinion or ideas, directing the pupils' action, criticizing his behaviour, or justifying the teachers' authority or use of that authority. This concept refers to actions taken by the teacher which restrict student participation. Expressing one's own views through lecture, giving directions, and criticizing with the expectation of compliance tend to restrain pupil participation (Flanders, 1970). Traditional teachers behaving in a restrictive way, were included in the direct or controlled group of the present study.

Indirect Influence :

Indirect influence implies teacher behaviours that expand students' freedom of action in the classroom. Indirect influence consists of soliciting the opinions or ideas, applying or enlarging the opinions or ideas, praising or encouraging the participation; or clarifying and accepting feeling of pupils. In other words, it is defined as action taken by the teacher which encourages and supports students' participation (Flanders, 1970). The indirect or experimental groups for the present study consisted of teachers trained in indirect behaviour.

Classroom Behaviour Training :

The training designed to change the classroom interaction patterns of the teacher through systematic feedback based on Flanders' Interaction Analysis Category System (Flanders, 1970).

Interaction Analysis :

Interaction analysis is nothing more than an observational technique which can be used to obtain a fairly reliable record of spontaneous verbal responses. Much of teachers' influence is exerted by verbal statements. Interaction analysis does not refer to one system but to many systems for codifying spontaneous verbal communications. The analysis of interaction helps to study patterns of teaching and learning (Flanders, 1970).

Feedback :

The information, a teacher obtains about his classroom interaction patterns on the basis of observation of his teaching (Flanders, 1970).

Classroom Interaction Analysis :

Classroom interaction analysis can be described as a technique for capturing quantitative and sequential (and hence qualitative) dimensions of teacher - student verbal behaviour in the classroom. As an instrument, however, it does not measure

(e) Pupil Initiation Ratio (PIR) :

PIR is 'the proportion of pupil talk judged by the observer as an act of initiation by pupil'.(Flanders, 1970, p. 102).

(f) Content Cross Ratio (CCR) :

CCR is an index representing content focus and is determined by computing the percentage of talk lying in columns and rows of categories 4 and 5 of the Flanders' Interaction Analysis Category system.

(g) Steady State Cell (SSR) :

SSR is an index representing the steady talk of the teacher and pupils.

(h) Pupil Steady State Ratio (PSSR) :

PSSR is an index representing the steady talk of the pupils.

Teacher Flexibility :

Teacher flexibility is a measure of the change a teacher makes in his verbal influence from activity period to another. It is measured by calculating the ratio of indirect influence (I) to direct influence (D) in the activity period and comparing it with the corresponding ratio in other activity periods.

No teacher has been observed to possess a pure pattern of influence. All teachers have a balanced combination of direct and indirect influence. As one enters the classroom he finds shifts of teacher behaviour from time to time. It is quite reasonable to observe all such different activities and separate the data. Only then one can find out whether teacher shifts from his balance from direct to indirect influence. It is essential to find the activity periods when teacher behaviour is direct to indirect. To identify activity periods one should classify verbal statements. Classifying them indicates the change in the teacher influence pattern. Data of such homogeneous activities will help us to measure the flexibility of the teacher and change in verbal influence. This can be measured by finding the ratio of indirect influence to direct influence. The effect of flexible influence on pupils' behaviour can be investigated.

Teacher Effectiveness :

Teacher effectiveness is an area of research which is concerned with relationships between the characteristics of teachers, teaching acts, and their effects on the educational outcomes of classroom teaching.

Adjustment :

The term 'adjustment' is defined as 'the individual's orientation towards his parents, teachers, peers, school and himself in terms of satisfaction he derives from his interactional relationship with the significant others and himself' (Pareek and Rao, p.2).

Classroom Trust :

Pareek and Rao define classroom trust as 'the pupils feelings, free to interact with the teacher, to discuss with him day to day classroom problems, (e.g.) the teachers' action not convenient to or liked by pupils, the feeling aroused in the pupil by some actions of the teacher, the pupils voluntary help to the teacher for some classroom problems' (Pareek and Rao, 1970,p.9).

Initiative :

Initiative is defined by English and English (1958) as 'the tendency to start actions independently, such independence may or may not involve originality'.

Dependency :

Dependency is defined as 'the tendency to seek the help of others in making decisions or in carrying out difficult actions' (English and English, 1958).

Activity :

Activity is defined as 'any type of voluntary performance, curricular or co-curricular, by a student in a controlled situation like the classroom. Activity may either be verbal or non-verbal' (Pareek and Rao, p.34).

10. Objectives of the Study

Various objectives of the study are specified as follows :

1. To change the teacher verbal behaviour by proper training programme.
2. To study the effects of the sustained changed behaviour and their effects on student performance.
3. To study the effects of changed behaviour on variables such as pupils' academic motivation, expectancy, dependency, classroom trust, initiative, activity level, adjustment, classroom climate, classroom integration and academic achievement as related to pupils.
4. To study the effectiveness of the psychological education inputs in bringing about changes with respect to the major components of psychological developments namely (i) Goal-setting behaviour (ii) risk-taking behaviour, (iii) perception of self-image, (iv) perception of goals, (v) perception of teachers' role, (vi) perception of the role of the self in schools (vii) non-academic interests^{and} (viii) images for emulation, ~~and-(ix)-~~ in Experimental Group I pupils.

11. Hypotheses

For the present investigation, the following hypotheses were formulated :

1. Properly planned training with definite inputs changes teacher verbal behaviour.
2. Changes in teacher verbal behaviour leads to different types of classroom climates like Highly Democratic, Democratic and Authoritarian.
3. Indirect Verbal behaviour leads to changes in pupils' academic motivation.
4. Indirect verbal behaviour leads to better adjustment of pupils towards class teacher, principal, companions, subjects, classroom, and school and in total adjustment.
5. Indirect verbal behaviour leads to changes in pupils' classroom trust.
6. Indirect verbal behaviour leads to changes in pupils' activity level.
7. Indirect verbal behaviour leads to changes in pupils' expectancy level.
8. Indirect verbal behaviour leads to changes in pupils' dependency level.
9. Indirect verbal behaviour leads to changes in classroom integration.
10. Changes in teacher verbal behaviour leads to changes in climate as measured by classroom climate scale.

11. Indirect verbal behaviour leads to changes in pupils' academic performance.
12. The psychological education input programme leads to changes in pupils' goal setting behaviour.
13. The psychological education input programme leads to changes in pupils' Risk-taking behaviour.
14. The psychological education input programme enables the pupils' to form a better self image.
15. The psychological education input programme leads to changes in Pupils' Goal-perception, perception of the Role of Self in relation to school, and perception of the Teachers' Role.
16. The psychological education input programme enables the pupils to develop a favourable attitude towards school.
17. The psychological education input programme leads to changes in the Images for emulation.
18. The psychological education input programme widens the non-academic interests of the pupils.

12. Scope and Delimitations

The scope and delimitations of this study are as follows :

1. The present investigation was a short range experimental study, running over six academic weeks.
2. The study has been conducted on a random sample of twenty one teachers from three schools in Coimbatore town. Of the twenty one, seven teachers belonged to Experimental Group I, seven teachers belonged to Experimental Group 2, and seven to the Control Group.

3. The total sample of the pupils under the twenty one teachers was 304, and in which 102 belonged to Experimental Group 1, 102 belonged to Experimental Group 2 and 100 belonged to Control Group.
4. After verifying their respective interaction analysis matrices, only seven like minded teachers teaching English, Languages, Science, Mathematics and History and Geography were selected from each school for the study.
5. The investigation was restricted to IX Standard in three High Schools in Coimbatore.
6. The Contents to be taught during the experimental period were the same in all the subjects in all the three schools.
7. During the experimental period, two teachers made common achievement tests, were administered.
8. Before the experiment, one teacher made common achievement test, was administered.
9. To measure the classroom climate, the following tests were administered on the pupils belonging to experimental Group 1, experimental Group 2 and Control Group. They are :
 - (a) Classroom Climate Scale
 - (b) Classroom Trust Schedule
 - (c) Pupils' Academic Motivation Scale
 - (d) Students' Activity Scale
 - (e) Students' Expectancy Scale
 - (f) Students' Adjustment Scale
 - (g) Students' Dependency Scale
 - (h) Sociometric Scale

10. Before the experiment, two FIACS matrices were prepared for all teachers under study and their respective percentage matrices were also prepared.
11. During the experiment, six FIACS matrices were prepared similar to the above.

13. Scheme of Chapters

The following is the scheme of chapters :

In the first chapter, the significance and importance of the problem is discussed in detail. It also includes definition of terms, scope, objectives and hypotheses.

In the second chapter the foundations of classroom climate, variables affecting classroom climate are dealt with in detail. It also includes related research studies conducted in India and abroad.

The third chapter deals with the design, the sample, tools, and procedure adopted for the study.

The fourth chapter deals with the collection of data. A detailed account of the training course conducted for the teachers of experimental groups to change their behaviour pattern and follow up experimental are given.

In the fifth chapter the analysis of teachers' behaviour is discussed in detail with reference to I/D, i/d categorywise and teacher wise.

Chapter six deals with analysis of the data, wherein the gains of the students due to changed behaviour patterns of teachers of the experimental groups are explicitly explained through proper statistical interpretations and diagrams.

Chapter seven deals with summary, observations and suggestions, where in the summary of findings and further scope for research in teacher behaviour areas are discussed.

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