CHAPTER I

INTRODUCTION

ASSUMPTIONS OF TEACHER EDUCATION

The ultimate aim of teacher education is to prepare effective teachers - teachers who are capable of bringing about desired behavioural changes in pupils under their charge to an optimal level in relation to the input in terms of human energy and material resources expended in the process. Teacher education attempts, or is presumed to attempt, to meet this challenge following a few assumptions. In the first place, it is assumed that there is an adequate concept of teaching. Secondly, it is assumed that this concept of teaching can be operationalized in terms of teaching behaviour patterns invariably related to desired educational outcomes. Thirdly, it is assumed that there are certain techniques of training available, through which teaching behaviour...
patterns can be developed in prospective teachers to effect the desired educational outcomes. Fourthly, it is assumed that once the teaching behaviour patterns are acquired by prospective teachers during the course of their training, these patterns are sustained and carried over to their assigned positions in the teaching profession, till more efficient teaching behaviour patterns are discovered and mastered to effect the desired educational outcomes. Lastly, it is assumed that teacher education institutions plan and execute their programmes directed to this end.

VALIDITY OF THE ASSUMPTIONS: SOME QUESTIONS

Are the assumptions cited above valid or are they presumed to be valid? If the assumptions are valid, what is the evidence to this effect? If they are not and are presumed to be valid, how far are we justified in doing so? Have attempts been made to validate the assumptions empirically? If not, what are the reasons? Is it essential to validate the assumptions empirically? Is it possible to do so, in case it is considered essential? These are some of the questions confronting those concerned with teacher education - the administrator, the teacher educator, and the research worker. A brief overview of the questions will be worthwhile, as these questions have implications for the present study.
QUEST FOR ANSWERS

The first assumption practically refers to the "process" component of teacher effectiveness. Second assumption is related to the "process-product" component, while the third one refers to "presage-process" component in a limited sense, as it is confined merely to the training aspect leaving aside other teacher characteristics. The fourth assumption is an extension of the third and the last one is general. It may be pointed out here that teacher effectiveness has been considered into its separate components for the convenience of presentation. It may not, however, be taken to mean that the components are isolated entities. The overview does not present an exhaustive review of studies conducted in the area, as detailed review appears in the next chapter.

DESIDERATUM OF TEACHER EDUCATION - RETROSPECT

Concept of Teaching

It is no denying the fact that there has been some concept of teaching from the very inception of formal system of education. In absence of empirical data, the concept of teaching, as in other disciplines, particularly in social sciences, was governed by what philosophers said about the subject directly or about other related subjects. With the development of psychology in general, and learning psychology in particular, the concept of

The concept of teaching derived from philosophy and psychology is considered inadequate, as it fails to encapsulate the complex and fluid transactions featuring classroom teaching. Smith observes:

From casual observation of teaching, we come to the conclusion that actual classroom teaching does not confirm to the methods of teaching described in textbooks. This conclusion has been sustained by subsequent observation. Actual teaching is so varied, so complex, so fluid as almost to defy any description whatsoever; and it certainly does not respond to the concepts of method set forth in the treatises on the subject. When we speak of method of teaching, we are not speaking of realities, but the picture of teaching we have built out of the ideas borrowed from psychology and philosophy. (Smith, 1963, p. 10)

Identification of Effective Teaching Behaviours

The work on teaching behaviours is closely associated with the concept of teaching. In absence of the concept of teaching derived from empirical data, teaching behaviours were also derived from what
philosophers and psychologists had said about thinking and learning, or it can be the other way round. Due to the absence of empirical teaching behaviours, the concept of teaching continued to lean too heavily on precepts rather than practice. Anyway, the situation continued as described. It continued to be believed that improvement of teaching could be brought about by substituting the conventional behaviours of teachers by the teaching behaviours derived from learning theory or philosophical conceptions of thinking.

The situation outlined above may be due to inadequate research on teaching and near failure of research on teacher effectiveness. For almost half a century, research on teacher effectiveness dominated educational research. Thousands of studies seeking relationship between teacher characteristics, contextual variables and teaching acts on the one hand, and pupil outcomes on the other, appeared. But the results, till late, were dismal. Morsh and Wilder, after reviewing quantitative studies on teacher effectiveness published during 1900-1952, concluded:

No single, specific, observable teacher act has yet been found whose frequency of occurrence is invariably and significantly correlated with student achievement.
(Morsh and Wilder, 1954, p. 4).

Tiedman (1950), Barr (1955, 1961), Howsam (1960),
Mitzel (1960), Fattu (1962), Anderson and Hunka (1963), Medley and Mitzel (1963b), Biddle (1964, 1967), and Soar (1964), are among a large number of reviews on the subject, wherein, dissatisfaction of one kind or the other has been echoed.

The result has been absence of adequate data on which the superstructure of an effective programme of teacher education could be raised. These programmes have been based on what can be described as expert opinion and the wisdom forthcoming from philosophy, psychology and other disciplines. Negligence of the natural teaching behaviours in the classroom has been the cause of the gap between the professed teaching behaviours in education courses and the actual teaching behaviours as obtaining in the classroom. For example, it is emphasised in the principles of teaching that the teacher should provide opportunity to the students for participation and even initiation in the teaching-learning process. But the evidence collected from the actual teaching situations in the classroom is just the reverse of its. Flanders observes,

...the foregoing evidence shows that no matter what a prospective teacher hears in education courses, he has, on the average, been exposed to living models of what teaching is and can be that are basically quite directive. (Flanders, 1967, p. 285)

A number of studies directed at finding out what
goes on in the classroom, reveal that mostly teachers are dominative, have more direct influence in the classroom, talk more, and provide very little opportunity to the pupils even to participate, what/speak of initiation, in the classroom discourse. Anderson (1956), Withall (1949), Hughes (1959), Flanders (1964, 1965), and Amidon and Hunter (1966) abroad; and Buch and Santhanam (1970), Buch and Quraishi (1970), Santhanam and others (1970), Pareek and Rao (1970), and Mitra (1971) in India, provide testimony to this effect.

The desideratum of teacher education had been lacking and teacher education starved of the actual input - empirically discovered effective teaching behaviours - the programmes continued to thrive upon the concepts derived from the expert opinions rationalized on the basis of ideas drawn from psychology, philosophy, and other social sciences, their validity remaining doubtful. It is not intended to undermine the role of psychology and philosophy in education, but this is to point out the need to try out an alternative approach based on studying teaching behaviours per se, understand them, and then integrate the contributions of the two approaches. This may provide a better base to teaching.

Techniques of Training

Teacher education programmes aim at providing
some pedagogical concepts and principles to the prospective teachers, develop in them certain desirable attitudes, and provide for training in teaching skills. As a matter of fact, the pedagogical concepts and principles of teaching are provided to the prospective teachers in the hope that these will affect their classroom behaviours, rather in the hope that these concepts will be translated into actual teaching behaviours. This had been accomplished in teacher education institutions through apprentice approach i.e. prospective teachers teach under the supervision of teachers and teacher educators equipped with better teaching skills than them. They plan lessons, prepare teaching aids, give lessons, handle classes for various activities, get guidance and supervision from the supervisors, and try to improve their skills of teaching.

Did the practice of providing training in skills of teaching indicated above prove to be satisfactory? The evidence appears to be far from satisfactory, if not totally negative. Again, this may be due to the absence of emphasis on effective teaching behaviours and objective tools of observing, recording and analysing classroom teaching. With the result, systematic definite feedback could not be provided to the prospective teachers. Despite their grounding in theory and principles of teaching, and despite the guidance they receive from
teachers or teacher educators, the prospective teachers fail to translate the theory and principles of teaching into actual teaching performance. Experience of Amidon and others is illustrative of the fact.

In the fall semester of 1962-63, a new course, The Teaching-Learning Process, was introduced into Secondary Education curriculum at Temple University. A year of planning and preparation preceded the introduction of the course. The particular purpose of the course was to develop understandings of the principles of teaching and learning as they apply to classroom methodology. The course met for four hours each week - two hours of lecture on principles, and two hours of laboratory designed to illustrate principles of teaching and learning through experiments in learning and stimulation of teaching-learning situation. By mid-semester it seemed apparent to the instructors teaching the course, that in spite of a year's planning and preparation, the course was not meeting the instructors' expectations. This seemed to be evidenced in the students' inability to translate the theory they had learned to their own teaching performance. While the students seemed to have developed some understanding of basic principles of teaching and learning, they seemed to apply such principles to their teaching situation at anything more than a superficial level. In addition, students often commented that they could see no real purpose for this course. They seemed to view the course as highly abstract and non-functional. A student evaluation of the course added further support to the instructors' informal evaluation. (Amidon and others, 1967, p. 1).

The gap between theory and practice has become proverbial. Flanders observes:

The point is that much of what is learned in education courses is neither conceptualized, quantified nor taught in a fashion that builds a bridge between theory and practice. (Flanders, 1967, p. 283)
Desai confessing absence of systematic study to determine the effectiveness of the training programmes in terms of general objectives of teacher education, drawing "broad empirical generalizations from experience, study and observation", mentions:

...a good deal of what is taught in training colleges is not directly useful to the trainee as prospective teacher, and a good deal of what is expected of a teacher in school is not taught in it. (Desai, 1968, p. 57)

Reports of a number of Committees and Commissions, appointed from time to time to review and suggest improvements in teacher education programmes, also point to this inadequacy.

By way of summarising the foregoing discussion about the desideratum of teacher education in retrospect, the prevalent concept of teaching derived from psychology and philosophy with reference to the actual teaching as it goes on in the classroom, is inadequate, identification of effective teaching behaviours far from satisfactory, and the techniques of training employed for imparting skills in teaching still begging. In absence of adequate data, the whole programme of teacher education appears to be ad hoc based on the conceptions derived from expert opinion without much empirical validation.

DESIDERATUM OF TEACHER EDUCATION - A BREAKTHROUGH

For long, research workers and reviewers of
research on teacher effectiveness faced consumers with a question writ large on their face: have your studies on teacher effectiveness yielded some dependable knowledge, on which we can base our teaching and formulate effective teacher education programmes? And the researchers had no answer except to hang their heads in despair, probably, thinking in their minds and sometimes verbalising too, that their attempts will bear fruit one day. There appears to be some weight in their hopes, if the recent developments in the area are any indication of the events to come.

Concerted attempts were directed to get out of the thaw on teacher effectiveness research. Ackerman's (1954) advice regarding the development of reliable tools for systematic observation and measurement of the teaching behaviours appears to have been well taken. Medley and Mitzel (1963) review a number of systems developed for studying classroom teaching. Simon and Boyers (1967, 1969) give 79 systems of observation. Rosenshine (1971) points out that there are about four hundred and fifty systems in use. Although quantity of observation systems does not necessarily ensure quality of the work accomplished, yet it definitely points out the concern shown by researchers in the area. At the same time attempts were directed to conceptualize teaching, operationalise it into teaching behaviours, and collect

The painstaking attempts at analysing teaching behaviour and relating them to pupil outcomes have made an impact on the whole problem of research on teaching and on teacher effectiveness. The initial results are encouraging and there seems to be a reason to be optimistic. Gage, justifying his research for the "desirable behaviour of teachers", expresses the optimism:

...the recent upsurge in the amount and quality of research on teaching may have rendered obsolescent the dismal conclusions of previous reviews of literature. (Gage, 1965, p. 85)

Flanders and Simon voice cautious optimism:

...this may be the first review that can marshal a set of widely separated research studies which provide statistically significant support for particular type of relationship. The primitive quality of our knowledge is exemplified by the concepts, methods of quantification, and lack of specificity to be found in the relationship. Nevertheless, it can now be stated with fairly high confidence that the percentage of teacher statements that make use of ideas and opinions previously expressed by pupils is directly related to average class scores in liking the class etc; as well as to average achievement scores adjusted for initial ability. (Flanders and Simon, 1969, p. 1426)
Rosenshine (1969, 1971) also support the optimism, but at the same time exhorts for more work with increased efficiency of design and analysis. This implies that effective teaching behaviour patterns i.e. the teaching behaviour patterns related to pupil outcomes are being identified with some measure of success, and it may not be a vain hope to expect that with continued efforts more success will ensue.

Along with the break-through in analysing teaching behaviour, came a break-through in the techniques of training in teaching skills. The technique of interaction analysis to provide systematic feedback about teaching behaviour, the technique of micro-teaching, and simulated skill training exercises, are proving more effective than the conventional practices being employed to impart teaching skills to the student teachers. To quote again Flanders and Simon, the authors concluded the review of presage-process research, thus:

...the sweet is the remarkable progress from 1960-66, in developing training experiences which do hold a promise of providing foundation upon which new pre-service and in-service programmes can be built. A programme of such experiences may include simulating teacher-pupil interaction by using adult-to-adult social training exercises. It may also include quasi simulated micro-teaching programmes which make use of "live teacher-pupil interaction" under highly focussed and controlled conditions which permit intensive feedback, ending with carefully programmed experiments involving a teacher's
working with a full sized class. Much work still remains, but the early results give reason for some optimism. (Flanders and Simon, 1969, p. 1431).

DESIDERATUM OF TEACHER EDUCATION - NEED FOR FURTHER WORK

The break-through achieved in research on teaching and teacher effectiveness mentioned above is promising for teacher education, as it will provide the much needed foundational data, which can be used for improving the existing programmes suited to emerging needs. Whatever has been accomplished so far is only spadework. Flanders and Simon (1969), conscious of the "primitive quality of our knowledge", observe that "much still remains" to be done. Biddle (1967) and Gage (1967) elaborated the directions along which research attempts have to be channelled, if the challenge of teaching, which depends upon the quality of research on teaching, is to be adequately met. Flanders (1970), Rosenshine (1971), and Turner (1971) also outline the directions along which present research attempts should be pointed.

A lot of empirical data on effective teaching behaviours, and the techniques through which they can be developed, is needed. It is yet to be confirmed whether differential teacher education programmes produce differential teaching behaviours, and if they do, whether these teaching behaviours are carried over to the actual
teaching performance subsequently. Turner maintains:

...if research findings are to be of value in teacher education, they must at least be able to show differences between particular kind of teacher education programmes. Indeed if research is really to be of value, it must ultimately be able to show the relationship between teacher education programmes and subsequent teacher performance. (Turner, 1971, p. 11).

Rosenshine and Furst go a step further and specify the criteria of subsequent performance:

Experimental studies in teacher education involve a number of steps. The first step is to determine whether teachers trained for specific performance criteria behave differently in their classroom from similar teachers who do not receive such training. But it is more important to determine whether the trained teachers engender greater cognitive or affective growth in their students compared to the controls. (Rosenshine and Furst, 1971, p. 65)

The authors further feel that "hypothesis derived from process-product studies and other studies on instruction can be validated only through experiments of this type", (Rosenshine and Furst, 1971, p. 65). There is a dearth of this type of studies.

The research needs in the context of improving teacher education programmes can be summarized as under:

(a) Correlational studies involving variety of teaching behaviours and pupil outcomes in
the three domains of educational objectives taking into account the hierarchical levels of mental processes involved therein.

(b) Experimental studies attempting to establish cause-effect relationship between the teaching behaviours and pupil outcomes.

(c) Experimental studies identifying the techniques suited to develop particular type of teaching behaviours.

(d) Experimental studies linking training with subsequent teaching behaviours, and ultimately, with pupil outcomes.

THE PRESENT STUDY

As pointed out earlier, there is a dearth of studies falling in the last category. The present study is an attempt in this direction. It provides for comparing the effectiveness of two approaches - Classroom Behaviour Training based on interaction analysis vis-a-vis conventional programme of student-teaching - in developing responsiveness, indirectness and flexibility in the classroom behaviour of student teachers. It envisages a follow-up of the student-teachers, when they join their assigned positions in the teaching profession after the completion of their training, to study sustenance and carry over of
the effects of Classroom Behaviour Training developed in the institute to their actual performance in the field. Lastly, it provides for comparing the performance of pupils under the two groups of student-teachers with differential student-teaching experiences, on adjustment, dependency, and classroom trust behaviour. The study purports to fulfil the need expressed by Turner and Rosenshine mentioned earlier.

**VARIABLES**

The study involves two phases - the first phase covering the training of student-teachers, and second dealing with the study of the subsequent performance of student-teachers and its relationship with pupil outcomes. The study involves independent, dependent, and intervening variables, which are specified below:

**Independent Variable**

The type of student teaching experiences form the independent variable. The independent variable is used in two broad dimensions - Classroom Behaviour Training based on interaction analysis, and conventional programme of student teaching.

**Dependent Variables**

Classroom interaction forms the dependent
variable in the first-phase of the study. The dimensions of classroom interaction covered in the study are: Percent Teacher Talk (PTT), Percent Pupil Talk (PPT), Percent Silence or Confusion (PSC), Teacher Response Ratio (TRR), Instantaneous Teacher Response Ratio (TRR 99), Teacher Question Ratio (TQR), Instantaneous Teacher Question Ratio (TQR 99), Pupil Initiation Ratio (PIR), Content Cross Ratio (CCR), Steady State Ratio (SSR), Pupil Steady State Ratio (PSSR), and Miller Flexibility Ratio (MFR).

In the latter part of second phase of the study pupil performance is another independent variable. It takes three dimensions - adjustment, dependency, and classroom trust behaviour.

**Intervening Variables**

Besides the independent and dependent variables cited above, the study involves the following intervening variables:

- Initial ability of the student-teachers
- Initial ability of the pupils
- Age of the student-teachers
- Sex of the student-teachers
- Grade taught by the student-teachers
- Subject taught by the student-teachers
Contamination between the experimental and the control groups

Halo effect
Instrumentation
Regression
Other teacher influence on the pupils.

The controls employed in the study for these variables have been given in detail in Chapter III.

OBJECTIVES OF THE STUDY

The study purports to achieve the following objectives:

1. To provide to a group of student-teachers Classroom Behaviour Training based on interaction analysis, and compare 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.

2. To follow up the two groups of student-teachers at 1 above, when they join their assigned positions in the teaching profession, to study the sustenance and carry over of the classroom interaction patterns acquired in the institute.
3. To study and compare the performance of the pupils under the two groups of student-teachers at 2 above.

**Hypotheses**

To achieve the objectives of the study cited above, the hypotheses to be tested can be stated as under:

1. Student-teachers with Classroom Behaviour Training, at the end of their student-teaching experience, will score higher on PPT, TRR, TRR 89, TQR, TQR 89, PIR, PSSR and MFR; and will score lower on PTT, PSC, and SSR, than the student-teachers with conventional programme of student-teaching.

2. The student teachers with Classroom Behaviour Training based on interaction analysis, after joining their assigned positions in the teaching profession, will score higher on PPT, TRR, TRR 89, TQR, TQR 89, PIR, PSSR, and MFR; and will score lower on PPT, PSC, and SSR, than the student-teachers with conventional programme of student-teaching.

3. The pupils under the student-teachers with Classroom Behaviour Training based on interaction analysis will score higher on
Pre-Adolescent Adjustment Scale, Pre-Adolescent Dependency Scale and Pre-Adolescent Classroom Trust Schedule.

DELIMITATION OF THE STUDY

1. Both verbal and non-verbal classroom behaviour mark transactions in the classroom. The present study, however, is confined to verbal behaviour only. One reason guiding the decision refers to the reliability with which verbal classroom behaviour can be observed, recorded and measured. Secondly, the classroom transactions are predominantly verbal. Seventy to eighty per cent of the teaching is covered by teacher or student talk. (Amidon and Hunter, 1966). Moreover, compatibility of the verbal and non-verbal behaviour is also considered probable under normal situations. So this may not be a serious limitation. This does not, however, belittle the significance of non-verbal behaviour and its study in its own right.

2. Exhaustive list of pupils' criteria of teaching effectiveness awaits the research worker in this area. But, due to the limitations of time and resources, the present study covers only three pupil outcomes viz. adjustment, dependency, and classroom trust.

3. Classroom observation being a time consuming process, the study limits to only 20 student-teachers and
398 pupils in their assigned classes. The study lays emphasis on depth rather than peripheral work. That is why the ultimate effectiveness of the Classroom Behaviour Training in subsequent performance of the student-teachers after joining their assigned positions in the profession has been envisaged in the coverage.

DEFINITION OF THE TERMS USED

A. General

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. (Flanders and Simon, 1969, p. 1423)

Indirect Teacher Influence

Indirect teacher influence implies teacher behaviours that expand students' freedom of action in the classroom. In the context of Flanders Interaction Analysis Category System (FIACS), it is represented by teacher statements accepting or using pupils' ideas or opinions, applying or elaborating pupils' ideas or opinions, praising or encouraging pupil ideas or behaviours, clarifying and accepting feelings of the pupils.
Direct Teacher Influence

Direct teacher influence implies the teacher behaviours that restrict students' freedom of action in the classroom. These teacher behaviours are represented in FIACS by lecturing, giving directions or commands, and criticising students' ideas or behaviours.

Flexibility of Teacher Influence

Flexibility of teacher influence is the tendency of a teacher to shift from direct to indirect and from indirect to direct patterns of classroom behaviour.

Classroom Behaviour Training

The training designed to change the classroom interaction patterns of the student-teachers through systematic feedback based on interaction analysis using FIACS.

Conventional Programme of Student Teaching

The programme of student teaching usually prevalent in the training institute, wherein student-teachers prepare lessons, plans, give lessons, the supervisor provides usual impressionistic feedback in the form of his casual comments.

Feedback

The information a teacher obtains about his
classroom interaction patterns on the basis of observation of his teaching.

B. Interaction Variables

Teacher Response Ratio (TRR)

TRR is defined as "an index which corresponds to the teachers' tendency to react to the ideas and feelings of the pupils". (Flanders, 1970, p. 102)

Teacher Question Ratio (TQR)

"TQR is defined as an index representing the tendency of a teacher to use questions when guiding the more content oriented part of the class discussion." (Flanders, 1970, p. 102)

Instantaneous Teacher Response Ratio (TRR 89)

TRR 89 is defined as "the tendency of the teacher to praise or integrate pupil ideas and feelings into the class discussion". (Flanders, 1970, p. 104)

Instantaneous Teacher Question Ratio (TQR 89)

TQR 89 is defined as "the tendency of the teacher to respond to pupil talk with questions based on his own ideas, compared to his tendency to lecture". (Flanders, 1970, p. 104)
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)

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 FLACS.

Steady State Ratio (SSR)

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

Pupil Steady State Ratio (PSSR)

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

C. Pupil Adjustment Variables

Adjustment

Definition of adjustment given by Pareek and Rao, whose Pre-Adolescent Test Battery was used, was accepted for the purpose of the present study. The authors define adjustment as "the individual's orientation towards his parents, teachers, peers, school, and himself, in terms of
the satisfaction he derives from his interactional relationship with these significant others, and himself". (Pareek and Rao, 1970, p. 2)

Dependency

English and English (1958) definition was accepted by Pareek and Rao (1970). It defines dependency as "the tendency, to seek the help of others in making decisions or the carrying out difficult actions". (Pareek and Rao, 1970, p. 7)

Classroom Trust

Pareek and Rao define classroom trust as "the pupils' feeling 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 feelings 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)