

CHAPTER - I

INTRODUCTION

1.0.0 The Problem

The problem, namely, "Factorial Structure of Teaching Competencies among Secondary School Teachers" purported to identify teaching competencies among secondary school teachers. More specifically, it was addressed to the following two questions:

- (i) What are the desirable teaching competencies of physics teachers of Standard IX?
- (ii) What are those specific teacher behaviours which describe each of these competencies?

In order to answer these questions, the presage, the process and the product variables of teaching were measured and factor analysed, and sets of behaviours that would be desirable for a competent teacher were arrived at. The variables of teacher's intelligence, his attitude towards and interest in teaching and self perception of his teaching behaviour constituted the presage variables; teacher classroom behaviour was the process variable; and the product variable was the students' liking for their teacher.

In the paragraphs that follow, the need for undertaking such a study, a paradigm of teaching competency and the scheme of chapterization are discussed.

1.1.0 The Need for the Study

The task of identifying competent teachers is crucial to the educational system insofar as teaching contributes to the realisation of educational goals, and, in turn, total human welfare. With the increasing recognition of the benefits of education, the teacher's role is becoming more crucial and a great deal of attention is being paid to the problem of teacher accountability. The particular problem of concern is the increased interest in the competence of teachers. The Education Commission (1964-66) also observed,

"Of all factors which determine the quality of education and its contribution to national development, the teacher is undoubtedly the most important. It is on his personal qualities and character, his educational qualifications and professional competence that the success of all endeavour must ultimately depend".

The unfathomable and changing complexity of influences on the students' learning does not, perhaps, excuse the teacher from his obligation to meet the specified standards of competence. But the standards expected of the teacher are diverse in nature and degree, and are determined by a variety of pressure groups such as the school principal, the inspector of schools, parents, students, colleagues and so on that are often difficult to define. Moreover, there is a dearth of theoretical knowledge about what competencies a teacher is expected to

possess, what constitutes these competencies and how exactly he should be assessed for possessing these competencies to a particular extent. Therefore, the problem of teacher accountability cannot be tackled unless such knowledge is made available to all concerned with education.

As the teachers are held accountable for their pupils, the teacher training institutions are answerable to the community for the teachers they turn out. The quality of the teachers depends, to a considerable extent, upon the teacher education programmes. In the absence of a sound teacher training programme, teacher education becomes not only a financial waste, but a source of overall deterioration in educational standards. The Education Commission (1964-66) also have emphasised the role the teacher training institutions play in the development of education.

But the reports of various Commissions and Committees (University Education Commission, 1949; the Secondary Education Commission, 1953; the International Team on Teachers and Curricula in Secondary Schools, 1954; and many others) reveal a sad state of affairs as regards the present teacher education programmes; suggestions for improvement have been made hitherto. Lot of dissatisfaction has been indicated by educationists and administrators towards the training provided to the teachers. Buch and Yadav (1974) have candidly expressed, "Much dissatisfaction has been shown about the training provided to the teacher. The trainees are not satisfied, the consumers are

not satisfied, and more than this, even the trainers are not satisfied with training programmes". But curiously enough the dissatisfaction and suggestions for improvement have not led to any significant researches in the area of teacher education whatsoever.

The problem in focus is that the colleges of education are at a loss to choose a set of valid objectives in the absence of accurate information about the relationship between the teacher's competencies and their effectiveness in promoting pupil learning. Although a large number of studies have been conducted to this end, the findings are inconsistent, noncoherent, or meagre to make any useful contribution to the theoretical basis of teacher education. Barr(1948) and Morsh and Wilder(1954) reviewed the quantitative studies on teacher effectiveness and concurred that upto that time nothing had been found that dependably distinguished effective teachers from ineffective ones. This conspicuous lack of a research base has not seemed to interfere with the operation of teacher education programmes, although there has been some concern about the complete absence of evidence that professionally teachers are more effective than untrained ones. Popham(1971) has even produced some evidence that no such difference exists.

At this juncture, the fact cannot be denied that research on teaching, both extensive and intensive, is an urgent task to improve the standard of teacher education which eventually enhances the quality of education at large. Alternatives have to be thought of, which would provide the teacher educators

with a repertoire of teaching skills which indicate to a teacher that if he increases behaviour A and/or decreases behaviour B, there will be a concomitant change in the achievement of his pupils. Once competencies that would result in teacher effectiveness are identified, it will be possible to teach student teachers how to acquire them. Such a competency/performance based teacher education programme, popularly known as the CBTE or the PBTE promises better avenues for a sound research based teacher education programme.

The two important aspects of the educational system may be considered as the curriculum and the teacher. Of these, curriculum has received due attention from the educationists as is evident from the reports of various Commissions and Committees. Recently, the Review Committee on the Curriculum for the Ten-Year School (Ministry of Education and Social Welfare, 1977) and the National Review Committee on Higher Secondary Education with special reference to Vocationalisation (Ministry of Education and Social Welfare, 1978) reviewed the existing syllabuses and text books at the secondary and the higher secondary stages, and made recommendations for a modification in the curriculum in order to make education socially relevant and useful. The document on 'Education for Our People' (Citizens for Democracy, 1978) also tries to indicate what a good national system of education for the country should be and how it can be created over the next ten years or so.

With the change in the curriculum, a change in the teacher role can be envisaged which further necessitates respective modification in the teacher education programmes. Broad outlines have been developed (National Council of Educational Research and Training, 1976) that could provide a frame of reference for a change in the existing system of teacher education; but specific suggestions as to how exactly analysis of the new role of the teacher has to be done and how research on teaching should be geared to the immediate needs of the teacher training institutions have not been made hitherto.

Thus, it is evident that nothing concrete has been taken up with regard to the teacher and the teaching-learning situation. Due emphasis has to be laid on this vital area of research, i.e., teaching, which decides the extent to which the educational objectives are fulfilled. Therefore, researches are needed to scientifically analyse ~~the~~ teaching in the light of the new role of the teacher.

Alongside, much concern is being shown by educational authorities, parents, students and others with regard to the falling standards in education. The dull and dreary teaching that goes on in the millions of classrooms is responsible for several negative effects on the student besides impeding realisation of national goals. It is, therefore, imperative to cast a searching look at the transactions that feature the classrooms and streamline the same along desirable directions. This is, perhaps, the greatest challenge that educational

practitioners and research workers face today.

Teaching and learning are two major areas which concern any system of education. Of these, learning has received the major share of attention of behavioural scientists leading to the development of a number of theories of learning. Unfortunately, not much of substantial research work has been done in the area of teaching. Although it was possible as long ago as 1950 to locate over a 1000 published articles on teacher effectiveness (Domas and Tiedeman, 1950), Barr (1948) could locate only 79 studies that could be regarded as really quantitative. Furthermore, these studies have proved to be inconclusive and in some instances contradictory. As a result, they have had no great impact on instruction in schools and have produced little of value to the classroom teacher (Gage, 1963; 1968).

Research activities in this area increased around sixties and more so in seventies as is evident from the two handbooks of research on teaching (Gage, 1963 and Travers, 1973), and 'A Survey of Research in Education' (Buch, 1974). Yet, the results of this research have not made any sweeping change, except at the hands of a few enthusiastic researchers. Similar is the situation in this country also as regards research on teaching. Buch and Yadav (1974) have delineated the actual position thus: "The actual position that teaching and teacher behaviour occupies in the total educational process is not reflected in the amount of research produced in this area...." The reason for this state of affairs, probably, is that problems

besetting research on classroom teaching are varied, complex and overwhelming.

Whatever the nature of the problem is, the knowledge of effective teacher behaviour is necessary for all concerned with the school system. If, as some researchers contend, teacher behaviours are manifestations of personality characteristics not likely to be affected by the training, then the problem of staffing the schools is a selection problem rather than a training problem. In either case, knowledge of effective teaching is essential. Medley and Mitzel (1963) express the idea, "without definite knowledge of the nature of effective teaching, it is impossible either to identify and recruit those young born with this talent or to make successful teachers out of young born without it". Therefore, one cannot hope to put teaching on a sound footing unless concerted research efforts are made to specify conditions for maximum pupil outcome contributing to the development of a theory of teaching.

✓ However, the function of competence research is not, perhaps, finding out which competencies a teacher must learn to use and which he should ignore; instead, it is to provide information to the teacher regarding when, how, with whom and for what purpose each competency is most likely to be effective. Chances are that every component listed in the 50 studies reviewed by Rosenshine^{and Furst} ~~et al~~ (1971, 1973) is effective for some purpose with teachers possessing some personality traits and some classes. Future research in teacher effectiveness

should produce descriptive information rather than the large^{ly} useless, value laden 'validity' data it has sought to produce in the past (Haskew, 1956)..

From the preceding discussion, the need for undertaking this study can be summarised as follows: (i) the problem of teacher accountability can be tackled only with the knowledge of what competencies a teacher should possess and how he should be assessed for possessing them; (ii) the teacher training institutions would be in a position to devise sound teacher education programmes leading to CBTE/PBTE, only with a sufficient research base; (iii) curriculum reforms envisage a change in the teacher role and a scientific analysis of this role is essential in order to ensure the realisation of educational objectives; (iv) teaching can be put on a sound footing only if concerted research efforts are made to specify conditions for maximum pupil outcome contributing to the development of a theory of teaching; and (v) to provide information to the teacher as well as others about when, how, with whom and for what purpose each competency is most likely to be effective, researches on teacher competence are necessary.

1.2.0 A Paradigm of Teaching Competency

There is an ^{un}precedented demand for competent teachers, especially with the increasing emphasis laid on education. But what constitutes teaching competency? Which are the valid and essential criteria of teaching competency? How should a teacher be assessed for possessing these competencies to a

particular extent? These questions have drawn the attention of teachers, principals, administrators, researchers and others since several decades resulting in probably more research than any other in education. Gage (1960) comments that the literature as well as the bibliographies on teacher competence are overwhelming and a ^{un}~~un~~manageable.

Yet, there has been little agreement over the concept, definition and, scope of teaching competency. The reason for this disagreement appears to stem from two sources. First, confusion has resulted from using a variety of terms interchangeably. For example, teacher competence, teacher effectiveness, teacher efficiency, teaching success, characteristics of teachers, criteria of competence, ability to teach and a host of other terms have been used to mean the same variable. Second, there is disagreement as to which criteria of teaching competency are essential. For example, should the teachers be expected to produce immediate effects or long range consequences? Should they exhibit similar competencies in all situations with respect to different kinds of schools, pupils, subjects, grades and so on? The problem becomes more complex because of the varieties of outcomes that may result from teaching.

A critique of a few of the definitions put forth and the views expressed by various educationists on the meaning and evaluation of teaching competency makes more explicit the absence of a clearcut and universally acceptable definition of teaching competency.

Competencies are those skills, concepts and attitudes needed by all workers regardless of their occupations or specific jobs (Good, 1973). Teaching is, narrowly, the act of instructing in an educational institution (Good, 1973). Therefore, combining these two definitions, the following definition can be arrived at: Teaching competency is those skills, concepts, and attitudes needed by teachers for the act of instructing in an educational institution.

The possessions of the teacher-his knowledges, skills, attitudes, personality configurations and the like are referred to as competencies; they lend the character dimension to teaching (Haskew, 1956).

The competence of a teacher is defined as the average success of all of his behaviours in achieving their intended effects (Medley and Mitzel, 1963).

Teacher competence is one or more abilities of a teacher to produce ^{agreed} upon educational effects (Biddle, 1964).

Teacher competence is the ability of a teacher to behave in specified ways within a social situation in order to produce empirically demonstrated effects approved by those in the environment in which he functions (Rosencranz and Biddle, 1964).

A competent teacher is one who: (i) has the skill to form accurate perceptions of the classroom situation and the changes

that occur within the classroom; (ii) is aware of the teacher roles which are appropriate to different situations; and (iii) possesses the personality skills which allow him to adapt to changing situations (Hoyle, 1969).

An individual who possesses the needed competencies is one who has mastered the science of teaching (Weigand, 1971).

Teacher competency is knowledge, attitudes, skills and self perceptions, or the products that derive from the mix of these behaviours resulting in consistent patterns of behaviour leading to the attainment of predicted outcomes (Wilson, 1973).

The above definitions clearly indicate that there is no concordance among the educationists over the concept of teaching competency. To some, it is an ability or abilities of a teacher operationally not explicated in the definitions; to some others, it is knowledge, attitude, skill and other teacher characteristics. This further gives rise to the question about the extent to which such characteristics are inborn or acquired. In some definitions, there is no mention of any antecedents; only teacher behaviours and their effects are correlated with each other. And teacher behaviour in most of the definitions is independent of the type of community, the school, the students, etc.; only Rosencranz and Biddle's (1964) definition takes care of this aspect. Some definitions are ambiguous (Hoyle, 1969; Weigand, 1971), in the sense that phrases like "teacher roles appropriate to different situations" and

"science of teaching" do not signify anything concrete. The difficulty with all these definitions except Wilson's (1973) is that they ignore many of the relationships that may result from the fusion of different antecedent, process and consequent variables of teaching.

Most of the definitions have a point in common: teachers are to be judged on the basis of their ability to produce certain effects. But there are as many ways of being effective as there are effects to be produced. And there is disagreement over the effects a teacher is called upon to produce. To decide the effects desired of the teacher, it calls for value judgment, calls, first, for decisions about how one wishes to view teaching competency.

In the definitions quoted above, the three distinctive gaps can be summarised as follows: (i) there is no agreement upon the language used for the variable of teaching competency; (ii) the context of social setting in which the different variables of teaching operate has not been specified; and (iii) the definitions do not provide for all the three types of variables, i.e., the presage, the process and the product variables of teaching. Until these gaps are filled, perhaps, no adequate definition of teaching competency is possible and the problem of what competencies are required in a teacher remains a perplexing one.

Nevertheless, attempts have been made by a few researchers to fill some of these gaps. Ryans (1960) seems to take care of the context of social setting while describing teaching

competency. According to him, "competent teaching undoubtedly is a relative matter". It is relative to atleast two major sets of conditions: (i) the social or cultural group in which the teacher operates, involving social values which frequently differ from person to person, community to community, culture to culture and time to time, and (ii) the grade level and the subject matter taught. McNeil and Popham (1973) seem to use the terms teacher competence and teacher effectiveness interchangeably. Their contention is that what teacher effectiveness is depends on who is doing the measuring.

Thus, it is evident from the above propositions that the issue of teaching competency is highly situational and involves value judgments. No one universal concept of teaching competency exists. There are many, all of which are valid and relevant. Any definition of teaching competency depends on the changing conceptions of what constitutes teaching in a particular social setting, the culture and the values held in the community as a whole, the innumerable teacher characteristics like the teacher's formative experiences, personality variables, knowledge of subject matter, etc., the classroom variables and the pupil variables. These different variables can be classified into three types, namely, the presage, the process and the product variables of teaching (also called the antecedent, the process and the consequent variables, or the input, throughput and output variables in research literature on teaching). Insofar as the definition of teaching competency makes provision for the interaction between these three types of variables, the definition can be accepted as a valid one.

Based on the foregoing discussion, efforts are made in this study to arrive at a comprehensive definition of teaching competency which can accommodate the changing conceptions of what teaching is, and the presage, the process and the product variables of teaching. The definition is given below:

"Teaching competency is the ability of a teacher manifested through a set of overt teacher classroom behaviours which is a resultant of the interaction between the presage, and the product variables of teaching within a social setting".

A brief explanation of the terms used in the above definition would make its meaning clear. Teaching competency is the ability of the teacher restricted to the act of teaching i.e. imparting of ^uinstruction by the teacher in the classroom. It manifests itself through teacher classroom behaviour, also called the process variable. On the other ~~h~~ hand, teacher competency is a more global term in that it is expressed in a number of teacher acts such as setting an examination paper, maintaining the attendance register, attending parent-teacher meetings, participating in cocurricular activities and the like along with the act of teaching. Thus, teacher competency includes teaching competency plus other teacher acts that have to do with his role as a teacher. The present study is limited to identifying the teaching competencies only.

A note on the interaction between the three types of variables, namely, the presage, the process and the product is in order at this point. Examples of each type of variable are as follows: (i) presage variables - these can be divided into

three kinds: (a) teacher characteristics consisting of teacher's education, professional training, sex, intelligence, attitude, interest, creative ability and other personality variables; (b) pupil characteristics such as their socio-economic status, environment at home, their intelligence, previous experience, etc.; (c) classroom and community contexts, comprising the physical equipment in school, agreed upon roles of the school personnel, concept of teaching prevalent in the community, the place the school occupies in the community, etc.; (ii) process variables - they consist of teacher classroom behaviours such as questioning, giving examples, moving purposefully in the class, modulating the voice, etc., and (iii) product variables - these consist of (a) immediate effects and (b) long range consequences. Immediate effects include pupil response to the teacher in the form of overt and covert reactions. Long range consequences comprise the differences in the lives of pupils in knowledge, attitude, skills, etc., adjustment to the environment, realisation of the set national goals of education and so on.

When a teacher teaches, a multitude of variables interact with each other in a complex of combinations and result in different sets of overt teacher classroom behaviour called teaching competencies.

More often than not, confusion has resulted from using a variety of terms to mean the same variable in research on teaching. It seems necessary at this point to understand the terms teaching competency, teacher effectiveness and teaching skill that are

most commonly used interchangeably.

Teaching competency, as described earlier, is an ability of the teacher to exhibit those behaviours which are an outcome of the interaction between the presage and the predetermined product variables in a given social setting. Since competency is an ability it is a teacher characteristic. But teacher effectiveness is ultimately defined in terms of effects on pupils. Thus, a teacher could be judged to be effective or not on the basis of what his students are ^rafter interacting with him for over a period of time minus what they were before they came in contact with him (Rao and Pareek, 1976). The central problem in understanding teacher effectiveness is establishing relationship between teacher behaviours and teacher effects. Therefore, it can be very clearly seen that this concept deals with only the process and the consequent variables.

Teaching skills are sets of definable classroom behaviours which can be used in a classroom to achieve intended objectives. They comprise both verbal and ^{iv}nonverbal behaviours such as questioning, nodding, moving in the class, giving approval to correct answers of the pupils, etc. These behaviours in particular combinations facilitate pupil learning. A few teaching skills have been conceptualised hitherto (Allen and Ryan, 1969; Borg et al., 1970; Passi, 1976, and many others); many more, perhaps, can be conceptualised.

A competent teacher will select and exhibit the skills in a particular combination and to a particular degree to

achieve the predicted goals. The extent to which a teacher performs these skills gives an idea about his inputs and the proposed outputs. Better the inputs for the particular effects to be produced, better will be his performance of teaching skills. Therefore, teaching competency requires, first, a mastery over the skills, second, the necessary inputs such as attitudes, interests, intelligence, etc., and third, a proper perception of the predetermined outputs. This is to say, a competent teacher is essentially skilled, but a skilled teacher may not be competent. A skilled teacher can only exhibit the different skills in an appreciable manner, but he lacks the knowledge about when, where and how to use each skill.

Summarising, competency consists of mastery over teaching skills, and the essential inputs to achieve the desired outcomes. In the light of the above discussion, teaching competency can be redefined thus: "It is the ability of a teacher to exhibit appropriate teaching skills in order to achieve the intended objectives with the help of the necessary inputs within a social situation".

Here, one point should be borne in mind. The purpose of the investigator has not been to demarcate the subtle differences (if any) between these three terms and prove that they are mutually exclusive. Instead, it has been only to clarify the ambiguities that may arise at different places in this report.

The present study, based on the paradigm discussed above, tries to identify teaching competencies desirable of a physics teacher of Standard IX in the context of the criterion variable of students' liking for their teacher in an urban area. Specifying conditions under which a particular set of competencies can operate would facilitate delimiting the scope of these competencies.

1.3.0 The Scheme of Chapterization

This chapter discusses the need for undertaking the study and a paradigm of teaching competency. Chapter II makes a review of the related literature and provides a rationale for considering the particular variables in this study. The operational definitions of key terms, the objective, the underlying assumptions, the scope and the limitations of the study are also discussed in this chapter. Chapter III outlines the method and procedure adopted in this study. Alongside, a brief description of the preliminary study and the guidelines that formed the bases for the final study are also presented. In Chapter IV the results of the study are interpreted; the factors that have emerged as a result of factor analysis have been named and discussed at length. The profile of a competent physics teacher that has been developed on the basis of reactions of students has

been presented in Chapter V; also, the results of the study are discussed in the light of the existing knowledge in the area of competence research. The educational implications and suggestions for further research have been presented next. Chapter VI reports a brief summary of the study.
