

## CHAPTER - II

### THE PRESENT STUDY

#### 2.0.0 Introduction

This chapter discusses at length the various aspects of the present study. Beginning with a discussion on the background of competence research, the different approaches normally employed in such research are described, arriving at a workable model for this study. Through a review of studies, a rationale for including the different variables in this study is provided next. This is followed by other details of the study like definitions of key terms, objective, assumptions, scope and limitations of the study.

#### 2.1.0 A Background of Competence Research

A brief overview of research on teaching competency would give an idea of its present status vis-a-vis the contribution this study would make to the area of competence research.

Studies designed to answer the question "What makes a good teacher?" began in the nineteenth century with the publication of a study, "Characteristics of the Best Teachers as Recognised by Children" (Kratz, 1896). The pioneer studies on teacher effectiveness centred around

compiling lists of characteristics of teachers whom students perceived as good teachers and this approach was in vogue as late as 1936 (Hart, 1936).

The beginning of twentieth century was marked by a modification in this approach in that it was assumed that it took an 'expert' to recognise good teaching (Anderson, 1917). But even experts confined to the traits already recognised and this gave a circular quality to the whole enterprise and proved less useful than the earlier approach. However, this flaw in the approach went unnoticed by the researchers of those days.

At about the same time (Elliott, 1915), the use of structured rating scale seems to have become popular to evaluate teacher effectiveness. Its use spread so rapidly that Barr and Emans (1930) could locate 209 such devices. Again, there was no agreement on what an effective teacher was like. There were as many traits as there were rating scales. Much of the disagreement seems to have stemmed from a difference in the semantics.

Quantitative studies on teacher effectiveness were rare until 1948. Barr (1948) could identify only 79 such studies of which 46 used supervisors' or principals' ratings and 15 used grades in practice teaching. According to Domas and Tiedeman (1950), not more than 20 among over a 1000 publications on teacher effectiveness involved any actual measure of teacher effectiveness. Moreover, these

studies bypassed the process variable, i.e., the direct observation of classroom interaction. This suggests why the research done upto around 1960 was so <sup>un</sup>~~un~~productive.

The beginning of 1960 was characterised by a marked increase in the frequency of process-product studies where some drawbacks of the past were, by and large, overcome. Rosenshine (1971) and Rosenshine and Furst<sup>S</sup> (1973) have located some 50 such studies and have collated the results in the form of a list of validated teacher characteristics. But no more than eleven characteristics have been identified as even probably related to teaching success in 75 years of research and hundreds of studies.

Even in the present decade, there have been studies of the kind that were undertaken in the past (Patrick, 1974; Anderson, 1974; Starr, 1975; Tichkowsky, 1975; Cockrell, 1976; Franklin, 1976; Cross, 1976). These studies, through the use of expert judgment, have sought to determine those competencies that are critical to teacher effectiveness. Patrick developed an effective teacher profile based on the opinions of students and teachers. The study showed that students preferred teachers who are outgoing and supporting on the one hand and who are not autocratic and dogmatic on the other. Anderson procured judgments about thirty six teacher descriptions from high school teachers and found that knowledge of subject matter and interest in individual students were given the highest weightage. In Cockrell's

study, the teachers emphasised the importance of achieving success and attitudes toward corporal punishment.

Tichkowsky identified those competencies which elementary teachers in self-contained classrooms consider should be given top priority in training and selecting teachers; <sup>e</sup>Eighty four teachers were involved in the study. Following were the competencies: positive relationship with students, discipline and control, teaching methodology, personal attributes, favourable learning climate, knowledge of subject matter, individual differences and professional growth. Franklin concluded that the competencies possessed by the urban teachers of grade four through eight who have been designated superior in the teaching of reading had a great deal to do with the personal attributes and positive attitudes toward learning of the individual. Starr's final list of competencies of a first year teacher included items divided into the areas of knowledge; skill and behaviour. Based on the opinions of principals and student teaching coordinators, Gross listed a set of traits associated with good teachers-child centred, creative, practical, patient, not easily depressed, frivolous and motivating.

In India, too, similar attempts to list the attributes of popular/ideal teachers through the opinions of students and other experts have been made(Prasad and Singh, 1962; Sharma, 1968; Kulandaivel and Rao, 1968; Ojha, 1969; Debnath, 1971; Kaul, 1974). The competencies listed in these studies

are too global in nature to be of any help to the teacher, and the samples under study are not the same. The experts are drawn from all walks of life and the competencies relate to teachers from grade one through eleven. Therefore, it is difficult to draw any conclusion from the findings of these studies.

Alongside, there is evidence to show that there exist significant differences in the perceptions of an effective teacher among the different experts (Aden, 1974; Van Tassel, 1974; Hranitz, 1975; Essington, 1975; Augenstein, 1975; Cockrell, 1976; Loadman, 1977).

Studies of this type cannot, perhaps, contribute anything substantial to the domain of teaching. It is ~~xxx~~ time to question the widely believed notion that there exists a single set of competencies which all effective teachers possess or all ineffective ones lack. Vain attempts have been made for 75 years to identify this imaginary set of competencies. The evidence that neither students nor experts could agree on the competencies the effective teachers possessed would imply two things; that the effective teachers do not all behave in the same way and that the referent groups in the context of which competencies are assessed have various frames of reference while giving their judgment.

The fallacies in the above mentioned studies can be summarised as follows: (i) no measure of changes in pupils

attributable to their teachers has been employed in most of the studies; (ii) the fact that all effective teachers do not behave in the same way seems to have escaped the notice of the researchers; (iii) that the perceptions of experts about teacher effectiveness are different is not taken care of; (iv) the process variable which is very important in competence research has been bypassed; and (v) the competencies arrived at are global in nature and do not tell the teacher how exactly he should behave to become more effective.

While there are many studies with inherent flaws in them, there are a few others which connect presage-process-product variables and employ suitable approaches and sophisticated statistical techniques, and contribute to competence research. The studies of Holloway (1973), Anderson (1973), Wells (1974), Westing (1974), Kaul (1974), Malhotra (1975), Grewal (1975), Sankowski (1976), Snider and Butefish (1976), Dean (1977) and Joshi (1977) are illustrative.

Holloway (1973) and Snider and Butefish (1976) have attempted to specify teacher behaviours under each of the competencies. Anderson (1973) measured first grade teachers' degree of progressivism and traditionalism and the attitude toward the teaching profession. He observed the teachers' classroom verbal and nonverbal behaviours and administered reading tests on the students. He found

that there was no significant relationship among any of the variables.

Wells (1974) concluded that teachers have preferred types of humour but the classroom observations and interviews with students revealed that they did not utilise these preferences. Westing's (1974) presage-process-product study of second and third grade teachers implies that no one theory at present comprehensively explains the complexities of the educational success. He contends that further exploration is needed of the attributes and behaviour of the teacher who achieves successful gain.

Kaul (1974) factor analysed the personality traits of popular secondary teachers and arrived at four factors, namely, striving, self confidence, ability and preservice, and calmness. Malhotra's (1975) again was a factor analytic study where he analysed teacher classroom behaviour in relation to teacher attitude and adjustment, and students' liking and perceived behaviour by peers, principals and self. The factors were: reinforcing pupil participation, peers disapproval of stable behaviour, teacher attitude adaptability, teacher stimulated pupil initiation, teacher stimulated pupil participation, students' liking for indirectness, principal approved subject informative behaviour, perceived teacher behaviour, and silence - confusion. A similar study has been conducted by Grewal (1975);

but teacher classroom behaviour has not been investigated in this study.

Sankowski (1976) investigated the degrees of agreement between teacher and student perceptions and observer observations of teacher verbal and nonverbal behaviours and the implications of these sources of feedback. The sample was drawn from elementary schools. The results indicated that teacher perceptions about their classroom behaviour represent a higher degree of agreement with the perceptions of their students than with the classroom observations. Dean (1977) found that no significant clearcut relationship was established between the prospective teachers' self concept, their classroom nonverbal behaviours and teaching effectiveness as measured by the student teaching evaluation form. Joshi (1977) factor analysed the data regarding the teacher's self perception of his classroom behaviour, his observed classroom behaviour and the students' liking for their teachers. Secondary school teachers and their students constituted the sample of the study. The factors, which he called teaching competencies, arrived at were general students' liking for the teacher, teacher communication through auditory visual media, teacher stimulating student participation and teacher concern for classroom management.

From the foregoing discussion it is evident that studies identifying competencies of secondary school teachers



of a particular grade and a subject are not undertaken so far. Such studies, perhaps, would tell about competencies that are typical to that grade, or subject matter or both. The knowledge of such competencies would enable the educationists and the practitioners to focus on the more crucial aspects of teaching. An attempt has been made in this study to identify desirable competencies of a physics teacher of Standard IX in the context of certain presage, process and product variables. The details of the approach employed and the different variables studied are discussed in the pages to follow.

#### 2.2.0 Different Approaches to the Identification of Teaching Competency

An examination of the various approaches usually employed in competence research would help in providing a rationale for the approach employed in the present study.

Barr (1941) lists three approaches to the measurement of teacher efficiency (as it was called those days): (i) definitions based upon estimates of traits (qualities) assumed to function in the teaching act as a drive, considerateness, emotional stability, objectivity, intelligence and the like; (ii) definitions based on appraisals of activities included in teaching such as discovering and defining pupil needs, setting goals, stimulating interest (pupil activity), choosing learning experiences, guiding

learning activities, appraising results and the like; and (iii) definitions desired from measures of pupil growth. According to Barr, the third approach is the soundest, the first two being in terms of means to an end (pupil growth).

Mitzel's (1957) 'Generalised Schema' represents the first distinct example of the centralisation of classroom behaviours. He visualises four types of variables: Type I: Human characteristics on which teachers differ and which can be hypothesised to account, in ~~part~~<sup>ar</sup>, for differences in teacher effectiveness. Type II: Contingency factors which modify and influence the whole complex of behaviours that enter into the educational process. Type III: Classroom behaviours of teachers and pupils. Type IV: Criteria or standards, consisting of 'intermediate educational goals', i.e., the measurable outcomes at the end of a period of instruction as distinguished from the ultimate criterion which might be phrased 'a better world in which to live'. This model gives a good amount of importance on what actually happens in the classroom. The teacher variables and the pupil variables are also given due recognition, in the sense that the teacher behaviours and the pupil behaviours are directly influenced by the above variables.

Most of the earlier studies followed the model of studying the relation between the criterion of effectiveness and its potential correlates as shown below (Gage, 1963):



These studies are mostly correlational in nature. The criteria happen to be ratings, pupil gain scores or score on some tests supposed to measure teacher effectiveness. Research by this paradigm has been abundant; hundreds of studies yielding thousands of correlation coefficients have been undertaken. By and large, these studies have yielded disappointing results: correlations that are non-significant, inconsistent from one study to the next, and usually lacking in psychological and educational meaning (Gage, 1963). Probably this is because of the fact that these studies did not take into account the key factor in teaching-learning, that is, the interaction telling what happens in the classroom.

Biddle (1964) suggests a comprehensive variable system composed of seven classes. Out of these, five of the variables are postulated to form a cause-and-effect sequence. They are formative experiences, teacher properties, teacher behaviours, immediate effects, and long term consequences. The other two variables are postulated to be contexts for portions of the main sequence. The classroom situation imbeds and interacts with teacher properties, teacher behaviours and immediate effects. School and community contexts imbed and interact with the ~~first five~~ <sup>first five</sup> variables.

Turner (1971) advocates an approach to identifying those teaching skills which are logically necessary for effective teaching or for which there is related evidence of importance. The use of such a model with its combination of logical analysis, theory and empirical evidence is likely to result in a higher pay off than reliance upon haphazard or idiosyncratic approaches to the specification of tentative teacher competencies.

Houston (1972) has recently outlined five specific approaches that program<sup>me</sup>/development groups may take toward identifying teacher competencies. First, in a program<sup>m</sup>e of translation approach, faculty may simply reformulate current courses by rewriting current requirements as behavioural objectives. This method complies with the requirement for specificity but fails to assure the presence of the most crucial competencies.

A second approach is analysis of teaching tasks or role specification. This approach requires that teachers be observed or that it be ascertained otherwise what it is that the teacher actually does ~~and~~ then inferences are made concerning the specific teacher behaviours needed to perform the tasks.

A third approach examines the needs of learners rather than the role of teachers. In order to arrive at teacher competencies under this approach, desired pupil outcomes are first set forth, the conditions that <sup>r</sup>being about pupil

outcomes are defined, and then the competencies needed by teachers to provide these conditions are derived. This approach suffers because of the lack of knowledge about what teaching behaviours produce pupil change under different conditions.

In the fourth approach, a theoretical stance regarding teaching style or the definition of an effective teacher is posed and specific behaviours which are hypothetical constructs of that theoretical position are defined.

The fifth and the final approach is the cluster method whereby programme planners identify a number of curriculum areas and deductively reduce them to behavioural objectives. The key to the success of this method seems to lie in the manner in which the curriculum areas are decided upon.

With the background of these different approaches, a workable model for research in teaching competency is developed for this study.

#### 2.2.1 Towards a Workable Model

Effectiveness of a behaviour may be hypothesised as a function of the total number of teachers, pupils and situations in which the behaviour has a particular effect. The effectiveness of a behaviour in theory could be estimated if a random sample of teachers, pupils and situations can be

drawn and the number of times that behaviour is effective is counted. This is not practical because it is almost impossible to isolate the effects of individual behaviours.

Therefore a less direct method should be adopted. A competent teacher possesses a repertoire of teaching skills and he selects one or another of them according to his perception of the situation which prevails at a given time. Two teachers who are equally competent in achieving a particular effect may have different repertoires. These repertoires may overlap: both may exhibit some of the same competencies. These are the competencies the present study has sought to identify.

The answer to the question of teaching competency may be thought of as consisting of three steps:

- (i) determining the criterion (or criteria) against which one could examine the teacher's ability;
- (ii) finding out what forces lead to the teacher classroom behaviour; and
- (iii) the gathering<sup>6</sup> of facts (teacher behaviours) that are a resultant of the interaction between the criterion (or criteria) and the forces that act as the antecedents.

These three steps would relate to the product variables (the consequents of the classroom variables), the presage variables (the antecedents to the classroom variables), and the process variables (the teacher classroom behaviour) respectively. The teaching competencies would manifest

themselves in the form of the resultant, i.e., the teacher classroom behaviour. The figure 2.1 below visually represents the above paradigm:

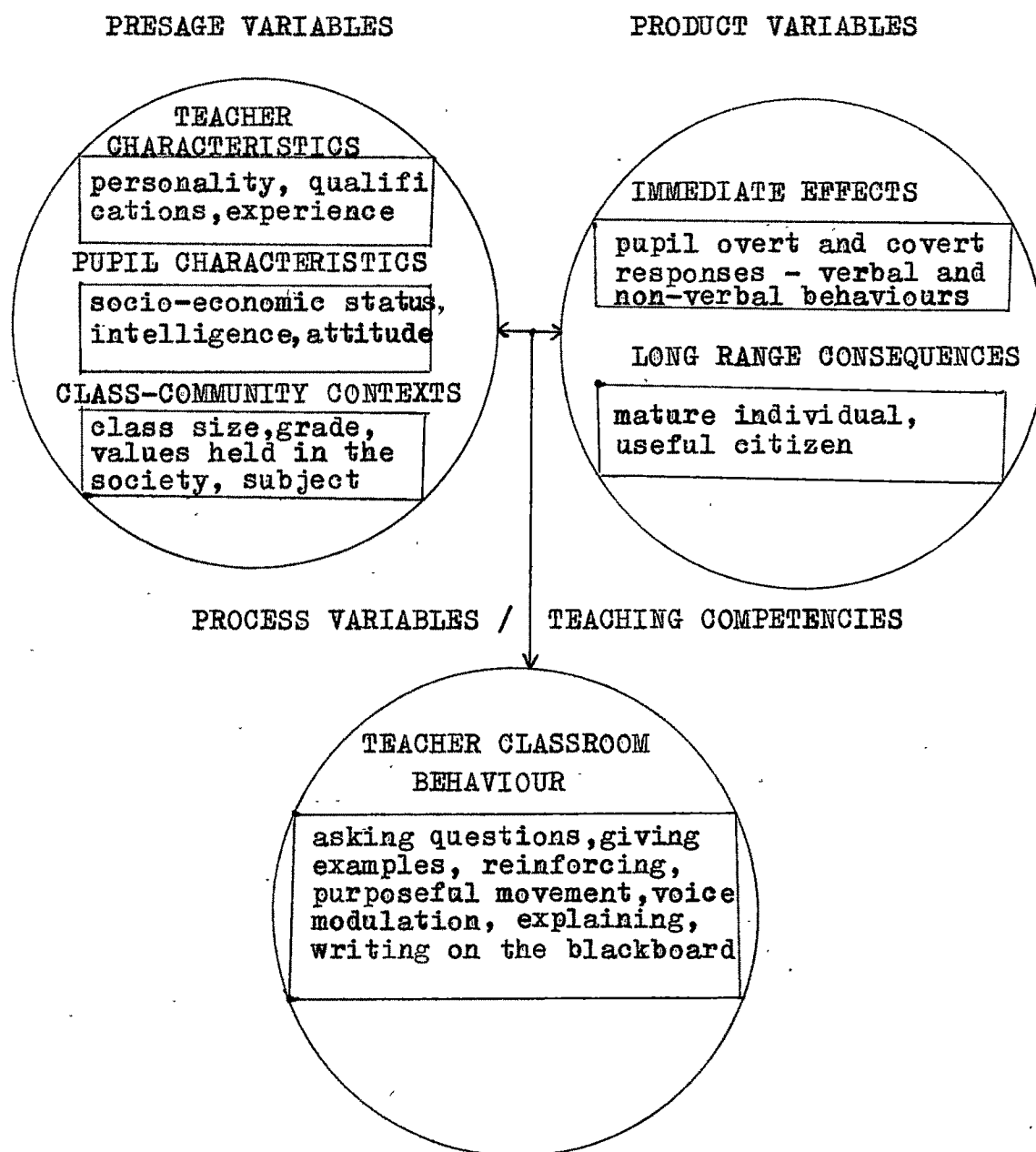


Fig.2.1 A Paradigm of Teaching Competency  
Note: Variables mentioned are examples.

In the figure, the process variables have been given a prominent place, viz., as a resultant of the interaction between the presage and the product variables. This is because the interest here is not in the relationship between the presage-process or process-product, not even in the older paradigms - in the relationship between teacher variables and pupil change, but in the way the competencies manifest themselves as a result of fusion between the presage and the product variables. Nevertheless, all the presage-process, process-product, presage-product and presage-process-product studies can be incorporated into the model.

Each of the variables in the above model can be measured in more than one way and each, in its own right, would be meaningful. The different variables under focus in this study are discussed in the paragraphs to follow.

### 2.3.0 The Variables Under Study

In this section a review of studies related to the presage, process and product variables in competence research is made with a view to bringing to focus some significant research trends and thereby a justification to include the variables under study. The details of each type of variable are discussed under separate headings, namely, presage variables, process variables and product variables.



### 2.3.1 Presage Variables

Extensive research has been designed to identify relationships between presage variables and either process variables or product variables. Many variables have been studied as predictors of teacher behaviour and teacher effectiveness; to name but a few is in order: demographic variables of the teacher like his sex, age, sibling rank, marital status, preservice practical experience, cumulative grade point average, qualifications held, etc., personality attributes, attitudes toward teaching, subject matter, students and the like, interest in teaching, students, etc., intelligence, self perception of his behaviour, knowledge of subject matter, values and beliefs, and a multitude of other variables.

In the present study, the presage variables of teacher's intelligence, his attitude towards and interest in teaching, and self perception of his teaching behaviour have been included. The rationale for including these variables is given in the pages to follow:

(i) Intelligence: Intelligence, in terms of both verbal and nonverbal test scores has been utilized as a correlate of teacher effectiveness in research studies. Every conceivable result has been found, for instance, some exhibit a negligible relationship between intelligence and teacher effectiveness, some, a positive correlation, while others show a negative relationship.

Morsh and Wilder (1954) reviewed 55 studies appearing between 1927 and 1952 in which intelligence test scores were related to effectiveness measures. In general, the results were disappointing. Relatively high correlations appeared occasionally (in 16 of the 55 studies reviewed, the correlation coefficient exceeded .30).

Faced with these disheartening findings, modern researchers seemed less desirous to include measures of intelligence in their studies of teacher effectiveness. However, this would not justify the general conclusion that intelligence is unrelated to teacher effectiveness. At a certain level, perhaps, difference in intelligence may not correlate highly with teacher effectiveness. But to conclude from this that superior intelligence is unimportant would be probably a great mistake.

Lately, there have been a few studies investigating intelligence of the teacher as a predictor of teacher effectiveness. Banerji (1956) reported that (i) there is a general factor in all the four aspects, that is, (a) theoretical studies, (b) index of brightness, (c) practice teaching, and (d) teaching aptitude, which is in conformity with the common expectation that intelligence and clear thinking are necessary for making a good and efficient teacher; and (ii) successful class teaching needs qualities like quick thinking, easy adaptability, humour, etc., which go to make a teacher bright and smart in the class. Suraj Balra<sup>7</sup> (1963) studied the relationship between teacher trainees'

intellectual efficiency (IE), self acceptance (SA), and teaching skill (TS). The study revealed the following: (i) the sex differences in the three relationships (IE-TS), (SA-TS), and (IE-SA) were significant at .01 level; (ii) the coefficient of correlation between IE and SA of the sample was comparable with the coefficient of correlation of the original California Psychological Inventory; and (iii) it was found that the coefficient of correlation was significant between IE and TS with respect to predictive value. That teaching ability could be predicted by the teacher's intelligence, social and personal adjustment, socio-economic status, and academic achievement was the conclusion arrived at in the study conducted by Deva (1966).

Nelson (1974) established relationship between structure of intellect (SOI) abilities of student teachers and their verbal instructional behaviour. The results showed that the SOI abilities measured were reflected in the way the student teachers structured an entire lesson or topics within the lesson. The lesson or the teaching sequence appeared to be a system upon which the student teachers exercised their SOI abilities involving the product of Semantic systems. Based on the Dogmatism Scale, Hester(1976) categorised 87 student teachers as open, closed or middle in dogmatism. The student teachers were administered the Minnesota Teacher Attitude Inventory (MTAI) to measure their attitude and Otis test for measuring their IQ. Student teaching ratings were collected from them at the end of two

semesters. The relationship between IQ scores and student teaching ratings was significant.

Thus, it may be seen that very few studies are conducted with intelligence of the teacher as a predictor. Whether intelligence acts directly as an important factor in the conditioning of pupil change or not, it may be the antecedent of certain teacher behaviours in the class; these behaviours are crucial in the conditioning of pupil change. Further research is necessary to probe into the problem and find out to what extent it acts as a predictor of teaching competency and its implications thereof.

(ii) Attitude Towards Teaching: The variable of attitude of the teacher towards the teaching profession, teacher-student relationship, subject matter and similar psychological objects has been investigated in many of the research studies. A study reported by Sprinthall, Whitel<sup>e</sup>y and Mosher (1966) is illustrative. The findings of this research support the hypothesis that cognitive flexibility (an attitude) and effective teaching (behaviour) are related to each other. Giebink (1967) reported a study in which he did not find any relationship between teacher behaviour and attitude measured by the Minnesota Teacher Attitude Inventory (MTAI). Contrariwise, Samantaroy (1971) found that some degree of positive relationship existed between teacher attitude and teaching efficiency and teacher adjustment and teaching efficiency.

Quraishi (1972) studied the relationship between certain behaviour dimensions of teachers and their attitudes towards various groups and classroom practices. The result of his study revealed that out of eight attitudes under study only one, namely, teachers' attitude towards Democratic Classroom Procedures related significantly with I/D ratio and i/d ratio. A significant relationship was found to exist between the teaching assistants' attitude toward teacher-student relationships and their classroom teaching performance as measured by FIACS (Haber, 1973). Denton (197<sup>4</sup>~~3~~) also found significant relationships between prospective teachers' self concepts and ability to establish teacher-pupil rapport as measured by the MTAI, instructional skills and overall effectiveness of student teaching as determined by supervising teachers.

But Ray's (1974) study provided contradictory results; very weak relationships were identified between educational attitude of teachers and the number of creative behavioural characteristics to be encouraged by teachers of fourth and fifth grades and creative thinking ability of their pupils. Similar results were obtained in the study of Preka<sup>e</sup>~~ges~~ (1974) and Poole (1975). Even in the study of Girvetz (1975) no significant relationship between progressive and traditional educational attitude of elementary teachers and their teaching behaviour was found.

But Batchelor (1975) studied teacher attitude and

teacher responses to pupil questions and found a significant positive relationship between them. In the studies of Hester (1976), Bowman (1976) and Schaffer (1976) no significant relationship was found between attitude of teachers and the criteria. In Hester's study, the criterion was student teaching ratings, in Bowman's, pupil achievement and in Schaffer's it was creative attitude and creative ability of pupils. But O'Keefe (1977) found that there was a definite association of significance between a high score on the MTAI of school teachers and a high rating by their school principals.

The samples of the studies quoted above range from teachers and students of grade one through eleven and prospective teachers. And in respect of methodology, the studies have adopted correlational approach. Therefore, the extent of generalisability of these results is very little and nothing concrete can be said about the relationship between teacher attitude and other variables.

Whatever the nature of the study is, it is clear that the teacher occupies the central position in the teaching-learning process. This role stems from his interaction with his students, the curriculum, his attitudes, values and beliefs and so on. Teachers' attitudes become important in shaping the expectations of his students insofar as children can perceive the nature of the feelings the teacher has towards them and there are evidences to show the presence of such a perception (Hargreaves, 1972; Nash, 1974 and 1976;

Doyle and Whiteley, 1974; Frey, et al., 1975). A warm, sympathetic, friendly and understanding teacher is more likely to have a positive influence on the students compared to one who is cold, unfriendly and autocratic. Hence, studies are needed which employ objective measures of teacher attitudes and relate them to their classroom behaviour and student growth.

(iii) Interest in Teaching: Interests ~~f~~ profoundly influence and mould an individual's beliefs, attitudes, values and overt behaviour. They serve as powerful means for the improvement of teaching work. It is very necessary that teachers' actual interest be known for determining ~~the~~ his effectiveness.

The manuals of both the Strong Vocational Interest Blank and the Kuder Preference Record report data regarding vocational preferences and interests of teachers. Though, in effect, it seems that the Kuder Vocational Preference Categories (1953) are not distinctive of teachers in specific subject areas, a number of investigations have compared the vocational profiles of inferior and superior teachers. Hedlund (1953) reported that good teachers could be differentiated from poor teachers and also from those who fail to complete the secondary education programme satisfactorily.

The Kuder has also been used in attempts to discriminate among "promising" and "other" students in education. Tanner (1954) examined the vocational preference profiles of

44 student teachers rated 'superior' and 22 rated 'inferior' on the basis of practice-teaching and MTAI scores. No difference in preference was observed for the male students; among the female students, the superior group had a significantly greater score in social service. Popham and Sandlee (1958) explored the relationship between the teachers' out-of-school activities and their professional performance as measured by (i) principals' ratings of overall teaching effectiveness, and (ii) teachers' attitudes toward pupils as reflected on the MTAI. Significant positive relationships were identified among the different out-of-school activities, principals' ratings and teacher attitude.

Of late, studies in teacher effectiveness have not explored the possible relationships of this variable with other variables. Interest in teaching as a variable does not seem to have attracted the attention of educational researchers though the role they play in influencing an individual's attitudes, beliefs, values and, in turn, teaching has been realised since many decades. Therefore, there is an urgent need to explore the possibilities of this variable interacting with teaching competency.

(iv) Self Perception of Teaching: As regards the variable of self rating of teachers as a predictor of their classroom behaviour or a criterion of teacher effectiveness, significant positive relationships have been established as evidenced in the studies of Norris (1973), Hochel (1973), Denton (197<sup>4</sup>),



Patted (1974), Hyre (1975), Malhotra (1975) and Boardman (1975).

Norris, in his study of thirty teachers and their 1400 students found significant relationship between the teaching proficiency of the teacher and his self concept. Denton and Patted found similar results with ~~pers~~<sup>pros</sup>pective teachers. Hochel related self concept of communication ability of student teachers with their success in student teaching. He concluded that self concept was the best predictor of student teaching success. Teachers rated as effective had a higher self concept in Hyre's study. In Malhotra's study, teachers with indirect classroom behaviour rated themselves higher on the Teacher Rating Scale for self than those with direct classroom behaviour. Boardman found that the self concept of teachers teaching English to sixth and eighth gradd~~s~~s appeared to be a critical factor in the academic achievement of their pupils.

The conclusions of these studies support the hypothesis that teachers with positive self concept faster better pupil learning. Purushottaman (1973) also has made a case for every teacher being able to know himself, assess his own shortcomings and achievements.

Alongside, there are studies showing statistically significant negative relationship between self concept and a criterion of teacher effectiveness (Thompson, 1973; Young, 1973; Hill, 1974; Mills, 1975; Poole, 1975; Bennett, 1977; and

Heinz, 1977). These researchers recommend that future studies use a larger sample to allow for variations in the degree of self concept of teachers. They also advocate further investigation into the relationship of self concept with other process and product variables.

McNeil and Popham (1973) express that they would like teachers to be students of teaching, systematically assessing and revising their own teaching behaviours. Theoretically, persons want to evaluate themselves in order to obtain an accurate picture of their own abilities (Festinger, 1954), but there are only a few studies indicating that some teachers are self directing in their learning and expend effort in judging their behaviour on the basis of the consequences of their teaching as revealed by the actions of pupils (Weiner and Kukla, 1970). An interesting hypothesis is that teachers are not likely to change their performance unless they themselves see a discrepancy between what they want to achieve and what they are achieving. Therefore, studies are needed to show the relationship that exists between the self concept of teachers and the effects of their teaching.

(v) Class and Community Contexts: The situational variables like the class size, physical equipment, seating arrangement, subject matter taught, period of the day, grade, location of the school, socio-economic status of the pupil, etc., considered as presage variables in the paradigm of this study have not been researched in most of the correlational studies.

The failure of these studies to bring out any consistent and significant results is, perhaps, due to the intervention of these situational factors. Unless the researchers restrict their studies on teaching competency to a particular grade, subject, type of school, kind of pupils, environment and so on, the results that come out may be spurious. There are a few studies giving evidence to this end.

Ledesma (1973) found that the variable of subject matter had significant main effects on pupil initiative, teacher questions, teacher talk, pupil talk and I/D ratio. There were significant differences in the effect of the teacher variables in achievement in accordance with the subject matter taught in Ober's (1974) study. Marshall (1977) also concluded that the nature of verbal interactions for different contextual purposes varied according to the subject matter during the observation period as well as according to the structure of classroom.

There are other studies investigating into the extent of interaction of other situational variables like the socio-economic status of pupils (Davis, 1974; Brown, 1974; Bowman, 1976; and Soar and Soar, 1976), seating arrangement in the classroom (Johnson, 1963), medium of teaching (Ledesma, 1973), and the like.

In this study, the technique of random sampling has been employed, thus neutralising the effects the situational factors may have on the teacher classroom behaviour and, in

turn, the criterion of students' liking. Only those variables are controlled which lend themselves for an easy manipulation. These are the subject matter, the grade and the medium of instruction. Moreover, competencies in relation to a particular grade and subject matter would focus on issues that are crucial to teaching of that subject to that particular grade.

However, the factor of socio-economic status of the pupils and other such variables are kept constant in a way that is feasible under the given constraints. The sample is drawn purely from an urban area making the factors of family background and socio-economic status of pupils, locality in which the student resides and the like somewhat uniform. Nevertheless, the researcher is aware of the fact that these factors do differ to a considerable extent.

Based on the above discussion, in the present study, the presage variables of teacher's intelligence, his attitude towards and interest in teaching and self perception of his teaching behaviour are included. The subject matter, grade, and the medium of instruction are kept constant for the study. The sample is drawn from an urban area making the pupil variables more uniform than it would have been if the sample were selected from both rural and urban areas.

### 2.3.2. Process Variables

The importance of process variables need hardly be overemphasized. Although the criterion against which one

could examine teacher's ability is a modification in the learner, to understand how exactly the presage variables come into play to achieve the desired objective, the process variables have to be studied.

It is the analysis of the process which will help control the antecedents and the consequents according to the needs of the different situations. Classroom interaction data are necessary for designing alternative teaching strategies and suggesting instructional objectives previously overlooked. The role the classroom data play is becoming more crucial in the light of the present trend that immediate effects of teaching on pupils are better criteria than long range consequences, because the long range consequences cannot be isolated and attributed to a single teacher as much as the immediate effects.

The findings of different presage-product studies do not show any significant and consistent relationship. The bypassing of the process variables may be one of the main reasons for it. Of late, much research has been undertaken giving due importance to the process variables.

Medley and Mitzel (1963) also emphasise the importance of observation thus: "Certainly there is no more obvious approach to research on teaching than direct observation of the behaviour of teachers while they teach and pupils while they learn". Hence, direct observation of the teacher behaviour in a live classroom in its natural setting is

considered one of the indispensable phases of this study.

### 2.3.3 Product Variables

The broad kinds of criteria<sup>a</sup> on which one can base judgments of competence generally come from two sources : (i) information supplied in some form to the researcher by principals, supervisors or observers (Cook and Leeds, 1947; Dodge, 1943) and (ii) data derived from pupils, such as their statements about how much they like the teacher, or some measured characteristics of the pupils, usually achievement, which may be attributed to the teacher's influence (Albert, 1941; and Bush, 1942). Support for the position that the ultimate criterion of a teacher's competence is his impact upon the learner has been offered by a number of individual researchers as well as professional associations (e.g., Barr, 1941; AERA, 1952; Biddle and Ellena, 1964; Astin and Lee, 1966; Cohen and Brawer, 1969). Therefore, the second source of criteria appears more direct and authentic and hence the review of the studies and the criterion selected for this study is restricted to the second source.

The practice of collecting and using pupil ratings for evaluating teacher effectiveness has empirical and logical support dating back nearly 50 years. It may be expected that pupils, coming as they do from different kinds of environment and to very different types of school, would vary widely in the teacher characteristics of which they most approve and disapprove. Yet, research on measurement issues of students

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as evaluators indicates that pupil assessment ratings show a high degree of unanimity and are valid too; they do not appear to be influenced by the sex of the student or teacher, and the difficulty of the course, <sup>and the</sup> grade awarded (Remmers, 1934 and 1963; Veldman and Peck, 1967; Doyle and Whiteley, 1974; Frey et al. 1975).

Evans (1962) summarises the results of studies using pupil rating thus: "Children like teachers who are kind, friendly, cheerful, patient, helpful, fair, have a sense of humour, show an understanding of children's problems, allow plenty of pupil activity, and at the same time maintain order. They dislike teachers who use sarcasm and ridicule, and domineering and have favourites, who punish to secure discipline, fail to provide for the needs of individual pupils and have disagreeable personality peculiarities".

In one American investigation, comparing the teacher qualities liked or disliked by children and, retrospectively by adults, it was found that children tended to be more concerned with the qualities of teachers as teachers, while adults judged them in terms of personal attributes. A similar difference was found by Taylor (1962) between pupils and teachers; children, especially younger children, described the 'good teacher' more in terms of his teaching than did teachers who emphasised the personal qualities of teachers. Taylor found wide agreement among pupils about the importance of firmness, justice, the avoidance of corporal punishment,

friendliness, knowledge, and most of all, participation in class activities. Amongst junior school pupils, encouragement to work hard was stressed, as was politeness by the girls; and amongst secondary school pupils, cheerfulness and explaining the work were emphasized.

Hargreaves (1972), who has reviewed most of the pertinent literature, arrived at essentially similar conclusions. He argues that pupils take into account three distinct aspects of their teachers' behaviour, their instructional style, their discipline and their personality. Under discipline, children prefer teachers who keep control, are fair, have no favourites, give no extreme or immoderate punishments, and dislike those who are too strict or too lax, have favourites and who punish or threaten excessively or arbitrarily. Where instructional methods are concerned, children prefer teachers who explain and give help where it is necessary, and give interesting lessons. They dislike teachers who do not explain, give little help, do not know their subject well, and who give dull and boring lessons. Pupils prefer teachers whose personalities are cheerful, patient, friendly and understanding, who have a good sense of humour and who take an interest in pupils as individuals. They dislike teachers who nag, ridicule, are sarcastic, bad tempered and unkind, and who have no sense of humour; and ignore individual differences.

One point worth noting here is that these views about



'good' and 'bad' teachers are held by those who do well and like school and by those who do not. Again, these findings are not merely descriptions of children's likes and dislikes about teachers, they are a formulation of the rules of conduct which children lay down for their teachers (Nash, 1976).

Studies by Jenkins (1960), Aden (1974), Naylor (1974), Kopper (1974), Parkhurst(1975), Sterman (1977) and Meighan (1977) also support these conclusions. Jenkins, after collecting and analysing the perceptions of their teachers from 360 sixth grade students, concluded that teacher behaviours which have tended to be viewed as merely a part of the 'teacher role' do have a significant impact on the affective climate in the classrooms. The implication of the studies conducted by Aden, Naylor, ~~and~~ Kopper and Parkhurst is that using pupils as raters of teacher effectiveness is a reasonable technique for evaluation.

Sterman's study tended to suggest that students generally perceived their teachers' classroom behaviour to be relatively nondemocratic. Most students suggested that even when teachers were somewhat democratic, usually they were subject matter centred. In a few instances, students noted that their teachers permitted them to work in areas of their own interests after completing the regular assignment. Meighan's study suggested that although pupils were untrained observers, their perceptions show enough consensus and agreement with other assessors.

The above studies indicate that pupil assessment ratings of teachers are highly reliable and valid. The implication of this finding would have a significant bearing on the student outcome in the teaching-learning process. Alexander and Halverson (1957) state that it seems a fair assumption that teachers whom learners like best are those who have the best interaction with pupils and therefore the potentiality for greater success in teaching. This assumption is supported by the findings of Hart (1934), Coats, et al. (1972) and Kaul (1972). Studies show that the subjects taught by well-liked teachers are voluntarily continued by students, while subjects taught by disliked teachers are continued only if they are required (Morse and Wingo, 1968).

Jackson (1968) suggests that at least two lines of reasoning lead to the expectation that scholastic success and positive attitude to school go hand in hand. First, traditional learning theory suggests that children who do well in school will be rewarded which, in turn, will lead to their developing a liking for school. And there is an argument which reverses the causality and says that children who like school will do well there for that reason alone.

Whichever line of reasoning operates in reality, recent studies have demonstrated definite relationships between academic performance and attitudes toward school, teacher, subject, etc. Lunn (1970) investigated children's attitudes

towards both their class and school. Both tests correlated with several tests of achievement including English, problem arithmetic, essay writing and verbal reasoning. Wright (1975) found that there was a significant relationship between the student rating of teachers and achievement. He recommends that further studies relating student ratings and achievement should involve different levels of mathematics and subject areas other than mathematics. Robinson (1977) found that there was a statistically significant difference in language arts gain between students who, as a class, perceived their teachers as providing high levels of the facilitative conditions and those students who perceived their teachers as providing low levels.

Based on the above discussion, the criterion variable of students' liking for their teacher has been investigated in this study. An important factor in the design of this study is the reliance on student perceptions of teacher behaviour in terms of the effects of the behaviour. A study of the achievement of students on the subject was beyond the scope of this study. Also "outcomes of instruction", according to Cronbach (1964), "are multidimensional and a satisfactory investigation will map out the effects of the course along these dimensions separately. To agglomerate many types of post-course performance into a single score is a mistake, since failure to achieve one objective is marked by success in another direction. Moreover, since a composite score embodies (and usually conceals) judgments about the

importance of the various outcomes, only a report that treats the outcomes separately can be useful to educators who have different value hierarchies".

The competencies identified in the context of the variable of students' liking may serve as a useful guide in developing subsequent research dealing with the criterion variable of student achievement.

#### 2.4.0 Statement of the Problem

The problem underlying the study is stated as "Factorial Structure of Teaching Competencies among Secondary School Teachers".

##### 2.4.1 Definitions of Key Terms

The operational definitions of the terms included in the title of the study are given below:

(i) Factorial Structure : This relates to the set (s) of teacher behaviours (called competencies) arrived at as a result of factor analysis of the data regarding the different variables.

(ii) Teaching Competency : It 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 product variables of teaching within a social setting.

In the present study, "overt teacher classroom behaviours" comprise teaching activities exhibited by the teacher inside the classroom. They are, for example, teacher asking questions, giving examples, writing on the blackboard, showing something to pupils and so on. These do not include the pupil behaviours that are a part of the teaching ~~behaviour~~ - learning process.

The presage variables investigated in this study are teacher's intelligence, his attitude towards and interest in teaching and self perception of his teaching behaviour. Students' liking for their teacher was the product variable under consideration.

"Social setting" in this study would mean an urban area like the city of Bangalore.

(iii) Secondary School Teachers: This denotes only the teachers of Standard IX teaching physics through the medium of English in all types (Government/private, aided/unaided, and boys/girls/mixed) of secondary schools in the city of Bangalore.

#### 2.5.0 The Objective of the Study

The study aimed at achieving the following objective:

To identify a set of desirable teaching competencies of physics teachers of Standard IX.

#### 2.6.0 Basic Assumptions Underlying the Study

The study is based on the following assumptions:

- (i) Teaching competency is an ability of the teacher and it manifests through his classroom teaching behaviour.
- (ii) The behaviour of the teacher in the classroom is the most direct evidence that one can appeal to in a search for teaching competencies.
- (iii) This behaviour of the teacher is capable of being observed by a trained observer.
- (iv) The different sections of Standard IX are homogeneous in respect of pupils' ability, their socio-economic status, the classroom environment, the physical equipment, etc.

#### 2.7.0 The Scope of the Study

- (i) The findings of the study are applicable to only the physics teachers of Standard IX of the secondary schools of an urban area like the city of Bangalore.
- (ii) Since this study is one of its kind, the findings may be treated as explorative rather than conclusive.

#### 2.8.0 Limitations of the Study

- (i) The topics in physics that were taught at the time

of data collection are considered representative of the entire syllabus of physics of Standard IX.

- (ii) Every teacher was observed only once for 30 minutes in his class due to lack of resources. The behaviours that he exhibited in this period are taken to be representative of the universal of his teaching behaviours.
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