CHAPTER III

STATEMENT OF THE PROBLEM, HYPOTHESES AND VARIABLES

3.0 The Problem

Teaching has been recognised as a complex process and is not a simple activity where by the teacher gives his magic performance in transferring knowledge and making the students understand effectively. He is to be creative, resourceful, objective and stable. His effectiveness depends on not only how he understands the pupils, presents the subject matter, appraises the results but also on his own character traits in defining objectives, setting goals, energising activities and keeping interest in tact. If he can galvanise personalities, his own as well as of his pupils, the teacher is surely on a road to success.

Students do judge their teachers. A devoted teacher makes a place for himself in the heart of students. His singleness of purpose, sympathetic understanding of pupils and moral standards are sure to crown him with success. Pupils express their opinion in unequivocal terms about their teachers and their teaching efficiency. Students are good observers and a teacher is a daily target of their evaluation. A teacher's success depends on his/her degree of interest in pupils and their problems. A good teacher attends to pupils responses and adopts the appraisal procedure and makes a fruitful use of pupils experience.
Since a teacher is to be a guide in the learning process of the pupils, he must have the skill to identify pupil needs and clearly setting the goals, creating favourable mind set in the learners. An effective teacher tries his best to make activities meaningful locates the short comings, recognises the individual differences, uses learning aids and concretes, the subject matter and thus facilitates learning. An effective teacher yields sufficient skill in problem solving and inculcating work habits in children. A good teacher never sacrifices human relations for pedagogical logic. A successful teacher realises that child is a sacred trust and to educate him is not stuffing him with information.

A teacher's effectiveness lies in the fact that his creative ingenuity never allows him to state in his profession. He faces teaching problems with open mindedness of a researcher. He applies alternatives, records, observations, interprets results and thus follows action research.

A good teacher is not only a communicator of knowledge, but a model of competence. He imparts attitudes to his subject and attitudes to learning, then becoming in himself a symbol of educating process, a person who is teaching as well as learning (Flanders, 1970).

Thus, an effective teacher will be ever-conscious of his teaching problems and as an action researcher will focus her efforts on self involvement, self assessment and
self improvement. He will gather good evidence and apply himself scientifically to better teaching and its outcomes. A teacher of today must pre-think, rethink, and post-think about what he is to do, what he does and what he has done. His experience must make him wiser and enlighten him to be more effective. Good teaching aspires for better and better pedagogical procedures and appraisals for effectiveness.

No doubt, much research has been done on the teaching effectiveness, but very little is achieved. As pointed out by Barr (1949) evaluation of teachers was, is and always will be carried on. The search for identifying an effective teacher with his personal and personality characteristics and the situations in which he is more effective is continuous.

3.1 Need for the Study

Today the world is facing three major problems viz., population increase, pollution and poverty. We believe, rightly or wrongly, that science education can make a very significant contribution towards the solution of these human problems. At the same time we believe that there can be no development without education. Indeed in order to develop we need a scientific and technological base and trained scientific and technological man power is a pivotal element in this base (Pendali, 1992).

The success of any system of education depends largely on the quality of its teachers. It is no exaggera-
tion to say that any system of education cannot ever rise above the level of the quality of its teachers. If education is at the root of the progress of any country, the teacher is at the root of education. Thus, any country must be able to attract the most talented to the teaching profession, provide them all facilities to do their work so that the desired ends of education are attained (The Education Commission, 1964-66).

Teaching has been one of the oldest and noblest profession. A teacher has a very complex role to play in the society as an agent of social change. He must be instrumental in initiating and accomplishing the social transformation. Effective teaching can be equated to the relationship of a teacher with the society and more particularly with his students whose growth and development are the major concern of a teacher. There exists a correlation between national development and quality of teachers. Chaurasia (1967) while emphasising the relationship wrote, "......it is universally accepted that the quality of a nation depends upon the quality of its citizens. The quality of its citizens depends in the critical measure upon the quality of their education. The quality of education depends upon several factors, home, inherited traits and attitudes of parents, financial support, building, books and equipment in the school, curriculum, and methods of instruction. But the most significant factor is the quality of the teachers."
The problem of effectiveness of a teacher is so complex that no one knows what the complex teacher is (Biddle, Ellena, 1964). According to them the effectiveness of the teacher can be determined through the formative experiences, teachers properties, teachers behaviours, immediate effects and long term consequences. The effective teacher never stops experimenting to discover what best suits his own particular needs and those of his students. The effective teacher can apply teaching methods that are easier, quicker, better, safer, more rewarding, less labour intensive and more suitable. An effective teacher may be understood as one who helps development of the basic skills, understanding, proper work habits, desirable attitudes, value judgement and adequate personal adjustment of the students.

Teachers are the real architects of a nation. The greatness of a country does not depend on lofty buildings, gigantic projects and large armies. The ultimate test of nation's greatness is the quality of her citizens. If a nation possesses young men of sterling character an unimpeachable patriotism, he/she is found to make rapid progress on all fronts. Young men are entrusted to the care of the teaching profession and it is, therefore, the sacred duty of the teacher to impart the right type of education to students in order to make them right type of citizens. Teachers can play a very vital role in shaping the future of India by paying attention to the young men entrusted to their care.
Maximizing the effectiveness of a teacher in teaching is a major goal of education. It is therefore, quite pertinent to say that a school's effectiveness depends on the effectiveness of its teachers. It points out the effects of the teacher in a classroom situation. The teacher ability or competence or effectiveness comprise one or more abilities of a teacher to produce educational effects in a situation or context (Mitzel, 1982).

The Secondary Education Commission, the teachers and teacher education, Indian Education Commission and National Policy on Education categorically pointed out the need for improving the teacher's status, salaries, service conditions and training facilities for the pursuit of knowledge to perform his duties satisfactorily. Nothing is more important than securing a sufficient supply of high quality recruits to the teaching profession, providing them which possible preparation and creating satisfactory conditions of work in which they can be fully effective.

Barr, A.S. (1961) states that "to select, recruit, educate, and assign teachers to a particular teaching position in an acceptable manner, one must have more precise about the many meanings associated with teaching, in general and in particular situations and how to identify the personal, academic and professional pre-requisites to effectiveness."

In the past decade, however, research has begun to relate certain teacher behaviours to specific consequences
in the climate of the classroom and in the academic achievement of the pupils. Every one agrees with the validity of the fact that some persons are endowed with certain characteristics which make them eminently fitted to become teachers. In view of the rapid expansion of education, large number of teachers are required. The success and failure of any school educations endeavour rests largely with the classroom teachers and there is no substitute for an effective teacher. However, the identification of effective teacher has been a problem that has challenged, educational leaders for years and it has yet to be resolved. Therefore, the present investigation is more helpful for identifying the effective science teachers and also for recruit the effective science student-teachers who are entering to the profession.

3.2 Statement of the Problem

The present study is stated as follows: "Impact of Certain Socio-Psychological Factors on Teaching Effectiveness of Science Teachers". This study is designed to investigate into various factors of teaching effectiveness and the influence of probable intervening variables on teaching effectiveness. This study may find, to what extent teaching effectiveness depends upon academic attainments and other factors so as to improve their role in education.
3.3 Objectives of the Study

The purpose of this study is to focus attention on teaching effectiveness of science teachers in order to identify the characteristics associated with effective science teachers.

The main objectives of the study may be stated as under.

1. To develop an instrument for measuring teaching effectiveness;

2. To know the general level of teaching effectiveness prevailing among science teachers of secondary schools;

3. To find out the influence of personal and demographic variables on teaching effectiveness;

4. To determine the degree of relationship between the scores of teaching effectiveness and their attitude towards teaching profession;

5. To find out the relationship between the different dimensions of teaching aptitude and teaching effectiveness;

6. To identify the personality characteristics that contribute to or affect teaching effectiveness;

7. To compare the personality profiles of less and more effective science teachers;
To develop multiple regression equations in order to predict the teaching effectiveness with the help of different groups of independent variables

3.4 Hypotheses

On the basis of the above objectives the following major hypotheses are formulated. The hypotheses are set up in a 'null' form as this form of hypotheses is akin to the legal principle that a man is innocent until he is proved guilty (Guilford and Fruchter 1978; Garrett 1966).

1. In general secondary school science teachers are not effective in their teaching.

2. There would not be any significant influence of personal and demographic variables of the science teachers on their teaching effectiveness (each one of the variables would be considered separately).

3. There would not be any significant influence of attitude towards teaching profession of science teachers on their teaching effectiveness.

4. There would not be any significant influence of teaching aptitude various dimensions of science teachers on their teaching effectiveness (each dimension is tested separately).

5. The personality characteristics of the science teachers would not significantly influence their teaching.
effectiveness (each characteristic is tested separately).

6. The personality profiles of more effective and less effective science teachers would not differ significantly.

7. There would not be any significant variation in the characteristics of more and less effective groups of science teachers.

8. None of the independent variable would turn out to be a significant predictor of the teaching effectiveness of science teachers.

3.5 Variables Studied

The dependent variable in the study is teaching effectiveness of secondary school science teachers. The independent variables are broadly grouped under two categories namely, Personal and demographic variables and Psychological variables.

3.6 Brief Description of the Variables

The following definitions/descriptions are operationalised for the purpose of measuring the variables in the study.

Teaching Effectiveness: Teaching effectiveness is operationally defined as 'the degree of exhibiting different characteristics that are essential for an effective science
teacher as perceived by his immediate supervisor and his students.

Personal and Demographic Variables:

Sex: Teachers of both the sexes are included in the study to find out whether there is any significant difference between men and women teachers in the level of their teaching effectiveness.

Qualifications: Teachers working in the same designation or in the same category are possessing varied general and professional qualifications. The teachers with minimum qualifications which are required to be a teacher in that designation are being treated as one group namely graduate trained teachers; the teachers possessing post-graduate degree are termed as post-graduate trained teachers and those possessing double post-graduate degrees are termed as third group namely double post-graduate training teachers.

Experience: It was observed in the review of past researches that the relationship between experience and teaching effectiveness was complex and contradictory. Hence the number of years of an individual has been working as teacher is considered as one of the variables in the study to see the effect of it on the dependent variable teaching effectiveness of science teachers. To test this the sample was divided into three groups namely less experienced,
moderately experienced and more experienced science teachers.

Marital Status: The sample of science teachers included in the study was divided into two groups on the basis of their marital status i.e., whether they are married or unmarried. The teaching effectiveness scores of science teachers were analysed to see whether there exists any difference between the two groups.

Caste: The sample of science teachers included in the study was divided into three groups on the basis of their caste, viz., teachers belonging to forward community (OC), backward community (BC), and scheduled caste and scheduled tribe (SC/ST). The teaching effectiveness scores are analysed to see whether there exists any difference between these three groups.

Size of the Family: Family size of the science teachers have been taken as another variable to see if it has any influence on the dependent variable. It is believed that those possessing more number of dependents or those who are from large families may more frequently be disturbed than the others having less number of dependents or belonging to small families. Hence, the number of people in the family as reported by the respondent is considered as one of the variables in the study.

Type of Management: In the present set up of educational administration in Chittoor district the secondary schools
are managed by three different agencies, viz., Private, Local bodies and Government. The type of management under which the school is being controlled may have a significant influence on the level of teaching effectiveness of teachers. Therefore teachers working in the schools under these managements are included in the present investigation.

Place of Work: According to the place of work all the science teachers are divided into two groups viz., science teachers working in the schools situated in the rural areas i.e., in the villages with gram panchayats and science teachers in the schools situated in the urban areas i.e., in the towns with municipalities. It is assumed that the rural and urban living brings variations in the level of teaching effectiveness of science teachers apart from the variations due to the facilities available in rural and urban schools.

Psychological Variables:

Attitude: In this investigation, the word attitude is used to refer to "a mental and neutral state of readiness, organised through experience, exerting a directive or a dynamic influence upon the individual responses to subjects and situations with which it is related".

Aptitude: In this investigation, the word aptitude is used to refer to "is a condition or set of characteristics regarded as symptomatic of an individual's ability to acquire with training some knowledge, or skill or set of response, such as the ability to speak a language, to
produce music etc." It is defined as a condition or set of characteristics indicative of ability to learn. This implies that an aptitude is not necessarily an entity, but rather a constellation of entities, the set of characteristics which enables one person to learn something may even be different from that which enables another person to learn the something.

Cooperative Attitude: This trait has been used for measuring the cooperative attitudes of the teachers towards their taughts, society and the nation. This trait is an essential link for the relationship between the teacher and the taught, the school and the community and the society and the nation.

Kindliness: The items under this area have been used with regard to the general and particular attention of the teacher which is to be devoted for full growth and development of the personality of the pupil and to remove the hurdles and handicaps in the way of growth and development of the pupil.

Patience: The patience is an important attribute of teacher's personality, as he very often meets such a critical situation which needs patience and tolerance on his part.

Wide Interest: The teacher is not supposed to stick to his work of teaching the subjects only but he is also an active participant in cocurricular activities outside the
institution. He wants to see his taught growing physically, mentally, culturally, socially and in other aspects alike.

Fairness: This element has been taken in the test to measure the fairness and impartiality of the teacher which are the most essential traits of the teacher's personality.

Moral Character: Moral status in the opinions of adults, specially concerning their adherence to the adults standard, have been tried to see through the items constituting this area.

Discipline: Discipline and problems of conduct in the classroom and else where, and the methods employed in dealing with the problems are contained in this area.

Optimism: This trait is more essential in the teacher's personality as he is supposed to be always optimistic.

Scholarly Taste: A teacher is always a student in acquisition of knowledge. He is always thirsty for knowledge, and as such items in this sub-test measure scholarly taste.

Enthusiasm: Enthusiasm is an important element for the personality of a good teacher. The importance of this trait has increased too much in the present age.

Factor A: Reserved, detached, critical, cool Vs. Out-going, warm hearted, easy going participating.

The person who scores low on Factor 'A' tends to be stiff, cool, skeptical and alone. He likes things rather
than people, working alone, and avoiding class of view
points. He is likely to be precise and 'rigid' in his wy of
doings things and in personal standards and in many
occupations these are desirable traits. He may tend at
times, to be critical, obstructive or hard.

The person who scores high on factor 'A' tends to
be natured, easy going, emotionally expressive, ready to
cooperative, attentive to people, soft-hearted, kindly
adaptable. He likes occupations dealing with people and
socially impressive situation. He readily forms acute
groups. He is generous in personal relations, less afraid of
criticism better able to remember the names of the people.

Factor 'B': Less intelligence, concrete thinking Vs. More
intelligent, abstract thinking.

The person scoring low on Factor-B tends to be
slow to learn and grasp, dull, sluggish. He tends to have
little capacity for the higher forms of knowledge and to be
some what boorish. His dullness may be simply a reflection
of low intelligence, or it may represent for functioning due
to psychopathology.

The person who scores high on Factor-B tends to be
quick to grasp ideas, as fast learner, intelligent. There is
some correlation with the level of culture nd some with
alertness. High score indicate deterioration of mental
functions in pathological conditions.
Factor-C: Affected by feeling, emotionally less stable Vs. Emotionally stable, calm, mature.

The person who scores low on Factor-C tends to be low in frustration, tolerance for unsatisfactory conditions, changeable, evading necessary reality demands, neurotically fatigued, worrying, easily annoyed, generally dissatisfied having neurotic symptoms (Phobias, sleep, disturbances, psychosomatic complaints etc.). Low score on Factor-C is common to almost all forms of neurotic and mental disorders.

The person who scores high on Factor-C tends to be emotionally mature, stable, calm, realistic, about life, unruffled, possessing ego strength, having an integrated philosophy of life, better able to maintain high group and morale. Sometimes he may be a person making a resigned adjustment to unsolved emotional problems.

Factor-E: Humble, mild, accommodating, i.e., submissive Vs. Assertive, independent, aggressive i.e., dominance.

The person who scores on Factor-E tends to be dependent, a follower, and to take action which goes along with the group. He is often soft-hearted, expressive and easily upset. This positivity is part of many neurotic syndromes.

The person who scores high on Factor-E tends to be assertive, self-assumed, independent-minded bold his approach to situations. He may at times be hard, a low to
himself, hostile, tough-minded, authoritarian (managing others) and disregards authority.

Factor-F: Sober, prudent, serious, i.e., disurgency Vs. Happy-go-lucky, gay enthusiastic i.e., surgency.

The person who scores low on Factor-F tends to be restrained, reticent, introspective. He is sometimes in communicative, pessimistic, anxious and considered to be sung, he tends to be sober, dependable person.

The person who scores high on this trait tends to be cheerful, active, talkative, frank, expressive, quick, alert, unperturbable. He is frequently chosen as an elected leader. He may be impulsive and mercurial.

Factor-G: Expedient, evades rules i.e., weaker super ego strength Vs. Conscientious, preserving, rule bound i.e., stronger super ego strength.

The person who scores low on Factor-G tends to be unsteady in purpose. He is often casual and lacking in effort for group undertakings and cultural demands. His freedom from group influence may lead to anti-social acts, but at times, make him more effective, while his refusal to be bound by rules causes him to have less somatic upset from stress.

The person who scores high on Factor-G tends to be strong in character, preserving, responsible, determined, consistent, planful, energetic, cautious, well-organised. He
is usually conscientious or moralistic, and he prefers hard working people to witty companions. The inner 'categorical imperative of this essential super-ego (in the psychoanalytical sense) should be distinguished from the superficially similar 'Social ideal self' of Q3+

Factor-H : Shy, restrained, timid i.e., Threctia Vs. Venturesome, socially bold i.e., parnia.

The person who scores low on this traits tends to be shy, withdrawing, cautious, retiring, cooling, a 'well flower'. He usually has inferiority feelings. He tends to be slow and impeded in speech in expressing himself, dislikes occupations with personal contacts, prefers one or two close friends to large groups, and is not given to keeping in contact with all that is going on around him.

The person who scores high on Factor-H tends to be sociable, bold, ready to try new things, a spontaneous, and abundant in emotional response. His "thick skinnedness" enables him to face wear and tear in dealing with people and grueling emotional situations without fatigue. However, he can careless of detail ignore danger signals, and consume much time. He tends to be "pushy" and actively interested in the opposite sex.

Factor-I : Tough-minded, self-reliant i.e., Harria Vs. Tenderminded, dependent, sensitive i.e., Premsia.

The person who scores low on Factor-I tends to be practical, realistic, masculine, independent, responsible
but skeptical of subjective and 'uncultured'. He is sometimes unmoved, hard, cynical, smug. He tends to keep group operating on a practical and realistic 'non-non-sense' basis.

The person who scores high on this trait tends to be tender-minded, day-dreaming artistically fastidious. He is sometimes demanding of attention and help, impatient, dependent, impractical. He dislikes crude people and rough occupations. He tends to slow up group performance, and to upset group morals by unrealistic fussiness.

Factor-L: Trusting, adaptable, free of jealousy i.e., Alaxia Vs. Suspicious, self-opinionated, hard to fool i.e., Protection.

The person who scores low on Factor-L tends to be free of jealous tendencies, adaptable, cheerful, uncompetitive, concerned about other people, a good team-worker.

The person who scores high on Factor-L tends to be mistrusting and doubtful. He is often involved in his own ego, is self-opinionated and interested in internal mental life. He is usually deliberate in his actions unconcerned about other people, a poor team member.

Factor-M: Practical, careful, conventional i.e., praxermia Vs. imaginative, wrapped up in inner urgencies i.e., Austia.

The person who scores low on Factor-M tends to be
anxious to do the right things, attentive to practical matters, and subject to the dedications of what is obviously possible. He is concerned over detail, able to keep his head in emergencies, but sometimes unimaginative and narrowly correct.

The person who scores high on Factor-M tends to be unconventional, unconcerned over every matter, Bohemian, self-motivated, ego-centric, sensitive, imaginative. He sometimes makes emotional scenes, is somewhat irresponsible, impractical, undependable. He is often rejected in group situations.

Factor-N: Forthright, natural, artless, i.e., Artlessness vs. Shrewed, calculating worldly i.e., Shrewdness.

The person who scores low on Factor-N tends to be unsophisticated, sentimental and simple. He is sometimes crude and awkward, but easily pleased and content with what comes, and is natural and spontaneous.

The person who scores high on this trait tends to be polished, experienced, worldly, shrewed. He is often hard-headed and analytical. He has an intellectual unsentimental approach to situations approach akin to cynicism.

Factor-O: Placid, self-assumed, confident, i.e., untroubled, adequacy, vs. Apprehensive, worrying, worrying, depressive, troubled i.e., Guilt proneness.

The person who scores low on Factor-O tends to be
placid, calm, with unshakable nerve. He has a mature, unanxious confidence in himself and his capacity to deal with things. He is resilient and secure.

The person who scores high on Factor-O tends to be depressed, moody, a worrier, suspicious, gooding, avoiding people. He has a child like tendency to anxiety in difficulties. He does not feel accepted in groups or free to participate. High factor-O score is very common in clinical groups of all types.

Factor-O1: Conservative, tolerant of traditional difficulties i.e., Conservatism Vs. Experimenting critical, free thinking i.e., Radicalism.

The person who scores low on Factor-O1, tends to be overly cautious and moderate. He is opposed to any change, inclined to go along with traditions, and tends not to be interested in analytical "intellectual" thought.

The person who scores high on Factor-O1 tends to be interested in intellectual matters and has doubts on fundamental issues. He frequently takes issues with ideas, either old or new. He tends to be well informed, less inclined to moralise, more inclined to experiment in life generally and more tolerant of inconvenience and change.
actor-Q2 : Group dependent, sound follower, i.e., group adherence Vs. Self-sufficient, resourceful i.e., self-sufficiency.

The person who scores low on Factor-Q2 prefers to work and make decisions with other people and depends on social approval and administration. He tends to go along with the group and may be lacking in individual resolution. He is not necessarily gregarious by choice, rather he needs group support.

The person who scores high on Factor-Q2 is temperamentally independent accustomed to go in his own way, making decisions and taking action on his own. He discounts public opinion, but is not necessarily dominant in his relation with others. He does not dislike people but simply does not mind their agreement or support.

Factor-Q3 : Undisciplined, self-conflict, careless i.e., low integration Vs. Controlled, socially precise following self-image, i.e., high self-concept control.

The person who scores low on Factor-Q3 will not be bothered with will-control and regard for social demands. He is not over considerable, careful or pains-taking. He may feel mal-adjusted and may show maladjustment.

The person who scores high on Factor-Q3 tends to have strong control of his emotions and general behaviour, is inclined to be socially aware and careful and evidence
what is commonly termed 'self-respect' and regard for social reputation. He sometimes tends, however, to be obstinate. Effective leaders, and some paranoids are high on $Q_3$.

Factor-$Q_4$ : Relaxed tranquil, unfrustrated i.e., Low ergic tension Vs. Tense, frustrated, driven i.e., high ergic tension.

The person who scores low on Factor-$Q_4$ tends to be sedate, relaxed, composed and satisfied (not frustrated). In some situations, his over-satisfaction can lead to laziness and low performance, in the sense that low motivation produces little trial and error conversely high tension level may disrupt school and work performance.

The person who scores high on Factor-$Q_4$ tends to be tense, excitable, restless, fretful impatient. He is often fatigued, but unable to remain inactive. In groups he takes a poor view of the degree of unity, orderliness and leadership.