CHAPTER-3

THE PRESENT STUDY
CHAPTER- III

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This chapter deals with the Statement of the problem, Title of the problem, Need for the present study, Purpose of the study, Scope of the study, Definitions of various terms, Objectives of the study, Hypotheses formulated, Variables included and Delimitations of the present study.

3.1 Introduction

Education plays a very prominent role in the life of human beings. The development of a country is primarily determined by the quality of its human resources. India today needs effective and productive citizens with scientific and constructive thinking and positive attitudes. This need can be met by well-planned educational curricula, including a systematic Physical sciences at the school level.

At present in our country, there are five levels of education. Pre-Primary, Primary, Secondary, Intermediate and Higher education levels. Primary and secondary levels are considered very important, as they lay proper foundation in the life of the students.

Physical sciences forms part of the subjects of study at secondary level of education. Different education commissions set up by the government of India have stressed the need for strengthening the teaching of Physical sciences at school level. National policy of education 1986, made a mention about Physical sciences education as “Physical sciences should be visualized as the vehicle to train a child to think, reason, analyse and articulate logically. Apart from being a specific subject, it should be treated as a concomitant to any subject, involving analysis and reasoning”.

The achievement in Physical sciences of IX class students is the primary concern of the investigator, in the present study. Physical sciences have been considered a difficult subject by majority of students at secondary level. Is it due to lack of proper teaching of the subject? or due to lack of proper attitude towards the subject or lack of proper encouragement or lack of proper study habits. One should ponder over it. But research in psychology has shown that “almost every subject can
be taught in some intellectually honest form to any child at any stage of
development, if it is properly taught". No system of education, no methodology and
no text book, can rise above the level of its teachers. If a country wants to have
quality of education, it must have quality teachers. Hence the Physical sciences
teacher plays a pivotal role in making the students to develop positive attitude
towards the subject and to remove the fear of the subject.

At present, the state of teaching Physical sciences, in the majority of our
schools is far from satisfactory. The rate of failures is considerably high when
compared with other subjects. The Physical sciences teachers have to think over this
problem of failures in Physical sciences or under achievement in Physical sciences
and try to change the situation, by suitably finding ways and means of improving the
achievement in Physical sciences. The investigator wants to find out the effect of
various psycho-sociological and demographical variables on the achievement in
Physical sciences at secondary level. It is against this backdrop that a comprehensive
and constructive research work is felt necessary, relating to the achievements in
Physical sciences, to suggest various ways and means of improving the achievement
in Physical sciences of IX class students.

After reviewing the related literature in the area of academic achievement
particularly the scholastic achievement in Physical sciences, the investigator
observed that there were no studies on the effect of variables like 'number of study
hours', 'time spent daily for Physical sciences and 'separate study room' etc. on the
scholastic achievement. Hence the investigator has shown some interest to know the
effect of these variables on the achievement of IX class students in Physical
sciences.

3.2 Statement of the problem

The present study is concerned with the finding out the effect of various
psycho-sociological and demographic variables on the scholastic achievement in
Physical sciences of IX class students of chittoor district, belonging to the different
educational divisions (i.e) the four educational divisions of chittoor district. It
examines the achievement in Physical sciences IX class students of the schools
belonging to the above divisions. It establishes the relationship between the various
psycho-sociological and demo-graphical variables and other variables namely study habits, self-concepts, personality factors, and socio-economic conditions of the students and achievement in Physical sciences of IX class students of chittoor district. It also predicts scholastic achievement with the help of different sets of psycho-sociological variables / independent variables.

3.3 Title of the problem

The title of the present study is stated as “Scholastic Achievement of IX class Pupils in Physical sciences in relation to certain Psycho-Sociological Variables”

3.4 Need for the present study

In olden days, the system of education was totally different from that of the present day system. The teacher and the taught lived together and they had devoted their entire time for studies exclusively. Now things have changed, as civilization improved and with the explosion of knowledge, the life style of people is changed beyond imagination.

The societies have come under the impact of science and technology and as a result of which, there are many means and sources of learning. Various psychological theories came into existence, which have their impact on methods of teaching. Both the teachers and students have to adopt new methods of teaching and efficient procedures of learning.

Everybody needs some knowledge of Physical sciences in one way or other. It is felt that for an ordinary man, the knowledge acquired during primary and secondary level is sufficient. It is believed that Physical sciences is exceptionally a difficult subject. Its study requires some special ability and intelligence and hence everybody should not be burdened with the study of this subject. But the other view is that Physical sciences does not require special ability for its successful performance but it needs general intelligence. A dedicated and honest teacher of Physical sciences can make the learning very interesting and exciting, thus changing the attitude and outlook of Physical sciences. However it has been widely accepted for its inclusion in the school curriculum as a compulsory subject up to X class level on the recommendations of various Education Commissions appointed by
government of India. It is clear that at the secondary level Physical sciences functions as a strong foundation for those who want to pursue Physical sciences at higher level. At the same time it functions as a tool to provide necessary Physical sciences skills for those who want to opt for arts, commerce, or humanities at higher level. Hence the role of physical sciences at the secondary level is very significant as it safeguards the interests of both types of students. Accordingly physical sciences teachers at secondary level have to realize the role of physical sciences and teach the fundamental concepts in the subject, thus creating interest for the subject among the pupils.

Syllabus in various subjects has been constantly under revision and so also in physical sciences. Various factors will have their effect on the achievement in various subjects and so in physical sciences. Having accepted the influence of various factors on achievement in physical sciences, the investigator desires to establish a relationship between achievement in physical sciences and various psycho-sociological factors and demographic variables. Scholastic achievement continues to be one of the most important variables held in high esteem in all cultures, countries and times. Hence the research related to the area of academic achievement is an ever growing concern of the researchers, educationists and administrators.

Academic achievement is of paramount importance, particularly in the present socio-economic and cultural contexts. There is a need to identify the psycho-sociological factors, which influence the scholastic achievement in physical sciences of IX class students, in order to draw conclusions and suggest, remedial measures, if any. It is rather interesting to know which of the variables of personality, study habits, Self - concepts, socio-demographic etc contribute to the scholastic achievement in physical sciences. There is a need to develop Mathematical models to explain the relationship between scholastic achievements in physical sciences of IX class students and psycho-sociological variables.

Though there are considerable studies on the scholastic achievement in relation to sociological and psychological factors at primary and secondary level school subjects, very few studies are found particularly in physical sciences of IX class students. The present investigation is to find the relationship between
achievement in physical sciences and socio-psychological, and demographical factors and also to predict the achievements in physical sciences with the help of various independent variables. Further there is no much research studies showing the relationship of scholastic achievement of IX class students in physical sciences with sociological variables like caste, birth order, age, sex, and personal factors like time spent for physical sciences daily, total number of hours of study and separate room for study. Hence there is a need of research study to know the influence of the above factors on the achievement in physical sciences. The main aim of present study is to predict the multiple effects of independent variables on the scholastic achievement and further to suggest suitable regression equations in the prediction of scholastic achievement of IX class students in physical sciences.

The above crucial conditions lead the investigator to make an attempt in this area of scholastic achievement of IX class students in physical sciences in relation to various psycho-sociological factors.

3.5 Purpose of present study

In view of the important role of physical sciences in the modern world, it has been imperative for any nation or the world to promote physical sciences education in their respective countries. But physical sciences have been considered by majority of students as a difficult subject. Hence it is necessary for a physical sciences teacher, to know the factors influencing achievement in physical sciences. Learners motives, emotions, needs, attitudes, outlook and interests play a very important role in learning the subject. Certain factors like, parents' educational background, home environment, study habits, educational divisions, environment in the school, abilities, self-confidence, general habits, social environment and emotional feelings etc. may have some impact on the achievement of physical sciences. Hence every physical sciences teacher has to evince a keen interest in knowing the effect of these factors and act accordingly so as to make the students learn the subject effectively.

Physical sciences education provides a good Physical sciences background with the knowledge of concepts and theories. It also provides ability to apply Physical sciences concepts and knowledge of theorems to new situations. Sufficient Scientific skills are needed to meet the demands of the daily life. The fundamentals
in physical sciences have got an immense practical value in life. The knowledge and skills in these processes can be provided in an effective and systematic manner, only by teaching physical sciences in schools.

The teachers of physical sciences are now required to up-date their knowledge in the subject. The physical sciences teacher will have to be essentially a learner. He must also have the knowledge of the factors which influence the achievement in physical sciences. Sound knowledge of the effect of these factors enable the physical sciences teachers to discharge their duties effectively. The variations in the performance of the pupil in physical sciences may probably be due to some personal, socio-demographic, psychological factors, which the physical sciences teachers are expected to know and hence the present study.

If physical sciences teachers are aware of factors influencing the achievement in the subject, they can accordingly choose the methods of teaching, use of teaching-learning materials and there by creating interest in physical sciences among the students.

In general, the examination results of IX class reveal that more percentage of students fail in physical sciences, as compared with other school subjects. Hence it is necessary for physical sciences teachers to know which of the personal, socio-demographic, psychological etc variables influence the learning and achievement of physical sciences. Hence the present investigation is taken up for the purpose of knowing the influence of various variables on the achievement of IX class students in physical sciences. The present study attempts to answer the following questions:

1. Whether there is any significant influence of demographic factors on the achievement in physical sciences of IX class students?
2. Whether there is any significant influence of study habits of IX class students on their academic achievement in physical sciences?
3. Whether there is any significant influence of self-concepts of the students on the achievement of IX class students in physical sciences?
4. Whether there is any influence of 14 personality factors on the achievement in physical sciences of IX class students?
5. Whether there is any impact of socio-economic factors on the achievement in physical sciences of IX class students?

6. Whether there is any influence of personal factors like sex, Locality, Age, caste, birth order, number of members in the family, number of children's in the family, Mother's Education, Mother's Occupation, Father's Education, Father's Occupation, Religion, Income of the family, Economic position, Separate room for study, Study hours at home, Works at home, etc, on the achievement in physical sciences?

7. Whether it is possible to predict the achievement in physical sciences with the help of various psycho-socio-logical factors.

3.6 Scope of the study

The main intention of the present study is to find out the relationship between scholastic achievement in physical sciences of IX class students and psycho-sociological factors, and demographic variables. The study habits, self-concepts and personality factors are measured by using relevant tools. An achievement test is constructed with the help of senior physical sciences teachers and experts in the subject and standardized by the investigator, following the procedure described by Garrett in the text book "statistics in psychology and education." The score obtained in the test is taken as achievement in physical sciences (Dependent Variable).

Academic achievement depends on a number of factors. It is not possible to include each and every factor in this study. Only a few variables like, age, sex, locality, caste, educational and occupational level of parents, religion, economic position of the family, size of the family, Educational divisions etc have been included in this study. Attitude of pupils towards physical sciences, intelligence of pupils, teachers' commitment and so many other variables having impact on achievement are beyond the scope of this study.

The study attempts to identify the type of relationship between dependent variable (scholastic achievement) and independent variables (psycho-sociological variables).
The study also attempts to predict the scholastic achievement in physical sciences with the help of different sets of independent variables.

The study also attempts to suggest suitable regression equations in the prediction of scholastic achievement of IX class students in physical sciences.

### 3.7 Operational definitions of the terms

The definitions of some of the important terms used in this study are given below:

**1. Academic Achievement**

i) Knowledge attained or skills developed in the school subjects, usually designated by test scores or by marks assigned by teachers or by both (Good, 1973)

ii) Accomplishment or proficiency, performance in a given skill or body of knowledge, progress in school theoretically different from intelligence but overlaps with it to a great degree.

(Good, 1973)

Measured ability and achievement level of a learner in school subjects or particular skills.

(Derek Rowntree, 1981)

Refers to performance in school or college in a standard series of educational testing.

(Teneja, 1991)

Accomplishment of specified objectives, past performance and what an individual or organization has accomplished in the past, in contrast with ability which refers to what an individual or organization can do now (in the present) or in future (Madhu Raj, 1996 & Singh, 2002).

Successful accomplishment or performance in particular subjects, areas, or courses, usually by reasons of skills, hard work and interest. Typically summarized in various types of grades, marks, scores or descriptive commentary (John Bellingham, 2004).
A measure of knowledge gained in formal education usually indicated by test scores, grade points, averages, and degrees (Madhu Raj, 1996; John Bellingham, 2004).

2. Scholastic

Used to denote relationship with school, for example, scholastic average. Relating to school or school men, pendantic (Webster’s New Dictionary and Tresaurus, 1975).

Of or concerning Universities, schools, education, teachers etc (Della Thompson, 1996)

Pertaining to or characteristic of scholar’s education or schools (Britannica Word Language Dictionary, 1961)

3. Achievement

i) Accomplishment or proficiency of performance in a given skill or body of knowledge. ii) Progress in school, theoretically different from intelligence but overlaps with it to a great degree (Good, 1973)

Refers to the performance in school or college in a standardized series of educational tests (Taneja, 1991)

4. Academic

Pertaining to the fields of English, Foreign language, History, Economics, Physical sciences and Science. (Good, 1973)

i) A scholarly teacher and / or researcher in higher education. ii) Relating to the school activities especially when concerning a discipline or a subject, not necessarily at higher educational level.

(Derek Rowntree, 1981)

5. Achievement Test

A test designed to measure a person’s knowledge, skills, understandings etc in a given field, taught in school, for example a physical sciences test or an English test etc (Good, 1973)
Refers to a test designed to measure the effects of specific teaching or training in an area of the curriculum. (Taneja, 1991)

A standardized test designed to measure and compare levels of knowledge and understanding, in a given subject already learned (John Bellingham, 2004)

In the present context, achievement test means, an Objective Achievement Test (OAT) constructed and standardized by the investigator.

6. Objective Test

Any examining device, whose scoring is not dependent upon the discretion of the examiners. In a psychological testing, any test for which the use of subjective judgment, by test scores is virtually eliminated, so that, qualified educators, scoring the test independently, would derive essentially the same scores (John Bellingham, 2004)

7. Personality

A psychological term that refers to the predictable and unique indicators of the way, an individual might respond to the environment. A personal reference that usually Connotes acceptance ability and likeability. (Madhu Raj, 1996; John Bellingham, 2004).

Personality is that which permits a prediction of what a person will do in a given situation.

(Cattell, 1970)

The total psychological and social reactions of an individual, the synthesis of his subjective, emotional and mental life, his behaviour, and his reactions to the environment; the unique or individual traits of a person are connoted to a seller degree by “personality” than by the term “character”.

(Good, 1973)

For individual all the aspects of behaviour, thought and feeling that make the person unique. For psychologists a major area of theory and research.

(Derek Rowntree, 1981)
8. Personality Trait

A general aspect of a person that may pre-dispose how he or she reacts to particular situations (Madhu Raj, 1996; John Bellingham, 2004)

9. Socio-Economic-Status

The background or standing of one or more persons in the society on the basis of both social class and financial situation. (John Bellingham, 2004)

The level indicative of both economic positions of an individual or group (Good, 1973).

A person’s status or position within the society (or any smaller social group) as determined by social class and wealth or income (Derek Rowntree, 1981).

An indicator of an individual or family’s social ranking, based on such factors as level of education, income, neighborhood of residence or type of occupation (Madhu Raj, 1996; Ring, 2002).

The background or standing of one or more persons in the society on the basis of both of social class and financial situation (John Bellingham, 2004).

10. Factor

i) An element in the composition of any thing or in bringing about a certain result. ii) A fact, which has to be taken into account or which affects the course of events. (Davidson et al, 1998)

11. Teacher

A person employed in an official capacity for the purpose of guiding and directing the learning experiences of pupils or students in an educational situation, whether public or private (Good, 1973).

12. Study Habits

i) The basic features involved in the application of mind to a problem or subject. ii) The academic pattern which an individual follows in learning about things and people (Good, 1973).
The evaluation of pupils' behavior in terms of attitudes, appreciation and habits of work is fundamental to a well-rounded study of outcomes of the teaching (NSSE, 1935).

Study habits include student's habits of concentration, note taking, time budgeting and study methods (Smith, 1961).

13. Self Concept

An individual's perception of himself, as a person, which includes his abilities, appearance, performance in his job, and phases of daily living (Good, 1973).

How a person sees himself (e.g. competent, amusing, homely etc). This may differ from other people's views of him, though they will have influenced it. (Derek Rowntree, 1981).

Self-concept refers to the picture or image, a person has of himself (Taneja, 1991; A group of Experts 2003).

i) An individual's perception of self. ii) A psychological contact that is more complex, than implied or assumed by most educators. (Madhu Raj, 1996).

14. Class

A group of pupils or students scheduled to report regularly at a particular time to a particular teacher (Good, 1973).

i) A group of students assigned to one or more teachers or other staff members for a given period of time for instruction or other activity in a situation where the teacher(s) and students are in presence of each other. ii) All students in the same grade level such as fifth grade class or tenth grade class. iii) The group of students who graduate at the same time. (Madhu Raj, 1996 & Singh, 2002).

15. Secondary School

Schools with classes VI to X are called high schools or secondary schools in the state of Andhra Pradesh in India. There will be a public examination at the end of VII and X classes in these schools in Andhra Pradesh.
16. **Physical sciences**

One of the compulsory subjects of study from VIII class to X class in schools of Andhra Pradesh.

Physical sciences is the science dealing physical and chemical properties of materials, which draws necessary conclusions after experimentation.

Physical sciences is a way to settle in the mind a habit of reasoning.

17. **Educational Divisions**

For the present study, the investigator has taken the four existing educational divisions in Chittoor District, namely, Chittoor Division, Tirupathi Division, Madanapalle Division and Puttur Division. In this study, schools under the authority of Zilla Parishad, Government, municipalities, Private unaided have been considered for present investigation.

18. **Nativity/ Locality**

The scholastic achievements of students coming from rural areas (villages), semi Urban areas (small towns) and Urban Areas (municipal areas) may differ. Hence students are divided into three groups namely rural, semi urban and urban students and scholastic achievements have been studied. In this investigation locality means rural, semi-urban and urban.

19. **Caste**

In the present educational system, which is in vogue, in Andhra Pradesh, students are categorized into scheduled castes and scheduled tribes, back ward castes and other castes not covered under the above two types. In the present investigation the students are divided into three categories basing on their caste, namely SC/ST, BC and OC students.

20. **Sex**

Male (Boys) and Female (Girls) students are considered as sub samples to carry the differential analysis.
21. Age

The chronological age of the students as reported by them through the personal data sheet is considered to study the variations in their achievements.

22. Size of the family

It refers to the number of total living members of the family.

23. Sample

i) A sample possessing the same characteristics as the population with reference to some variables other than, but thought of to be related to, the one under investigation. ii) Some times used to refer to a stratified sample, in which the sub sample numbers are proportional to the size of the strata (Good, 1973).

A sample drawn from a population in such a way that it should (or does) contain members of various categories and classification in the same proportions as they appear in the population (Derek Rowntree, 1981).

Sample refers to a group that is selected from a large group or population for examination with a view to making generalizations about the population, as a whole (Taneja, 1991).

Sample that corresponds to or matches the population of which it is a part with respect to characteristics important for the purpose under investigation. (Madhu Raj 1996, Singh, 2002 and John Bellingham 2004).

24. Variable

Any trait that changes from one case or condition to another, more strictly, the representation of the trait, usually in quantitative form, such as a measurement or an enumeration (Good, 1973).

Refers to a factor in educational research that influences the observation or management of an educational phenomenon (Taneja, 1991 & a group of experts, 2003).

In educational research, an entity that can vary.
25. **Independent Variable**

i) A variable to which values may be assigned at will. 

ii) The variable on which an estimation or prediction is based in a regression problem. 

iii) In the plural, often used to refer to variables that are unconnected, when presented graphically, the x-axis or horizontal axis is conveniently used for the independent variable. (Good, 1973).

In a statistical study, the variable whose values are deliberately changed (or natural difference observed) in order to see how this influences the values of another variable (the dependent variable). (Derek Rowntree, 1981).

Refers to variable whose changes are considered as not dependent upon transformations in other specific variables (Taneja, 1991).

In experimental research, the aspects of the study that the investigator manipulates or controls in order to observe the effect on the dependent variable (Madhu Raj, 1996).

An independent variable is one that the researcher manipulates; e.g., a type of instructional programme (John Bellingham, 2004).

26. **Dependent variable**

A dependent variable is one that changes in consequence with changes in the independent variable (John Bellingham, 2004).

A variable whose magnitude depends on or is a function of, the value of the another variable (or other variables); a variable whose value is being estimated (for example by regression techniques) from that of one or more independent variables to which it is related; when represented graphically, the y-axis or vertical line is conveniently used for the dependent variable. (Good, 1973).

In a statistical study, the variable in whose values, we are expecting to see changes as a result of changes, we have made or observed in the values of some other variable (the independent variable) (Derek Rowntree, 1981).

Refers to a variable that is the presumed effect of a presumed cause of an event (Taneja, 1991 & Group of Experts, 2003).
A factor in an experimental relationship which has or shows variation that is hypothesized to be caused by another independent factor or variable (Madhu Raj, 1996 & Singh, 2002).

27. Demographics

i) Statistics showing an area’s population characteristics such as age, race, income and education.

ii) Basic information about an individual including such characteristics as age, place of residence and marital status.

(Singh, 2002; Job Bellingham, 2004)

28. Regression

i) The tendency for observations that show a high deviation from the mean and a low degree of variability among themselves in regard to one trait to display wider variability and markedly less deviation (on the average) from the mean in a second trait; ii) The psychological mechanism of retreat from difficulties of adult world of reality to an imaginary world patterned on an earlier, more comfortable mode of life, as in childhood; normally seen in adults as play and make believe; iii) A movement of the eyes, backward from right to left along the line of type being read; iv) An error in silent or oral reading in which the reader retracts or goes back over what he has seen reading – (Good, 1973).

The term relates to the techniques of analyzing relationships between two or more variables with a view to prediction (or estimating) values of one from values of other(s). (Derek Rowntree, 1981).

i) In the context of child development, the temporary lapses or set backs that occur in the otherwise smooth course of normal development ii) In the context of learned behavior or skills, the loss or forgetting of previously learned skills in the absence of opportunities for continued practice. iii) A psychological withdrawal to an earlier period of life, which may be manifested by infinite or immature behavior (Madhu Raj, 1996; Singh, 2002).
In the context of child development, the temporary lapses or set backs that occur in the otherwise smooth course of normal development. (John Bellinghom, 2004).

A method which makes use of a correlation in order to predict probable relationships. (Taneja 1991 & A group of Experts, 2003).

A method for describing the nature of relationship between two variables, so that the value of one can be predicted if the value of the other is known. Multiple regression analysis involves more than two variables.

(Madhu Raj, 1996; Singh, 2002).

3.8 Objectives of the study

The present study has the following objectives:

1. To understand the present status of IX class students with regard to their achievement in Physical sciences.

2. To study the influence of the variables, Educational Division, Sex, Caste and their interaction on scholastic achievement in physical sciences.

3. To study the influence of the variables Age, Religion, Nativity and their interaction on scholastic achievement in Physical sciences.

4. To establish a relationship of scholastic achievement with Socio-demographic variables like, Income of the family, Father’s Education, Father’s Occupation, Mother’s Education, Mother’s Occupation, Numbers of children, Birth order, Number of members in the family, Economic position, Separate room for studies, Study hours at the Home and works at Home.

5. To study the impact of Study habits on scholastic achievement of IX class students in physical sciences.

6. To study the influence of self-concepts on scholastic achievement of IX class students in Physical sciences.

7. To study the impact of personality factors on scholastic achievement of IX class students in Physical sciences.
8. To predict the scholastic achievement of IX class students in Physical sciences with the help of socio-demographic variables, Study habits, Self-Concepts and personality factors.

9. To predict the scholastic achievement of IX class students in Physical Sciences with the help of all the 51 independent variables in the investigation.

10. To develop mathematical equations for predicting the scholastic achievement of IX class students in Physical sciences.

11. To summarize the findings of present investigation

12. To make appropriate recommendations on the basis of findings of the present investigation.

13. To provide suggestions for further investigation.

3.9 Hypotheses formulated

On the basis of the above objectives the following major Hypotheses, in the null form are formulated for testing.

1. All the IX class students would not have the same scholastic achievement abilities in physical sciences.

2. Educational Division, Sex, Caste, and their interactions would not have any significant influence on scholastic achievement of IX class students in physical sciences.

3. Age, Religion, Nativity and their interactions would not have any significant influence on scholastic achievement of IX class students in physical sciences.

4. Socio - Demographic variables would not have any significant influence on scholastic achievement of IX class students in physical sciences.

5. Study habits would not have any significant impact on scholastic achievement of IX class students in physical sciences.
6. Self-concepts would not have any significant impact on scholastic achievement of IX class students in Physical sciences.

7. Personality factors would not have significant influence on scholastic achievement of IX class students in physical sciences.

8. It would not be possible to predict scholastic achievement with the help of socio-demographic variables, study habits self-concepts and personality factors.

9. It would not be possible to predict scholastic achievement with the help of all the 51 independent variables.

10. It would not be possible to develop mathematical equations for predicting scholastic achievement in physical sciences with the help of different sets of independent variables.

11. None of the independent variables in this investigation turns out to be a significant predictor of scholastic achievement of IX class students in physical sciences.

3.10 Variables included in the present study

On basis of study of literature, it has been found that the achievement of students in all classes in physical sciences in general and IX class in particular, it depends on several factors. The investigator has selected the following Psycho - Sociological variables for the present study.

A. Dependent Variable

The scores obtained in the scholastic achievement test, in Physical sciences, constructed and standardized by the investigator has been taken as dependent variable.

B. Independent Variables

The independent variables studied in this investigation are given below:
1. Socio-Demographic variables

The socio-demographic variables included in the present investigation are:

1. Educational Divisions
2. Age
3. Income of the Family
4. Father's Education
5. Father's Occupation
6. Mother's Education
7. Mother's Occupation
8. Number of Children
9. Birth Order
10. Number of members in the family
11. Sex
12. Religion
13. Caste
14. Nativity/Locality
15. Economic position
16. Separate room for study
17. Study Hours at Home
18. Works at Home

2. Psychological Variables

The following psychological variables are included in the present investigation:

i) Study Habits questionnaire consisting of seven areas,

ii) Self-Concepts questionnaire consisting of 10 areas and
iii) High School Students Personality Questionnaire (HSPQ) consisting of 14 personality factors

3.11 Method of study

The investigator following the scientific principles and procedures of test construction, developed a preliminary objective scholastic achievement test in physical sciences for IX class students with 150 multiple choice questions with the help of senior Physical sciences teachers for the use of pilot study. The preliminary form is standardized following the method described by Garrette (1973) from pages 365-368 and after deleting fifty questions, a final objective Scholastic achievement test paper is prepared with 100 (one hundred) multiple choice questions with four alternatives carrying one mark each. A personal data sheet is prepared to collect the people’s data on Socio - Demographic variables. Study habits Inventory of Dr. B.V. Patel is adopted to measured the Study Habits of the students. Dr. (Miss). Muktha Rani Rasthogi’s Self-Concepts Scale is adopted to measure the self-concepts of pupils. Cattel’s High School Students Personality Questionnaire (H.S.P.Q) is used to collect the information regarding the personality characteristics of the students.

A sample of 1800 IX class students representing four Educational Divisions of Chittoor District are selected by following standard procedures. The necessary data is collected in a planned way and are analyzed using appropriate statistical techniques and the results are interpreted accordingly.

3.12 Delimitations of present study

The following are the delimitations of the present study.

1. The study is confined to only chittoor district of Andhra Pradesh

2. The study is confined 36 schools in the four Educational divisions of Chittoor District.

3. The study confined to the IX class students.

4. The study is concerned with Physical sciences subject only.

5. The effect of only a few Psycho - Sociological variables on the scholastic achievement in Physical sciences has been studied.
6. The Scholastic achievement scores in Physical sciences are taken only from the achievement test constructed and standardized by the investigator.

7. The study is based on survey research where in the techniques of analyzing the data are based on the questionnaires only

8. The scholastic achievement of IX class students in physical sciences depends upon a number of psychological, sociological, demographic, environmental etc., variables. It is not possible to include each and every factor in this investigation.

9. It is only a presage-product study in the area of scholastic achievement.