CHAPTER - I

INTRODUCTION

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References
1.00.0: INTRODUCTION

Science has introduced us to new ways of thinking, reasoning and hypothesizing our problems. It pursues inculcation of the power of thinking and understanding. It helps to sharpen intellect. It provides a special training in discovering truth or to thrash out fact from fiction. It inculcates a spirit of inquiry and love for investigation.

Study of science helps in developing scientific attitude or temperament. Scientific attitude, which is a Mental set, is a collection of certain qualities of which are peculiar to the study of science. These qualities in human behavior do not develop overnight but through a long period of time.

1.01.0: IMPORTANCE OF SCIENCE EDUCATION

Whether we like it or not, we have to live in a scientific civilization. Science is no longer confined to a few seriously devoted persons. Living in the present world invariably warrants the knowledge of scientific facts and laws to variable degrees. By process of science we mean the patterns of thinking which we sometimes call scientific attitudes. We mean curiosity, honest-doubt, tolerance for the opinions of others, open mindedness, willingness to admit when one is wrong and inclination to make decisions on the basis of evidence, rather than tradition, superstition or emotion.

Science education aims to bring rationality in thinking and power of judgment among human beings. All our educational endeavours eventually are concerned with the inculcation of an ability to think logically and develop skills desirable to make scientific observation and analysis in life among the young learners, so that, they may be able to avoid ragged traditions and use scientific
deduction to solve the various problems of their own life, as well as of the society.

1.01.1: FACTORS AFFECTING SCIENCE EDUCATION

In this modern world everything has to be proved in a scientific way. In order to enrich the science education various factors play a major role. Among them psychological factors such as Achievement motivation, Scientific attitude and Mental ability play paramount roles.

Achievement motivation is relatively a new concept. It is essentially a type of motivation that is personal in nature. According to David C. McClelland of Harvard University, human beings differ from one another in the strength of Achievement motive. It is this difference in the strength of motivation to achieve that is important in understanding the difference in the economic growth of nation. The responsibility of developing scientific attitude among the students lies on the teachers who can manipulate all the situations to instill in pupils the characteristic features of scientific attitude and at the same time present himself as an example to the students for his intellectual honesty.

Many psychologists have given different types of definitions about Mental ability. Stern (1914) says that Mental ability is a capacity of an individual to adjust his thinking to new requirements. It is general mental adaptability to new problems and conditions of life. David Wechsler (1944) remarks Mental ability as the aggregate global capacity of individual to act purposefully, to think rationally and to deal effectively with its environment. There are chances to change in Mental abilities over a life span. Changes associated with age can be examined through longitudinal studies may under estimate the degree to which abilities decline with age.
1.02.0: ACHIEVEMENT MOTIVATION

We can say that achievement motive moves or drives an individual to get involved in the mastery of difficult and challenging performances for the pursuit of excellence. It comes in to the picture when an individual knows that his performance will be evaluated, that the consequence of his actions will be either a success or a failure and that good performance will produce a feeling of pride in accomplishment. Hence, achievement motive may be considered as a disposition to approach success and a capacity for taking pride in accomplishment when success is achieved in one or other activity. As far as the origin and development of the achievement motive is concerned, it can safely be said that it results from one's early training as well as experiences and subsequent learning. In general, children usually learn the achievement motive from their parent's life style and family life studies have shown that children who get independent training started at an early age and get more autonomy with in a co-operative, encouraging and less authoritarian family environment, usually develop as achievement - oriented children. Later on the experience and learning based circumstance and situations in one’s life may lead an individual to provide a level for the intensity of his achievement motive to struggle for attaining the desired standard of excellence.

1.03.0: DEVELOPMENT OF SCIENTIFIC ATTITUDE

Attitude towards science indicates feelings of an individual or a group concerning science like faith in scientific method, opinion about scientists, values of science, interaction of science with individual and society, opinion held about science related social issues. It is a tendency to react favourably or unfavourably towards science or in science.
The sole responsibility of developing Scientific attitude among the students lies on the teachers who can manipulate all the situations to instill in pupils the characteristic features of Scientific attitude and at the same time present himself as an example to the students for his intellectual honesty, respect for other's point of views, unbiased and impartial behaviour in his dealings and the like. This will create a favourable and permanent impression on the students to adopt the same attitude, which their teachers have. However, the teacher can develop Scientific attitude among the students in the context of 1. Curriculum 2. Physical facilities and 3. Opportunity for practical work.

A large majority of the schools are of the view that an enthusiastic teacher can help in developing the Scientific attitude through the curriculum. The teacher should suggest projects, which give the pupils training in problem solving. Curtis is of the opinion that pupils who engage in wide reading in general science develop Scientific attitude more than those who read only one text book.

Democratic atmosphere in the classroom also helps in developing certain desirable attitude in the students. Such an atmosphere will infuse a spirit of healthy criticism. There will be no wishful or biased thinking on the part of the students. They are free to question and discuss and get to the prejudices and difficulties removed. For removing the superstitions and false beliefs from the minds of the students, the teacher should usually put such type of questions as "What evidence or proof have you got for this belief?" This will also develop in them open-mindedness and critical thinking. They should be taught not to take the things for granted because they appear in print or spoken by some big man. But too much of stress on this point may prove harmful.
Opportunities for practising work should be provided in schools. This will help in forming and practising good attitudes. The students should perform the experiments themselves and find out truth of what they learn in their theory. They should be taught to suspend judgement until sufficient evidence is secured. They should be instructed to observe critically and accurately and to report only what they see. The habit of concocting and copying things should be discouraged. It is quite obvious that most of the attitudes can be developed through practical work and at the same time the students get the chances of practising the attitudes they have already acquired.

1.04.0: MENTAL ABILITY

We know that with the physical development of the child his intellectual development also takes place. The speed of intellectual development is rather slow in earlier years. The child cannot possibly perform such tasks that require high Mental abilities. His Mental abilities develop with the advancing years and he is able to solve the complex problems of life. Some of the features of these mental abilities are given below.

i. All these qualities and abilities develop side by side.

ii. However, there may be differences in the rate of development of these qualities and abilities at various stages of the child. There may be a quicker development of one aspect or area of Mental activity than the other at one stage of life. Other aspects may fully develop at the other stage.

iii. Even those qualities and abilities, which do not develop at a particular stage and have a faint development at that stage. They develop to full extent as the child grows older and older.
Some Important Mental Abilities

1. Sensation and Perception: The child observes and feels various things of the world with his sense organs. These observations create an impression on their minds. When these impressions are interpreted and some definite meanings are given to them, they take the form of perception.

2. Concept Formation: The word concept means a general notion about a particular object, person, place or idea. We can also say concept is the generalized meaning that is attached to an object or idea. Its formation involves perceptual experience and later on both discrimination and generalization.

3. Development of Language: Language concepts take some time to develop. The main features are, speech picking up, vocabulary, uttering and imitating others, and responding to others after listening.

4. Development of Memory: Memory is an ability of the individual’s mind to remember things, events, individuals etc. It is an important aspect of Mental development. Good memory leads to good intelligence.

5. Development of Problem Solving Ability: Every individual faces problems in life. He tries to solve them. Their solution requires thinking and reasoning powers of the mind. These powers start growing from early infancy at the age of one or two years. In his earlier years the reasoning is confined to concrete and personal things from his immediate environment. His ability is mainly confined to problems dealing with the concrete problems and concrete thinking.
Achievement means the knowledge attained or skill developed as measured by test scores or by marks assigned by the teachers or by examinations conducted during the academic year. The occurrence of success and failure, experience is independent of actual achievement; it is determined rather by goals, expectations and aspirations of the person of the time of the action.

According to Henry E. Garret (1955) “Achievement means actual performance after used in reference to score on educational tests or school graders. Achievement in school subjects is wholly learnt by conscious applications system.”

The world is becoming more and more competitive. Quality of performance has become the key factor for personal progress. Parents desire that their children climb the factor of performance to as high a level as possible. This desire for a high level of achievement puts a lot of pressure on the students, teachers, schools and in general, the educational system itself. In fact it appears as if the whole system of education revolves round the academic achievement of students though various other outcomes are also expected from the system. Thus a lot of time and effort of the schools are used for helping students to achieve better in their scholastic endeavors.

The importance of scholastic or academic achievement has raised several important questions for educational researches. Many factors contribute towards achievement. Researches have come out with varied results at times complementing each other but at times contradicting each other. A complete comprehensive picture of academic achievements till seems to budding the researchers. The search at high schools, the students learn languages,
mathematics, science, history and geography and the like. To discover how much the students know about subjects they have studied, school examinations are conducted. Some times educational achievements tests are also administered. These examinations and tests are concerned with mental process like intelligence but they demonstrated in a pupil’s performance in the prescribed lessons in the school subjects. Hence the student’s performance is assessed by the marks obtained in the school subjects. The people often think that the students who are good at school subjects are usually intelligent. The students are judged intelligent or dull according to their level of achievement in school subjects.

1.06.0: STATEMENT OF THE PROBLEM

After finishing the school studies, most of the students like to join in professional courses. Some students like prefer Banking, Railway department etc. For all these careers, unless the students are sound enough in their Mental ability they cannot succeed in their endeavours. So, the investigator has opted to study the Mental ability, Achievement motivation and Scientific attitude of X standard students. Moreover to the knowledge of the investigator, no such study has been carried out by anybody selecting these three variables. So, the researcher has decided to conduct “A Study on the Relationship among Achievement motivation, Scientific attitude, Mental ability and Achievement in Science of X Standard students in Coimbatore District”.

1.07.0: DEFINITIONS OF THE TECHNICAL TERMS USED IN THE STUDY

a. Achievement Motivation

Achievement Motivation is defined as a psychological need and energetic drive that prompts an individual to strive for and work forwards mastering his or her environment by the successful accomplishment of a goal or goals, accompanied by a sense of satisfaction and self-worth.
b. Scientific Attitude

An attitude characteristic of science, involving the search for objective facts through empirical methods is Scientific attitude. According to National Society for the Study of Education, Scientific Attitude can be defined as an open-mindedness, a desire for accurate knowledge, confidence in procedures for seeking knowledge, and the expectation that the solution of the problem will come through the use of verified knowledge.

c. Mental Ability

Encyclopedic Dictionary of Education (1997) defines Mental Ability as a relatively general type of capability of thought processes evaluated by the kind of standardized test that is often called a test of Mental abilities: among such abilities are verbal ability, numerical ability and spatial visualization ability.

d. X Standard

In a class consisting of students of age of minimum 15, the students who study X standard in different schools situated throughout the state of Tamil Nadu, take a common public examination conducted by the State Board of Secondary Education, Government of Tamil Nadu. Passing X standard is the qualifying examination for entering the higher secondary class.

e. Coimbatore District:

Coimbatore is a city and a district headquarter in the state of Tamil Nadu, one of the Southern states in India. In this study, Coimbatore district refers not the Coimbatore Revenue district, but refers to three educational districts, namely Coimbatore, Pollachi and Tiruppur. The Department of Education of Government of Tamil Nadu has divided the Coimbatore Revenue district into three Educational districts for easy administrative convenience. These three educational districts are under the control of Chief Educational Officer,
Coimbatore. He is responsible for the entire administration and inspection of both high and higher secondary schools situated in these Educational districts. Each Educational district is controlled by a District Educational Officer.

1.08.0: OBJECTIVES OF THE STUDY

The Major objective of the study is to study the relationship among Achievement motivation, Scientific attitude, Mental ability and Achievement in science of X standard students in Coimbatore district.

The objectives of this study are delineated as follows:

1. To find out the relationship between (i) Achievement motivation and Scientific attitude, (ii) Achievement motivation and Mental ability, (iii) Achievement motivation and Achievement in Science, (iv) Scientific attitude and Mental ability, (v) Scientific attitude and Achievement in science, (vi) Mental ability and Achievement in science of X standard students studying in different schools located in Rural, Urban and Hill areas.

2. To find out the relationship between (i) Achievement motivation and Scientific attitude, (ii) Achievement motivation and Mental ability, (iii) Achievement motivation and Achievement in Science, (iv) Scientific attitude and Mental ability, (v) Scientific attitude and Achievement in science, (vi) Mental ability and Achievement in science of X standard students studying in Government, Aided, Municipal and Corporation schools.
3. To find out the relationship between (i) Achievement motivation and Scientific attitude, (ii) Achievement motivation and Mental ability, (iii) Achievement motivation and Achievement in Science, (iv) Scientific attitude and Mental ability, (v) Scientific attitude and Achievement in science, (vi) Mental ability and Achievement in science of X standard students studying in Boys, Girls and Mixed schools in Coimbatore district.

4. To find out the relationship between (i) Achievement motivation and Scientific attitude, (ii) Achievement motivation and Mental ability, (iii) Achievement motivation and Achievement in Science, (iv) Scientific attitude and Mental ability, (v) Scientific attitude and Achievement in science, (vi) Mental ability and Achievement in science of X standard Boys and Girls in Coimbatore district.

5. To study the difference if any in the Achievement motivation of X standard students with regard to their sex, location of school, nature of school and type of school.

6. To study the difference if any in the Scientific attitude of X standard students with regard to their sex, location of school, nature of school and type of school.

7. To study the difference if any in the Mental ability of X standard students with regard to their sex, location of school, nature of school and type of school.

8. To study the difference if any in the Achievement in science of X standard students with regard to their sex, location of school, nature of school and type of school.
9. To find out the relationship among Achievement motivation, Scientific attitude, Mental ability and Achievement in science of X standard students of Rural, Urban and Hill areas.

10. To find out the difference among Government, Aided, Municipal and Corporation school students in respect of Achievement motivation, Scientific attitude, Mental ability and Achievement in science.

11. To find out the difference among Boys, Girls and Mixed school students in respect of Achievement motivation, Scientific attitude, Mental ability and Achievement in science.

1.09.0: HYPOTHESES OF THE STUDY

Following were the major hypotheses of the present study:

1. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Hill area schools.

2. There is no significant relationship between Scientific attitude and Mental ability of X standard students studying in Hill area schools.

3. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Hill area schools.

4. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Corporation schools.
5. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Municipal schools.

6. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Aided schools.

7. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Government schools.

8. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Rural area schools.

9. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Urban area schools.

10. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Boys schools.

11. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Girls schools.

12. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Mixed schools.

13. There is no significant relationship between Achievement motivation and Scientific attitude of X standard students studying in Coimbatore district.
14. There is no significant relationship between Achievement motivation and Scientific attitude of X standard boys studying Coimbatore district.

15. There is no significant relationship between Achievement motivation and Scientific attitude of X standard girls studying in Coimbatore district.

16. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Municipal schools.

17. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Corporation schools.

18. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Aided schools.

19. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Government schools.

20. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Rural area schools.

21. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Urban area schools.

22. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Boys schools.

23. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Girls schools.
24. There is no significant relationship between Achievement motivation and Mental ability of X standard students studying in Mixed schools.

25. There is no significant relationship between Achievement motivation and Mental ability of X standard Boys studying in Coimbatore district.

26. There is no significant relationship between Achievement motivation and Mental ability of X standard Girls studying in Coimbatore district.

27. There is no significant relationship between Achievement motivation and Mental ability of X standard Students studying in Coimbatore district.

28. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Municipal schools.

29. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Corporation schools.

30. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Aided schools.

31. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Government schools.

32. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Rural area schools.

33. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Urban area schools.
34. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Boys schools.

35. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Girls schools.

36. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Mixed schools.

37. There is no significant relationship between Scientific attitude and Mental ability of X standard Boys studying in Coimbatore district.

38. There is no significant relationship between Scientific attitude and Mental ability of X standard Girls studying in Coimbatore district.

39. There is no significant relationship between Scientific attitude and Mental ability of X standard Students studying in Coimbatore district.

40. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Municipal schools.

41. There is no significant relationship between Scientific attitude and Achievement science of X standard Students studying in Corporation schools.

42. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Aided schools.
43. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Government schools.

44. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Rural area schools.

45. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Urban area schools.

46. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Boys schools.

47. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Girls schools.

48. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Mixed schools.

49. There is no significant relationship between Scientific attitude and Achievement in science of X standard Boys studying in Coimbatore district.

50. There is no significant relationship between Scientific attitude and Achievement in science of X standard Girls studying in Coimbatore district.
51. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Coimbatore district.

52. There is no significant relationship between Achievement motivation and Achievement in science of X standard students studying in Municipal schools.

53. There is no significant relationship between Achievement motivation and Achievement in science of X standard students studying in Corporation schools.

54. There is no significant relationship between Achievement motivation and Achievement in science of X standard students studying in Aided schools.

55. There is no significant relationship between Achievement motivation and Achievement in science of X standard students studying in Government schools.

56. There is no significant relationship between Achievement motivation and Achievement in science of X standard students studying in Rural area schools.

57. There is no significant relationship between Achievement motivation and Achievement in science of X standard students studying in Urban area schools.
There is no significant relationship between Achievement motivation and Achievement in science of X standard Students studying in Boys schools.

There is no significant relationship between Achievement motivation and Achievement in science of X standard Students studying in Girls schools.

There is no significant relationship between Achievement motivation and Achievement in science of X standard Students studying in Mixed schools.

There is no significant relationship between Achievement motivation and Achievement in science of X standard Boys studying in Coimbatore district.

There is no significant relationship between Achievement motivation and Achievement in science of X standard Girls studying in Coimbatore district.

There is no significant relationship between Achievement motivation and Achievement in science of X standard Students studying in Coimbatore district.

There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Municipal schools.

There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Corporation schools.
66. There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Aided schools.

67. There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Government schools.

68. There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Rural area schools.

69. There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Urban area schools.

70. There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Boys schools.

71. There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Girls schools.

72. There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Mixed schools.

73. There is no significant relationship between Mental ability and Achievement in science of X standard Boys studying in Coimbatore district.
74. There is no significant relationship between Mental ability and Achievement in science of X standard Girls studying in Coimbatore district.

75. There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Coimbatore district.

76. There is no significant relationship between Achievement motivation and Achievement in science of X standard Students studying in Hill area schools.

77. There is no significant relationship between Scientific attitude and Achievement in science of X standard Students studying in Hill area schools.

78. There is no significant relationship between Mental ability and Achievement in science of X standard Students studying in Hill area schools.

79. There is no significant difference among the X standard students studying in government, aided, municipal and corporation schools in respect of Achievement motivation.

80. There is no significant difference among the X standard students studying in government, aided, municipal and corporation schools in respect of Scientific attitude.
81. There is no significant difference among the X standard students studying in government, aided, municipal and corporation schools in respect of Mental ability.

82. There is no significant difference among the X standard students studying in government, aided, municipal and corporation schools in respect of Achievement in Science.

83. There is no significant difference among the X standard students studying in rural, urban and hill area schools in respect of Achievement motivation.

84. There is no significant difference among the X standard students studying in rural, urban and hill area schools in respect of Scientific attitude.

85. There is no significant difference among the X standard students studying in rural, urban and hill area schools in respect of Mental ability.

86. There is no significant difference among the X standard students studying in rural, urban and hill area schools in respect of Achievement in Science.

87. There is no significant difference between Government and Aided school students in respect of Achievement motivation.

88. There is no significant difference between Government and Aided school students in respect of Scientific attitude.

89. There is no significant difference between Government and Aided school students in respect of Mental ability.
90. There is no significant difference between Government and Aided school students in respect of Achievement in Science.

91. There is no significant difference between Government and Municipal school students in respect of Achievement motivation.

92. There is no significant difference between Government and Municipal school students in respect of Scientific attitude.

93. There is no significant difference between Government and Municipal school students in respect of Mental ability.

94. There is no significant difference between Government and Municipal school students in respect of Achievement in Science.

95. There is no significant difference between Government and Corporation school students in respect of Achievement motivation.

96. There is no significant difference between Government and Corporation school students in respect of Scientific attitude.

97. There is no significant difference between Government and Corporation school students in respect of Mental ability.

98. There is no significant difference between Government and Corporation school students in respect of Achievement in Science.

99. There is no significant difference between Aided and Municipal school students in respect of Achievement motivation.
100. There is no significant difference between Aided and Municipal school students in respect of Scientific attitude.

101. There is no significant difference between Aided and Municipal school students in respect of Mental ability.

102. There is no significant difference between Aided and Municipal school students in respect of Achievement in Science.

103. There is no significant difference between Aided and Corporation school students in respect of Achievement motivation.

104. There is no significant difference between Aided and Corporation school students in respect of Scientific attitude.

105. There is no significant difference between Aided and Corporation school students in respect of Mental ability.

106. There is no significant difference between Aided and Corporation school students in respect of Achievement in Science.

107. There is no significant difference between Municipal and Corporation school students in respect of Mental ability.

108. There is no significant difference between Municipal and Corporation school students in respect of Achievement in Science.

109. There is no significant difference between Municipal and Corporation school students in respect of Achievement motivation.
110. There is no significant difference between Municipal and Corporation school students in respect of Scientific attitude.

111. There is no significant difference between Rural and Urban area school students in respect of Achievement motivation.

112. There is no significant difference between Rural and Urban area school students in respect of Scientific attitude.

113. There is no significant difference between Rural and Urban area school students in respect of Achievement in Science.

114. There is no significant difference between Rural and Urban area school students in respect of Mental ability.

115. There is no significant difference between Rural and Hill area school students in respect of Achievement motivation.

116. There is no significant difference between Rural and Hill area school students in respect of Mental ability.

117. There is no significant difference between Rural and Hill area school students in respect of Achievement in Science.

118. There is no significant difference between Rural and Hill area school students in respect of Scientific attitude.

119. There is no significant difference between Urban and Hill area school students in respect of Achievement motivation.
120. There is no significant difference between Urban and Hill area school students in respect of Mental ability.

121. There is no significant difference between Urban and Hill area school students in respect of Achievement in Science.

122. There is no significant difference between Urban and Hill area school students in respect of Scientific attitude.

123. There is no significant difference between boys and girls studying in X standard in Coimbatore district in respect of Achievement motivation.

124. There is no significant difference between boys and girls studying in X standard in Coimbatore district in respect of Mental ability.

125. There is no significant difference between boys and girls studying in X standard in Coimbatore district in respect of Achievement in Science.

126. There is no significant difference between boys and girls studying in X standard in Coimbatore district in respect of Scientific attitude.

127. There is no significant difference between X standard Boys studying in boys schools and mixed schools in respect of Achievement motivation.

128. There is no significant difference between X standard Boys studying in boys schools and mixed schools in respect of Scientific attitude.

129. There is no significant difference between X standard Boys studying in boys schools and mixed schools in respect of Mental ability.
130. There is no significant difference between X standard Boys studying in boys schools and mixed schools in respect of Achievement in Science.

131. There is no significant difference between X standard Girls studying in girls schools and mixed schools in respect of Achievement in Science.

132. There is no significant difference between X standard Girls studying in girls schools and mixed schools in respect of Scientific attitude.

133. There is no significant difference between X standard Girls studying in girls schools and mixed schools in respect of Mental ability.

134. There is no significant difference between X standard Girls studying in girls schools and mixed schools in respect of Achievement motivation.

1.10.0: SCOPE OF THE STUDY

The present investigation is expected to bring out the relationship, if any, among Achievement motivation, Scientific attitude, Mental ability and Achievement in science of X standard students in Coimbatore district. The study is significant at present because no one has taken up this kind of study in Coimbatore district. This study will bring out the relationship in Achievement motivation with Scientific attitude, Mental ability and Achievement in science. This study will help the school authorities to know the exact position of Mental ability, Scientific attitude, Achievement motivation and Achievement in science of the students of the institutions. The findings of the study will enable the administrators to change the environment, prevailing in their school campus according to the need. The school authorities may provide better learning facilities to the students who are poor in their studies. In the light of the above aspect the investigator takes this kind of investigation.
1.11.0: DELIMITATIONS OF THE STUDY

Every research investigation has its own limitations. Therefore, present investigation has the following limitations, which could not be avoided.

1. As the researcher has taken the samples from Coimbatore Revenue District in Tamil Nadu, in order to give due representation in all areas, the investigator has selected the samples such as Rural, Urban and Hill area schools.

2. The present investigation is confined to 30 High and Higher secondary schools of Coimbatore district.

3. Since a large number of students are studying in X standard, the investigator has selected 1394 students.

4. The study is limited to Government schools, Aided schools, Municipal schools and Corporation schools.

5. The present investigation is related to collection of facts and information about the students. Therefore this study is limited to descriptive survey method.

6. Despite the above mentioned limitations great care has been taken in selecting the sample constructing the tools, collection of suitable data, making proper analysis of data etc.
1.12.0: ORGANISATION OF THE THESIS

The present dissertation has been organized under 5 chapters as follows.

The first chapter deals about Achievement motivation, Scientific attitude, Mental ability, Achievement in science, Objectives, Hypotheses, Statement of the problems, Scope of the study, Limitations of the study and Arrangement of chapters.

The second chapter gives an account of some previous research studies conducted in India and Abroad, which are related to the present investigation. These studies are abstracted.

The third chapter describes about Research method adopted for the study, Construction of tools, Sample, Administration of the tools, Data collection, Scoring procedure and Application of statistical techniques.

The fourth chapter deals about the Analysis of data, Results and their Interpretations.

The fifth chapter presents Summary of findings, Discussion and Recommendations for further research study.
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