CHAPTER III

METHODOLOGY

The present chapter describes the methodology used for the sampling design, selection of tools, collection of data and the statistical techniques to be used to analyse the data. This chapter has been divided and dealt with in the following sequence :

3.1 STATEMENT OF THE PROBLEM
3.2 DEFINITION OF THE TERMS
3.3 VARIABLES OF THE STUDY
3.4 NATURE AND DEFINITION OF THE VARIABLES
3.5 OBJECTIVES
3.6 HYPOTHESES
3.7 SAMPLING DESIGN
3.8 INSTRUMENTATION
3.9 DATA COLLECTION
3.10 DATA ANALYSIS

3.1 STATEMENT OF THE PROBLEM

"A COMPARATIVE STUDY OF CORRELATES OF ACADEMIC ACHIEVEMENT AMONG DISADVANTAGED AND NON-DISADVANTAGE CHILDREN AT THE TERMINAL STAGE OF PRIMARY SCHOOLING IN TAMIL NADU".

3.2 DEFINITION OF THE TERMS

3.2.1 Disadvantaged Children

The term disadvantaged refers to those who are culturally suppressed, socially stigmatised, economically exploited and educationally backward. The children of scheduled castes and scheduled tribes are deprived of cultural advancement, social involvement, economical upliftment and educational development, they are entitled to. There are also certain backward communities who are deprived of economical upliftment and educational development.

Disadvantaged children in the present study refers to the children of scheduled castes and scheduled tribes and backward communities who are declared as eligible for educational concessions (i.e., children whose parents are below the poverty line) granted by the Government of Tamil Nadu.

3.2.2 Non-Disadvantaged Children

Children other than the disadvantaged children.

3.2.3 Terminal Stage of the Primary Schooling in Tamil Nadu

It refers to the children of standard VIII. In India,

the structure of primary stage is upto standard VII in some states whereas it is upto standard VIII in some other states. In the state of Tamil Nadu, the terminal stage of the primary school is standard VIII. Hence the present study includes the children of Standard VIII in Tamil Nadu.

3.2.4 Correlates of Academic Achievement

The factors which are in someway related to academic achievement are called the correlates of academic achievement. The researchers have identified a large number of correlates of academic achievement such as intelligence, adjustment, self-concept, ego-strength, personality traits, interest, attitude, study habit, achievement motivation, educational aspiration, vocational aspiration, peer group influence, age, sex, birth order, family size, parents' income, parents' education, parents' occupation, parental encouragement etc. On the basis of theoretical background and review of related studies, the present study attempts to establish the relationship between the following correlates viz., achievement motivation, adjustment, educational aspiration, parental encouragement, pupils' attitude toward teachers, pupils' attitude toward school and socio-economic status and the academic achievement.

3.3 VARIABLES OF THE STUDY

Based on the theoretical framework proposed in the first chapter the following variables were selected for the present study.

3.3.1 Independent variables

1. Achievement motivation
2. Adjustment
3. Educational Aspiration
4. Perceived Parental Encouragement
5. Pupils' Attitude Toward Teachers
6. Pupils' Attitude Toward School
7. Socio-economic status.

3.3.2 Dependent Variable

1. Academic Achievement.

3.4 NATURE AND DEFINITION OF THE VARIABLES

3.4.1 Achievement Motivation

Motivation is the vital condition and the most powerful director of all learning. Success and achievement in life and learning depend very largely on how much one

really wants to succeed and achieve. McClelland and his associates isolated a motive or a need which is characterised by a concern for excellence expressed in a tendency to compete with a standard of exellence and called it the need for achievement (n-Achievement) or the achievement motivation.

McClelland (1961) precisely defines the term achievement motive as under :

> "A motive is generally described as a pattern of thought associated with a type of goal. The achievement motive consists of a cluster of thoughts associated with striving for some kind of excellence".

He further clarifies the definition by giving explanation as -

> "If a man spends his time thinking about doing things better, he has a concern for achievement".

Defining the problem, wanting to solve it, thinking of difficulties that get in the way of solving it and anticipating what would happen if one succeeded or failed - all these represent different aspects of a complete achievement sequence.

According to Heckhausen (1967) achievement motivation is striving to increase or keep as high as possible one's own capability in all activities in which a standard of excellence is thought to apply and where the execution of such activity can either succeed or fail.

Schatcher (1963) believes that "in general, people with high degree of achievement motivation are more persistent, realistic and action minded than people with other kinds of motivational patterns". Since n-achievement oriented person is realistic in his approach, persistent in his work, and action minded, it can be visualised that such people devote their time and energy in attaining the goals set by them. It has also been reported by many researchers that achievement motivation was one of the factors contributing to superior academic achievement (Barki, 1976; Shivappa, 1980; Rajeeva, 1981; and Reddy, 1983). Hence it is assumed that pupils with high degree of achievement motivation will try to achieve better in the school. The present study attempts to find out the relationship between achievement motivation of pupils and their academic achievement.

3.4.2 Adjustment

Adjustment is a process of interaction between the

individual and his environment for the sake of bringing harmony between them by any means. It consists of the psychological processes by means of which the individual manages or copes with various demands or pressures, (Lazarus 1961).

Wolman (1973) defines adjustment as "a harmonious relationship with the environment, involving the ability to satisfy most of one's needs and meet most of the demands both physical and social that are put upon one". In order to achieve harmonious relationship with the environment, an individual attempts to get along with its demands satisfactorily during the process of adjustment. An adjustment problem arises when a person confronts a demand made by his environment which he cannot fulfil or when an environmental demand comes in the way of immediate or early satisfaction of his need. Hence, from this view point adjustment consists of the efforts of an individual toget along well and satisfy the demands of his environmental situations, while fulfilling his personal needs.

A child spending the most formative years of his life in the school, must have harmonious relationship with the

environment so as to meet most of his needs and demands involved therein and for healthy educational growth during this period. The soundness of his mental and physical health, his emotional maturity and his interpersonal relations with his teachers and friends will lead to better outcomes. The fact that maladjustment leads to underachievement was established by many researchers (Srivastava, 1967; 1967; Pathak, 1972; Saxena, 1972; Aruna, 1981). Hence it is essential to study the adjustment problems of children in different areas so that they can be helped to overcome their problems and achieve better in the school.

In the present study adjustment includes the following areas namely adjustment towards home, school, peers, teachers and general.

3.4.3 Educational Aspiration

The Encyclopedia of Psychology defines the level of aspiration as the possible goal (score) an individual sets himself in his performance. Aspiration for education is a definite mode of behaviour manifesting one's realistic

expectations in the field of education and his striving to realize these expectations. Pupils' willingness or unwillingness to pursue higher studies indicate their aspiration for higher or lower educational attainment.

The term 'Educational Aspiration' denotes the goal-setting in the field of education. This goal-setting process being dependent on past performance is considered to play a significant role in academic achievement.

3.4.4 Parental Encouragement

There is considerable evidence that parental support and nature of the home environment are important determinants of child's success in the school. Fraser (1958) and Starman (1979) found that encouragement given by parents help the children to surpass the limits circumscribed by his intelligence. Creating good reading atmosphere in the home by providing adequate interesting books for children, developing good study habits and inculcating positive attitude toward school will certainly improve the academic achievement of the children. The academic guidance provided at home has a high correlation with academic achievement. (Dave, 1963; Vanarase, 1970; Reddy, 1973; Barki, 1976; and Chopra, 1983).

The role of the parents in the academic achievement of the child may be judged in terms of their guidance, help and encouragement in matters relating to education of the child. Then, who should report the parental behaviour towards the child-parents or child? The studies of Ginzberg (1952), O'Hara (1959) and Hall (1963) indicate that the children of the age group 11-13, have an ability to perceive and report experience reliably. Green and Parker (1965) reported that 'parent-child relationship would be reported more accurately at an age before the influence of later adolescent peer group values tended to distort perception of, and thought patterns about parents. In the present study, the respondents were in the pre-adolescent age-group and it may be presumed that they have the ability to perceive and reliably report their experience with their parents. It may, therefore, be appropriate to assess the parental guidance from the children's report.

The operational definition of 'parental encouragement' is the extent to which the child receives guidance, help and encouragement in educational matters.

3.4.5 Pupils' Attitude Toward School

The encyclopedia of Psychology defines an attitude as "a perceptual orientation and response readiness in relation to a particular object or class of objects".

In the present study attitude is used in the sense as defined by Thurstone (1946) viz., "The degree of positive or negative affect associated with some psychological object". The psychological object in this case is the school towards which students may have either positive or negative affect.

Several investigators have the opinion that pupils' attitude toward school and curriculum is one of the important factors influencing their academic achievement (Rao, 1965; Abraham, 1974; Zacharia, 1977; Jain, 1979; Kamila, 1986). Hence the present study attempts to find out the relationship between pupils' attitude toward school and their academic achievement.

3.4.6 Pupils' Attitude Toward Teachers

A study to find out what motivates young people to try to do good work in school was conducted by Frymier (1964).

The data indicated that interest in the subject matter, liking the teacher and the subject were the reasons accounted for their motivation.

Jani (1974) proved in his study that pupils have definite likes and dislikes for their teachers and reasons for the same are, for example, teachers personality, knowledge and general behaviour with the student community and so on. Hence it is assumed that the attitude of pupils toward teachers may have an effect on their academic achievement and the present study attempts to test this assumption.

3.4.7 Socio-Economic Status (SES)

Chapin (1928) defined SES as "the position that an individual or family occupies with respect to the prevailing average standards of cultural possessions, effective income, material possessions and participation in group activity of community. Miller (1961) defined it as a 'position in the social group. It is a structured concept, that is, it refers to position rather than function".

It has been customary in educational research to treat SES as one of the effective factors of academic achievement. Especially while attempting to study the educational attainment of minority group and rural children, SES is considered to be undisputable facor.

In most of the studies parents' education, occupation and income were regarded as the dimensions to measure SES. But in recent times growing interest is shown to include more number of variables like material possession, parents' social participation, size of the family, type of the family, newspapers and magazine subscription etc. The present study includes several of these sub-factors in measuring the SES of children.

3.4.8 Academic Achievement

Achievement is a general term for the successful attainment of some goal requiring a certain effort. It is the degree of success attained in a task. Academic achievement is the level of proficiency attained in scholastic or academic work. In the present study the academic achievement of the student was measured by administering objective type of achievement tests constructed and standardized by the investigator.

3.5 OBJECTIVES

The objectives of the study have been already mentioned in the first chapter. Here the investigator will like to state them elaborately as under :

(i) To find out the relationship between the selected predictor variables viz., Achievement motivation, adjustment, educational aspiration, pupils' attitude toward teachers, pupils' attitude toward school, perceived parental encouragement, and socio-economic status and the academic achievement of the disadvantaged children.

(ii) To find out the relationship between the selected predictor variables viz., Achievement motivation, adjustment, educational aspiration, pupils' attitude toward teachers, pupils' attitude toward school, perceived parental encouragement, and socio-economic status and the academic achievement of the non-disadvantaged children.

(iii) To compare the variables influencing the academic achievement of disadvantaged children with that of the non-disadvantaged children.

(iv) To determine the relative strength of the selected predictor variables viz., achievement motivation, adjustment, educational aspiration, pupils' attitude toward teachers, pupils' attitude toward school, perceived parental encouragement and socio-economic status in explaining the variation of academic achievement of the disadvantaged children.

(v) To determine the relative strength of the selected predictor variables viz., achievement motivation, adjustment, educational aspiration, pupils' attitude toward teachers, pupils' attitude toward school, perceived parental encouragement and socio-economic status in explaining the variation of academic achievement of the non-disadvantaged children.

(vi) To make a comparative study of high achievers in the disadvantaged group and high achievers in the non-disadvantaged group with respect to each of the selected predictor variables.

(vii) To make a comparative study of low achievers in the disadvantaged group and low achievers in the non-disadvantaged group with respect to each of the selected predictor variables.

(viii) To make an indepth study of the conditions associated with high and low achievers among the disadvantaged children.

3.6 HYPOTHESES

On the basis of the above objectives, the following hypotheses were formulated.

3.6.1 Objective 1

To find out the relationship between the selected predictor variables viz., achievement motivation, adjustment, educational aspiration, pupils' attitude toward teachers, pupils' attitude toward school, perceived parental encouragement and socio-economic status and the academic achievement of disadvantaged children.

Hypotheses :

1.1 There is no significant relationship between achievement motivation and academic achievement of disadvantaged children.

1.2 There is no significant relationship between the level of adjustment and academic achievement of disadvantaged children.

1.3 There is no significant relationship between the educational aspiration and academic achievement of disadvantaged children.

1.4 There is no significant relationship between the disadvantaged childrens' attitude toward teachers and their academic achievement.

1.5 There is no significant relationship between the disadvantaged childrens' attitude toward school and their academic achievement.

1.6 There is no significant relationship between the perceived parental encouragement and academic achievement of disadvantaged children.

1.7 There is no significant relationship between the socio-economic status and academic achievement of disadvantaged children.

3.6.2 Objective 2

To find out the relationship between the selected predictor variables viz., achievement motivation, adjustment, educational aspiration, pupils' attitude toward teachers,

pupils' attitude toward school, perceived parental encouragement and socio-economic status and the academic achievement of non-disadvantaged children.

Hypotheses :

2.1 There is no significant relationship between the achievement motivation and academic achievement of non-disadvantaged children.

2.2 There is no significant relationship between the level of adjustment and academic achievement of non-disadvantaged children.

2.3 There is no significant relationship between the educational aspiration and academic achievement of non-disadvantaged children.

2.4 There is no significant relationship between the non-disadvantaged childrens' attitude toward teachers and their academic achievement.

2.5 There is no significant relationship between the non-disadvantaged childrens' attitude toward school and their academic achievement.

2.6 There is no significant relationship between the perceived parental encouragement and academic achievement of non-disadvantaged children.

2.7 There is no significant relationship between the socio-economic status and academic achievement of non-disadvantaged children.

3.6.3 Objective 3

To compare the variables influencing the academic achievement of disadvantaged children with that of non-disadvantaged children.

Hypothesis :

The disadvantaged children and the non-disadvantaged children do not differ in respect of any of the selected predictor variables viz., achievement motivation, adjustment, educational aspiration, pupils' attitude toward teachers, pupils' attitude toward school perceived parental encouragement and socio-economic status.

Objectives 4 and 5 do not have any hypothesis.

3.6.4 Objective 6

To make a comparative study of high achievers in the disadvantaged group and high achievers in the non-disadvantaged group with respect to each of the selected predictor variables.

Hypotheses :

6.1 There is no significant difference in the mean achievement motivation scores of high achievers in the disadvantaged group and high achievers in the non-disadvantaged group.

6.2 There is no significant difference in the mean educational aspiration scores of high achievers in the disadvantaged group and high achievers in the non-disadvantaged group.

6.3 There is no significant difference in the mean adjustment scores of high achievers in the disadvantaged group and high achievers in the non-disadvantaged group.

6.4 The high achievers in the disadvantaged group and the high achievers in the non-disadvantaged group do not differ in their attitude toward teachers.

6.5 The high achievers in the disadvantaged group and the high achievers in the non-disadvantaged group do not differ in their attitude toward school.

6.6 There is no significant difference in the mean perceived parental encouragement scores of high achievers in the disadvantaged group and the high achievers in the non-disadvantaged group.

6.7 The high achievers in the disadvantaged group and the high achievers in the non-disadvantaged group do not differ in their socio-economic status.

3.6.5 Objective 7

To make a comparative study of low achievers in the disadvantaged group and low achievers in the non-disadvantaged group with respect to each of the selected predictor variables.

Hypotheses :

7.1 There is no significant difference in the mean achievement motivation scores of low achievers in the disadvantaged group and low achievers in the non-disadvantaged group.

7.2 There is no significant difference in the mean educational aspiration scores of low achievers in the disadvantaged group and the low achievers in the non-disadvantaged group.

7.3 There is no significant difference in the mean adjustment scores of low achievers in the disadvantaged group and low achievers in the non-disadvantaged group.

7.4 The low achievers in the disadvantaged group and the low achievers in the non-disadvantaged group do not differ in their attitude toward teachers.

7.5 The low achievers in the disadvantaged group and the low achievers in the non-disadvantaged group do not differ in their attitude toward school.

7.6 There is no significant difference in the mean perceived parental encouragement scores of low achievers in the disadvantaged group and low achievers in the non-disadvantaged group.

7.7 The low achievers in the disadvantaged group and the low achievers in the non-disadvantaged group do not differ in their socio-economic status.

There is no hypothesis for Objective 8.

3.7 SAMPLE

It is important that the samples be so designed that their characteristics are reasonably good picture of the characteristics of the population (or universe). A good sampling must provide equal chance for all the items of the universe to be included in the sample. The population of the present study consists of all the students of class VIII in all the Tamil Medium schools of Ramnad district during the year 1985-86.

The investigator selected Ramnad district in Tamil Nadu because it is one of the most backward districts in the state of Tamil Nadu. Agriculture is the main occupation of the people in Ramnad district and majority of them are below the poverty line due to inadequate rain fall and lack of industrial growth. The location of Ramnad district in Tamil Nadu can be seen in the map. The map is given in Appendix I.

The target of the investigator was to include 500 disadvantaged children and 500 non-disadvantaged children in the present study and to make the sample representative by including students from different types of schools and schools in different localities.

Stratified random sampling technique was used to select the sample for this study. The latest list of schools in Ramnad district was obtained from the office of the Chief Educational Officer. At first the schools were grouped into two major divisions viz., (1) Rural and (2) Urban. The schools in the Panchayat Union area were grouped under rural schools and the schools in the Municipality area were grouped under urban schools. Again in each group Government and private schools were grouped separately. Twenty schools were randomly selected giving due representation to different types of schools and schools in different localities.

The investigator visited all the twenty schools and prepared the list of disadvantaged and non-disadvantaged children enrolled in class VIII based on their communities and the annual income of their parents. These details were available in the school admission registers. Finally

15 schools were selected for the present study according to the number of disadvantaged and non-disadvantaged children enrolled in class VIII. The sample consisted of 1016 students including 500 disadvantaged and 516 non-disadvantaged children. The localitywise distribution of the selected schools is shown in Table 3.1 and the sexwise distribution of students is shown in Table 3.2.

Table 3.1

Localitywise Distribution of Schools

Locality	Govt.	Private	Total
Rural	5	4	9
Urban	3	3	6
Total	8	7	15

Table 3.2

Sexwise Distribution of the Sample

Locality	Disadvantaged			Non-disadvantaged		
	Boys	Girls	Total	Boys	Girls	Total
Rural	118	127	245	141	180	321
Urban	133	122	255	109	86	195
Total	251	249	500	250	266	516

3.8 INSTRUMENTATION

The present investigation was devised to gather the empirical evidence in order to test a series of hypotheses proposed in this chapter. It was therefore imperative that the variables under study be measured quantitatively so that appropriate statistical techniques could be applied to test the hypotheses. This could be done only by devising suitable tools which yield scores for each variable and for each respondent. The variables which were to be measured are

(1) Academic Achievement
(2) Achievement motivation
(3) Adjustment
(4) Educational aspiration
(5) Perceived Parental encouragement
(6) Pupils' attitude toward teachers
(7) Pupils' attitude toward school
and (8) Socio-economic status.

It may be pointed out that studies in the area of academic achievement were more in number and standardized tools were available for use in this study. All the available tools for each variable were scrutinized and suitable

ones were selected for the present study. Since standardized achievement tests were not available for use in this study, objective type of achievement tests were constructed and standardized.

3.8.1 Construction of Academic Achievement Tests

Tests which are taken under standard conditions viz., the prescribed directions, time-limit, form of the test etc., offer more meaningful bases for evaluating and comparing performance. Thomas Kellanghan et al. (1982) have stated that "the superiority of standardized tests over more conventional means of assessment such as essay type examinations and teacher judgements in their objectivity and reliability could hardly be doubted".

Stephans et al. (1961) have concluded that more emphasis should be placed on the use of standardized achievement tests instead of grades for criterion purposes.

Since in the present study achievement tests are to be used for criterion purposes, the researcher felt the need and importance of having standardized tests to measure academic achievement.

Hence objective type of achievement tests were constructed for standard VIII in the following subjects viz.,

(1) Tamil

(2) Mathematics

(3) Science

(4) History and Geography

various steps in the construction of achievement tests are given below :

Content Analysis : The syllabus of standard VIII framed by the Department of Education, Government of Tamil Nadu, was studied and analysed with a view to give due weightages to content units.

Objectives : The objectives of teaching various subjects were selected, classified and clarified in terms of behavioural patterns.

Preparation of Blue Prints : A blue print was prepared for each subject giving proper weightages to objectives and content based on the number of periods devoted to teaching different units in each subject and the number of pages devoted to each topic in the text books prescribed

by the Tamil Nadu Text Book Society. Experienced teachers and subject experts were also consulted while deciding the weightages to different units in each subject.

Construction of Test Items : The investigator has the experience of teaching various subjects to the pupils of standard VIII for more than ten years. So the investigator herself constructed the test items for different subjects. A set of Annual Examination questions of Standard VIII were also studied with respect to different types of questions and the relative importance given to different topics in each subject. One hundred items were constructed for each subject keeping in mind the criteria and principles of item construction. Five types of items were included viz.,

(1) Multiple choice items
(2) True/False items
(3) Matching items
(4) Fill in the blanks
(5) Short answer questions

Equal weightages were given to all types of questions subject experts were requested to judge the items and slight

modifications were done based on their opinions. Thus the items were finalised for all the subjects and the question papers were printed with sufficient space for answering. The achievement tests for the pilot study are given in Appendix II.

Administering the Tests : The tests were administered to 370 students of standard IX in the beginning of the academic year 1984-85. It may be mentioned that the schools where the sample was to be selected for the final study, was not considered for this tryout. This was done with a view to avoid any diffusion of information about the test, no time limit was given for answering these tests. But the time taken by 90 per cent of the students to complete each test was noted to fix up the time limit for the final form of the tests. Answer papers were collected and scored.

Item Analysis : The purpose of item analysis is to determine the difficulty level and discrimination power of each item. Difficulty level is how hard the item is for the group tested and discrimination power is how well does it distinguishes between the more knowledgeable and the less knowledgeable students. Item analysis was done in the following way in the present study.

(i) All the 370 corrected papers were arranged in descending order, highest score on the top and lowest at the bottom.

(ii) Top 27 per cent of papers "High Group" and bottom 27 per cent of papers "Low Group" were selected.

(iii) For each item the number of persons who answered correctly in the high group (RH) and the number of persons who answered correctly in the low group (RL) were counted and recorded.

Difficulty Index : The difficulty index of the items were determined using the formula

$$D.I. = \frac{RH + RL}{2}$$

Discrimination power : The discrimination power of the items is considered as the most valid index of judging the quality of an item. Greater the discrimination index the better it is. An item with the discrimination index value of more than 0.35 is considered as an excellent item (Ebel, 1979).

Flanagon prepared a table for the estimation of the product moment correlation from the 27 per cent tails of

the distribution and it was recommended to use when 100 cases remain in each tail which meant for a total sample of 370. In the present study the tryout was made on a sample of 370 pupils and hence the discrimination power of the items were found out from the Flanagon's table. The difficulty index and the discrimination power of the items for all the four tests are given in the appendix III.

Selection of items : Items for the final form of the test were selected based on the following criteria :

1. The discrimination value of the selected items should not be less than 20.
2. For any standardized test the difficulty index of the selected items should be within the range of 20-85.

Considering the above mentioned criteria 30 items were selected for each test and the time limit was fixed as 45 minutes. The difficulty index and the discrimination power of the selected items are given in the Appendix III.

Validity : Content validity is important in achievement testing. Here we are interested in how well the test measures the subject matter content and learning outcomes covered during the instructional period. Content validity of all the tests were established through experts judgement.

Reliability was determined by split-half method. The tests were administered to 100 students and the answer papers were scored. Each test was split up into two parts, 'A' and 'B'. 'A' consisted of all odd numbered items and 'B' consisted of all even numbered items. A total score for each half of the test was obtained. Then the correlation coefficient between the two halves (rhh) was determined. The correlation coefficient of the tests are given below :

1. Tamil = 0.82
2. Mathematics = 0.96
3. Science = 0.74
4. History and Geography = 0.68

From the correlation coefficients (r_{hh}) the split-half reliability (r_{xx}) was determined using the Spearman-Brown step up formula viz.,

$$R_{xx} = \frac{2r_{hh}}{1+r_{hh}}$$

1. Achievement Test in Tamil

Correlation Coefficient $r_{hh} = 0.82$

Reliability Coefficient

$$R_{xx} = \frac{2 \times 0.82}{1.82}$$

$$= 0.90$$

2. Achievement Test in Mathematics

Correlation Coefficient $r_{hh} = 0.96$

Reliability Coefficient

$$R_{xx} = \frac{2 \times 0.96}{1.96}$$

$$= 0.97$$

3. Achievement Test in Science

Correlation Coefficient $r_{hh} = 0.74$

Reliability Coefficient

$$R_{xx} = \frac{2 \times 0.74}{1.74}$$

$$= 0.85$$

4. Achievement Test in History & Geography

Correlation Coefficient $r_{hh} = 0.68$

Reliability Coefficient

$$R_{xx} = \frac{2 \times 0.68}{1.68}$$

$$= 0.80$$

The reliability coefficients are sufficiently high to ensure the consistency of the tests. The achievement tests that were prepared for the final study are given in Appendix IV.

3.8.2 Instrument for Measuring Achievement Motivation

Several tests have been developed to measure achievement motivation. Mukherjee (1965) developed a sentence completion test (SCT) consisting of 50 forced-choice trials. Shantamani and Hafeez (1968) developed a sentence completion test with three alternatives for measuring the achievement motivation of adult males. Aaron et al. (1969) developed a projective technique, consisting of five pictures for measuring the n-achievement of secondary school boys from South India. Mehta (1969) adapted McClellands (1953) TAT technique for assessing the level of n-achievement of high school students. Rao (1974) developed a simple form of achievement motivation test with 20 incomplete sentences.

The TAT has the disadvantage of requiring a careful content analysis of phantasy materials which needs special training and experience. The advantage of SCT is its objectivity in scoring and ease in administration. Among the available sentence completion Tests (SCT) Rao's (1974) achievement motivation was found to be more suitable for the present study. Hence it is used in the present study to measure the achievement motivation of the students.

Rao's Achievement Motivation Test : The test includes 20 incomplete sentences, each of which is followed by two possible alternatives A and B, out of which one is an achievement related item. Though both the alternatives are achievement oriented, yet one of them imply a higher sense of achievement and excellence. The student has to indicate the alternative he generally prefers.

The test was standardized on a sample of 380 pupils of grades VIII-X selected at random from five secondary schools of Bhopal. As the sample of the present study also includes students of standard VIII this tool has been selected for this study.

Validity : The test has been validated in two ways : (a) The items for this test were selected in terms of the degree to which they differentiated between the upper and the lower 27 per cent of the individuals in a distribution of scores. Only those items which had a discriminating index of 0.25 and above were retained for the final form of the test.

(b) The teachers of four secondary schools of Bhopal were explained the purpose of the test and the concept of

achievement motivation and they were asked to identify, the students who had 'very high' and 'very low' achievement motive. The test was administered to these extreme groups. The means of the total weighted score was compared. The difference between the mean score of the two groups was found to be significant at 0.01 level, which means that there is agreement between the judgement of the teachers and the scores on the achievement motivation test.

Reliability : The test-retest reliability coefficient was found to be 0.79.

Scoring : The statements depicting achievement motivation at a lower level were assigned a score of one whereas the statements depicting achievement at a higher level were assigned a score of three.

Interpretation : The cumulative weighted score of all the responses as provided in the key forms the achievement motivation score of the individual. The pupils obtaining a score in the range of 50-60 may be considered "high" in their achievement motive, and the pupils obtaining a score in the range of 33-41 as 'Average' and the pupils obtaining a score in the range of 20-32 as "low" in their achievement motive. The test and the scoring key are given in the Appendix V.

3.8.3 Adjustment Inventory

A review of the adjustment inventories in India and the studies conducted on adjustment shows that very little has been done in studying the adjustment patterns of preadolescents. The several adjustment inventories available in India include Adjustment Inventory by Parameswaran E.G. (1957), Rajangam's personal-social maladjustment Inventory, Brunschwig's Adjustment Inventory by Majumdar (1963), Adjustment Inventory by Prem Pascicha et al. (1964), Adolescent adjustment Inventory by Reddy (1964), adaptations of Bell's Adjustment Inventory by P.A. Abraham and D.I. George (1966), Nataraj (1968), J.G. Tewari and J.N. Tewari (1968), Adjustment Inventory by Bhattacharya et al. (1967), Asthana's Adjustment Inventory (1968), Sinha and Singh's (1968) Adjustment Inventory, Adjustment Inventory by Mittal (1965) and so on. These and many other inventories available in India were meant for adolescents and adults. Realising the need for developing instruments to study the personality patterns of preadolescents Pareek et al. (1970) have developed a battery of pre-adolescent personality Tests of which the pre-adolescent Adjustment Scale (PASS) forms a major part. Since the present study was to be conducted on pre-adolescents, the PASS was selected for this study.

Pre-Adolescent Adjustment Scales (PASS): It was developed using Thurstone's method of equal appearing intervals. The final form consists of 40 items chosen from a pool of 180 items based on the judgements given by 190 judges. These items have different scale values and measure the adjustment towards home, school, peers, teachers and general matters.

Reliability : Test-retest reliability coefficients range from 0.2 to 0.60 for different areas of adjustment.

Validity : Validated against teachers' ratings Mann-Whitney's 'U' values showed acceptable level of validity.

Scoring and Interpretation : On this scale the students were asked to check the items of the scale that are correct in their case. The scale values of the items checked were added to find out the total score on adjustment. In this scoring negative scores represent maladjustment and positive scores represent positive adjustment depending on their respective magnitudes. Zero scores represent neither adjustment nor maladjustment. The pre-adolescent adjustment scale and the scoring key are given in the Appendix VI.

3.8.4 Educational Aspiration Scale

In India, Grewal (1980), Sharma and Gupta (1980), Shah and Bhargava (1971), Pareek and Chattopadhyay (1965), Phutela (1976) and Nageswara Rao (1982) have used different tools to measure the 'the level of aspiration'. The tool used by Nageswara Rao was found simple and more suitable for the present study. Therefore it was selected for the present study.

Development of the Tool : It was developed on the basis of Phutela's (1976) tool. various alternative educational plans were arranged in the form of a check-list. Eleven alternatives ranging from 'a job without completing higher secondary' to 'a job after completing post-graduate course in Medicine, Engineering' were provided in the check-list. These alternatives were assigned weightages according to their social prestige attached to degrees, diplomas etc., of general and professional education awarded by boards of education and universities. The weightages range from 0 to 8 for the eleven alternatives. It is possible that two or more plans may have the same weightage. In this tool, two alternatives namely 'completion of Medicine (MBBS) or Engineering (B.E.) and 'Completion of

Ph.D.' were given the same weightage. Similarly 'completion of a diploma in Polytechnic' and completion of post-graduation privately' were given the same weightage. The remaining alternatives were given different weightages.

The rationale behind assigning these weightages is the opinion of a group of judges. Alternative sets of weightages were proposed, discussed and finally the set of weightages to be assigned was decided.

Scoring : The eleven educational plans provided in the tool were assigned different weightages. These weightages were not shown in the tool so that respondents were not biased. The respondent was requested to select only one educational plan that he desires to pursue. The weightages assigned to the educational plan which the respondent chose indicated the 'level of educational aspiration'.

Reliability and Validity : The reliability of the tool was established by test-retest method. The reliability coefficient was 0.95 which is very high.

Validity was studied by examining the relationship of the students educational aspiration with the known correlates

like the father's educational qualification and socio-economic status. It was found that the educational aspiration scores were highly correlated with the above variables.

The educational aspiration scale and the weightages assigned to the items of the scale are given in the Appendix VII.

3.8.5 Test of Parental Encouragement

In our country only a few investigators have studied the relationship between parental encouragement and academic achievement, (Vanarase, 1970; Reddy, 1973; Barki 1976; and Sekhar, 1980). The test developed by Sekhar (1980) was found to be more suitable for the present study and hence it was selected.

Test of Encouragement given by the Parents : It is a likert type rating scale consisting of 18 statements to be rated on a four point scale. Summated score on the test gives the degree of encouragement given by the parents.

Reliability : The test-retest reliability was found to be 0.74.

Validity was established against an external criterion of a single question in the form of a four point rating scale and the value was found to be 0.33. The test is given in Appendix VIII.

3.8.6 Rao's School Attitude Inventory

It consists of 30 questions covering various aspects of the school such as teachers, school subjects, class fellows, homework, curricular activities and parental attitude to school as perceived by the pupils. Each question has five category responses such as always, most often, frequently, sometimes and never out of which one needs to be checked.

For the present study the items related to teachers were taken from this tool to measure pupils' attitude toward teahers and the items related to school subjects, homework, curricular activities were taken from the above mentioned tool to measure pupils' attitude toward school and curriculum.

Reliability : The Coefficient of reliability was determined by correlating the odd-even items and applying the Spearman Brown formula. The reliability coefficient of the school attitude inventory was found to be 0.81.

Validity was established by selecting valid items through item-analysis. Rao's school attitude inventory is given in Appendix IX.

3.8.7 Socio-Economic Status Scale

A number of scales are available to measure the socio-economic status. A few of them are (1) Socio-economic status scale (Urban) developed by Kuppuswamy (1962), (2) Socio-economic status scale (Rural) developed by Pareek and Trivedi (1963), (3) Socio-economic status scale by Shirpurkar (1967), (4) SES scale by Srivastava (1978), (5) SES scale by Verma (1969), (6) SES scale for Rural and Urban by Aaron et al. (1969), (7) SES scale by Kulshreshta (1972), (8) SES scale by Rao (1977), (9) SES scale (Rural) by Singh and Saxena (1978) and (10) SES scale urban by Singh and Saxens (1978).

The SES scale developed by Singh and Saxena was selected for this study. The other scales do not satisfy the needs of the study.

Socio-economic Status scale by Singh and Saxena : This scale is a comprehensive one. It has 21 items which might give clear picture about the family background of

the child. There are separate scales for rural and urban people. The rural scale consists of 21 items while there are 18 items in the urban scale. The scales reflect social, economical, educational, caste, cultural aspect etc. of the students.

Reliability : The split-half and test retest reliability has been established for rural and urban scales as given below :

	Test-retest	Split-half	Coefficient
SES (Rural) N = 100	.83	.85	.87
SES (Urban) N = 100	.89	.91	.93

Validity : Validity was established by Correlating the scores of these scales with that of Kulshreshtha's SES scale (N=50). The Coefficient of validity (N=50) was found to be .78 and .73 for urban and rural scales respectively. The socio-economic status scales (Rural and Urban) alongwith the scoring key are given in Appendix X.

3.8.8 Unstructured Interview Schedule

An unstructured interview schedule was prepared for the indepth study of high and low achievers in the disadvantaged group. Information regarding sex, home location,

parent's education, size of the family, nature of the family, birth order, educational facilities available at home, participation in extra curricular activities, leisure time activities and ambition in life are to be collected through this schedule. The umstructured interview schedule is shown in Appendix XI.

The following selected tools for the background variables were translated into Tamil with the help of four language experts.

(1) Rao's Achievement motivation Test
(2) Pre-adolescent Adjustment Scale
(3) Educational Aspiration scale by Nageswara Rao
(4) Test of parental encouragement by Sekhar
(5) Rao's school Attitude inventory
(6) SES Scale (Rural) by Singh and Saxena
(7) SES Scale (Urban) by Singh and Saxena.

Reliability : Reliability Coefficients of the translated tools were established by test-retest method by administering the tools to a group of 50 students with an interval of one month. The reliability coefficients of the translated tools are given below :

		Reliability Coefficients
(1)	Rao's Achievement Motivation Test	0.91
(2)	Pre-Adolescent Adjustment Scale	0.73
(3)	Educational Aspiration Scale	0.90
(4)	Test of Parental Encouragement	0.67
(5)	Rao's School Attitude Inventory	0.75
(6)	SES Scale (Rural)	0.82
(7)	SES Scale (Urban)	0.76

Validity of the translated tools was established through experts judgement.

3.9 DATA COLLECTION

The data used in the present study was collected from January 1986 to May 1986. The data collection was done in three phases :

First Phase :

The following seven tools were administered during the months of January and February in 1986.

1. Rao's Achievement Motivation Test.
2. Pre-Adolescent Adjustment Scale.

3. Educational Aspiration Scale
4. Rao's School Attitude Inventory
5. Test of Parental Encouragement
6. Socio-Economic Status Scale (Rural)
7. Socio-Economic Status Scale (Urban)

Second Phase :

Achievement tests were administered after the completion of the syllabus and before the commencement of the annual examinations. All the schools completed teaching the whole syllabus only in the mid-March 1986. Hence achievement tests were administered during the last two weeks of March '86. Scoring of the answer scripts of disadvantaged group was done first to select the individuals for indepth studies. A total score in academic achievement was made for each individual by adding the scores obtained in the four tests. The scores were arranged in descending order. 50 students from the top and 50 students from the bottom were selected for indepth study.

Third Phase :

Case studies of high and low achievers were conducted during this phase. It was during mid-April 1986 to May 1986.

3.10 DATA ANALYSIS

The data collected using the various tools mentioned in this chapter were coded with the help of the scoring keys. The coded data were transformed into Punch Cards for computer analysis.

The following statistical techniques are used to analyze the data :

1. Product-moment Correlation analysis is used to find-out the inter-relationship between the dependent and independent variables.
2. Regression analysis is used to predict the academic achievement of disadvantaged and non-disadvantaged groups.
3. 't' tests are used to test the significance of differences between the high and low achievers on the dependent variables.

The next chapter presents the analysis and interpretation of the data collected.