CHAPTER III

INSTRUMENTS AND PROCEDURES

The present chapter reports the toosls adopted and procedures followed to conduct the study. Precisely, they include:

(i)   The sampling procedure.

(ii) The instruments used for data collection.

(iii) The procedure of administering and scoring of the tests.

(iv) The statastical technique employed for analysing the data.

SAMPLE

In the present study, population under investigation was the elementary students. The sample was drawn from four schools each of Bhopal & shahdol districts of M.P.

Method of selection

Various techniques were available for obtaining a sample which would be represantative of the population. Weather sample is free from bias or not depends upon our knowledge o the population or supply as well as upon the methods used i drawing the sampling methods fall under four headings random, stratified or Quota, incidental and purposive Keeping in view the nature of the problem and populatio under investigation, is availability, and suitability wit convenience of the purpose, the schools were selected b incident sampling technique and the sample of 200 student was randomly selected.

Size of the sample

In order to study the gender variable the sample included two girls schools, two boys schools and 3 co-ed schools. The list of schools and the numbers of students included in the sample gender and area wise are given in the tables nos. 1 & 2.

TABLE I

List of schools of Shahdol districts (rural)

Name of school	Male	Female	Total
Amiliha Ashram	3	–	3
Amiliha Middle School	15	5	18
Chandaniya Middle School	30	14	44
Jamui Upper Middle School	14	18	32
	TOTAL		100

TABLE 2

URBAN REGION – School in Bhopal

Name of school	Male	Female	Total
Obedia High School	25	–	25
Babeali Girls High School	–	30	30
Kasturba Girls High School	–	20	20
Hamedia High School	25	–	25
	TOTAL		100

INSTRUMENTS

The present study aims at the exploration of relationship between the variables namely, n-ach, gender among various categories of the same group. The following test was used for the collection of the data :-

(i) Pratibha Deo and Asha Mohan's achievement motivation scale.

A short description of the important characterstics of the test is as follows :-

Pratibha Deo & Asha Mohan's achievement motivation test :-

This test was used for the collection of data regarding the variable n-ach. The study of motivation gained importance since early fifties with the efforts of Mc Clelland and his associates at Wesleyan university, U.S.A. Achievement motivation is the aquired tendency and is one of the most important social needs, has been defined by Mc Clelland and his associates (1953) as a desposition to strive for succes in competition with others with some standard of excellence set by the individual.

The need to develop this scale was felt mainly for three reasons. Firstly, a projective test generally used for measuring achievement motivation is time consuming in administration and the scoring procedure is some what Complecated. Quite often, a researcher requires a quick scoring tool which can be easily administered and used for research or studying pupils. Achievement motivation is a

variable which is used in many studies in education, either as a main or secondry variable or a moderator variable. The purpose of preparing this scale is to be handy and convinient for administration and scoring. Secondly a standard verbal measure which sufficiently measure the achievement motivation in general is desired. The present scale is built to fulfil that need. Thirdly, for validating the projective test of achievement motivation the verbal scale was found to be a very useful and valuable instrument. The items in the scale were based on :-

(i)   Academic factors.

(ii)   Factors of general interest.

(iii) Factors of social interest.

There were 50 items among them 37 were positive and 13 negative.

The test was translated into hindi language so that it was easy for the rural group. This was corrected many a times and was presented in a simplest form. For testing its reliability this was administered on 25 students of Kasturba High School

Final Form of the scale :-

Earlier in the test there were total 115 items, out of the 50 items were selected on the basis of the hig

correspondence between item indices obtained through the item analysis and on the basis of content, so that each factor should be represented in the scale, atleast by two or three items. The 50 items are distributed as follows in the given table.

TABLE 3

S.No.	FACTORS	No. OF ITEMS
1.	Academic motivation	4
2.	Need for achievement	4
3.	Academic challange	4
4.	Academic anxiety	1
5.	Importance of grades/marks	2
6.	Meaningfulness of tasks	4
7.	Relevance of school in future goals	2
8.	Attitude towards education	4
9.	Work methods	5
10.	Attitude towards teachers	3
11.	Interpersonal relations	4
12.	Individual concern	2
13.	General Interest	4
14.	Dramatics	2
15.	Sports etc.	5

Reliability of the scale

Test method was applied to obtain the reliability co efficient of the scale. Taking different sets of sample, the administration of the scale was repeated on several occasions. The results are given below.

TABLE 4

SAMPLE	N	INTERVAL	r	Significant
Mixed group	51	4 weeks	.69	.01
Males	33	5-6 weeks	.67	.01
Females	50	5-6 weeks	.78	.01

These coffeicient of reliability are sufficiently high and the scale can be considered as reliable for use.

Validity of the scale

As the validity of the scale is concerned, in the first instance the item validity established by the high low descrimination method was accepted as the valdity of the whole measure. Besides, this scale was also used for valdating the projective test of achievement motivation the coefficient of correlation between the scale and the projective test was observed to be .04 which speaks for the validity of the scales, the validity being of the concurrent nature.

Collection of Data

After selecting the required instrument discussed above, the task was to employ it to collect information regarding the dependent and independent variables.

The above mentioned test was administered carefully according to the instructions laid down in the manual of the test. Special case was taken to encourage full interest, enthusiasm and frankness among students while performing the test. Their difficulties in understanding the items were invited and removed on the spot. The test was administered in one sitting to groups of students numbering 25-35. The students were thoroughly explained as to what they were expected to do.

After administering the test, the scoring was done usinfg two stencil keys, one for positive items and one for negative items. A positive item carries the weights of 4,3,2,1 & 0 respectively for the categories of always, frequently, sometimes, rarely and never (as given in 5 point rating scales). The negative item is to be scored 0,1,2,3 & 4 respectively for the categories given earlier. The total score is the summation of all the positive and negative item scores. The mionimum score obtained can be zero (0) and the maximum can be 200, other scores ranging in between. Some answersheets were left incomplete inspite of the clear instructions not to do so. Such answer sheets were not considered.

After scoring of the achievement motivation test, the scores were compiled on large sheet of paper. Thus the master data sheet was prepared.

STATISTICAL PROCEDURE

For analysing the data and arriving at results of a number of statistical techniques formula were employed. They were as follows :

Mean (M) and Standard deviation (SD)

Means and standard deviations were calculated in case of distribution of scores on achievement motivation test in case of rural, urban students gederwise.

The formula used are as follows :-

1.(i) $\text{Mean (M)} = AM + \dfrac{\sum fu}{N} \times i$

(ii) $SD = i \sqrt{\dfrac{\sum fu^2}{N} - \left(\dfrac{\sum fu}{N}\right)^2}$

where

AM = Assumed Mean
i = width of the class interval
u = Deviations from AM in terms of Class interval
f = Frequencies
N = Total Number of scores

2. Test of significance of difference between means

The significance difference between means was required to be tested while determining the relationship between achievment motivation and gender and achievement motivation among various groups. The sample being large enough (more than 30).

The technique of this test employed was that of critical ratio (CR).

The formula employed for the calculation of CR was as follows

$$CR = \frac{D}{SED}$$

Where   D = M_1 – M2 or the difference between two means

SED = The standard error of the difference between the means.

The formula for the calculation of SED is :-

$$SED = \sqrt{\frac{SD_1^2}{N1} - \frac{SD_2^2}{N2}}$$

Where SD1 and SD2 are the values of the standard deviations of two samples :

N1 = Number of cases in first sample

N2 = Number of cases in second sample.

In order to be significant at 0.05 level the value of CR should be 1.96 and for significance at .01 level the value of CR should be 2.56.

The SE of the difference between M's in small independent samples

In the case when N's of two independent samples are small, we get the true SD (standard deviation) by pooling the sums of squares of the deviations taken around the means of the two

groups and computing a single SD. The justification for pooling that under the will hypothesis no real mean differences exists between the two samples which are assumed to have been drawn from the same population. The formula for computing this "pooled" SD and the formula for SE of the difference are as follows.

σ_1 , σ_2 - are the standard deviations of two groups.

df_1 , df_2 - degree of freedom of two groups.

N_1 , N_2 - are the total no. of stores of two groups.

M_1 , M_2 - Are the means of two groups.

Thus Formula for finding SE_D.

$$SD' = \sqrt{\frac{\sigma_1^2 \times df_1 + \sigma_2^2 \times df_2}{df_1 + df_2}}$$

$$SE_D = SD' \sqrt{\frac{N_1 + N_2}{N_1 \times N_2}}$$

$$t = \frac{M_1 - M_2}{SE_D}$$