CHAPTER III
THE RESEARCH DESIGN

Design provides a picture of what and how to do the work before starting it. It has been determined from time to time that a suitable research design guards against the collection of irrelevant data and gives more economically. So, in any research Project, design provides the researcher a blueprint of research, dictates the boundaries of project and helps in controlling the experimental, extraneous error variances of the problem under investigation.

The present chapter gives a thumbnail sketch of the method employed in conducting the research i.e. sample method used, tools used, the procedure adopted for the data collection and statistical techniques applied.

3.1 METHOD

For the present investigation "Normative Survey Method" was employed for the collection of the data. This method provided an organised way to attempt a problem with suitable result. Three types of information were collected by this method-

(i) of what existed (by studying and analysing important aspects of present situation).

(ii) of what we wanted (by clarifying goals and objectives possibly through a study of the conditions exists).
of how we got these through discovering the possible means of achieving the goals on the basis of experiences of others or the options of experts.

Investigator collected the data by using three proformas i.e. High School, Personality questionnaire (HSPQ), Academic Anxiety Scale for Children (AASC) and Educational Interest Record (EIR) on the sample.

3.2 SAMPLE

"A sample is the representative proportion of the population."

The total sample for the study comprised of X grade 500 male and female students drawn from various urban and rural schools belonging to the age group of 13 to 16 years.

The following schools were selected for the sample-

**URBAN AREA (Girls)**

1. Government Girls High School
2. Government Girls Sr. Sec. School
3. S.D. Girls School
4. Arya Kanya High School
5. Vaish Girls High School

**URBAN AREA (Boys)**

7. Jat High School for Boys.
8. Gaur Brahman High School for Boys.
10. Shri Ram Sr. Sec. School.

**RURAL AREA (Girls)**

1. Government Girls High School, Kahnaur
2. Government Girls High School, Kansala
3. Government Girls High School, Asean
4. Government Girls High School, Bhalout
5. Government Girls High School, Kalanaur

**RURAL AREA (Boys)**

1. Government Boys High School, Nigana
2. Government Boys High School, Sampla
3. Government Boys High School, Ismaila
4. Government Boys High School, Kalawarh
5. Government Boys High School, Bohar

**3.3 TOOLS USED IN THE STUDY**

Following tools were used in the research study for the collection of data-

1. High School Personality Questionnaire (HSPQ)  
   by S.D. Kapoor and K.K. Mehrotra

2. Educational Interest Record (EIR)  
   by Dr. S.P. Kulshreshtha
3. Academic Anxiety Scale for Children (AASC)  
   by Dr. A.K. Singh and  
   Dr. (Km). A. Sen Gupta.

4. Academic Achievement of the students was taken from their X class  
   result records made available from the school authorities.

(i) HIGH SCHOOL PERSONALITY QUESTIONNAIRE

For the present study, the researcher has used the 'High School  
Personality Questionnaire (HSPQ)' constructed and standardized by S.D.  
Kapoor and K.K. Mehrotra. The HSPQ is a standardised test which can be  
given with in a class period, to an individual or in groups, to yield a general  
assessment of personality development.

The High School Personality Questionnaire measures fourteen  
distinct dimensions or traits of personality which cover the total personality of  
individual. By working with these fourteen scores, the psychologists can obtain  
predictions of, e.g., school achievement of vocational fitness, of danger, of  
delinquency, of likelihood, of leadership qualities, of need for clinical help in  
avoiding neurotic conditions etc.

The reading level of the test is adapted to ages 11 or 12 upto 18 years.  
It is one of the most reliable and valid test of personality.

The fourteen personality traits measured by HSPQ are as follows-

FACTOR A - Reserve V/s Outgoing

A person who scores low on factor A, tends to be reserved, detached,  
critical, aloof and stiff. He likes things, rather than people, working alone and
avoiding compromises on view points. He is likely to be precise and rigid in his own way of doing things and his personal standards. He may tend at times to be critical, obstructive and hard.

On the other hand a person who scores high on factor ‘A’ tends to be good-natured, easy-going, participating, emotionally stable, expressive ready to cooperate to people, warm hearted, kind and adaptable. He readily forms active groups. He is generous in personal relations and less afraid of criticism.

**FACTOR B - Less Intelligent V/s More Intelligent**

A person who scores low on factor ‘B’ tends to be less intelligent of lower scholastic mental capacity, slow in learning and grasping ideas. His dullness may simply be a reflection of low intelligence.

On the other hand a person who scores high on factor ‘B’ tends to be more intelligent, owns abstract thinking and higher scholastic mental capacity, fast learner and quick to grasp ideas.

**FACTOR C - Affected by Feelings V/s Emotionally Stable**

A person who scores low on factor ‘C’ of personality tends to be low in emotional stability because he get upset easily from unsatisfactory conditions, is greatly affected by feelings. Low score on factor ‘C’ is common to almost all forms of neurotic and some psychotic disorders.

A person who scores high on factor ‘C’ tends to be emotionally mature, ego strength, better able to maintain solid group moral. Sometimes he may be a person making a resigned adjustment to unsolved emotional problems.
FACTOR D - Phlegmatic V/s Excitable

A person who scores low on factor ‘D’ is taken as inactive deliberate, phlegmatic dependent and anxious.

A person who scores high on factor ‘D’ of personality is excitable, impatient and overactive.

FACTOR E - Obedient V/s Assertive

A person who scores low on factor ‘E’ is taken as mild, accommodating, submissive and humble. Such a person is often dependent, confessing and anxious for obsessional correctness.

A person who scores high on factor ‘E’ of personality is assertive, competitive, aggressive, dominant and independent.

FACTOR F - Sober V/s Happy-go-lucky

A person who scores low on factor ‘F’ tends to be introspective, restrained, sober and serious.

On the other hand a person who scores high on factor ‘F’ has a tendency to be cheerful, talkative, active, frank, expressive and carefree.

FACTOR G - Expedient V/s Conscientious

A person with low score on factor ‘G’ tends to be unsteady in purpose. He is often casual and lacks on efforts for group undertaking and cultural demands, such a person evades rules, feels few obligations and possesses little conscience.
On the other hand a person who scores high on factor ‘G’ has a
tendency to be exacting in character, dominated by a sense of duty preserving,
responsible, moralistic and conscientious.

**FACTOR H - Shy V/s Venturesome**

Low score on factor ‘H’ of personality implies that a person is shy,
cautious, withdrawing, restrained and timid. Such a person has usually
inferiority feelings. Such a person tends to be slow and impeded in speed and
expression, dislike occupations with personal contact and prefers one or two
close friends to large group.

On the other side, the person having high scores on this factor are
sociable, bold, ready to try out new things, spontaneous and abundant in
emotional responses. However, such a person may be careless of details, ignore
danger signal and consume much time in talking. They tend to be pushy and
actively interested in opposite sex.

**FACTOR I - Tough Minded V/s Tender Minded**

A person who scores low on factor ‘I’ of personality tends to be
practical, realistic, masculine, independent responsible and tough minded.
Such a person is sometimes unmoved, hard, cynical and smug.

On the other side a person who scores high on factor ‘I’ tends to be
tender minded, day dreamer, artistic, fastidious and feminine. He/she
sometimes may be found demanding of attention and help, important,
dependent and impractical. He/she tends to slow up group performance and
upset group morale by unrealistic business.

**FACTOR J - Vigorous V/s Doubting**

A person who scores low on factor ‘J’ tends to be zestful, free of jealous tender, adaptable, cheerful, concerned about the other people and good team worker.

On the other hand a person who scores high on factor ‘J’ tends to be mistrusting and doubtful. Such a person is often involved in his own ego, is of self opinion and is interested in internal mental life. He/she is usually deliberate in his/her action, unconcerned about other people and a poor team member.

**FACTOR O - Placid V/s Apprehensive**

A person who scores low on factor ‘O’ tends to be placid, self-assured and confident. Such a person has maturity and capacity to deal with things.

On the other hand a person who scores high on factor ‘O’ tends to be depressed, moody, full of foreboding, worried apprehensive. He has a child like tendency to anxiety in difficulties. He does not feel accepted in groups or free to participate.

**FACTOR Q₂ - Group Department V/s self Dependent**

A person who scores low on factor ‘Q₂’ prefers to wish and make decision in consultation with other people and depicts on social approval and admiration. He/she tends to go along with the group and may be lacking in individual solution and needs group support.
On the other hand a person who scores high on factor 'Q2' is temperamentally independent, accustomed to going his own way, making decision and taking action on his own. He discounts public opinion and does not need support of the people. He is self-sufficient.

**FACTOR Q3 - Indisciplined, self-conflicted V/s controlled**

A person who scores low on factor ‘Q3’ faces conflict, tends of be careless and possessing relatively low control over his emotions and behavaiour.

On the other hand a person who scores high on this factor tends to have strong control on his emotions and general behaviour and is socially aware and careful person, enjoying self-respect.

**FACTOR Q4 - Relaxed V/s tense**

A person who scores low on factor ‘Q4’ tends to be sedate, relaxed, composed and satisfied. In some situations his over satisfaction can lead to laziness in performance.

On the other hand, a person who scores high on this factor has a tendency to be tense, excitable, restless, fretful and important. He is often fatigued but unable to remain inactive in the group. He takes a poor view of the degree of the unity orderliness and leadership. His frustration represents an excess of stimulated but discharged drive.
Reliability and Validity of the Test (HSPQ)

For the purpose of knowing the personality traits of the students, the researcher has used Cattell's personality questionnaire (HSPQ). It is one of the most competent and valid tests of personality. It measures fourteen different dimensions or traits of personality which have been found by psychologists to come near to cover the total personality of a child.

Administration of the Test

The HSPQ test has a Reusable Test Booklet of seven pages along with separate answer sheet. In the very beginning the examinees must be told that they have not to mark anything on the Test Booklets, so that it can be reused.

The researcher supplied the test-booklets of personality test (HSPQ) with the separate answer sheet. The researcher established rapport with the examinees and told them frankly that, "it is not your ability test or any academic test, it is simply your personality test", so that students feel themselves free and open minded, while responding.

The examinees were then asked to write at the top of the answer sheet their name, school's name, class, date, sex, father's income and age respectively. After this researcher read the instructions loudly which were given on the cover page of the test. The examinees were made to understand clearly how responses were to be made on the answer sheet with the help of the examples given on the cover page. After giving the necessary instructions, they were asked to turn over the cover page of the test booklet and to start the test properly.
The researcher discouraged the tendency of changing the answers on the answer sheet, and checked that each question has been given only one answer, not more than that. The test was administered without the time limit. Most of the students completed it in 40 minutes but some of them took near about 50-60 minutes. Those examinees who finished earlier were released soon.

**Scoring Procedure of the Test**

The completed answer sheets were the usual record for obtaining the score. For scoring of the personality test researcher checked all the answer sheets, to see that each question was given one and only one answer. If a question was given two answers such type of answers were rejected.

Two stencil Key i.e. Key ‘A’ and Key ‘B’ were used for scoring the answers Key ‘A’ covered the factors - A, C, E, G, I, O, Q₃ and Key ‘B’ covered the factors - B, D, F, H, J, Q₂ and Q₄ respectively. The researcher placed the stencil Key ‘A’ first on the star of the answer sheet and counted the right mark visible through the holes for Factor A, allowing either 2 or 1, as indicated by the number adjacent to the hole. These scores were summed up i.e. raw scores of factors ‘A’ and then entered into the space indicated on the answer sheet i.e. in Factor ‘A’ column. Similarly all the other factors were calculated with the help of Key ‘A’ and Key ‘B’.

**(ii) EDUCATIONAL INTEREST RECORD (EIR)**

Educational interest plays a very significant role in education. The purpose of the record was to aid students to adjust themselves to their education by making wise choices of the subjects of study. The Educational
Interest Record (EIR) constructed and standardised by Dr. S.P. Kulshreshtha contained 98 educational subjects/activities belonging to seven different educational interest areas explained as under:

1. AGRICULTURE (AG) : The agriculture interest area includes the subjects and activities like-Reforms in villages. Study of Manures, Animal Husbandry, Farming, Fruit Preservation. Dairying, Agriculture Extension, Veterinary Sciences, Rural Sociology Agriculture Botany etc.

2. COMMERCE (CO) : Commerce area has been covered through elements of Commerce, Transport Principles, Typing, Commercial Mathematics, Business Correspondence, Short Hand, Accountancy, Banking, Shop-Management, Insurance and Foreign Trade etc.

3. FINE ARTS (FA) : Fine Arts area of interest is represented by the subjects/activities like-sculptures, Music, Songs, Toy making, Wood craft, Art, Drawing and Painting, Art of Decoration, Dance etc.

4. HOME SCIENCE (HG) : Home Science area is covered through the subjects of General Home Science, Preparation of Home Budget, Hygiene, Cooking, Home Management, Home Decoration, Sewing, Embroidery, Knitting, Child Care and Musical Dances etc.

5. HUMANITIES (HU) : Humanities area of interest is represented by the subjects like Hindi, Logic, History, Geography, Economics, English Literature, Anthropology, Philosophy, Sociology, Education, Psychology and Civics etc.

7. TECHNOLOGY (TE): Technology field of interest is represented by the subjects/activities like Fitters job, Electrical, Mechanical and Civil Engineering, Welding, Engineering-Drawing, Radio/TV Engineering, Applied Mathematics, Indian Technology, General Technology, Science of Maths etc.

Thus each of these educational areas (based on school faculties system) has fourteen subjects on the record, seven on horizontal and seven on vertical side.

**Administration of the Test**

The researcher supplied the Educational Interest Record to the testees and asked them not to open it unless told to do so. The respondents were asked to write their name, age, sex, class, school’s name, father’s occupation and monthly income and date etc.

In Educational Interest Record there were forty-nine columns. Each column had two educational subjects i.e. no.1 and no.2.

The following instructions were given to the students:-

(i) If you like the first educational subject of first column, then put a tick (√) mark in front of that subject.

(ii) If you like the second educational subject of first column, then put a tick (√) mark in front of that subject.
(iii) If you like both the educational subjects of column first, then put a tick (✓) mark in front of both the subjects.

(iv) If you dislike both the educational subjects of column first then put a cross (X) mark in front of both the subjects.

(v) If you like one subject and dislike the other educational subject of column first, then put a tick (✓) mark in front of that subject which you like and put a cross (X) mark in front of that subject which you dislike.

Although there was no fixed time limit in completing the responses on the record, but the pupils took 7 to 10 minutes in responding the educational interest record.

**Scoring of the Record**

The maximum possible scores under each educational interest area was 14 and the minimum was zero.

One mark was assigned for each right marked responses and the total scores under each interest area were counted e.g. to know the interest in Agriculture (AG) area, all the right marked (✓) responses vertically for the first figure in first column and for AG2 all the right marked (✓) responses horizontally for second figure in first (horizontal) column were summed up. Thus, both the sums for AGI (vertically) and AG2 (horizontally) provided a total score for AG which indicated the interest in the agriculture field and were
recorded on the last page of the blank. After obtaining raw scores on all the seven different educational areas the scores were transcribed on profile area wise.

(iii) ACADEMIC ANXIETY FOR CHILDREN (AASC)

The Academic Anxiety Scale for Children, constructed and standardised by Dr. A.K. Singh and Dr. (Km.) A. Sengupta, has been developed for use with school students of class VIII, IX and X (age range 13-16 years). The preliminary form of the Academic Anxiety Scale for children had 30 items. After item analysis, based upon Kelley's Technique (1939), only 20 items were retained and the remaining 10 were dropped.

Administration of the Test

Following steps were useful in the administration of the Academic Anxiety Scale for Children (AASC):

(i) A rapport was established between the receptor and the students with brief general talks.

(ii) Instructions printed on the test were read by the researcher and the students were asked to read it silently.

(iii) They were asked to raise their hands, if they had any confusions regarding instructions.
(iv) There were twenty items in the scale, which were related to your pupils' habit and personality traits. Every item had two columns of 'Yes' and 'No' answers. After reading item, they were asked to tick (✓) mark in any column of 'Yes' or 'No', which suited them better.

(v) There was no fixed time limit for the test. But ordinarily pupils took 10 to 15 minutes time in completing the test.

(vi) The researcher assured the students that their answers would always remain confidential. The investigator tried her best to secure the sincere co-operation from the students.

(vii) As soon as the pupils finished their work, test materials were collected.

**Scoring of the Test**

The maximum possible score of the test was 20. In Academic Anxiety Scale for Children, each item of the test scored either +1 or 0. There were two types of items - positive and negative. All the positive items which were endorsed by the subjects as 'yes' and all the negative items No. 4, 9, 16 and 18 which were endorsed by the subjects as 'No' were given a score of +1. A score of zero was awarded to all other answers. Thus, high score on the test indicated high academic anxiety and low score on the test indicated low academic anxiety.
3.4 STATISTICAL TECHNIQUES USED

To arrive at certain conclusions, various statistical techniques have been employed, according to the design of the study. The main techniques that have been employed in the present study are - Critical Ratio (C.R.) and Pearson’s Product Moment Method for computing coefficient of Correlation.

**Critical Ratio (C.R.) Test**

As the means of two groups, randomly drawn from the same population, were not necessarily identical. Any difference that appeared at the end of the experimental cycle could be attributed to sampling error or chance. To be statistically significant, critical ratio (C.R.) test was employed to test the significance of observed means between the two samples.

In the present study critical ratio (C.R.) test was employed to test the significant difference between the mean scores of X grade male, female, rural and urban students in their academic achievements, personality traits, educational interest and anxiety.

**Correlation**

The Pearson’s Product Moment Method was employed for determining the coefficients of correlation between academic achievement and personality traits, academic achievement and educational interest, academic achievement and academic anxiety to achieve objectives of the study.