The research methodology of the present study have been set out in this chapter under the following sections-

a. Sample

b. Research design & variables

c. Tools

d. Process

e. Statistical Technique used

a. Sample: "Good result can be expected from a good sample.

In the present study 300 male and 300 female intermediate students of District Jaiyun were included in the sample.

The subjects were included in the age range of 17-20 years. The subjects were selected through stratified random sampling technique. The subjects were also selected in the range of middle class socio-economics status on the basis of income and education.
Showing the plan for sample selection -

Total 600 Intermediate Students

\[\begin{array}{c}
300 \text{ Success of academic achievement} \\
150 \text{ Male} & 150 \text{ Female} \\
75 & 75 & 75 & 75 \\
\text{Art} & \text{Science} & \text{Art} & \text{Science}
\end{array}\]

\[\begin{array}{c}
300 \text{ Failure of academic achievement} \\
150 \text{ Male} & 150 \text{ Female} \\
75 & 75 & 75 & 75 \\
\text{Art} & \text{Science} & \text{Art} & \text{Science}
\end{array}\]

The sample was selected from the following colleges of Distt. Jalaun.

We took 75 success male students of Intermediate belonging to the science group.

We took 75 success male students of intermediate belonging to the art group.

We took 75 success female students of intermediate belonging to the art group.

We took 75 success female students of Intermediate belonging to the science group.

We too 75 failure male students of Intermediate belonging to the art group.
We took 75 failure male students of Intermediate belonging to the science group.

We took 75 failure female students of Intermediate belonging to the art group.

We took 75 failure female students of Intermediate belonging to the science group.

b. **Research Design and Variables involved:**

The present study is concerned with the effect of sex, different personality factors on the anxiety and mental health of success and failures of academic achievement. An ex-post facto design was considered suitable for the present study. The present study is an exploratory nature in which the independent variables have already occurred and researcher starts with the observations of the dependent variables are studied in respect of their possible relations and effect on dependent variable.

Thus there are two types of variables in the present study:

1. **Independent variables**
   (i) Sex
   (ii) Different personality Factors
(iii) Success and failure of academic achievement

2. Dependent variables
   Anxiety
   Mental Health

c. Tools: "Skill in choice and use of research instrument is essential to the success to the study and the validity of its results and conclusion."

The following tools were used for the data collection.

1. Anxiety test by Dr. Taresh Bhatia and Dr. A.K. Srivastava.

2. Multi-Variable personality inventory by Dr. Taresh Bhatia and Arunima Pathak.

3. Mental Health Scale (MHS)- By Dr. Taresh Bhatia and Dr. S.C. Sharma.

4. Socio Economic- Status scale by Dr. S.P. Kulshrestha.

A detailed description of the tools given below-

(1) Anxiety Test (A. Test):

- By Dr. Taresh Bhatia & Dr. A.K Srivastava.

Anxiety is a unique mix of subjective and physiological events. The subjective or emotional reactions associated with an anxiety state include apprehension, tension, worry and nervousness. The physiological events include rapid and shallow breathing.
increased heart rate (Palpitations, tachychardial) sweating, dryness of the mouth nausea and muscular-skeletal disturbances which cause trembling, restlessness and feeling of weakness (Spielberger 1981).

Any situation that is perceived as threatening will evoke an anxiety state and the intensity and duration of that state will be in proportion to the amount of threat perceived and its time span.

Development of the Test:

The preliminary form of the test had a total of 150 items of the ‘Yes-No’. The questions were designed to elicit self rating on items descriptive of anxiety reactions to the following areas :-

(a) Physiological manifestation, (b) Psychological manifestation, (c) Family anxieties, (d) Social approval and relations, (e) worries regarding the success and failure in work, (f) Anxieties regarding love and friendship, (g) Health appearance and injury, (h) Academic and vocational worries (i) worries regarding future, (j) Guilt and shame.

The preliminary test was administered on a sample of 300 male and 300 female subjects of age group 15 to 22 years. The form of the test contains only 100 items. These items are carefully selected on the basis of their discriminative value. Thus in the final test there are 100 “Yes-No” type of items.
Reliability:

The co-efficient of reliability was determined by the following two methods.

1. The test-retest reliability was determined by administering the test after four weeks.

2. The split-half reliability was ascertained by adopting odd-even procedure.

The Table 3.01 gives the co-efficient of reliability determined by two methods.

Table 3.01

Reliability Co-efficient of the scale

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Method</th>
<th>Co-efficient of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>1.</td>
<td>Test Retest</td>
<td>.81</td>
</tr>
<tr>
<td>2.</td>
<td>Split-half</td>
<td>.79</td>
</tr>
</tbody>
</table>

Validity: The validity was determined by computing the co-efficient of correlation the scores of the present test with scores of following two valid test.

1. Sinha W.A. self analysis form constructed and standardised by Prof. D. Sinha on 100 subjects co-relation was found .78.
2. Anxiety scale constructed and standardised by Dr. D.N. Srivastava and Dr. G. Tiwari in 100 subjects correlation was found .80.

Administration

The administrator should read the instructions given on the cover page and clear to the testee.

There is no time limit for completing the test. Usually an individual takes 20 minutes.

Scoring

For any response indicated 'Yes' the testee should be awarded the score of one and zero for 'No'. The sum of all the positive or yes responses would be the total anxiety score of each area. The use of letters a b c d e g h i j corresponding to the ten different areas of anxiety. Add all the scores obtained for a particular area for all the pages. Record total of each area score, so obtained on the cover page of the test. The possible maximum scores under each anxiety area is 10 and the minimum is Zero.

Interpretation

Place the total scores for each anxiety area in the profile and note the hierarchical order for various anxiety area. The subjects
can be classified into five categories on the basis of raw scores obtained by them. The five various levels of anxiety are very low, low, average, high and very high.

Total the scores obtained for all the ten areas to get the over all anxiety scores. The individual may be classified into five categories on the basis of total scores obtained on the inventory.

(2) Multi Variable Personality Inventory (MPI):

-By Dr. Taresh Bhatia and Arunima Pathak

Essentially personality consists of those permanent or semi-permanent modes of behaviour which characterise an individual and make him or her different from other people. These individual differences are called ‘traits’ (Hans Eysenck).

The ‘Multi-variable personality Inventory’ (MPI) has been used for measuring the different personality variables of an individual. The present inventory measures ten important variables of an individual.

To make a scientific selection of the variables of personality, 15 relevant and meaningful variables of personality were taken. These 15 variables were given to seven experts in the field of psychology for approval. The total number of variables over which the experts were unanimous were ten and these were further
given to a group of another 5 experts to examine the content and
format of these variables. These experts were almost unanimous
regarding these ten variables and thus they were retained for the
final form of the inventory. These variables were.

a. Social Desirability - The state or quality of being socially
desirable.

b. Extraversion - A person whose basic orientation is
towards the external world. Extraversion (and introversion, its
dimensional opposite) can be investigated by a whole range of
personality tests. Extraverts are out-going sociable, rather impulsive
and require constant stimulation from the environment.

c. Psychoticism - Tendency of suffering from several mental
arrangements.

d. Dogmatism - Tendency of declaring opinion arrogantly. A
some what unfashionable term related to the idea of closed
mindedness or the inability to form new cognitive systems of
various kinds (perceptual, conceptual etc.).

d. Ego-ideal - Individual's ideal perception or experience
himself, the ideal standard against which the ego- evaluates its
activity and qualities.
f. Alienation - The feeling that one's life has no meaning that the human and natural world around one is impersonal mechanistic and unsympathetic. Person's scoring high would be suspicious, over sensitive getting unusual sensations and sensory distortion.

g. Emotional instability - Unhappy, nervous, emotionally labile, fearful, anxious and depressed. Person scoring high would be indicated that the individual has serious personality problems and would need psychological and psychiatric assistance.

h. Self-confidence - Belief in one's own abilities.

i. Empathy - The ability to share and accept another person's feelings, while respecting their dignity and refraining from value and judgements.

j. Dominance - Certain personality as being dominant over others having control or authority or influence.

Item Selection - It was decided to write 15 to 20 items under each of the 10 variables. In this way an initial pool of 185 items were ready for the entire inventory. These items were given to five experts for a rating. The items with 100 percent approval were retained and rest were dropped. Thus after the initial tryout, the 45 items were left. These items were further passed on to three.
experts with a request to rate each items on a nine point scale (extremely undesirable to extremely desirable) in order to measure the social desirability tendency the items having value less than or equal to 5.00 (mean value) were rejected. Thus 20 items were dropped and 120 items were retained for further analysis.

The inventory was administered to the subjects of the sample of 300 students (male and female) for the purpose of item analysis. The age range of the subjects was 15 to 22 years. Subjects were asked to respond to items as ‘Yes or No’. Items measuring of particular variable positively and responded as ‘True or Yes’ given a score of one, the negatively word items were given a score of zero. The higher the score, the higher was the subject on that variable. Item analysis was done with the help of the method between two extreme upper and lower groups, as described by Anastasi (1968).

Total 120 items were of good discriminative value, thus 20 items were dropped. In the final inventory there were 100 ‘Yes-No’ type items.

Reliability- The coefficient of reliability was determined by test-retest method. The test was administered twice with a time interval of 20 days to a sample of 150 subjects. The test-retest reliability coefficient for each dimension of the scale was found out as follows-
<table>
<thead>
<tr>
<th>S.N.</th>
<th>Variables</th>
<th>Retest Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>a social Desirability</td>
<td>.88</td>
</tr>
<tr>
<td>2.</td>
<td>b Extraversion</td>
<td>.84</td>
</tr>
<tr>
<td>3.</td>
<td>c Psychoticism</td>
<td>.79</td>
</tr>
<tr>
<td>4.</td>
<td>d Dogmatism</td>
<td>.81</td>
</tr>
<tr>
<td>5.</td>
<td>e Ego-ideal</td>
<td>.83</td>
</tr>
<tr>
<td>6.</td>
<td>f Alienation</td>
<td>.87</td>
</tr>
<tr>
<td>7.</td>
<td>g Emotional instability</td>
<td>.84</td>
</tr>
<tr>
<td>8.</td>
<td>h Self-confidence</td>
<td>.91</td>
</tr>
<tr>
<td>9.</td>
<td>i Empathy</td>
<td>.94</td>
</tr>
<tr>
<td>10.</td>
<td>j Dominance</td>
<td>.89</td>
</tr>
</tbody>
</table>

The split half reliability method was computed for estimating the internal consistency and equivalence, which was found .89. Thus both these reliabilities are significant which indicate that the scale is highly consistent and reliable.

Validity- The Empirical validity of the scale was found out by correlating the scale with some external criterion that is Multi variable personality Inventory by B.C. Muthayya. Both the test were administered to sample of 100 subjects and correlation was found out between different variables which were common in both the tests, indicated positive and significant correlation also. The total
score of the present inventory in high and significantly correlated
with Muthayya's personality inventory total score (r=.77).

**Administration of the Inventory**

It is a self-administering inventory. There is no time
limit for answering it. However most of groups should finish it in
about 20 minutes. Though there will be a few individual who would
take much longer time. It should be emphasized that there is no
right or wrong answers to the statement. They are constructed to
have differences in individual's reaction to various situations.

**Scoring key**

Scoring key of the present inventory is given as follows.

Give one score for the following responses, otherwise give zero
score.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Yes responses (Items having Yes)</th>
<th>No response (Items having No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Social Desirability</td>
<td>1.11.21,31,41,51.61.71.81.91</td>
<td></td>
</tr>
<tr>
<td>b. Extraversion</td>
<td>32.42,52,62.82</td>
<td>2.12.22,72.92</td>
</tr>
<tr>
<td>c. Psychoticism</td>
<td>3,13,23,33,42,53,63,73,83,93</td>
<td></td>
</tr>
<tr>
<td>d. Dogmatism</td>
<td>4,14,24,34,44,54,64.74.84,94</td>
<td>-</td>
</tr>
<tr>
<td>e. Ego-ideal</td>
<td>5,15,25,35,45,55,65,75,85,95</td>
<td>-</td>
</tr>
</tbody>
</table>
f. Alienation  
6.16.26.36.46.56.66.76  
 86.96

g. Emotional Instability  
7.17.37.47.57.67.77.87.97  
 27

h. Self-confidence  
8.18.28.38.48.68.78  
 88.98

i. Empathy  
9.19.29.39.49.69.79.89.99  
 59

j. Dominance  
10.20.30.40.50.60.70.80  
 90.100

(3) Mental Health Scale (MHS)

-By Dr. Taresh Bhatia & Dr. S.C. Sharma

Effort have been made to define/describe the criteria or characteristics of a normal person and normality dealing with theoretical and clinical concepts of mental health (Jahoda 1958) and healthy personality from the humanistic viewpoint (Jourard and Landsman 1980). Grinker, (Grinker and Timberlake 1962) have suggested the possibilities of a variety of mental healths. "The concept of ideal social functioning is the social equivalent of "positive mental health" (Carstairs and R.L. Kapur 1976). "In the larger context mental health is the other name of quality of life, (Wig 1979). Mental health professionals, however, agree that positive mental
health is not the mere absence of mental illness but something different (Nagaraja-1983). In view of the existing situation the efforts of scientists and researchers need to be making efforts of operationally define mental health (K. Sathyavath 1988).

Development of Test

The mental health scale (MHS) has been used for measuring different mental health areas of an individual. The present scale measures five important areas of an individual’s mental health. To make a scientific selection of the areas of mental health, 10 relevant and meaningful areas of mental health were taken. These 10 areas were given to five experts in the field of psychology, for approval. The total number of areas over which the experts were unanimous were five and they were retained for the final form of the scale. These areas were-

(a) **Realistic (REA)**

The ability of appraise oneself realistically and to take a realistic approach to situations, the ability to evaluate one’s achievements realistically.

(b) **Joyful living (JFL)**

One of the outstanding characteristics of the person is joyful living. A happy person is a young, healthy, well educated.
well paid, extroverted, optimistic, worry free, religious, married person with high self esteem, high job morale, modest aspirations of either sex and of a middle range of intelligence.

(c) Autonomy (AUT)

Closely related to acceptance of responsibility is autonomy. One who trusts and depends on his own capacities to organize and interpret the idea of his experience. He freely steers his own course (Barrett Lennard 1962). In decision making, he is able to make important decisions with a minimum of worry, conflict, advice seeking and other types of running-away behaviour (Kent 1966).

(d) Emotional Stability (ES)

Emotional stability indicates an individual, who is with full control over his emotional expression. emotionally mature, stable, possessing ego strength.

(e) Social Maturity

The progressive improvement brings in social maturity through directed activity of the individual. In comprehension of the social heritage and the formation of flexible conduct patterns of reasonable comformity with this heritage.
**Item Analysis**

It was decided to write 15 to 20 items under each of the five areas. In this way an initial pool of 85 items was ready for the entire scale. The scale was administered to the subjects of a sample of 250 students (male and female) for the purpose of item analysis. The age range of the subjects was 15 to 21 years. Employing 27% upper and 27% lower criterion groups item analysis was done. Discriminative values were computed for item selection and applying 't' test for each item. All the statements were then arranged in descending order of their 't' values. Researcher selected the first 50 items with the largest 't' value for the final scale out of which each area had 10 items.

**Reliability**

The co-efficient of reliability was determined by test-retest method. The test was administered twice with a time interval of 45 days to a sample of 200 subjects. The test-retest reliability coefficient for each area of the scale was found to range between .78 and .85.

**Validity**

The validity of the scale was established with the help of content validity on the basis of internal consistency.
Administration and Scoring:

It is a self administrating scale. There is no time limit for answering it. However, most of the groups should finish it in about 15 minutes. It should be emphasized that there is no right or wrong answer to the statement.

It is a five point scale, the scoring of which was been objectified by assigning five or one scores respectively for five alternatives of the positive items, rated strongly agree to strongly disagree. For the negative items the scores assigned to each of the alternatives have been reversed. They range from one to five for five alternatives.

Norms:

A qualitative description of the scores obtained on different areas can be interpreted with the help of norm table.

(4) Socio-Economic Status Scale (SESS FORM A), 1980 (URBAN)

- by Dr. S.P. Kulshrestha

This scale of Socio-Economic Status for urban population (SESSU) contains 20 items in all. It is a verbal scale. This scale can be administered individually as well as in the groups also. The information may also be collected through simple
interviews, observation or by direct questioning. If the subject himself fills the information he is supposed to put a Tick (✓) for the due information. This scale has transparent scoring key for easy and simple scoring.

Components of Socio-Economic Status Scale:

The present scale is designed to measure Socio-Economic Status of urban families. It collects information regarding the following component variables:

Parental and Sibling’s Occupation:

Parental and sibling’s occupation relates to the primary occupations of the family, which are the main sources of livelihood. This item has been divided into nine categories. They are-

(i) Those occupations where higher education is required e.g. Doctors. Engineers, Professors etc.

(ii) Executive occupations (higher level) e.g. Managers or administrative officers of the big industries etc.

(iii) Those occupations which require at least graduate degree e.g. Teachers of Inter Colleges, medical representative etc.

(iv) Middle level occupations like Manager, Partner of factory etc.
(v) General occupations or Technical work e.g. teachers of primary/nursery schools, shopkeepers etc.

(vi) Skilled occupations like craftman, carpenter etc.

(vii) Service worker’s occupations e.g. clerk, typist, steno, non-commissioned army officers.

(viii) Semi skilled occupations e.g. machine operator.

(ix) Unskilled occupations e.g. peons, labourer etc.

**Parental and Sibling’s General Education:**

This component has got eight categories. They are given below-

(i) Doctoral and post doctoral degree.

(ii) Post-graduate degree.

(iii) Graduate degree.

(iv) Intermediate/higher secondary.

(v) High School.

(vi) Middle School.

(vii) Primary School.

(viii) Illiterate.
Parental and Sibling's Technical Education:

The level of the technical education has been divided into seven categories-

(i) Post-graduate Diploma e.g. Guidance Diploma.

(ii) Graduate Diploma or degree (after having at least one graduate degree) e.g. B.Ed.

(iii) Diploma after Hr. Secondary or Intermediate.

(iv) Diploma or training after High School.

(v) Training/Certificate after middle.

(vi) General Training Certificate/diploma.

(vii) No Training or Technical degree/diploma.

Economic Indicators:

This component is represented by the Item Nos. 4 to 12. This includes Monthly, income of the family, Bank and Post Office deposits, Debt on the family, Capacity to collect money in emergency. House Ownership, type of houses, freeship in school, types of school in which children are studying or studied, types of servants, Number of various Household articles in possession e.g., T.V./Radio, Car, Cycle etc.
Cultural Indicators:

This component includes the Item No. 13 to 15 which represent the types of Newspapers/magazines and their frequency, invitations from Mohallas/City or Societies, membership of various types of clubs and other organizations.

Psychological Indicators:

Item Nos. 16 to 20 represent the psychological variables in the scale. These include the types of colony in which the person is living, types of general views/thinking of others about the family, belief in caste, mobility, and the likes and dislikes towards the new practices and innovations.

Scoring Method:

The scoring key summarises the informations recorded on the scale. The weightage of each item has been written on the transparent key, which may be used in very convenient manner. Keep the key on the scale and add the scores mentioned above each box on the key for each ticked (√) answer. Do the same for other pages no. 3, 4 & 5 add all the scores of all the pages of the scale and find out the grand total. This grand total of all the scores should be taken into consideration for determining the Socio-Economic Status of urban testee. Compare the grand total numericals with the
norms and assign the category to the person accordingly.

Reliability of the scale:

The test-retest reliability of the scale was found to be .87.

Validity:

The scale possesses content and construct validity. The validity of the scale was also calculated by comparing the scale with Dr. Kuppuswami's and Pandey's Socio-Economic Status Questionnaires. The coefficient of correlations were found .57 and .89 respectively.

Norms:

The norms are given in the following table. The grand total of the testee can be compared with this table 3.02 and can be classified accordingly for the status:

**TABLE : 3.02**

(Showing the norms. N = 1000 male students)

<table>
<thead>
<tr>
<th>No.</th>
<th>Distribution of raw Scores</th>
<th>Cutting points in Sigma units</th>
<th>Status Category (Socio-Economic Status)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>223 &amp; above</td>
<td>+1.50+</td>
<td>High</td>
</tr>
<tr>
<td>2.</td>
<td>108 to 223</td>
<td>-.5 to +1.5</td>
<td>Average</td>
</tr>
<tr>
<td>3.</td>
<td>Below 108</td>
<td>-.5</td>
<td>Low</td>
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</table>
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<tr>
<td>3.</td>
<td>Below 108</td>
<td>-.5</td>
<td>Low</td>
</tr>
</tbody>
</table>
d. **Process:**

After selecting the research problem the researcher has chosen **Inter Colleges** of boys and girls whose names are following:

1. Government Girls Inter College, Orai
2. Government Inter College, Orai
3. Sanatan Dharam Inter College, Orai
4. Gandhi Inter College, Orai
5. Sarvodaya Inter College, Orai
6. Jila Parishad Inter College, Nadigaon
7. Arya Kanya Inter College, Orai
8. Nehru Audogic Inter College, Sarsee
9. Swantha Senani Inter College, Kushmiliya
10. Chhatrasai Inter College, Jalaun
11. Tej Singh Ashirvad Inter College, Orai
12. Dayanand AngloVedic Inter College, Orai
13. Tej Singh Ashirvad Balika Inter College, Orai
14. Sanatan Dharam Balika Inter College, Orai
The researcher went to the colleges and met the principals and requested them to seek permission for administration of psychological tests to the students class XII.

After getting permission from the principals of the colleges the researcher selected 75 boy and girl students of science and art group, success and failure of class XII.

After selecting the sample the researcher explained all the instructions to the students before requesting the students to fill the test papers. They were asked to answer freely, frankly and to the point. No time limit was enforced but they were asked not to waste time, when the students has filled the test papers the researcher collected the test papers.

e. **Statistical Technique Used:**

After collecting data, researcher used statistical calculation as mean, standard deviation, critical ratio, t-ratio. Degree of freedom. The formula are as follow.
The Formula of Mean is:

\[ \text{Mean} = \sqrt{\frac{\sum x}{N}} \]

The Formula of S.D. is:

\[ \text{S.D.} = \sqrt{\frac{\sum d^2}{N}} \]

The formula of Critical ratio is:

\[ \text{CR} = \sqrt{\frac{M_1 - M_2}{\text{SD}_1^2 \over N_1} + \frac{\text{SD}_2^2}{N_2}} \]

The Formula of Degree of Freedom:

\[ \text{df}^* = (N_1 - 1) + (N_2 - 1) \]

Analysis of Variance:

\[ \text{F-ratio} = \frac{\text{Mean square between groups}}{\text{Mean square within groups}} \]

* * * * * * *