CHAPTER – III

METHODOLOGY

3.1 Introduction
3.2 Problem of the Research
3.3 Research Objective
3.4 Research Hypothesis
3.5 Variable
3.6 Sample
3.7 Research Tools
3.8 Research Procedure
3.9 Statistical Analysis
3.1 Introduction:

Research is a systematic investigation or inquiry directed towards discovery and the establishment of new facts in any discipline/branch of knowledge. A research can be called scientific if it is conducted in a planned and objective manner. The aim of research is to discover the answers to questions through the objective and systematic application of procedures. In the social science too the research should be conducted in a planned and objective manner to discover the facts and interpret the findings logically to add something new in the existing body of knowledge. Researchers must be careful regarding the designing of study, utilizing adequate sampling techniques, choosing most appropriate and standardized tools to gather information and applying suitable statistical methods for data analysis to test the hypothesis for the purpose of making predictions and drawing meaningful conclusions. Planning is a necessary adjunct even for an ordinary day-to-day work and when work is spread over a number of weeks, and months, planning must be at the core, if the work is to be completed without any confusion or disarray. The present research is a multidimensional study. Hence, every care and caution has been taken in preparing and executing the plan and arriving at definite and valid conclusions.

The present investigation has made effort to advance the knowledge in the field of student’s adjustment, emotional maturity and self-concept.

What is Research?

The English word research from the French word research. It means ‘to see to work’ or ‘investigate’ etc. form the word origin, the meaning of research is as under.

**Research** = **Re** + **Search**. It means the repetition of search.
This research means to search again or enquiry and examination phenomena. The original discovery is also called research.

Scientific research is systematic, empirical, controlled & critical discovery of imaginary proposition about the probable relation found in natural event.

Polling Young (1978) gives objectives definition of social research and state that it is a scientific adventure in which new facts are discovered or old facts verified through logical and systematic procedures. The order in these facts and mutual relations give causal explanation and explains human behavior. Through such valid and reliable studies new scientific tools and theories are developed.

The definitions of scientific research given by some psychologists are as under.

“Systematic controlled empirical one critical studies of natural event which indicates imaginary relations between events through hypothesis, is called scientific research.”

“The systematic examination of finding facts or showing relation between facts through objective and methods and deriving is called research.

- Karlinger

Functions of research

Main function of research is as under.

1. Repeated observation of any one fact and finding out something new about it.

2. The important task of research is to observe the facts objectively and without prejudices.
3. One function of research is to verify old facts and presented new alternative truths.

4. One other function of research is to challenge the proposition established by common sense.

3.2. **Problem of Study:**

The problem of present research is as follow:

**“A Study of Adjustment, Emotional maturity and Self-concept of College Students.”**

3.3 **Objectives:**

The following objectives have formulated for the present study.

1. To study the adjustment, emotional maturity and self-concept among male and female college students.
2. To study the adjustment, emotional maturity and self-concept among in which they study.
3. To study the adjustment, emotional maturity and self-concept among urban and rural area college students.
4. To study interaction effect on the adjustment, emotional maturity and self-concept of their sex and education stream.
5. To study interaction effect on the adjustment, emotional maturity and self-concept of their sex and area.
6. To study interaction effect on the adjustment, emotional maturity and self-concept of their education stream and area.
7. To study interaction effect on the adjustment, emotional maturity and self-concept of their sex, area and education stream.
3.4 Hypothesis:-

1. Adjustment

1. There is no significant difference in adjustment with all factors among boys and girls college students.

2. There is no significance difference in adjustment with all factors among student’s education stream.

3. There is no significance difference in adjustment with all factors among Urban and Rural area college students.

4. There is no significant interaction effect on adjustment of sex and education stream of college students.

5. There is no significant interaction effect on adjustment of sex and area level of college students.

6. There is no significant interaction effect on adjustment of education stream and area level of college students.

7. There is no significant interaction effect on adjustment of sex, education stream and area level of college students.

2. Emotional Maturity

1 There is no significant difference in emotional maturity among boys and girls of college students.

2 There is no significance difference in emotional maturity among education stream of college students.

3 There is no significance difference in emotional maturity among Urban and Rural area college students.

4 There is no significant interaction effect on emotional maturity of sex and education stream of college students.

5 There is no significant interaction effect on emotional maturity of sex and area level of college students.
6. There is no significant interaction effect on emotional maturity of education stream and area level of college students.

7. There is no significant interaction effect on emotional maturity of sex, education stream and area level of college students.

3. Self-Concept

1. There is no significant difference in self-concept with all factors among boys and girls of college students.

2. There is no significant difference in self-concept with all factors among education stream of college students.

3. There is no significant difference in self-concept with all factors among urban and rural area college students.

4. There is no significant interaction effect on self-concept of sex and education stream of college students.

5. There is no significant interaction effect on self-concept of sex and area level of college students.

6. There is no significant interaction effect on self-concept of education stream and area level of college students.

7. There is no significant interaction effect on self-concept of sex, education stream and area level of college students.

3.5 Variables:

Independent Variables

1. Gender: Boys/Girls
2. Stream: General/ Science
3. Area: Rural/Urban
Dependent Variables

4. Adjustment
5. Emotional Maturity
6. Self-concept

Controlled Variables

1. Number of participant in each treatment group was equal.
2. Blind and mentally retired boys and girls were not including in this study.
3. Only Guajarati medium of study for all students.
4. The age range respondents was 16 to 19

3.6 Sample:

In this present research work 2x2x2 factorial design was used for to study. The present research work was conducted on 320 students. The random sampling technique was used for selection of sample. The students were select from various college of Vadodara, Anand and kheda district. Number of boys and girl students was maintained equally as per the design of the research.

The total sample is categorized as under

<table>
<thead>
<tr>
<th></th>
<th>Boy (A1)</th>
<th>Girls (A2)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Stream (B1)</td>
<td>Science Stream (B2)</td>
<td>General Stream (B1)</td>
</tr>
<tr>
<td>Urban (C1)</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Rural (C2)</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>80</strong></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>

A = Gender: A1 = Boys A2 = Girls
B = Stream: B1 = General B2 = Science
C = Living Area or Inhabittance: C1 = Urban C2 = Rural
3.7 Tools:

The following tools were used in the present research work.

**Personal Data Sheet:**

A personal data sheet comprises of subjects information i.e. name, birth date, age, sex, name of the stream, type of area stream etc.

1. **Adjustment Scale**

To measure adjustment Bell’s Adjustment Scale (1962) converter into Gujarati by Bhatt(1994) was used. There are 160 statements in this scale. It is divided into five divisions. In each division, there are 32 statements. This inventory is intended for use of high school, intermediate, Degree and post-graduate students. It is suitable for both the sexes. The tool is chiefly meant for discriminating well adjusted from poor adjusted ones. The inventory provides separate measures of adjustment in four areas.

- a) Home adjustment
- b) Health adjustment
- c) Social adjustment
- d) Emotional adjustment

The adjustment inventory has four parts. Each part has 35 questions. On the left side of each question “yes”, “no” and “?” have been given. Subject is to encircle the right choice. There is no time limit to complete the test but generally 80 minutes are taken to complete the inventory.

**Scoring**

Scoring of the inventory is very easy as number of responses where the individual has encircled “yes” is to be only counted. For each encircled “yes” response 1 score is to be given. The total number
of “yes” scores thus make total score of the individual “No” and “?”
responses are not to be considered. The inventory is totally negative
inventory when an individual answer in “yes”, it indicates his
difficulties. If he answer in “No” it indicates that the individual has no
such difficulty. If he answers in question mark “?” , his answer is
neither affirmative nor negative towards difficulties. Therefore, only
“yes” responses are scored to measure Adjustment difficulty. Scoring
pattern shows that more score indicate less adjustment or
maladjustment. The low score in the scale indicate good adjustment

**Reliability**

The Adjustment Inventory possesses high reliability. The
reliability coefficients were determined by Split-half and test-retest
method. For split-half, the correlation between odd and even items
was calculated and corrected by Spearman-Brown formula. Similarly,
in case of test-retest method, the inventory was again administered on
a sample of 200 students after a period of two months. The reliability
coefficients for four areas of the inventory are separately given below

**The table showing the order of statements of adjustments scale**

<table>
<thead>
<tr>
<th>Area of adjustment</th>
<th>Split-half reliability</th>
<th>Test-Retest reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Adjustment</td>
<td>0.84</td>
<td>0.91</td>
</tr>
<tr>
<td>Health Adjustment</td>
<td>0.81</td>
<td>0.90</td>
</tr>
<tr>
<td>Social Adjustment</td>
<td>0.87</td>
<td>0.89</td>
</tr>
<tr>
<td>Emotional Adjustment</td>
<td>0.89</td>
<td>0.92</td>
</tr>
</tbody>
</table>
Validity

The Adjustment Inventory was validated against K. Kumar’s Adjustment Inventory. The two inventory scores yielded positive correlations. This study was conducted on a sample of 400 cases of four educational groups. Pearson’s r are given below for four different areas of adjustment:

<table>
<thead>
<tr>
<th>Area of adjustment</th>
<th>Validity coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Adjustment</td>
<td>0.72</td>
</tr>
<tr>
<td>Health Adjustment</td>
<td>0.79</td>
</tr>
<tr>
<td>Social Adjustment</td>
<td>0.82</td>
</tr>
<tr>
<td>Emotional Adjustment</td>
<td>0.81</td>
</tr>
</tbody>
</table>

The subject matter of Bell Adjustment scale

This inventory measures four types of adjustment.

1. Family Adjustment

   It throws light on the family life of individual. It indicates whether the individual is satisfied with his family life. It contains family atmosphere, likes and dislikes with family, relations in the family the emotional co-operation from the members of family etc.

2. Health Adjustment

   It is related with individual’s health. It indicates the type of illness and its intensity. It contains general health, proneness to physical decrease, resistance, smaller big operations in the past common complains about health such as headache, cold, diathermia, high B.P., indigestion etc.
3. **Social Adjustment**

This division shows whether the individual is shameful, introvert, extrovert etc. Individual’s sociability and his participation in social life, introversion extroversion etc can be measured by this division. The selection of friend, the options about good friendship, his interactions with society, likes and dislikes, leadership is social functions, the activities social welfare etc. can be known by this scale.

4. **Emotional Adjustment**

It indicates the frustration and disappointment of individual. How far he is to move emotionally? Emotional maturity, emotional stability, his temperament impulsiveness, the participation of his self. The development of superego, self-consciousness role playing in society, his sensitivity, his power of tolerant, inferiority complex etc. can be known through this part of the scale.

We get different areas for the above four types of adjustment and we also get the total score of adjustment. In the present research, the entire score of adjustment has been used.

2. **Emotional Maturity scale:**

Emotional maturity scale by kum.Roma pal (1988) (Department of psychology, Agra college, Agra published by Agra psychological research cell, Tiwari kothi, Belanganj measures emotional maturity. It measures five factors of Emotional maturity that is Emotional instability, Emotional regression, and Faulty social adjustment, Lack of independency and Flexibility composite score for Emotional maturity. The scale is translated in Gujarati without changing the meaning and nature of the original item. Emotional maturity scale has a total 40 item and it is a self-reporting 5 point scale. The 5 options mentioned in strongly agree, agree, undecided, disagree and strongly disagree. 5 for tick mark totally agree, 4 for tick mark agree, 3 for tick
mark neutral, 2 for tick mark disagree and 1 for tick mark totally disagree. The maximum possible score is 200 and minimum score is 40. Scoring pattern shows that more score indicate less emotional maturity. The less score indicate good emotional maturity.

➢ **Reliability:**

The internal consistency of the scale was checked by split has method and the values of internal consistency of its various arias and test retest validity are as given in the table.

<table>
<thead>
<tr>
<th>Areas of Emotional Maturity</th>
<th>split half</th>
<th>split half Test retest</th>
<th>Internal consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.I</td>
<td>0.81</td>
<td>0.72</td>
<td>0.79</td>
</tr>
<tr>
<td>E.R</td>
<td>0.73</td>
<td>0.79</td>
<td>0.68</td>
</tr>
<tr>
<td>F.S.A</td>
<td>0.79</td>
<td>0.82</td>
<td>0.60</td>
</tr>
<tr>
<td>L of I</td>
<td>0.76</td>
<td>0.72</td>
<td>0.82</td>
</tr>
<tr>
<td>Flexibility</td>
<td>0.80</td>
<td>0.86</td>
<td>0.65</td>
</tr>
<tr>
<td>Total E.M</td>
<td>0.74</td>
<td>0.77</td>
<td>0.70</td>
</tr>
</tbody>
</table>

➢ **Validity:**

The scale was validated with Singh & Bhargava’s Emotional maturity scale and correlation was 0.84. The main version of questionnaire is in final translated Gujarati version was delivered test retest reliability found 0.68.
3. **Self-concept scale:**

To study the aspects of self-concept, Mr. S.P. Ahluwalia’s self-concept scale (1986) was used. It measures six aspects regarding self-concept like

1. Behavior
2. Intellectual and school status
3. Physical appearance and attributes
4. Anxiety
5. Popularity
6. Happiness and satisfaction

By Dr. S.P. Ahluwalia, Retired Professor and Head, Faculty of Education, University of Sagar, M.P. Children’s self-concept scale has been constructed, developed and standardized using the Translation – Back Translation Method under the able and scholarly stewardship of Dr. Ellen V. Piers. The present scale has been prepared after the well-known piers- Harris, children’s self-concept scale (1969). The test contains eighty items in all with ‘Yes’ or ‘No’ responses. It includes fourteen lie items to detect whether the children have filled it accurately or not. It is a verbal paper-pencil test. The scale items are scored in a positive or negative direction to reflect the evaluation dimension. A high score on the scale is presumed to indicate a favorable self-concept, which is interchangeable with the term “self-esteem” or “self-regard.”

**Scoring procedure**

The scoring procedure for self-concept scale is simple. The items are scored in the direction of high self-concept according to the scoring stencil. One score is to be awarded to each statement either for ‘Yes’ or ‘No’ as described in the table below. The total self-concept score can be obtained by adding scores of all the six areas, which can be used as a total self-concept score.
### Area of Self-concept

<table>
<thead>
<tr>
<th>Area of Self-concept</th>
<th>Response</th>
<th>Item No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior</td>
<td>Yes</td>
<td>12* 4, 13, 14, 22, 25, 31, 32, 34, 56, 59*, 64, 67, 76, 78, 80</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Intellectual and school status</td>
<td>Yes</td>
<td>5, 21, 27*, 30, 33*+, 42, 49, 57*, 70</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>7*, 9, 11*, 12, 16, 17, 26, 53, 66</td>
</tr>
<tr>
<td>Physical appearance and attributes</td>
<td>Yes</td>
<td>15, 27, 41, 49, 54, 55*, 57, 60, 63, 72</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>8*, 29</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Yes</td>
<td>44, 55</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>6, 7, 8, 10, 20, 28, 37, 40*, 74, 79</td>
</tr>
<tr>
<td>Popularity</td>
<td>Yes</td>
<td>33, 49, 51, 57, 69</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1, 3, 11, 40, 46, 58, 77</td>
</tr>
<tr>
<td>Happiness and satisfaction</td>
<td>Yes</td>
<td>2, 8, 36, 39, 52</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>38, 50, 59</td>
</tr>
<tr>
<td>Lie Score Items</td>
<td></td>
<td>18, 19, 23, 24, 35, 43, 45, 47, 48, 61, 62, 62, 65, 68, 71, 72, 75</td>
</tr>
</tbody>
</table>

* Some of the items measure more than one area. As such their score is to be added to respective sub-scales in which they have appeared.

The maximum score for the scale can be 78, whereas the minimum score can be zero.
Reliability:

The test-retest and split-half reliability method was used as an index of reliability which has been reported in table below.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Age</th>
<th>Sex</th>
<th>No</th>
<th>Index</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle school</td>
<td>12</td>
<td>Male</td>
<td>330</td>
<td>Test-Retest</td>
<td>0.83</td>
</tr>
<tr>
<td>High school</td>
<td>14</td>
<td>Female</td>
<td>380</td>
<td>Test-Retest</td>
<td>0.88</td>
</tr>
<tr>
<td>Higher secondary school</td>
<td>15</td>
<td>Male</td>
<td>470</td>
<td>Split half</td>
<td>0.74</td>
</tr>
<tr>
<td>Higher secondary school</td>
<td>15</td>
<td>Female</td>
<td>590</td>
<td>Split half</td>
<td>0.79</td>
</tr>
</tbody>
</table>

The coefficient of correlations reported in Table, are significant beyond .01 level of confidence. This indicates that this self-concept scale is quite reliable as the obtained reliability coefficients are adequately high.

Validity

The validity of the self-concept scale has been determined in three ways:

1. Face validity- The content validity of the self-concept scale was determined by “Translation and Back Translation method”. The instrument has face and content validity of high order.
2. Concurrent validity- In order to ascertain concurrent validity of the self-concept scale, the scores from each sub-scale was inter-correlated.
3. Factorial validity- The structure of the original scale was investigated on the six grade levels by means of a multiple factor analysis. For this purpose a sample of 457 sixty graders was used. Responses to the 80 items of the scale were placed in matrix and were inter correlated. A principal component analysis was made using unities in diagonals.

3.8 Procedure:-

The following research methodology was used in the present study. The primary information was gathered by giving personal information from to each student. All these test was administered in and individual setting after given adequate instruction and establishing rapport. Scoring of each test was done as per manual of each test.

3.9. Statistical Analysis:-

According test manual the response of each subject test was score as per scoring key of each test. These score was subject to adequate statistical techniques for analysis (a) analysis of variance in order to study the contribution of three independent variable of gender, area and stream i.e., to examine their main and interaction effect on various aspects of adjustment, emotional maturity and self-concept. Looking to the objectives of the study 2 x 2 x 2 factorial design and 'F' test was used were considered as most appropriate which not only provide information about main effect but also furnishes detailed information regarding the interaction between/among independent variables with regard to dependent variables.