CHAPTER - III
METHODOLOGY

3.01. INTRODUCTION

Methodology is a process, which deals with that all the methods and techniques used by the researcher, during the course of his research study. The role of methodology is to carry out the research work in a scientific and valid manner. Adaptation of a suitable methodology can raise the efficiency and dignity of the research work. The success of any research mainly depends on the tools and techniques besides the methods adopted in the research process.

This chapter gives an account of the sample selected, tools used, statistical technique employed and the procedures followed in the different stages of the present study.

3.02 OBJECTIVES OF THE STUDY

The investigator of the present study, framed the following objectives:

1. To find out the level of learning environment of low, average and high achievers in English of high school students.

2. To find out the level of learning environment of low achievers in English of high school students based on the sub-samples
   a) Gender (Male/Female)
   b) Age (Up to 14 / Above 14)
   c) Locality of the school (Urban/Rural)
d) Type of the Management (Government/Private/Aided)

3. To find out the level of learning environment of average achievers in English of high school students based on the sub-samples
   a) Gender (Male/Female)
   b) Age (Up to 14 / Above 14)
   c) Locality of the school (Urban/Rural)
   d) Type of the Management (Government/Private/Aided)

4. To find out the level of learning environment of high achievers in English of high school students based on the sub-samples
   a) Gender (Male/Female)
   b) Age (Up to 14 / Above 14)
   c) Locality of the school (Urban/Rural)
   d) Type of the Management (Government/Private/Aided)

5. To find out the level of study habits of low, average and high achievers in English of high school students.

6. To find out the level of study habits of low achievers in English of high school students based on the sub-samples
   a) Gender (Male/Female)
   b) Age (Up to 14 / Above 14)
   c) Locality of the school (Urban/Rural)
   d) Type of the Management (Government/Private/Aided)
7. To find out the level of study habits of average achievers in English of high school students based on the sub-samples
   a) Gender (Male/Female)
   b) Age (Up to 14 / Above 14)
   c) Locality of the school (Urban/Rural)
   d) Type of the Management (Government/Private/Aided)

8. To find out the level of study habits of high achievers in English of high school students based on the sub-samples
   a) Gender (Male/Female)
   b) Age (Up to 14 / Above 14)
   c) Locality of the school (Urban/Rural)
   d) Type of the Management (Government/Private/Aided)

9. To find out the level of emotional intelligence of low, average and high achievers in English of high school students.

10. To find out the level of emotional intelligence of low achievers in English of high school students based on the sub-samples
    a) Gender (Male/Female)
    b) Age (Up to 14 / Above 14)
    c) Locality of the school (Urban/Rural)
    d) Type of the Management (Government/Private/Aided)

11. To find out the level of emotional intelligence of average achievers in English of high school students based on the sub-samples
a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)

c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

12. To find out the level of emotional intelligence of high achievers in English of high school students based on the sub-samples

   a) Gender (Male/Female)
   
   b) Age (Up to 14 / Above 14)
   
   c) Locality of the school (Urban/Rural)
   
   d) Type of the Management (Government/Private/Aided)

13. To find out whether there is any significant difference between the learning environment scores of low, average and high achievers in English of high school students with regard to the sub-samples

   a) Gender (Male/Female)
   
   b) Age (Up to 14 / Above 14)
   
   c) Locality of the school (Urban/Rural)
   
   d) Type of the Management (Government/Private/Aided)

14. To find out whether there is any significant difference between the study habits scores of low, average and high achievers in English of high school students with regard to the sub-samples

   a) Gender (Male/Female)
   
   b) Age (Up to 14 / Above 14)
c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

15. To find out whether there is any significant difference between the emotional intelligence scores of low, average and high achievers in English of high school students with regard to the sub-samples

a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)

c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

16. To find out whether there is any significant relationship between low achievers’ achievement in English of high school students and their

a) Learning Environment

b) Study Habit and

c) Emotional Intelligence

17. To find out whether there is any significant relationship between average achievers’ achievement in English of high school students and their

a) Learning Environment

b) Study Habit and

c) Emotional Intelligence
18. To find out whether there is any significant relationship between high achievers’ achievement in English of high school students and their
   a) Learning Environment
   b) Study Habit and
   c) Emotional Intelligence

19. To find out the relative influence of independent variables and the sub samples up on the dependent variable achievement in English of low achievers of high school students.

20. To find out the relative influence of independent variables and the sub samples up on the dependent variable achievement in English of average achievers of high school students.

21. To find out the relative influence of independent variables and the sub samples up on the dependent variable achievement in English of high achievers of high school students.

3.03 HYPOTHESES OF THE STUDY

The investigator of the present study, framed the following hypotheses based on the objectives framed earlier:

1. The level of learning environment of low, average and high achievers in English of high school students.

2. The level of learning environment of low achievers in English of high school students based on the sub-samples
   a) Gender (Male/Female)
   b) Age (Up to 14 / Above 14)
c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

-is low

3. The level of learning environment of average achievers in English of high school students based on the sub-samples

   a) Gender (Male/Female)

   b) Age (Up to 14 / Above 14)

   c) Locality of the school (Urban/Rural)

   d) Type of the Management (Government/Private/Aided)

   - is low

4. The level of learning environment of high achievers in English of high school students based on the sub-samples

   a) Gender (Male/Female)

   b) Age (Up to 14 / Above 14)

   c) Locality of the school (Urban/Rural)

   d) Type of the Management (Government/Private/Aided)

   - is low

5. The level of study habits of low, average and high achievers in English of high school students.

6. The level of study habits of low achievers in English of high school students based on the sub-samples

   a) Gender (Male/Female)

   b) Age (Up to 14 / Above 14)
c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

- is low

7. The level of study habits of average achievers in English of high school students based on the sub-samples

a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)

c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

- is low

8. The level of study habits of high achievers in English of high school students based on the sub-samples

a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)

c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

- is low

9. The level of emotional intelligence of low, average and high achievers in English of high school students.

10. The level of emotional intelligence of low achievers in English of high school students based on the sub-samples

a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)
c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

- is low

11. The level of emotional intelligence of average achievers in English of high school students based on the sub-samples

a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)

c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

- is low

12. The level of emotional intelligence of high achievers in English of high school students based on the sub-samples

a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)

c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

- is low

13. There is no significant difference between the learning environment scores of low, average and high achievers in English of high school students with regard to the sub-samples

a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)
c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

14. There is no significant difference between the study habits scores of low, average and high achievers in English of high school students with regard to the sub-samples

a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)

c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

15. There is no significant difference between the emotional intelligence scores of low, average and high achievers in English of high school students with regard to the sub-samples

a) Gender (Male/Female)

b) Age (Up to 14 / Above 14)

c) Locality of the school (Urban/Rural)

d) Type of the Management (Government/Private/Aided)

16. There is no significant relationship between low achievers’ achievement in English of high school students and their

a) Learning Environment

b) Study Habit and

c) Emotional Intelligence
17. There is no significant relationship between average achievers’ achievement in English of high school students and their
   a) Learning Environment
   b) Study Habit and
   c) Emotional Intelligence

18. There is no significant relationship between high achievers’ achievement in English of high school students and their
   a) Learning Environment
   b) Study Habit and
   c) Emotional Intelligence

19. There is no relative influence of independent variables and the sub samples up on the dependent variable achievement in English of low achievers of high school students.

20. There is no relative influence of independent variables and the sub samples up on the dependent variable achievement in English of average achievers of high school students.

21. There is no relative influence of independent variables and the sub samples up on the dependent variable achievement in English of high achievers of high school students.

3.04. THE METHOD OF THE STUDY

   For the present investigation the investigator adopted Normative Survey as a method. It involves describing, recording, analyzing and interpreting the data which are all directed towards a better understanding of the present study.
Normative Survey method has been used in the present investigation to collect data from the high schools and higher secondary schools of Puducherry Region, Union Territory of India. This method had been chosen as it seeks to obtain precise information concerning the current status of phenomena and to draw valid conclusions from the facts discovered. Also, this method of research attempts to describe and interpret what exist at present in the form of conditions, practices, processes, trends, effects and attitudes. In brief, it is an attempt to analyze, interpret and repeat the present status of a social institution of the group. Hence Normative Survey method was found to be the suitable method.

3.05. LOCATION OF THE STUDY

The investigator collected information from the high schools and higher secondary schools in Puducherry Region, Union Territory of India. For this study, many high schools and higher secondary schools were selected for data collection.

3.06 POPULATION OF THE STUDY

From the Government of Puducherry Education Department authorities the data was collected that there are as many as 21 high schools in Pudhucherry region. In these schools there are around 2,500 students studying in high schools. So the investigator planned to take around 500 high school students (20% of the population) as the sample of the study.
3.07 SAMPLE OF THE STUDY

A sample is a small proportion of a population selected for observation and analysis. By observing the characteristics of the sample, one can make certain inferences about the characteristics of the population from which it is drawn.

The investigator of the study planned to collect data from 467 high school students. The present study consists of 467 high school students in Puducherry Region, Union Territory. The sample was selected by using simple random sampling technique. The sample forms a representative sample of the entire population. The proportionate weightage was given to various sub-samples. The distribution of sample is given in the Table 3.1.

3.08 DISTRIBUTION OF THE SAMPLE

The subjects of the sample were divided into categories on the basis of Gender, Age, Locality of the School and Type of the Management. Table 3.1. shows the distribution of the entire sample with regard to the above mentioned sub-samples.
Table – 3.1

Table Showing the Distribution of sample used in the study

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Variable</th>
<th>Sample</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gender</td>
<td>Male</td>
<td>272</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>195</td>
</tr>
<tr>
<td>2</td>
<td>Age</td>
<td>Up to 15</td>
<td>147</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Above 14</td>
<td>320</td>
</tr>
<tr>
<td>3</td>
<td>Locality of the School</td>
<td>Urban</td>
<td>157</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rural</td>
<td>310</td>
</tr>
<tr>
<td>4</td>
<td>Type of the Management</td>
<td>Government</td>
<td>155</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Private</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aided</td>
<td>112</td>
</tr>
<tr>
<td>5</td>
<td>Entire Sample</td>
<td></td>
<td>467</td>
</tr>
</tbody>
</table>

The demographic variable wise distribution of the sub-samples is graphically represented by the following Pie-diagrams.
Figure 3.1

Distribution of the sample with regard to Gender

Figure 3.1 shows the distribution of the sample with regard to gender. Out of 467 high school students selected for the study, 272 were male students and 195 were female students.
Figure 3.2

Distribution of the sample with regard to Age

Figure 3.2 shows the distribution of the sample with regard to age. Out of 467 high school students selected for the study, 147 were Up to 14 years students and 320 were Above 14 years students.
Figure 3.3

**Distribution of the sample with regard to Locality of the school**

Figure 3.3 shows the distribution of the sample with regard to locality of the school. Out of 467 high school students selected for the study, 157 were urban school students and 310 were above rural school students.
Figure 3.4

Distribution of the sample with regard to Type of the Management

Figure 3.4 shows the distribution of the sample with regard to type of the management. Out of 467 high school students selected for the study, 155 were government school students, 200 were private school students and 112 were aided school students.
3.09. VARIABLES USED

Variables are the conditions or characteristics that the researcher manipulates, controls or observes. Different variables selected by the investigator are given under the following sub-headings.

3.09.1. Dependent Variable

The dependent variables are the conditions or characteristics that appear, disappear, or change as the researcher introduces, removes, or changes the independent variables. For the present study, “Achievement in English of high school students” was taken as a dependent variable.

3.09.2. Independent variables

The independent variables are the conditions or characteristics that the researcher manipulates, or controls in his/her attempt to ascertain their relationship to the observed phenomena. For this study, the investigator has selected “Learning Environment, Study habits and Emotional intelligence” as independent variables.

3.09.3. Demographic variables

The investigator of the present study utilized the following demographic variables:

a) Gender [Male/Female]
b) Age [Up to 14/Above 14]
c) Locality of the School [Urban/Rural]
d) Type of the Management [Government/Private/Aided]
3.10. TOOLS USED

The data, necessary for engaging the research investigation, must be collected with the special instrument or devices. The successful outcome of any research work mainly depends upon the proper selection of the research tool. So, the investigator used the following tools.

1. Achievement in English of high school student’s – Common Examination marks from the School records.


4. Study Habits Inventory [SHI]-Constructed and Validated by Dr.B.V.Patel (1998).

3.11 CONSTRUCTION AND VALIDATION OF LEARNING ENVIRONMENT SCALE [LES]

3.11.1 Description of the Tool

The learning environment scale, constructed and standardized by the investigator (2015). The scale has as many as 54 items representing learning environment.

The test has been prepared on four-point rating scale based on ‘Strongly agree’, ‘Agree’, ‘Disagree’ and ‘Strongly disagree’ type initially 54 statements.
3.11.2 Pilot study

In the present study, it has been decided to construct and validate research tool by the investigator. For this purpose, a pilot study was carried out in Puducherry Region, Union Territory of India. A sample of 100 high school students were selected from one of the schools selected for the study. The research tool of the pilot study is given in Appendix-A.

The details of learning environment and the scoring range of the scale were given below:

Table 3.2

<table>
<thead>
<tr>
<th>Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>4</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
</tr>
</tbody>
</table>

3.11.3 Item Analysis

One of the important steps in standardization of any research tool is item analysis. For this purpose, the investigator used 100 self-rated LES sheets from the respondents. Each item was scored by using the rating point as stated above. The individual scores for the entire 100 samples were calculated and arranged in the manner of highest to the lowest score. From the arranged
scores, only the upper 27% of the sample constituting the high scores and the lower 27% constituting the lower scores were selected for the purpose of item selection. The high and low groups, thus selected formed the criterion groups.

3.11.4 Items selection

To select the items to form the final draft of the learning environment scale, the difficulty index of the each item was analyzed. According to Edwards (1957), “the value of ‘t’ is a measure of the extent to which a given item differentiates between the high and low groups. If the ‘t’ value is equal to or greater than 1.96, it indicates that the average response of the high and low groups to a statement differs significantly, provided there are 25 or more subjects in the high group and also in the low group”.

The ‘t’ value for all the 54 items of the LES were obtained to select the items for the final draft. All items were found to be selected as having ‘t’ value more than 1.96.

To find the t-value for each statement the investigator has used the formula given below:

\[
t = \frac{M_H - M_L}{\sqrt{\frac{\sum fX_H^2}{n} - \left(\frac{\sum fX_H}{n}\right)^2 + \frac{\sum fX_L^2}{n} - \left(\frac{\sum fX_L}{n}\right)^2}}\]

The letters representing the above formula are,

\(M_H\) – Mean value of the higher score

\(M_L\) – Mean value of the lower score

\(f\) – Frequency
n - Total number

\[ R_H \] and \[ R_L \] are found out using the formulas given below.

\[
R_H = \frac{\sum f_x}{\sum f} \\
R_L = \frac{\sum f_x^2}{\sum f}
\]

The letters representing this formula are,

\[ X \] – Score

\[ f \] – frequency

Thus, the ‘t’ values for all the 70 statements were calculated. According to Edwards (1957), any ‘t’ value equal to or greater than 1.96 indicates that the average response of the high and low groups of a statement differs significantly.

The form for calculating the ‘t’ value is given in table 3.3.

**Table 3.3**

*Table for calculating ‘t’ value*

<table>
<thead>
<tr>
<th>RESPONSE CATEGORIES</th>
<th>Low Group</th>
<th>High Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>f</td>
</tr>
<tr>
<td>Always</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sums</td>
<td>( n_H )</td>
<td>( \sum X_H )</td>
</tr>
</tbody>
</table>
\[ t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum(X_H - \bar{X}_H)^2 + \sum(X_L - \bar{X}_L)^2}{n(n-1)}}} \]

where \( \sum(X_H - \bar{X}_H)^2 = \sum X_H^2 - \frac{\left(\sum X_H\right)^2}{n} \)

and \( \sum(X_L - \bar{X}_L)^2 = \sum X_L^2 - \frac{\left(\sum X_L\right)^2}{n} \)

Thus, the final tool contains seventy items; the list of items with the ‘t’ value is presented in Table 3.3 - Split-half method also used to find out the consistency of the test. It has been given in table.

**Table 3.4**

List of items selected for the final draft of the LES based on their ‘t’ value between upper and lower group

<table>
<thead>
<tr>
<th>Item No.</th>
<th>‘t’ value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>3.000</td>
<td>Selected</td>
</tr>
<tr>
<td>2.</td>
<td>2.803</td>
<td>Selected</td>
</tr>
<tr>
<td>3.</td>
<td>2.387</td>
<td>Selected</td>
</tr>
<tr>
<td>4.</td>
<td>2.803</td>
<td>Selected</td>
</tr>
<tr>
<td>5.</td>
<td>2.442</td>
<td>Selected</td>
</tr>
<tr>
<td>6.</td>
<td>3.000</td>
<td>Selected</td>
</tr>
<tr>
<td>7.</td>
<td>2.000</td>
<td>Selected</td>
</tr>
<tr>
<td>8.</td>
<td>1.991</td>
<td>Selected</td>
</tr>
<tr>
<td>9.</td>
<td>2.081</td>
<td>Selected</td>
</tr>
<tr>
<td>10.</td>
<td>2.705</td>
<td>Selected</td>
</tr>
<tr>
<td>11.</td>
<td>3.803</td>
<td>Selected</td>
</tr>
<tr>
<td>12.</td>
<td>4.000</td>
<td>Selected</td>
</tr>
<tr>
<td>13.</td>
<td>6.803</td>
<td>Selected</td>
</tr>
<tr>
<td>14.</td>
<td>2.726</td>
<td>Selected</td>
</tr>
<tr>
<td>15.</td>
<td>3.362</td>
<td>Selected</td>
</tr>
<tr>
<td>16.</td>
<td>4.561</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>17.</td>
<td>2.126</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>3.442</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>2.431</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>2.126</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>4.000</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>3.019</td>
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</tr>
<tr>
<td>23.</td>
<td>2.975</td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>3.309</td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>2.975</td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>2.000</td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>4.803</td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>5.442</td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>3.442</td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>2.000</td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>2.431</td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>3.442</td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>3.911</td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>2.081</td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>2.726</td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>3.606</td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>2.153</td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>4.803</td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>2.975</td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>4.228</td>
<td></td>
</tr>
<tr>
<td>41.</td>
<td>3.126</td>
<td></td>
</tr>
<tr>
<td>42.</td>
<td>3.000</td>
<td></td>
</tr>
<tr>
<td>43.</td>
<td>4.803</td>
<td></td>
</tr>
<tr>
<td>44.</td>
<td>2.975</td>
<td></td>
</tr>
<tr>
<td>45.</td>
<td>2.803</td>
<td></td>
</tr>
<tr>
<td>46.</td>
<td>2.408</td>
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</tr>
<tr>
<td>47.</td>
<td>2.000</td>
<td></td>
</tr>
<tr>
<td>48.</td>
<td>2.442</td>
<td></td>
</tr>
<tr>
<td>49.</td>
<td>5.701</td>
<td></td>
</tr>
<tr>
<td>50.</td>
<td>2.623</td>
<td></td>
</tr>
</tbody>
</table>
3.11.5 Final Study

As shown in table 3.4, 54 items were finalized for the final draft of the learning environment for high school students. The final study of the LES is given in Appendix-B. The minimum score for the tool is ‘54’ and maximum score of the tool is 216.

3.11.6 Reliability

A test score is called reliable when we have reasons for believing the score to be stable and trustworthy. Stability and trustworthiness depend upon the degree to which the score is an index of “true-ability” – is free of chance error.

Test-retest (repetition) method used to arrive the reliability of the tool. Repetition of a test is the simplest method of determining the agreement between the two set of scores, the test is given and repeated on the same group, and the correlation computed between the first and second set of scores. Given sufficient time between the two tests the administration results show the stability of the test scores. The value of correlation co-efficient shows that there is high positive degree of correlation between the two tests and are given in Table.
shows reliability co-efficient of LES

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Method of Reliability</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Test-retest (Repetition)</td>
<td>0.81</td>
</tr>
<tr>
<td>2</td>
<td>Split – Half</td>
<td>0.72</td>
</tr>
</tbody>
</table>

3.11.7 Validity

The first essential quality of valid test is that it should be highly reliable. Besides, the content or face validity, the investigator intended to arrive intrinsic validity. Guilford (1950) defined the intrinsic validity as “the degree to which a test measures what it measures”. The square root of reliability gives the intrinsic validity. Therefore, the intrinsic validity of learning environment scale is 0.81.

3.12 EMOTIONAL INTELLIGENCE SCALE (EIS)

3.12.1 Description

In this study the emotional intelligence of the high school students were measured by using emotional intelligence scale standardized by Hyde and Sanjyot Pethe. This scale consists of 106 items. Each item has five alternative responses like wholly always, Often, Sometimes, Seldom and Never. The research tool of the EIS are given in Appendix-C.

3.12.2 Scoring Procedure

Subject is asked to indicate either of his or her choice. No time limit is fixed. However it takes 20 to 30 minutes to complete the task. Scoring was done according to the instruction give in the manual. The sum of weightage as given by the respondents for all the statements forms the individual's total score.
which ranges from 1-5. The minimum and maximum possible score are 1 and 5 respectively.

The details of emotional Intelligence and the scoring range of the tool were given below:

**Table 3.5**

**Showing the arbitrary weights of response category in emotional intelligence**

<table>
<thead>
<tr>
<th>Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>5</td>
</tr>
<tr>
<td>Often</td>
<td>4</td>
</tr>
<tr>
<td>Sometimes</td>
<td>3</td>
</tr>
<tr>
<td>Seldom</td>
<td>2</td>
</tr>
<tr>
<td>Never</td>
<td>1</td>
</tr>
</tbody>
</table>

The maximum score is 530 and the minimum score is 106. The mid value of the scale is 265.

**3.12.3 Validity and Reliability of the Tool**

The validity of the tool refers to the truth fullness of the test i.e how closely the test measures what it intends to measure. The reliability refers to the consistency of the test scores. The reliability of the tool was found by test retest method. It is found to be 0.78. The validity of the tool is ascertained by the experts. Thus, the tool used in the study has validity and reliability.
3.13 STUDY HABITS INVENTORY (SHI)

3.13.1 Description of the Tool

The investigator used the study habits inventory constructed and validated Dr. B. V. Patel. To measure the study habits of high school students. The study habits tool consists of 45 items and for every item five point scale are given is Always, Often, Sometimes, Seldom and Never. The research tool of the SHI are given in Appendix-D.

3.13.2 Scoring Procedure

Table scoring key of the inventory according to the nature of items.

<table>
<thead>
<tr>
<th>Nature of the Items</th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Seldom</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive:</strong> 1, 2, 3, 4, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 22, 26, 32, 33, 36, 37, 38, 39, 40, 41, 42, 43, 44</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Negative:</strong> 5, 6, 7, 14, 15, 20, 21, 23, 24, 25, 27, 28, 29, 30, 31, 34, 35, 45</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

The maximum score one can get is 225 and the minimum score is 45. The mid value of the scale is 135.

3.13.1 Validity and Reliability of the Tool

Experts opinion was obtained to establish the validity of this scale. Thus the content validity of the scale was established.
The correlation co-efficient of the inventory by the split half test was found by investigator using Karl Pearson Product moment method. It was found to be 0.63.

3.15 ADMINISTRATION OF THE TOOLS

The investigator got permission from all the authorities and then the samples were approached with the help of respective teachers. The final form of the tools were administered to a random sample of as many as 467 high school students studying in Puducherry Region after getting prior permission from the respective headmasters/headmistress of the schools.

It is administered as a group test. After distributing a copy of the tools to each student proper instructions were given regarding answering the items in the tools.

The instruction regarding the methods of answering was clearly given in the tools. The students were requested and persuaded to go through the instruction and statements carefully and then to indicate their responses in the tools. The tools were administered to the students in various schools of Puducherry Region on different dates personally by the investigator.

3.16 DELIMITATIONS OF THE STUDY

The following are the delimitations of the present research work:

1. This study was conducted in Puducherry Region, of Tamil Nadu.
2. 467 high school students were involved as the sample of this study.
3. This study is restricted to include only three psychological variables namely Learning environment, emotional intelligence and study habits.
3.17. STATISTICAL TECHNIQUES USED:

For the analysis of the data, the following statistical techniques have been used.

**Descriptive Analysis**

- Measures of central tendency (Mean)
- Measures of variability (standard deviation)

**Differential Analysis**

- Independent sample ‘t’ test and one way ANOVA ‘F’ test

**Correlation Analysis**

- Co-efficient of correlation ‘r’ value.

**Regression Analysis**

- Linear Regression analysis

3.18 CONCLUSION

In this chapter, the details about the method of study, sample, sampling techniques, and construction of the research tools, validation procedure and the statistical techniques used were given in detail. The research instrument was administered to a sample of 467 high school students in Puducherry Region of Tamilnadu, India by random sampling technique. The obtained scales scores were computed and subjected to statistical treatment. The analysis and the interpretations of the data are being described in the succeeding chapter.