CHAPTER – III
METHODOLOGY

3.00 Introduction

Methodology is a systematic procedure investigating a problem starting from its initial identification to the final conclusion. The machinery of methodology occupies a very important position in any kind of research.

“Research methods are of utmost importance in a research process. They describe the various steps of the plan action to be adopted in solving a research problem, such as the manner in which the problems are formulated, the definitions of terms, the choice of subjects for investigation, the validation of data gathering tools, the collection, analysis and interpretation of the data and the process of inferences and generalization” (Koul, 1993, P.384). A careful selection of a method is an essential prerequisite for any investigation.

According to Hillwary (1964 P.138) to describe in detail the specific method being used, incidentally constitute a very good way of determining whether the method chosen had been worked out properly and is likely to prove effectiveness. If the scholar cannot describe his method, the chances are that it is too vague and general to yield him a satisfactory result. A preplanned and well described method will provide the researcher a scientific and feasible plan for attacking and solving the problem under investigation. Three major categories of methodology have been identified in educational research, i.e. historical, descriptive and experimental method. Keeping in view the purpose and importance of the present study, the investigator has adopted ‘Survey studies’ based on descriptive Research Method. The survey studies are conducted to collect detail information of the existing practices of phenomenon with the intent of employing data to justify the conditions and practices to make an effective plan for improving them.

The methodology followed in the present research is detailed in the chapter under the following headings:

i) Method
ii) Population
iii) Selection of sample
iv) Selection of tools used and their description
v) Statistical techniques used for analysis of the data

3.10 Method

The Descriptive Survey Method is used in the study. It describes the current position of the research work. It involves interpretation, comparison, measurement, classification, evaluation and generalization. All these direct towards a proper understanding the solution of significant educational problem. The present study attempted to find Academic Achievement, Emotional Maturity and Intelligence of Secondary School Students in Assam”. Keeping in view the nature of the study, the survey method was found to be more suitable.

3.20 Population

All the students studying in class-X of the secondary school of Lakhimpur and Sonitpur districts from the population of the study.

3.30 Sample

The sample is of small number of representative individuals from the population. The study was conducted on one thousand class-X students by giving due representation to boys (500) and girls (500) as well as rural and urban localities of both the districts. The schools were selected using stratified random sampling technique, and students were selected using simple random sampling technique. However all the students of the selected schools formed the sample of the present study.

Selection of Schools and Final Sample

In Assam two districts were considered for this present study. From these two districts two stratified groups namely rural and urban schools were selected. After completion of stratification with respect to rural and urban schools, sample was selected randomly with equal proportion from the said stratified groups (rural and urban). The selected schools belong to the category of provincialized as well as private schools which are affiliated to SEBA i.e., Board of Secondary Education, Assam and controlled and supervised by the Department of Education, Govt. of Assam. The extent of the final sample is shown in Diagram -1 and the break-up of the final sample is shown Table –6. The list of the selected schools is given in Appendix- I
Diagram-1 The extent of the final samples
Table – 6
Break up of Sample in terms of districts, locality and sample size wise

<table>
<thead>
<tr>
<th>Schools</th>
<th>North Lakhimpur</th>
<th>Sonitpur</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Urban (6)</td>
<td>Rural (8)</td>
</tr>
<tr>
<td>Male</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>Female</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td>250</td>
</tr>
</tbody>
</table>

3.40 Tools Used
In order to fulfill the objectives of the present study the following tools were used:

i) Academic Achievement
ii) Emotional Maturity
iii) Intelligence

The tools are described in the following sections

3.41 The Students Performance Record from the Schools
Secondary student’s means students studying in class X in different provincialized (government) and private schools located in rural and urban areas of the both districts. Achievement means performance. Academic achievement refers to Educational performance of students studying in schools. How far they are successful in acquiring knowledge, understanding, and skill in different subjects presented to them for study through the curriculum is to be reflected in their Academic Achievement. As far as academic achievement of the students was concerned for the purpose of the present study, the investigator visited the selected schools and collected from the school records of the selected students i.e. marks obtained by the students in the last annual examination, 2014 (i.e. Class IX annual examination).
3.42 Emotional Maturity Scale

The Emotional Maturity Score (EMS) of the students was measured by using Emotional Maturity Scale developed by Singh and Bhargava (1984). Emotional Maturity Scale is a self-reporting five point scale namely emotional stability, emotional progression, social adjustment, personality integration and independence. This scale has forty-eight statements. Each statement has five possible modes of responses, such as: very much; much; undecided; probably and never. The items are so stated that if the answer is very much a score of 5 is given; for much 4; for undecided 3; and for probably 2 and for negative answer of never, a score of 1 is to be awarded. Only 1 hour is needed to administer this scale on the students. The higher the score, greater the degree of the emotional immaturity and vice versa. This scale has been furnished in Appendix II.

3.43 Intelligence Test

Another variable in the study is intelligence. The researcher used Dr. S. Jalota’s Intelligence meant for secondary school students. The group test of mental ability was constructed and standardized by Dr. S. Jalota. This Intelligence Test comprises of five separate categories of twenty tasks each. Namely: (i) Vocabulary (ii) Classification (iii) Number Series (iv) Analysis and (v) Reasoning. Only 1 hour 15 minutes were given to administer is to the students. The number of item’s that measure the different interest’s areas are given in Table-7. The items were mixed and arranged in an empirically determined order in increasing difficulty.
**Table-7**

Showing the details of the scoring scheme of the scale, Reliability and Validity of the Intelligence Test are mentioned ahead.

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Area</th>
<th>Sl.no of item in group mental ability of Dr. Jalota</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vocabulary</td>
<td>1, 2, 4, 5, 7, 8, 10, 12, 14, 30, 47, 51, 62, 65, 78, 87, 89, 95, 98, 100</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Classification</td>
<td>6, 11, 15, 17, 20, 26, 32, 35, 37, 46, 48, 50, 58, 64, 67, 73, 83, 85, 91, 97</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Number Series</td>
<td>19, 22, 24, 28, 31, 33, 39, 41, 44, 52, 55, 60, 66, 70, 75, 77, 82, 84, 92, 94</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Analysis</td>
<td>34, 36, 38, 40, 42, 45, 53, 57, 59, 61, 63, 69, 71, 74, 80, 86, 88, 90, 93, 100</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Reasoning</td>
<td>3, 9, 13, 16, 18, 21, 23, 25, 27, 29, 43, 49, 54, 56, 68, 72, 76, 79, 81, 96</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Manual of Dr. S. Jalota Intelligence Test*

**Scoring Scheme of the Intelligence Test**

Reusable type of the test booklets of general mental ability test constructed by Dr. S. S. Jalota were used in which students could indicate their response; by selecting a right answer among the alternative given in the scoring sheet. The group mental ability test by Dr. Jalota has scored key, in which the score of students was classified in 9 groups such as: (i) Dull (ii) Very dull (iii) Poor (iv) Very poor (v) Average (vi) Bright (vii) Superior (viii) Very superior (ix) Excellent. Each range of the score falls under certain category mentioned above. The score range from 0-18 are rated under dull categories, likewise 19-28 under very dull categories, 29-38 under poor, 39-47 under low, 48-58 below average, 59-67 under bright, 68-77 under superior, 78-87 under very superior and lastly 88+ was rated under excellent categories.

The researcher used intelligence test for measuring the general mental ability of the X grade students. After administering this test on students, investigator did the scoring by making the use of scoring key of this test and by following the instructions indicated in the manual. The intelligence test and scoring key are given as **Appendix- III**.
In the present study, the students are not divided into different groups. They are compared in terms of total score on intelligence and accordingly comparison of different groups was done.

3.50 Administration of Tools and Data Collection

The data were collected from the government/provincialized and private schools. First the permission from the Inspector of Schools, Lakhimpur and Sonitpur Districts was sought in order to administer the questionnaires and the collection of data in connection with the study.

Then the Head masters or the Principals of the selected schools were informed and their co-operation was sought. The rapport was established with the subjects of all the schools during data collection. Subjects were briefed about the study and also about the confidentiality of the results. Taking into consideration their convenience, the days were fixed up for the administration of Emotional Maturity Scale and Intelligence Test. The scales were administered on the same day one after the other. Standard instructions as per the manual were given. Problems if any faced were solved during the administration of the scale and test. It was made sure that the subjects were seated comfortably. The investigator was personally present to remove any doubt or suspicion, thereby removing any bias due to misinterpretation of the words used. The response sheets were collected and arranged as well as classified as per the sample break-up recording in the register. The answers sheets complete in all respects were considered for final analysis.

3.60 Analysis of Data

After collecting data the investigator used relevant statistical techniques such as mean, standard deviation, t-test and correlation for analysing the data. The calculations are done by using Microsoft Excel in computer.

The analysis and interpretation of data are done in the following chapter.