CHAPTER-III

METHODOLOGY AND PROCEDURE

3.1 INTRODUCTION

Research, un-doubtedly is a systematic search for knowledge. A dissertation should bear the fragmentary details of the research work in order to testify that it is based on an “ordinary system of searching for the truth which, by basing conclusion upon factual evidence and by using logic as a means of showing relationship between ideas has given him better and more accurate answers to his many questions”.

This part of the methodology usually consists of three parts: subjects, procedures and data analysis. The subject section details the population from which the researcher plans to select the sample. Variables that are frequently included, depending on the nature of research procedure, it include- chronological age, grade level, socio-economic status, sex, race, IQ (if other than average), mental age (if significantly different from chronological age), academic achievement level, and other pertinent attributes of the targeted population. The number of subjects desired from the population and how they will be selected are also indicated in this section. The reader should be able to understand exactly from where and how the subjects are to be selected.

The procedure section outlines the research plan. It describes in detail what will be done, how it will be done, what will be needed and what data-gathering devices will be used. The information given in the data-analysis section should be specific and detailed enough to demonstrate to the reader exactly what is planned. No details should be left open to question.
Methods are of utmost importance in a research process. The method describes the various steps of the plan of attack to be adopted in solving research problem, such as the manner in which the problems are formulated, the definition of terms, the choice of subjects for investigation, the validation of data gathering tools, the collection, analysis and interpretation of data and the processes of inferences and generalizations.

A researcher must have a thorough understanding of all research methods with particular reference to their strengths, limitations, applicability, and appropriateness. It will help him to carefully plan the steps that he/she will take in the research process and describe the method clearly before he actually starts working on solution of the problem.

The creation of new state after independence assumes relevance for the purpose of the present study, because of the fact that the un-divided state had a common educational administration and state level statistical data which cannot be made authentic to be studied precisely. So, the researcher took the privilege to study the Effectiveness of Teachers Training Programme at the Elementary School Stage in Assam, which became separate state at early 70's.

3.2 Methods adopted in the present study

There are various methods among which we may adopt one to conduct research in the field of education. These are-experimental, historical, psychological, case study, survey, curriculum making, job analysis, interview, questionnaire, observation, measurement, statistical tabular, graphic and library techniques.

This chapter presents the methods adopted in the present study is to obtain the necessary data in reference to the objectives of the present study which is a piece of descriptive survey research.
The study aims at assessing the present growth and development of teacher training programme in Assam, its needs, management, performance and achievement of training institute, to identify the problems of teacher training programmes and lastly to analyse the profile of teacher educators and find out the attitude of teacher educators and teacher pupil towards the teacher education programme in Assam.

The study is based on descriptive survey method, particularly normative-survey method. The compound adjective ‘normative- survey’ is applied to method in order to suggest the two closely related aspects of this kind of study. The word ‘survey’ indicates the gathering of data, regarding current conditions. The word ‘normative’ is used because surveys are frequently made for purpose of ascertaining which is the normal or typical condition or practice.

Therefore, normative survey method has been adopted for collection of data by using questionnaires and interview schedule from both primary and secondary source. Besides the method of study, there are other aspects of methodology, which is most important to make the study more authentic and precise. So, to achieve the objectives of the present study, various aspects of methodology were followed, such as- selecting sample, considering population, tools applied for study, procedure of data collection and analyzed the data with statistical techniques.

3.2.1 Population

A population as stated by Best (1978) “is any group of individuals that have one or more characteristics in common that are of interest to the researcher. The population may be all individuals of a particular type or more restricted part of the group”.

“Population may be defined as an aggregate of items possessing common traits. A population refers to any collection of specified group of human beings or non-human entities such as objects, educational institutions, time limits and
geographical areas, prices of commodities or salaries drawn by individuals. Population can be called as universe. A population containing a finite number of individuals is known as finite population on the other kind a population with infinite number of population is known as infinite population. The concrete individual is called as existent population while the collection of all possible ways in which an event can materialize as the hypothetical population.

In brief, the aggregates of all items which come under the definition investigation unit are called population. The boundary of a population is determined by the problem under investigation, circumstances, object and availability of resources. The population is properly defined so that there is no ambiguity, as to whether a given unit belongs to the population. If a population is not properly defined, a researcher does not know what units to consider when selecting the sample.

The population of the present study includes all principals, teacher-educators and student-teachers of the teacher training institutes of Assam.

3.2.2 Sample

Sample covers a group of representative items. A sample must be as nearly representative of the entire population as possible and ideally it provides the whole of the information about the population from which the sample has been drawn. The researcher always selects some items from the universe or population for his/her study purpose that is technically called as sample.

Bloomers and Lindquist (1978) have said, “A large majority of the research studies in Education and psychology, or for that matter, in many other fields, are of a type known as sampling study. In such studies, a limited number or sample of individuals or objects in order that generalization or inferences may be drawn about still larger group or population of the individuals or objects that these are supposed to represent”.

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According to the Manheim (1977) "a sample is a part of the population which situated in order to make inferences about the whole population."

Sampling method is essential for researcher to save time and money. The sampling method was used in social sciences research as early as in 1754 by A.L. Bowley. Since then this method is being increasingly utilized.

In Assam, there are different Teacher Training Institutes meant for primary and secondary level teachers. In the present study, the researcher was considering only the Teacher Training Institutes meant for elementary teachers training in Assam.

Following table shows the total number of Elementary Teacher Training Institutes in the State

**TABLE 3.1 Number of Elementary Teacher Training Institutes in Assam.**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of TTIs</th>
<th>No. of TTIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DIET</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>BTC</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>Normal Schools</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>PPTTC(Pre-primary)</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>English Language Teaching Institute</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Hindi Training Institute</td>
<td>2</td>
</tr>
</tbody>
</table>

In connection to the Elementary Teacher Training Institutes, the researcher
had selected 10 districts of Assam for study. They were Dhubri, Nalbari, Kamrup, Darrang, Nagaon, Lakhimpur, Golaghat, Jorhat, Sibsagar and Dibrugarh. The respective districts show the Elementary Teacher Training Institutes in the following table, which will give a clear picture to select the sample.

**TABLE No. 3.2 Sampled TTIs with total number of Teacher Educators**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Districts</th>
<th>Location</th>
<th>Total TTIs</th>
<th>Teacher Educator in TTIs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>1</td>
<td>Dhubri</td>
<td>Golakganj</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>2</td>
<td>Nalbari</td>
<td>Nalbari</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>3</td>
<td>Kamrup</td>
<td>Rangia</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>4</td>
<td>Darrang</td>
<td>Dalgaon</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>5</td>
<td>Nagaon</td>
<td>Raha</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>6</td>
<td>Lakhimpur</td>
<td>Azad</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>7</td>
<td>Golaghat</td>
<td>Golaghat</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>8</td>
<td>Jorhat</td>
<td>Dergaon</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>9</td>
<td>Sibsagar</td>
<td>Sonari</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
<tr>
<td>10</td>
<td>Dibrugarh</td>
<td>Chabua</td>
<td>DIET BTC NS</td>
<td>DIET BTC NS</td>
</tr>
</tbody>
</table>

For the study the researcher had selected 10 DIETs, 3 Normal Schools and 12 BTCs from the selected districts of Assam (Table 3.2) which imparted teacher training at elementary level. Altogether the researcher took 25 Teacher Training Institutes along with 1(one) SIE (State Institute of Education) of Assam. On the other hand, the researcher had considered 100 Teacher Educators including Principals and 200 In-service
Teachers, out of which 50% were trained and another 50% were un-trained.

3.2.3 Research Tools

Tools to be used:

The researcher used the following tools for the collection of required data-

1. The questionnaire for identification of need of teacher training programme for in-service teachers of elementary school stage in Assam.

2. Training Assessment Test to find out the impact of in-service teachers training in classroom transaction for teachers.

3. Questionnaire for investigating the problems of in-service teachers training at elementary school stage.

4. The attitude scale to measure the attitude of elementary school teachers towards in-service teacher training programme at the elementary school stage in Assam.

3.2.4 Description of the questionnaire

It is worth mentioning that all the above stated tools were developed by the investigator with due support of the supervisor which have been described below.

(i) Questionnaire to investigate the need of in-service teacher training-

This is the questionnaire which was developed by the investigator in due consultation with the supervisor. The basic purpose of the questionnaire was to identify the need of in-service training programme for the newly recruited un-trained teachers (50) and trained teachers (50) of elementary schools of Assam. The questionnaire has been divided in three sections pertaining to educational aspects which the appointed teachers supposed to know, understand and capable of using in practice. The section- A of the questionnaire contains 10 items in the form of question
relating to the shifts/changes in educational process as per the RTE –Act, 2009 and NCFSE -2005. The section- B of the questionnaire covers some of the aspects of the RTE-Act 2009, because the teachers need to understand the basics of RTE-Act and teach accordingly at the elementary school stage. The section deals with the items pertaining to curriculum and subject matter and 15 items have been put under this section of the questionnaire. All the items have been put in Table -3.3

Table-3.3: Distribution of Questions in the three sections of the Questionnaire

<table>
<thead>
<tr>
<th>Sections</th>
<th>A-Shifts</th>
<th>B-RTE Act-2009</th>
<th>C-Curriculum</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Questionnaire</td>
<td>10</td>
<td>9</td>
<td>15</td>
<td>34</td>
</tr>
<tr>
<td>Percentage</td>
<td>29.41</td>
<td>26.47</td>
<td>44.12</td>
<td>100%</td>
</tr>
</tbody>
</table>

The scoring was done by giving the weightage of 2 marks to each correct answer of the questions of each section of the questionnaire. Section-A consists of 20 marks, Section-B consists of 18 marks and Section-C consists of 30 marks. As the questionnaire came out to be 68 marks and minimum score was taken as 0.0 in case none of the question is responded correctly. The copy of the questionnaire is put in the appendix-I

3.2.4.i. (a) Try out of the questionnaire

The rough draft of 34 questions was developed and typed properly. For the purpose of editing, it was given to two content and two language experts who did the editing of this questionnaire properly and improved the questions as per their advice and feedback. Before the use of this test for a selected sample of un-trained teachers it was tried out on a small sample of 30 un-trained elementary school teachers to find out values of ‘De’ for each question. It was found that all the 34 questions of this questionnaire possessed the discriminative index value more than 0.50; therefore, the questions were considered satisfactory for the purpose.
3.2.4.i.(b) Finding reliability and validity of the questionnaire

The roughly draft 34 questions of the questionnaire possessed 'Dc' value more than 0.50, which is considered satisfactory for the purpose. After this, the reliability of the questionnaire was found out by using test-retest method and it came out to be 0.86 which was found quite satisfactory. Further, the content validity of the questionnaire was ensured by taking the opinions of two content experts relating to the need of in-service teacher's training on the various issues of educational process at the elementary school stage.

(ii) **Training Assessment Test:** to investigate the impact of in-service Teachers Training on classroom transaction (summative test covering the content & skills): The purpose of this test was to know about the awareness, knowledge, understanding and skills relating to the course content, which was delivered during the In-service Teacher Training Programmes in Assam. It is more or less a kind of summative test which covers the maximum course content of in-service training programme. The test has been divided into three sections, i.e., Section-A, Section-B, Section-C and Section-D. The Section-A possesses 16 (sixteen) multiple choice type of items based on the course content delivered during the training programmes, Section-B of the test contains 9 (nine) true/false type of test items based on the same training course content, Section-C has 5 (five) items in which the respondents need to fill up the blanks by placing appropriate terms, and Section-D contains 33 (thirty three) questions of short answer type. The whole Training Assessment Test (TAT) contains 64 test items. The distribution of all these items has shown in the following table no.3.4

<table>
<thead>
<tr>
<th>Table-3.4 Distribution of TAT items and weightages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sections</strong></td>
</tr>
<tr>
<td>Types of Items</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>No. of Items</th>
<th>16</th>
<th>10</th>
<th>5</th>
<th>33</th>
<th>64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>25.0</td>
<td>15.62</td>
<td>0.08</td>
<td>59.28</td>
<td>100</td>
</tr>
</tbody>
</table>

Scoring work was done by giving the weightage of one (1) mark to the correct responses of each item of Section-A, Section-B, and Section-C respectively. The weightage of 2 marks was given to the correct answer of the questions of section-D. In total the test carried 97 marks and minimum marks for the test could be 0.0 in case of not responding even a single question correctly. The copy of the test has put in the appendix-II

3.2.4.ii.(a) Try out of the questionnaire

The investigator prepared the rough draft of 64 test items and got it typed carefully. The rough draft of the test was xeroxed and given to three language and three content experts for the purpose of editing from language and content points of view respectively. The language and content experts gave their feedback and accordingly the items of the test were improved, but, finally there were 64 items in the test. As it was the rough draft or preliminary draft of the test and it was administered on a sample of 20 elementary school teachers to establish the criterion difficulty level of the test items. In the context of criterion difficulty of test items, Beggs and Lewis (1975) have proposed a measure called as criterion difficulty of test items. The index of criterion difficulty ranges from 0.00 to 1.00. The teachers responded the questions very well, therefore, discriminative values were found above 0.50 and the test was considered satisfactory.

3.3.4.ii(b) Finding out the reliability and validity of the questionnaire

After finding the ‘De’ value above 0.50, which marks the test is satisfactory, then the investigator computed the reliability of the test by adopting the test-retest method and the co-efficient of reliability was found 0.89 which was considered quite satisfactory. Finally, the test was evaluated in terms of validity. The investigator established the content validity of the test by taking the opinions of content experts to
find proper suitable validity and matching the test items with objectives of the training materials.

(iii) **Questionnaire for Investigation of Problems of In-service Teacher’s Training Programmes at Elementary School Stage**

This is the questionnaire which was developed by the investigator for the realization of the third objective of the study. The main purpose of the questionnaire was to investigate problems faced by the teachers. This questionnaire contains 12 questions pertaining to the various problem which the trainees are likely to face during the training programmes such as their willingness and liking of the training programmes, duration, content of the training, availability of training materials, effectiveness of resources persons, timely intimation, duty leave, venue of training programmes, practical/applied part of training, transportational, feeding, lodging etc. The questionnaire was developed by taking care of each segment of it like other questionnaire. This is placed as an appendix-III

(iv) **Attitude Scale**: The investigator thought appropriately to measure the attitude of elementary school teachers towards the training programmes which they attended in these selected districts of Assam. The investigator developed five point scale suggested by Likert (1932). The investigator adopted certain steps for construction and standardization of the required scale.

**Step-1: Collection and Editing of Statements:**

For the collection of relevant statements, the investigator consulted the literature intensively relating to elementary school teachers’ training programmes for having the overviews of the whole gamut of teachers training programmes and their effectiveness. The matter was also discussed with some experts and functionaries who organized the teachers training programmes in the various districts of Assam. After having done this, the investigator collected 21 statements. These statements were
listed systematically and typed properly. A set of well typed 22 statements were handed over to three language experts to edit the statements from language point of view and the set of statement was given to three content experts who did the editing work from content points of view. At the time of editing, all the criteria suggested by Thrustone and Clave (1929), Wang (1932), Bird (1940), Edwards and Kilpatrick (1948) were also taken care. These experts put their negative opinions regarding 6 statements out of 22 statements and therefore, these 6 statements were rejected. Finally, the preliminary draft of this attitude scale possessed 16 statements in all.

Step-II: Try out:

The preliminary draft of 16 statements was typed properly and xeroxed to have 50 sets of this attitude scale. For the purpose of try-out, a sample of 50 teachers selected who attended the training programmes. The attitude scale was administered on selected sample of teachers, they responded to each statement taking five options in view as placed against each statements were SA (strongly agree), A (Agree), U (Undecided), D (disagree) and SD (Strongly disagree) and the teacher was to put the tick marks on any one of the option as he/she likes to choose. As the statements are positive in nature, therefore, the weightage to each response SA to SD was given 4,3,2,1 and 0 respectively. The scoring work as completed by adopting these weightages

Step –III: Analysis of Statements:

The preliminary draft of 16 statements was administered on a sample of 50 elementary school teachers who attended the training programmes at one point or the other point of time. The scoring work was done as indicated under step-II. For the purpose of analysis, two groups were made by taking the scores of a sample of 50 teachers. For making two groups, 25% cases of teachers were taken from the higher side of performance on attitude scale and 25% cases of teachers from the lower side of the performance. These two groups called as ‘Higher Group’ and ‘Lower Group’ respectively. By taking the frequency tables of higher- group and lower- group for a
statement of the attitude scale, the t-value was computed by adopting the following formula.

\[
t = \frac{M_H - M_L}{\sqrt{\sum (X_H - M_H)^2 + \sum (X_L - M_L)^2}} \div N(N-1)
\]

In case the t-value came significant, the statement was selected and on the other hand in case the t-value was not found significant, the statement was rejected. In the present case, all the 16 statements were kept in the final draft of the attitude scale.

**Step – IV: Establishing the Reliability and Validity:**

For establishing the reliability of the present attitude scale scores, the investigators used test-retest method by having a small sample of 15 teachers and the coefficient of reliability was computed which came out to be 0.84 and considered quite satisfactory. The content validity and concurrent validity were also established by using the opinions of content experts and the scores taken on another attitude scale respectively. Finally, the attitude scale scores were found quite reliable and valid in nature. The copy of this attitude scale has been put as an appendix – IV

In addition to these tools, the investigator used interview and observation as tools to obtain some important data during the time of field work.

**3.2.5 Data Collection**

Data collection is essentially an important part of the research process so that the inferences, hypotheses or generalizations tentatively held may be identified, as valid, verified as correct, or rejected as untenable.

For any study generally, one has to depend on official documents and other published works to gather the information. But, the published works and information were not adequate to carry out research work. So, in order to achieve the objectives of
the study, the researcher had to obtain information by personal contact with the people involved in the programme. Thus, both data had been collected from both primary and secondary sources.

In the present study, after selecting the problem, the researcher decided to collect data and was followed a systematic procedure.

**Primary sources**

The researcher personally visited 25 Teacher Training Institutes under the selected districts of Assam. The researcher personally met the respondents and had some informal talks with them to build a good rapport. Then the researcher disclosed the purpose of the visit. Then, the researcher according to the items of the questionnaires took responses of the teacher educator and pupil teacher and also from the principals separately. The responses were recorded properly, and at the same time the researcher made an observation on the problems faced by both teacher-educator and teacher-pupil. The researcher also make an observation on attitude towards teacher training programme of teacher and the observations were recorded by the researcher separately in the dairy carried along with it. It took two months to collect the data.

The study was primarily based on the information provided by principals, teacher-educators, pupil-teachers and experts on their perception about different aspects of teacher training programme.

**Secondary Sources**

The secondary sources were the reports of University Grants Commission (UGC), Secondary Education Commission, official records, documentary sources, departmental reports and booklets. Besides those sources, some other sources were periodicals, newspapers, journals, and relevant books to the research topic, which were provided by Gauhati University, SIE, Dibrugarh University, SCERT library,
3.2.6 Statistical Techniques

Conducting research in social sciences which are not exact sciences generally statistical methods are employed to get the desired result. Statistical technique is the only technique of getting result which is considered the best for every problem.

Statistics is a sample fact which depends upon the scores of the particular sampling units comprising a sample. It is the sample value representing any trait or characteristics of members of the sampling. Statistical techniques mean that procedures adopted for interpreting the collected data. There are several statistical techniques to be used.

In the present study some suitable statistical techniques were used to analyze the data gathered from the respondents, they were frequency, percentage, central tendency-Mean score, measures of variability- SD and ‘t’-test etc. for analysis and interpretation of results.

The researcher had presented the obtained data by the process of tabulation, computation of percentages. The gathered informations on different variables were classified, tabulated and titled, so that they are self explanatory.