CHAPTER-III
The investigator had to make intensive study of different phenomena and gathered all information as much as possible, from the Karbi Anglong district systematically, so that the present study can equip her with success to an optimum level.

In this chapter, the investigator adopted the methods and procedures which is used for the present study.

For the present study, the normative survey method has been applied, because, it is that method of investigation which attempts to describe and interpret what exists at present in the form of conditions, practices, processes, trends, effects, attitude, beliefs etc. It is concerned with the phenomena that are typical of the normal conditions.

Area of the Study:

i) Field area :- The area of the study is the Karbi Anglong hill district of Assam, where the students offering mathematics are considered as first generation learners.

ii) Subject under consideration :- Mathematics.

iii) Target groups :- HSLC (High School Leaving Certificate) students.

iv) Period of study :- The period of study is spreaded over 14 (fourteen) years namely 1986-1999.

Sample Design:

The main focus of the present study is to ascertain the effect of the failure
and achievement in mathematics in high school leaving certificate examination in Karbi Anglong district of Assam.

The sample of the study comprised the Inspector of Schools in the district, head of Institutions, the mathematics teachers of secondary level, pupils from class-X and the guardians of different areas like as rural, urban and semi-urban areas of Karbi Anglong district of Assam.

In order to investigate about the problems in failure in Mathematics in HSLC examination the very first step was to select the schools by the method of Random sampling from where the data were to be collected.

In Karbi Anglong district, there are 140 (one hundred and forty) high schools are established. These schools are managed by the State Government; as well as private and semi-private bodies. The medium of instruction of these schools are Assamese, English, Bengali and Hindi.

For the present study the investigator have selected 50 schools, where 2 govt. higher secondary school, 30 provincialised high school and 18 recognised high school. The investigator have also selected 43 assamese medium, 4 english medium, 2 bengali medium and 1 hindi medium high school by randomisation.

The sample of the study consisted of 110 students of class X from 50 schools, 52 mathematics teachers from 50 schools, 35 head of institutions and 60 guardians from different areas of Karbi Anglong district.

Data Collection:

Data were collected from :-

i) Secondary Education Board, Assam (SEBA), Bamunimaidan, Guwahati.
ii) Office of the Inspector of Schools, Karbi Anglong District Circle, Diphu.
iii) Office of the Autonomous District Council, Karbi Anglong, Diphu.
iv) The Students, teachers and guardians of the district are selected on a stratified random sample basis. Each component elements were interviewed.
and their opinions were gathered by the distribution of questionnaires to collect their opinion in the problem.

v) Directorate of Secondary Education, Kahilipara, Guwahati.

vi) Directorate of Tribal Welfare, Guwahati.

vii) Directorate of Census Operation, Guwahati, Assam.

viii) Omeo Kumar Das Institute of Social Change and Development, Cenikuthi, Guwahati.

ix) Office of the District Primary Education Programme, Kahilipara, Guwahati.

**Tools:**

The tools used to collect data developed by the investigator included the failure and achievement in mathematics among Karbi students.

The following tools were selected and employed on the present study.

a) Questionnaire

b) Interview schedule

**a) Questionnaire :**

Questionnaire constructed by the investigator to assess failure in Mathematics among Karbi students.

The questionnaire were placed before the research guides of the present study and it is considered valid by their opinion.

The questionnaire was prepared and the printed copies of the questionnaires were distributed to obtain responses. This device was used for an effort to secure answers of some quarries through the respondent to fill by themselves [Questionnaires attached in the Field Survey chapter].

Questionnaires constructed as three categories—
i) for the student of class-X

ii) for mathematics teacher, and
iii) for guardians

The following steps were followed in constructing the questionnaire—
i) to know the actual situation prevailing the school.
ii) to ascertain their social condition and educational background.
iii) to know about their rational thinking and planning.
iv) to know their attitude towards mathematics.

The respondents were asked to give tick mark (✓) against each of the items. The number of students, mathematics teachers and guardians giving tick marks under different headings were counted separately.

Most of the guardians were illiterate, therefore they did not understand how the questionnaires were filled up. In this case the investigator has taken oral interview through discussed.

b) Interview schedule:

For the present study, at the very beginning, the investigator met the Inspector of Schools in Karbi Anglong district to have a fruitful contact of the different schools of the district. He has supplied the data which was available in his office and wrote to the Head of Institution to render their best co-operation with the investigator to investigate one of the vital social problems of the district.

With the best efforts the investigator met 35 Head of Institutions and recorded their views for poor performance of the students in mathematics in the HSLC examination.

STATISTICAL WORKS:

The investigator has collected the informations of the number of regular candidates appeared and passed in Mathematics for the Karbi Anglong district, Assam from the Board of Secondary Education, Bamunimaidan, Guwahati, for the period 1986 to 1999.
The investigator have collected the data, yearwise and centrewise and recorded the informations in Tabular forms (Table no 1 to 14 in the Field Survey chapter). We have drawn the graphs of the candidates appeared in HSLC examinations and the candidates passed in Mathematics separately for boys and girls for the period 1986 to 1999. The upper curve (CA) represents the number of candidates appeared in HSLC examination and the lower curve (CP) represents the candidates passed in Mathematics in the said examinations. The gap between the two curves (CA and CP) represents the failure of the candidates in mathematics in HSLC examinations and the gap between lower curve (CP) and the horizontal line (horizontal axis) represents the candidates passed in Mathematics in the said examination. (Graphs showed in the Field Survey chapter).

When the gap between the curves CA and CP increases, it means the failure increases. The deviation of CP towards the horizontal line means the percentage of pass decreases i.e. success ratio is lowered.

**LIMITATIONS OF THE STUDY :**

The study had the following limitations—

a) The study was limited to secondary schools of Karbi Anglong district of Assam.
b) The study had to be limited to the students of class X alone because the results of the HSLC examinations conducted by SEBA shows that the percentage of failure in the subject of mathematics is higher than the percentage of pass in mathematics.