CHAPTER IV

METHODS AND PROCEDURE
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4.1. RESEARCH DESIGN

The research design is the conceptual framework within which the research is conducted. Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a Research Design. It helps the researcher to carry on his research operation to solve a research problem with minimum wastage of effort, time and money. A research design can be compared to a blueprint that an architect prepares before starting of a construction. As such the design includes an outline of what the researcher will do from writing the hypothesis and its operational implications to the final analysis of data. For the present study the investigator has to develop a research design which contained the following -

1) Formulating the objective of the study (what the study is about and why is it being made?)

2) Designing the methods of data collection (What techniques of gathering data will be adopted?)

3) Selecting the sample (how much material will be needed?)

4) Collecting the data (Where can the required data be found and with what time period should the data be related?)

5) Processing and analysing the data.

6) Reporting the findings.

The whole research work is divided into 5 stages.

The first stage is a good deal of library work to study different literatures related to the problem under study. The objectives of the study are formulated and hypotheses are stated.

In the second stage the method for the study is selected, sample is drawn by appropriate technique and procedures for collection of data are finalised and appropriate tools are developed.

The third stage is the field work to collect data both primary and secondary.

Fourth stage is the processing of data. Concentration is mainly given on table work. Tabulation and analysis of data are done and findings are interpreted, Statistical Techniques are used to verify the findings.

Finally the study has been reported.
4.2. Method used in the study.

Educational Research can be classified into three broad categories, viz. Historical Research, Descriptive Research, and Experimental Research. All studies fall under one or combination of these types. Historical Research describes 'What was' and Experimental Research describes 'What will be'. Descriptive Research concerned with the conditions or relationships that exist, practices that prevail, beliefs, point of view or attitudes that are held; processes that are going on; effects that are being felt; or trends that are developing. Thus the major purpose of the Descriptive Research is to describe the state of affairs as it exists.

For the sake of convenience descriptive studies may be classified in the following three main categories -

1) Survey studies.
2) Interrelationship studies.
3) Developmental studies.

Some investigations fall exclusively within one of these categories, but others have characteristics of more than one. Here survey studies include:

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1) School surveys.
2) Job analysis.
3) Content analysis.
4) Public opinion surveys.
5) Social Survey etc.

Interrelationship studies include -
1) Case studies
2) Casual comparative studies.
3) Correlation and prediction studies.
4) Cross-cultural and comparative studies.

Developmental studies include -
1) Growth studies.
2) Follow up studies.
3) Trend studies.

Descriptive survey method is also called 'Normative Survey Method'. The compound adjective 'Normative-Survey' is applied to this method which suggests two aspects of the study. The word 'Survey' indicates the gathering of the data of the current condition. The word 'Normative' is used because the surveys are done frequently to ascertain the normal or typical condition or practice.  

Considering the different Methods of Research the investigator selected the survey methods as  

appropriate for the present study. Thus in the present study Normative Survey method has been employed and data are collected by - observation, interview, schedules which help to gather real facts of the conditions that are going to be studied and is expected to give a correct picture of the socioeconomic causes that influence the academic achievement of the children at Lower Primary Level.

4.3. Sampling Design.

In surveys, data may be collected from entire population. Population or universe means totality of the field study under consideration in any field of inquiry. In such a case it is known as Census survey. Most of the educational phenomena consist of a large number of units. It would be impracticable, if not impossible, to test, to interview or observe each unit of the population under controlled conditions in order to arrive at principles having universal validity. It is time consuming and expensive and also not feasible for an ordinary researcher.

Sampling is the process by which a relatively small number of individuals or measures of individuals, objectives, or events is selected and analysed in order to find out something about the entire population for which it was selected. Sampling design are basically of two types - viz, nonprobability sampling and probability sampling.⁵

⁵Kothari, C.R.; Opcit. P.82.
Non probability Sampling:

Non probability sampling is also known by different names such as, deliberate sampling, purposive sampling and judgment sampling. This sampling method involves purposive or deliberate selection of particular units of the universe for constituting a sample which represents the universe. It does not afford any basis for estimating the probability that each item in the population has of being included in the sample. Quota sampling is an example of Non-probability sampling.

Probability Sampling:

Probability sampling is also known as Simple Random Sampling or chance sampling - is the sampling procedure where each and every item in the population has an equal chance of inclusion in the sample and each one of the possible samples, in case of finite universe, has the same probability of being selected.

Mixed Sampling Design:

Combination of both probability and non-probability samplings adopted in selecting the sample is called-. 'Mixed Sampling Design'. These are also termed as Complex Random Sampling Designs.6

Some of these are di scused here -

6 Kothari, C.R.; Opcit p.87.
i) Systematic Sampling:

In systematic sampling only the first unit is selected randomly and the remaining units of the sample are selected at fixed intervals.

ii) Stratified Sampling:

Under stratified sampling the population is divided into several sub-populations. These sub-populations are individually more homogeneous than the total population. The different sub-populations are called Strata. Items are selected from each stratum by random method. As each stratum is more homogeneous than the total population, it is possible to get a more representative sample.

iii) Cluster Sampling and Area Sampling:

If the total area of interest happens to be a big one to select the sample—then the area is divided into a number of smaller non-overlapping areas. Then a number of these smaller areas are selected randomly for the sample. If clusters happens to be some geographic subdivisions, in that case cluster sampling is known as area sampling.

iv) Multistage Sampling:

This is a further development of the idea of cluster sampling. Under multi-stage sampling the first stage may be to select large primary sampling units such as states, then districts, then towns and finally certain families within towns. If the technique of random sampling
is applied at all stages, the sampling procedure is described as multi-stage random sampling.

Considering the merits and demerits of different sampling techniques the investigator selected the combination of multi-stage and stratified sampling methods which can be said as Multi-stage-stratified sampling technique for selecting the sample for the present study which falls under Mixed Sampling Design.

4.3.1. The Universe of the Study:

The universe of the study or population of the study are the Government and provincialised primary schools of Kamrup district. The physical position of Kamrup district in Assam can be clearly viewed in the Map of Assam, Fig 5. The units of the population are taken randomly from the primary schools situated in the North, south, East and West parts of Kamrup district, Fig 6.

Here in the Eastern part Chandapur, Sonapur areas are selected, in Western part - Palasbari, Rani Chaygaon areas are selected, in Northern part - Pasaria, Sualkuchi, Rangia areas are selected and in the Southern part the Greater Guwahati areas are selected. The sample collected from different schools of these areas as shown in Figure 6, and the list of the names of the sampled schools is shown in table 8.

The total population of Kamrup district is 20,000,71, out of which only 10,85000 are literates. It means
out of 23 districts of Assam- Kamrup district itself shelters more than 9 lakh (9,15,071) illiterates, although its position according to the percentage of literacy is 2nd out of 23 districts of Assam (Table-II). Out of the illiterate population of kamrup District only if we take into account 35'5% adults as illiterates then also the total number of illiterate adults of Kamrup district is more than 3 lakh. Table 6 shows the total and sexwise population by caste in Kamrup district. Here we see that the percentage of scheduled caste population to the total population is 7.54 % and scheduled tribe population to the total population is 10'72 %.

Table VI

<table>
<thead>
<tr>
<th>District</th>
<th>Total population</th>
<th>Scheduled caste population</th>
<th>Scheduled tribes population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male Female Total</td>
<td>Male Female Total</td>
<td>Male Female Total</td>
</tr>
<tr>
<td>KAMRUP</td>
<td>10,64,644 9,35,422</td>
<td>79,00,10 71,733</td>
<td>1,09,286 1,05,054</td>
</tr>
<tr>
<td></td>
<td>1,50,743</td>
<td></td>
<td>2,14,340</td>
</tr>
</tbody>
</table>


'Aspects of population profile of Assam.'

7 'Education for all' Director of Adult and Non-Formal Education, Assam. 1993.
Photo.5. Investigator interviewing teachers in a sampled school of East Kamrup.

Photo.6. The parents of a dropoutee (At the time of interview).
The area from which the universe of the study has been selected by the investigator i.e., Kamrup District's percentage of literacy is 67.5% in general. Here the male literacy rate is 73.67% percent and female literacy rate is 56.41% percent with a disparity of 17.19% percent (Fig 7).

Fig. 7. Sexwise disparity in literacy in Kamrup District. SOURCE: Statistical handbook of Assam 1991.

The schedule tribe children are found more in Sonapur, Rani, Chaygaon areas, scheduled caste children are found more in the North Bank of the river Brahmaputra. There are all total 26390 Government and provincialised primary schools in Assam, out of which 1869 are in Kamrup
District. Table VII shows the number of primary schools, number of teachers, pupil-teacher ratio of different districts of Assam. The units of population are also taken from some remote village areas where still now communication is a very big problem. The investigator found that most of the people of such remote village areas are living in a quite different world unaware even about the facilities given by the government through the Community Development Block and which are specially meant for them.

The investigator in her house to house survey and interviewing parents found that most of these families are suffering from diseases like - Malaria, Diarrhoea etc. although health department has taken very active preventive and curative measures to control these diseases.

As the total 1026 samples of the study are collected from the schools situated in urban, semi-urban and remote areas where the people of both Advance and Backward classes are residing; therefore the units of population is expected to give a more representative sample for the present study.
### Table-VII

Number of primary schools, number of teachers, pupil teacher ratio at different districts of Assam.

<table>
<thead>
<tr>
<th>District</th>
<th>No.of Primary schools</th>
<th>Enrolment in primary level</th>
<th>No of Primary schools teacher</th>
<th>P/T Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dhubri</td>
<td>1201</td>
<td>109133</td>
<td>2328</td>
<td>1:46</td>
</tr>
<tr>
<td>Kokrajhar (Bongaigaon)</td>
<td>1358</td>
<td>125716</td>
<td>2768</td>
<td>1:45</td>
</tr>
<tr>
<td>Goalpara</td>
<td>1086</td>
<td>95039</td>
<td>2457</td>
<td>1:38</td>
</tr>
<tr>
<td>Kamrup</td>
<td>1869</td>
<td>234333</td>
<td>4487</td>
<td>1:52</td>
</tr>
<tr>
<td>Nalbari</td>
<td>1265</td>
<td>114883</td>
<td>2721</td>
<td>1:42</td>
</tr>
<tr>
<td>Barpeta</td>
<td>1623</td>
<td>142626</td>
<td>3467</td>
<td>1:41</td>
</tr>
<tr>
<td>Nowgaon (Morigaon)</td>
<td>2446</td>
<td>140420</td>
<td>5190</td>
<td>1:57</td>
</tr>
<tr>
<td>Lakhimpur (Dhemaji)</td>
<td>1860</td>
<td>172861</td>
<td>3851</td>
<td>1:45</td>
</tr>
<tr>
<td>Dibrugarh (Tinsukia)</td>
<td>1949</td>
<td>121392</td>
<td>4188</td>
<td>1:29</td>
</tr>
<tr>
<td>Darrang</td>
<td>1323</td>
<td>125106</td>
<td>2942</td>
<td>1:42</td>
</tr>
<tr>
<td>Sonitpur</td>
<td>1572</td>
<td>120835</td>
<td>2818</td>
<td>1:43</td>
</tr>
<tr>
<td>Sibsagar</td>
<td>1569</td>
<td>147803</td>
<td>3606</td>
<td>1:41</td>
</tr>
<tr>
<td>Jorhat Golaghat</td>
<td>2286</td>
<td>199500</td>
<td>5169</td>
<td>1:38</td>
</tr>
<tr>
<td>Karimganj</td>
<td>1103</td>
<td>76692</td>
<td>2078</td>
<td>1:37</td>
</tr>
</tbody>
</table>

**SOURCE**: Statistical Hand Book of Assam.

"Directorate of Economics and statistics, Govt. of Assam. Guwahati. 1991 P.296-313."
4.3.2. THE SAMPLE

Multistage, stratified sampling technique is adopted for selection of the sample.

Although the investigator had collected total 1825 samples from all together 60 primary schools of Kamrup District yet due to some technical difficulties only 1016 samples were selected from 24 Primary schools of Kamrup District out of which 575 are from Advance class and 451 are from backward class. Only those schools in which children from both Advance and Backward classes are studying were selected for the study to have a balance view of their academic achievement.

The list of sampled schools along with the sides of Kamrup District, schoolwise no. of samples in Advance and Backward classes are shown in table no. VIII.

So inspite of writing in the research proposal to use total 1200 samples for the study, the investigator could not do so due to the non-availability of samples from both the classes in the same school. Table IX shows the classwise number of samples collected from different sides of Kamrup District.

In the first stage the investigator divided the whole Kamrup District into 4 parts as North, South, West and East kamrup. Then from each part some places were selected and the primary schools in which children of both
<table>
<thead>
<tr>
<th>School Code</th>
<th>Name of the school</th>
<th>Side in Kamrup district</th>
<th>Samples of AC</th>
<th>Samples of BC</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Dispur Govt Nimna Buniyadi Vidyalaya</td>
<td>SOUTH</td>
<td>18</td>
<td>31</td>
<td>49</td>
</tr>
<tr>
<td>S2</td>
<td>Panbazar Adarsha Buniyadi Vidyalaya</td>
<td>SOUTH</td>
<td>57-2(T)</td>
<td>30-1(T)</td>
<td>84</td>
</tr>
<tr>
<td>S3</td>
<td>Domorapathar L.P. School</td>
<td>EAST</td>
<td>17</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>S4</td>
<td>1 No.Borkhat L.P. School</td>
<td>EAST</td>
<td>12</td>
<td>19</td>
<td>31</td>
</tr>
<tr>
<td>S5</td>
<td>Hahara Primary School</td>
<td>EAST</td>
<td>11</td>
<td>33</td>
<td>44</td>
</tr>
<tr>
<td>S6</td>
<td>Tatelia Gov't Buniyadi Vidyalaya</td>
<td>EAST</td>
<td>1</td>
<td>64</td>
<td>65</td>
</tr>
<tr>
<td>S7</td>
<td>36 No.Digaru Nimna Buniyadi Vidyalaya</td>
<td>EAST</td>
<td>14</td>
<td>40</td>
<td>54</td>
</tr>
<tr>
<td>S8</td>
<td>Karchia Primary school</td>
<td>EAST</td>
<td>1</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>S9</td>
<td>Dapata Kalikajari Primary School</td>
<td>EAST</td>
<td>4</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>S10</td>
<td>Pasaria Girls' L.P. School</td>
<td>NORTH</td>
<td>21</td>
<td>8</td>
<td>29</td>
</tr>
<tr>
<td>S11</td>
<td>South Sarania Gov't L.P. School</td>
<td>SOUTH</td>
<td>50</td>
<td>24-1(T)</td>
<td>73</td>
</tr>
<tr>
<td>S12</td>
<td>Kamalajari L.P. School</td>
<td>EAST</td>
<td>8</td>
<td>5-1(D)=4</td>
<td>12</td>
</tr>
<tr>
<td>S13</td>
<td>109 Parlee Balak Prathamic Vidyalaya</td>
<td>WEST</td>
<td>32</td>
<td>3</td>
<td>35</td>
</tr>
<tr>
<td>S14</td>
<td>761 Parlee Dina Balika L.P. School</td>
<td>WEST</td>
<td>30</td>
<td>9</td>
<td>39</td>
</tr>
</tbody>
</table>

Contd. Table VIII
<table>
<thead>
<tr>
<th>School Cod no</th>
<th>Name of the School</th>
<th>Side in Kamrup district</th>
<th>Samples of AC</th>
<th>Samples of BC</th>
<th>Total Sample.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S15</td>
<td>Harmohan Das VidyaPith</td>
<td>NORTH</td>
<td>32</td>
<td>4</td>
<td>36</td>
</tr>
<tr>
<td>S16</td>
<td>Kaibatrapara Prathamik Vidyalaya</td>
<td>NORTH</td>
<td>6</td>
<td>35</td>
<td>41</td>
</tr>
<tr>
<td>S17</td>
<td>61 no. Matiparbat Prathamik Vidyalaya</td>
<td>NORTH</td>
<td>77</td>
<td>14</td>
<td>91</td>
</tr>
<tr>
<td>S18</td>
<td>Suwalkuchi Adarsha Prathamik Vidyalaya</td>
<td>NORTH</td>
<td>97</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>S19</td>
<td>Chaygaon Balika Primary School</td>
<td>WEST</td>
<td>31</td>
<td>7</td>
<td>38</td>
</tr>
<tr>
<td>S20</td>
<td>Rangia Buniyadi Abhyas Vidyalaya</td>
<td>NORTH</td>
<td>14-1(T) 13</td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>S21</td>
<td>Rani Sajjanpara Primary School</td>
<td>WEST</td>
<td>8</td>
<td>25</td>
<td>33</td>
</tr>
<tr>
<td>S22</td>
<td>Parlee Natun Basti Primary School</td>
<td>WEST</td>
<td>8</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>S23</td>
<td>Chandapur Nimna Buniyadi Vidyalaya</td>
<td>EAST</td>
<td>19</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>S24</td>
<td>Upper Hengrabari L.P. School</td>
<td>SOUTH</td>
<td>10</td>
<td>18</td>
<td>28</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>=</td>
<td>575</td>
<td>451</td>
<td>1026</td>
</tr>
</tbody>
</table>
Advance and Backward classes are studying were finally selected as sampled schools (Fig.6).

<table>
<thead>
<tr>
<th>TABLE IX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of samples collected from different sides of Kamrup District.</td>
</tr>
<tr>
<td>CLASSES</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>ADVANCE CLASS</td>
</tr>
<tr>
<td>BACKWARD CLASS</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

In the Eastern side of Kamrup—Sonapur, Chandapur, Digaru etc. places were selected.

In the Western side of Kamrup—places like Palasbari, Chaygaon, Rani were selected.

In the Southern side of Kamrup—Panbazar, Dakshin Sarania, Dispur, Hengrabari etc. of Greater Guwahati were selected.

In the Northern side of Kamrup—Pasaria, Suwalkuchi, Rangia etc. places were selected.

In all these places only those schools were selected for sample collection where samples from both Advance and Backward classes were found.
These sampled schools are either provincialised or Government. The cod number for each school has shown in the table VIII which are also used in Figure 6 to show the exact location of the sampled schools.

Under stratified sampling the population i.e, FGLS (First Generation Learners) and NFGLS (Non-First Generation Learners) are selected from two sub-populations according to social status under the heading of -

i) Advance class and

ii) Backward class.

Then these selected FGLS and NFGLS are divided into three sub-groups according to economic levels as-

i) High Income Level (HIL)

ii) Middle Income Level (MIL)

iii) Low Income Level (LIL)

These sub-populations are called strata. Items were selected for each stratum by random method. As each stratum is more homogenous than the total population therefore it is possible to get more representative sample here. The schools selected are well spread all over the Kamrup District (Fig.6)

The schematic diagram of the sampling design used in the present study is given in Fig.8.
Fig. 8. Schematic diagram showing the number of samples collected from different classes, groups and income levels.

Although in the research proposal the investigator aimed to collect 600 samples each in Advance and Backward classes and accordingly 300 each in FGL and NFGL groups and 100 each in HIL, MIL and LIL according to income yet after collecting data by following the selection norm (i.e., collecting samples from those schools where children of both Advance and Backward classes are studying) it has found that, the sample numbers in different classes groups and income levels are different from what the investigator mentioned in her research proposal. And accordingly the used number of samples are indicated in the
schematic diagram. (Fig. 8)

As data collection and interviewing parents and children in different areas of Kamrup district was not possible and convenient for the investigator herself alone, therefore the investigator entrusted some reliable persons working as para medical Staff and whose duty is to do local house to house survey to create awareness about health, sanitation and family planning, to fill up the interview schedules, opinionnaire for which special verbal instructions were given to them by the investigator. Thus 20% help the investigator took from those reliable persons in data collection and remaining 80% data collection work was completed by herself.

Besides this the primary school teachers, college students also helped a lot in indentifying families of different classes and groups, who even accompanied the investigator to do her survey work smoothly.

The investigator did a sample survey of 50 families to determine the income levels. The determination of income levels is clearly mentioned in chapter II and the number of families interviewed from different areas in different income levels are shown in Table 5.

To test the attitude of parents towards their children's education the investigator administered
Likert's attitude scale on all together 100 parents of which 50 are literates and 50 are illiterates.

The investigator interviewed all together 50 dropouts. some of these dropouts are not from the cohort group selected for the present study. Total 120 grade repeaters were interviewed of which 60 from the Advance class and 60 from the Backward class.

Regarding regular promotee: the investigator interviewed 45 children of which 15 are FGLS and 30 are NFGLS.

From different parts of Kamrup the investigator interviewed all total 24 headmasters and 40 teachers of the primary schools which are shown in table X along with the number of selected sample schools from different sides of Kamrup district.

<table>
<thead>
<tr>
<th>Sides</th>
<th>No of Schools</th>
<th>No of Head Masters</th>
<th>No of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH KAMRUP</td>
<td>6</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>SOUTH KAMRUP</td>
<td>4</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>EAST KAMRUP</td>
<td>9</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>WEST KAMRUP</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>24</td>
<td>24</td>
<td>40</td>
</tr>
</tbody>
</table>
Photo 7. A grade repeater with the investigator.

Photo 8. A regular promotee at home with the investigator.
4.4.1. PROCEDURE FOR DATA COLLECTION:

The method used for the present study is the Normative survey Method. Data from both primary and secondary sources were collected for the study. Primary data were collected with the help of information sheets, schedule, interview, observation method and attitude scales. Secondary data were collected from different sources like - Census report, Offices like - Director of Adult and Non-formal education office Kamrup, Director of statistics, Director of Social welfare etc. From different books, Journals and newspapers, visiting Libraries of NCERT, CASE, Administrative Staff college Library, Library of NEIBM, K.K., Hinduque Library G.U., S.K.B. Library Cotton college etc.

4.4.2. Data gathering technique:

The data gathering techniques that are used in normative survey method of study are as follows:

i) Inquiry forms

ii) Interview

iii) Observation

(i) Inquiry forms\(^7\) : Inquiry forms are a set of data gathering research tools, which make use of properly designed proformas for enquiring into and securing information about certain phenomena under investigation.

\(^7\)Koul, Lokesh; Methodology of Educational Research, Vikash publishing house Pvt. Ltd. New Delhi-14, 1988, P.142.
tools included in this category are -

a) Questionnaire
b) Schedule
c) checklist
d) Rating scale
e) Score card
f) Opinionnaire or attitude scale.

A questionnaire is a device consisting of a series of questions (by using a form) which is mailed or given to the respondent to fill up by himself and when it is filled up in the presence of the questioner then it is referred to as a schedule. A checklist is a simple device consisting of a prepared list of items which the researcher thought to be relevant to the problem being studied. It helps the investigator to record the data quickly and systematically. Checklists are sometimes used in the form of questionnaire, which are completed by the respondent rather than by the observer. Rating means the judgment of one person by another. Rating scale refers to a scale with a set of points which describe varying degrees of the dimension of an attribute being observed.

When the purpose of the questions are to know the opinion of the respondent in that case it is known as opinionnaire or attitude scale.

In both schedule and questionnaire there are a number of questions printed or typed to collect
data. The questions may be structured or unstructured. Structured questionnaires are those questionnaires in which there is definite, concrete and predetermined questions. The form of the questions may be closed or restricted type or open or unrestricted type. When the responses are wanted in a list of suggested responses, then it is known as closed or restricted type of questionnaire. The open form or unrestricted type of questionnaire calls for a free response in the respondent's own word. Though closed type structured questionnaire is easy to tabulate, fillup and also easy to analyse yet to search new facts open unrestricted questionnaire is more useful.

(ii) Interview Method:

The interview is a process of communication or interaction in which the subject or interviewer gives the needed information verbally in a face to face situation. After the interviewer gains rapport or established a friendly relationship with the interviewee, it is possible to bring out some confidential informations also, the informations that are difficult to obtain in written form. In interview the interviewer can acquire many informations from the incidental comments of the interviewee, facial and bodily expressions, tune of voice, gestures, reactions etc. that
would not be conveyed in any other way.

(iii) Observation Method:

Observation is an important method for gathering data in descriptive research. Observation is the knowledge directly gained through the sense organs. By observation method, information is collected by the investigator by direct observation. The element of restriction imposed in questionnaire or interview are missing in observation method. It naturally records the bahaviour of the individuals as it is shown by them. For recording of information gained through observation number of devices have been extensively used. Those are checklists, rating scales, score cards and scaled specimens.

However observation method has certain limitations. It is expensive and limited informations can be collected by this method. Moreover some people or situations under the study may not be accessible for direct observation.

4.4.3. Techniques used for data collection in the present study:

Schedules, observation, interview, opinionnaire or attitude scales were used in the present study for data collection.

8 Best, W.J.; Opct P.164.
Questionnaires were not used for a number of reasons -

(i) Informations regarding school enrolment, promotion etc. from 1992 are to be searched in school records which is very tiresome and time consuming. So it is very likely that the questionnaires if mailed may not come back. Reliability of the data may also be doubted.

(ii) In schedules and interviews - observation method can be used which is not possible in questionnaires.

Data regarding school are collected through schedules by the investigator and also by some reliable persons employed by the investigator.

For several advantages interview technique is used widely in the study. In the course of study many people are interviewed such as teachers, government officials, parents of the primary school-going children who are either literate or illiterate or of low educational status. Direct method applied in gathering data makes the study intensive and expected to give a more accurate result.

4.4.4. Tools for data collection and administration of the tools:

Following tools have been developed by the investigator in the present study to use in the
collection of data.

(i) Inquiry form A. (Appendix 1)

To follow the carrier of a group of fresh entrants in class I in January 1992 and pursue them for four years i.e. upto the completion of four classes (classes I, II, III, IV) of lower primary stage in December 1995, i.e. to know about the academic achievement of the children - the inquiry form A was used. All the children that were enrolled in the year 1992 (Base year for the present study) are entered in this form, their attainment to different grades, failure to get promotion in particular grade, when they left schools i.e., dropped out or went to other school or death case if any along with their caste, guardians' monthly income and education (literate or illiterate) etc., all these informations of each and every child are recorded. The child that passed primary schools in due time i.e. regular promotee is also recorded in the inquiry form 'A'. Attendence register, register containing marks obtained by the children in class IV annual examination held in December 1995 and counter foils of certificates issued from the school were consulted for this purpose.

(ii) Inquiry Form B. (Appendix II)

This inquiry form was prepared for the parents of dropouts to enquire about
the name, caste, occupation, way of spending leisure time, income, education (literate or illiterate) of the parents along with the name and age of the dropouts. Here to identify the dropouts the help of school teachers and para-medical persons were taken by the investigator.

(iii) Schedule I (Appendix III)

This schedule was prepared to collect data relating to the school. Name and biodata of the headmaster, strength of male and female teachers, their training and qualification, present enrolment, number of permanent and temporary teachers etc. physical condition of the schools - all these informations were recorded in this schedule.

(iv) Interview schedule for Regular Promotee (RP) (Appendix IV) and
(v) Interview schedule for dropouts and grade repeaters (Appendix V), were to interview the regular promotee (RP) dropoutees and grade repeaters to know their problems and some personal informations about them.

(vi) Interview schedule for the parents of FGLS and NFGLS, Dropoutee, Grade repeater (GR) of Advance and Backward classes (Appendix - VI)

This interview schedule was prepared to know about the home environment provided by the parents to their children i.e. the social background of the child and also the economic, educational etc. backgrounds of the child.
In this present study the investigator included structured as well as unstructured questions. In all closed type items the response 'Others' is included to permit the respondent to indicate his response which the investigator had not anticipated.

(vii) Attitude test (Appendix VII)

An attitude test was prepared of Likert type. Both positive and negative statements regarding education of the children are included in the test.

It was administered among 100 parents to know their attitude towards their children's education out of which 50 were literate and 50 were illiterate parents. At the moment of interviewing parents the investigator asked these questions and accordingly their answers were recorded against each statement by giving a tick (✓) mark against the appropriate response of the five point response scale as given below -

1) Strongly agree
2) Agree
3) Cannot say
4) Disagree
5) Strongly disagree

These five point responses are later converted into the number of parents according to the trend of attitude towards their children's education into five categories as -

\(^9\)Best, W.J.; Opcit P 157.
1) Most favourable
2) Favourable
3) Indifferent
4) Unfavourable
5) Most unfavourable

After preparation of the tools these were tried out and finalized after modification.

In data collection regarding academic achievement of the children, although it was very much tiresome, and time consuming yet the headmasters and teachers of each of the sampled schools were highly co-operative with the investigator that she found no difficulty in collecting these informations. In some cases of course she had to visit the same school even more than 5 times for misplacement of the records in the school. The investigator faced some difficulties in interviewing the dropouts as all the dropouts of the cohort were not found, and could not be identified due to the reasons that - some of the dropouts were out of station and worked as helper in teastalls, garages and houses. so to know the causes of dropout, problems faced by the dropoutees, their home and economic conditions etc. the investigator interviewed the available dropoutees with the help of teachers and paramedical persons. All together 50 dropouts (20 from Advance class and 30 from Backward class ) from different sides of Kamrup district as shown in Table XI were interviewed.
The investigator visited the homes of the children to interview their parents. All total 30 parents of the dropouts of which 10 from Advance class and 20 from Backward class were interviewed. All total 30 parents of the grade repeaters of which 20 parents of the FGLS and 10 parents of the NFGLS were interviewed. Teachers and paramedical personnel helped the investigator to contact the parents. So although it was harder for the investigator to contact the parents of dropouts, yet the parents of grade repeaters and regular promotee were easier to contact as they have some touch with the teachers of the school. This also helped the

<table>
<thead>
<tr>
<th>SIDES</th>
<th>ADVANCE CLASS</th>
<th>BACKWARD CLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH KAMRUP</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>SOUTH KAMRUP</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>EAST KAMRUP</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>WEST KAMRUP</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>
investigator to observe the overall home environment, the leisure time activity etc. of the parents.

To know the academic atmosphere of the school the responses from the regular promotee regarding teacher-pupil relationship, their liking and disliking of school subjects, home-works, punishment, physical condition of the school were collected by actual interview with them and also by observing the school situations.

4.5. **TREATMENT OF THE DATA.**

Present investigation is both qualitative and quantitative. Therefore both qualitative and quantitative data were gathered for the study. Data collected to compute the extent of academic achievement, wastage are quantitative but in investigating the causes of non achievement, dropout and stagnation, the data collected are qualitative. The qualitative data are also analysed by quantitative method.

4.5.1. **Method of computing academic achievement of the Learners.**

To measure the academic achievement of the Learners the investigator here took the help of two methods.

In the first method the total number of students came out successfully in the class IV annual
examination in 1995, those enrolled for the first time in class I in 1992 was divided by the total number of students enrolled in class I in 1992 and then multiplied it by 100 to get the percentage of regular promotee (RP) which indicates the academic achievement of the students. So the percentage of regular promotee or the rate of academic achievement is calculated here as -

\[
RP = \frac{\text{No of students passed class IV in 1995}}{\text{No of students enrolled for the first time in class I in 1992 (excluding transfer and death cases)}} \times 100
\]

In the second method the investigator calculated the Gross Wastage in which more rate of gross wastage indicates less academic achievement and less rate of gross wastage indicates more academic achievement. In the present study the investigator used the true cohort method to compute Gross Wastage of the cohort group. Here the cohort group was divided into First generation and Non First Generation Learners according to the literacy of the parents to compute wastage. In this true cohort method longitudinal data on a single group of pupils, who were enrolled in class I in 1992, followed their carrier in subsequent 4 years till they completed lower primary stage in 1995. Here those who were failed to get promotion to the next higher class is regarded as wastage due to stagnation
(\(W_s\)) or considered here as grade repeaters (GR). But those who left school without completing the 4 years lower primary education in stipulated time is regarded as wastage due to dropout (\(W_d\)). And thereby the Gross Wastage (\(G_w\)) was computed as -

\[ GW = W_s + W_d \]

Where, \(W_s = \frac{\text{Total number of GR of the cohort}}{\text{Total number of students of the cohort}} \times 100\)

\(W_d = \frac{\text{Total student of the cohort left school without completing the Lower Primary}}{\text{Total number of students of the cohort}} \times 100\)

Here in this method, informations regarding transfer or death were recorded and subtracted from the cohort group as their carrier could not be followed.

In this study the investigator found 5 such cases out of which 1 was a death case and 4 were transferred to other schools. These five cases were initially subtracted from the cohort so that it may not hamper in later calculations of wastage and academic achievement. Here in Advance class two transfer cases are found one in North Kamrup and the other in South Kamrup and both are in NFGL group. In Backward class 2 transfer cases in NFGL group are found in South Kamrup and 1 death
case in FGL group is found in West Kamrup. So out of total 1031 samples these 5 samples are subtracted and 1026 is regarded as the total cohort for the present study.

Although the actual number of dropouts could not be computed here as in many cases after stagnation for two or more years students drop out from the school, yet it does not hamper in the main aim of the investigation. Because the present investigation aims to find out the academic achievement of the cohort group (enrolled in class 1 for the first time in 1992), classwise, groupwise and incomelvelwise, where if anyone fails for once indicates its failure in achievement. Academic achievement measured here only with the rate of regular promotee (RP).

4.5.2. Identification of the causes of the failure in academic achievement.

Teachers, parents, grade repeaters, dropouts were asked about the causes of failure in academic achievement during the course of interview. Here the respondents were asked to give free opinion regarding the failure in academic achievement and also some causes were raised by the investigator during the time of interview and their responses were marked by marking tick (√) in the schedule where number of causes were listed.
The qualitative data are analysed in the form of frequencies and percentage of the respondents responded to a particular cause is calculated separately for each cause. If a particular cause is given by 4 out of 40 teachers then the cause is said to be getting 10 percent response. Each of the causes were valued to identify the causes that hampered the academic achievement of the children. With the response to a particular cause the percentage of the responses was calculated to ascertain the degree of importance of the causes.

4.6. STATISTICAL METHODS USED.

The statistical methods used in analysing and interpreting the findings are described below.

4.6.1. Classwise, groupwise, incomelevelwise percentage of Academic achievements are computed by the following methods.

\[
\frac{\text{No of RP in the class/Group/Incomelevel}}{\text{Total no of pupils in the class/group/ incomelevel}} \times 100
\]

4.6.2. Mean and Standard Deviation are computed by the following formulas -

Mean academic achievement in Advance and Backward classes and also in FGL and NFGLS groups are
computed by applying the formula.

\[ M = \frac{\sum x}{N} \]  \hspace{1cm} (ii)

Where -

\[ \sum x = \text{Sum of the raw scores (Here percentage of RP are considered as raw scores for the classes and groups)} \]

\[ N = \text{Total number of raw scores} \]
\[ M = \text{Mean or average.} \]

After computing the percentage of academic achievements of FGL and NFGL boys and girls of Advance and Backward classes, the Standard Deviation (SD) of these different groups are computed by the following method.

\[ SD = \sqrt{\frac{\sum x^2}{N}} \]  \hspace{1cm} (iii)

Where,

\[ \sum x^2 = \text{The sum of the squares of the deviations from the mean.} \]
\[ N = \text{Number of cases.} \]
\[ SD = \text{Standard Deviation.} \]

4.6.3. To determine the income levels the following formula of Q was used.

\[ Q = \frac{Q_3 - Q_1}{2} \]  \hspace{1cm} (iv)

---

11 Ibid P 50
Where,

\[ Q = \text{Quartile Deviation} \]

\[ Q_1 = L + \frac{N/4 - \text{cumfl}}{fq} \times i \]  

(v)

and

\[ Q_3 = L + \frac{3N/4 - \text{cumfl}}{fq} \times i \]  

(vi)

Here,

\[ \frac{N}{4} \quad \text{and} \quad \frac{3N}{4} = \text{One fourth and three fourth of the total cases.} \]

\[ L = \text{Exact lower limit of the class interval on which the one fourth of the total cases in case of } Q_1 \text{ and three fourth of the total cases in case of } Q_3 \text{ lie.} \]

\[ \text{Cumfl} = \text{Cumulative frequency below } L. \]

\[ fq = \text{Frequency on which the quartile lies.} \]

\[ i = \text{Length of the class intervals.} \]

4.6.4. Analysis of variance (ANOVA) technique is used and F- ratios are calculated to examine the significance of variance among groups by the formula -

\[ F = \frac{\text{Mean square variance within groups}}{\text{Mean square variance between groups}} \]  

(vii)

4.6.5. To determine the significance of the differences between means, t-testing method was applied to test the significance of the differences between means by applying the following formula.

\[ t = \frac{(M_1 - M_2) - 0}{\sigma_D} \]

Where,

\[ \sigma_D = \text{Standard error of the differences between means.} \]

\[ \sigma_D \] is computed by applying the following formula.

\[ \sigma_D = SD \cdot \sqrt{\frac{N_1 + N_2}{N_1 N_2}} \]

Where,

\[ SD = \text{pooled SD of the two groups calculated by applying the formula} \]

\[ \text{Pooled } SD = \sqrt{\frac{\sum (X_1 - M_1)^2 + \sum (X_2 - M_2)^2}{(N_1-1) + (N_2-1)}} \]

Where,

\[ \sum (X_1 - M_1)^2 = \sum X_1^2 \] is the sum of the squared deviations around the mean of group 1 and \[ \sum (X_2 - M_2)^2 = \sum X_2^2 \] is the sum of the squared deviations around the mean of group 2.

\[ ^{14} \text{Garrett, H.E.; Opcit. P 223.} \]

\[ ^{15,16} \text{Ibid p 224.} \]
4.6.6. Chi-square ($\chi^2$) test was applied to test the trends in attitude test by the formula. 

$$\chi^2 = \sum \left[ \frac{(f_o - f_e)^2}{f_e} \right]$$

(xi)

Where,

$f_o$, means the observed frequency i.e., the frequency of occurrence of observed or experimentally determined facts.

$f_e$, means expected frequency i.e., the expected frequency of occurrence on some hypothesis.

4.6.7. Bar, line and pie diagrams are also used in reporting the findings.