CHAPTER III
METHODOLOGY

3.0 Introduction

The methodology of educational research is a vast field of growing literature, combining various approaches to suit different problems relating to a wide variety of study areas. It is a way to systematically solve the research problem undertaken to study. “Research is considered to be the more formal, systematic and intensive process of carrying on a scientific method of analysis. It involves a more systematic structure of investigation, usually resulting in some sort of formal record of procedures and a report of results or conclusions”. – J.W. Best and J.V. Kahn (2000).

The present study conducted is descriptive in nature and it identify the problems related to financial management and utilization of resources, academic practices, scholastic and co-scholastic activities and assess the problems related to infrastructural facilities and mode of class-room transaction and also assess the students’ level of educational aspiration. This chapter deals with the methodology and procedure of the study.

As the study involved only one contact with the study population, so it is an one-shot or status study. It is a suitable design for finding out the prevalence of a phenomenon, situation, problem or issue by taking different section of the population like students, teachers and principals of the colleges.
For collection of data, self prepared ‘questionnaire’ for students, ‘Information Schedule’ for teachers and ‘Institutional Data Schedule’ and ‘Interview Schedule’ for principals are used. For assess the educational aspiration level of the students the “Educational Aspiration Scale” developed by Dr. V.P. Sharma and Dr. Anuradha Gupta (2009) is used.

3.1 Research Design:

“A traditional research design is a blue-print of detailed plan for how a research study is to be completed operationalizing variables, so they can be measured, selecting a sample of interest to study, collecting data to be used as a basis for testing hypotheses and analyzing the results – Thyer (1993). In the present study the ‘Descriptive Survey Method’ was adopted which deals with the variables that are executing in the institutions. It is an important type of study which gathers data from a relatively large number of samples at a particular time.

In this study, the investigator has collected data for finding out the problems and limitations, in financial management and utilization of resources, strength and weaknesses in academic practices, limitation in the scholastic and co-scholastic activities, problems related to adequate infrastructural facilities and mode of classroom transaction which affect the internal efficiency of the colleges.

In this study, the investigator attempts to explore and assess the educational aspiration level of the students belong to the colleges of urban, semi-urban and rural areas which indirectly affect the quality of the education as well as the institutions. The present study is designed to collect detailed description of existing institution specific
problems and prospects of the colleges and to draw valid conclusion from the facts discovered.

3.2 Selection of variables:

A concept, an image or perception that can be measured is called a variable. ‘A variable is a property that takes on different values. Putting it redundantly, a variable is something that varies …… A variable is a symbol to which numerals or values are attached.’ [Kerlinger, 1986].

In this study, the following variables were taken into consideration-

i) Financial management and utilization of resources.
ii) Academic practices.
iii) Scholastic and co-scholastic activities and facilities.
iv) Infrastructural facilities.
v) Mode of class room transaction.
vi) Prospects of the colleges.
vii) Educational Aspiration level of students.

3.3 Population:

Population is the universe in a particular context of variables. It refers to any collection of specified group of human beings or of non-human entities such as objects, educational institutions, time-units, geographical areas, prices or salaries drawn by individuals (Koul, 1984). The population is any group of individuals that has one or more characteristics in common. Population may be either finite or infinite, either
hypothetical or real. A finite population is one all members of which may be counted; an infinite population is one of unlimited size.

In this study, all the principals, teachers and students of 74 provincialized colleges under Dibrugarh University spreading over 7 districts of Assam were considered as the population. However, the sample of the study was confined to 27 provincialized colleges of 3 districts.

3.4 Sample:

Sample may be defined as the smaller representative portion of the total research population on the basis of which inference can be made about the population. Therefore, appropriate procedure was applied carefully to select the sample from the universe, because it was not possible to study the whole universe from the point of consuming time and money. So the sample was selected from different strata for the study by applying different techniques to increase the efficiency, decrease the cost and obtain more accurate results.

In this study, the sample comprises of 270 teachers, 324 students and 27 principals (a total of 621) of 27 sample colleges under Dibrugarh University which are spreading in three districts namely Golaghat, Jorhat and Sibsagar.

In selecting the sample of the present study, the stratified randomization technique was adopted. The stratification factors taken into consideration are the locality of the colleges, such as Urban, Semi-Urban and Rural.
3.4.1. Sampling of Districts:

The colleges affiliated to Dibrugarh University are spreading in 7 (seven) districts namely- Tinsukia, Dibrugarh, Sibsagar, Jorhat, Golaghat, Lakhimpur and Dhemaji. Out of 7 (seven), 3 (three) districts were selected for the present study. These three districts are Sibsagar, Jorhat and Golaghat. All these three districts are located in the middle part, Tinsukia and Dibrugarh are located in the east and Lakhimpur and Dhemaji in the north. These three districts were selected only from the point of convenient communication and ease of data collection.

3.4.2. Sampling of colleges:

Stratified randomization technique was applied to sort out 27 out of 74 provincialised colleges under Dibrugarh University. Hence, sample strength of college was 36% and the sample strength of districts was 42.85%. Among the sample colleges there were 9 (nine) colleges each from the urban, semi-urban and rural areas respectively. Again out of the 27 colleges 10, 8, 2, 5, 2 colleges possessed only Arts, Arts & Science, Arts, Science & Commerce, Arts & Commerce, only Commerce respectively. The detail list of sample drawn from the colleges is given in the Appendix - i.

3.4.3. Sampling of Principals, Teachers and students:

In the present study the investigator selected equal number of samples from different strata, for example, number of male and female teacher samples are equal, the number of students sample are equal and the number of sample colleges from urban,
semi-urban and rural are also equal. An attempt has been made to collect information from the entire population of principals of the selected samples colleges.

The institution wise break up of the 270 teachers and 324 students are presented in **Appendix-ii**

The teachers, students and principals were selected by applying stratified random sampling technique. A random sample of 10 teachers, 12 students and the principals from all selected colleges were drawn to the construct the sample for the study.

There are three girls’ colleges in urban areas, so the number of students sample are same but their representation of male and female number was a little bit different. From the girls’ colleges 10 samples were picked up from each and in the case of co-educational colleges of urban areas the male female ratio of sample was 9:4.

The figure 3 shows the distribution of sampling of provincialised colleges (principals, teachers and students).
Fig: 3: Sample distribution of the study
3.5 Tools for data collection

To collect required data and information, the investigator used the following tools:

1. Self prepared “Institutional Data Schedule” with 30 items and ‘Interview Schedule’ with 25 items for principals.
2. Self-prepared “Information Schedule” with 44 items for teachers.
3. Self-prepared “Questionnaire” with 26 items for students.
4. “Educational Aspiration Scale” standardized by Dr. V.P. Sharma and Dr. Anuradha Gupta (2009) of Raipur for students. (Hindi version of this scale is translated into Assamese by investigator and English by professional translators.)

A detailed description of above tools is given below:

3.5.1. Interview Schedule (Principals) (Appendix –iii)

Interview is a method of collecting information through different forms of interaction between interviewer and interviewee or group of interviewees. It is a process of communication in which interviewee given the needed information verbally in a face to face situation.

In the present study, the investigator used both structured and unstructured interview. For structured interview the ‘Interview schedule’ was prepared with both ‘open ended’ and ‘close-ended’ questions. Beside these, for collecting relevant data, multiple choice questions were also included in the interview schedule. The structured interview schedule was used in this study to collect information about – (i) Financial
Management, (ii) Resource Utilization and (iii) Prospect of Provincialized colleges, besides general information.

3.5.1.1. Reliability and Validity

The success of schedule mainly depends on obtaining natural answer. To find out the misleading answers the information schedule and interview schedule were administered on a sample group of 20 teachers and 3 principals respectively when the limitations were indicated in the given answers then the related questions were removed. The responses made by the teachers and the principals were studied carefully by the investigator and those question which were found to be irrelevant and ambiguous were either modified or omitted and again the schedule administered. The schedules were administered twice on same sample groups for testing the reliability of the schedules, which were prepared for both teachers and principal samples. After that, the schedules were made final for the study.

3.5.1.2 Application of Interview Schedule

After taking due permission and appointment, a good rapport was established with the principals of the colleges. After a pleasant introduction the investigator started the formal interview with the principals to get the requisite data and information. A self-developed interview schedule was used for that purpose which consist of all total 25 questions (excluding general information) focusing mainly on 3 aspects as mentioned above.
3.5.2 Information Schedule (teachers) (Appendix –v)

"Information schedule" is the name usually applied to a set of questions which are asked and filled in by an interview in a face to face situation with another person (Good and Hatt, 1952). In this study, the information schedule was prepared with 44 items for the teacher respondents to collect necessary data regarding the variables as follows:

<table>
<thead>
<tr>
<th>Aspects</th>
<th>No of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information.</td>
<td></td>
</tr>
<tr>
<td>Academic practices</td>
<td>11</td>
</tr>
<tr>
<td>Scholastic activities</td>
<td>13</td>
</tr>
<tr>
<td>Co-scholastic activities</td>
<td>10</td>
</tr>
<tr>
<td>Mode of class-room transaction</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44</strong></td>
</tr>
</tbody>
</table>

3.5.2.1. Application of information schedule:

For proper administration of the schedule, the investigator has established a good rapport with the teacher of each college. A peaceful corner in the staff common room was selected for administering the schedule. The question of the information schedule was put one after another by the investigator and the respondents were requested to give honest answer. Proper care was taken to note down the answer immediately so that any important part would not be left out.
3.5.2.2. Scoring of the Schedules

The information schedule prepared for teachers and interview schedule for principal were structured in nature and contained different types of questions like multiple choice, ‘Yes’ ‘No’ type and some were open ended also.

But, there were no right or wrong answers in the schedule. Therefore, 1 (one) score was offered to every answer and percentages were calculated for the positive and negative answers (as required) for valid conclusion.

In relation to academic practices of the teacher the response ‘Yes’ was used to identify the strength and ‘No’ to weaknesses of the colleges.

3.5.3. Institutional Data Schedule (Principal) (Appendix – iv)

The schedule as apparent by its name is used to collect data of concerning institutions. In the present study the ‘Institutional Data Schedule’ was prepared to collect data of the colleges with the help of the concerning principals. This data schedule contained 30 items under four headings, such as

- Administrative facilities 10 Items
- Academic facilities 09 Items
- Student support facilities 07 Items
- Co-scholastic facilities 04 Items

3.5.3.1. Scoring of Institutional Data Schedule:

This schedule had been scored in each of four aspects. Each ‘yes’ response was allotted I mark and ‘no’ response was 0 (zero). The maximum scores in each aspect
were indicated the degree of internal efficiency of the institution/college as adequate or inadequate. Minimum score of 65% indicates the adequate of the colleges of any area.

3.5.4. Questionnaire for students: (Appendix-vi)

‘Questionnaire’ refers to a device for securing answers to questions by using a form which the respondent fills in himself” (Goode & Hatt). In the present study, the investigator decided to use close-form and open form questionnaire i.e. structured questionnaire for gathering data from the student sample. The both-form of questionnaire has been used because close form is easy to respond, relatively objective in nature, keep the respondents on the subject, takes little time to fill up by the respondents and also easy to tabulate and analyse. But open form question is very much helpful to collect actual information on what actually want to collect. The questionnaire prepared for students contains 26 items in 2 aspects besides general information. They are as follows:

- **Scholastic facilities.**
- **Co-scholastic facilities.**

On the basis of the aforesaid dimensions, the researcher has tried to find out the problems faced by the students in the sample colleges and a draft was prepared accordingly. Preliminary draft was prepared by sorting out items as well as constructing some new items as per requirements. After preparing the preliminary draft, it was typed and the script was given to three subject experts for the review and evaluation. These three subject experts were drawn from the department of education, G.U. renown educationist and social activists associated with higher education institutions. On the basis of their responses and suggestions, the draft was modified. This preliminary tool was administered to a representative sample of 30 students of different disciplines (10
form Arts, 10 from Science and 10 from commerce). On the basis of these responses the draft was further modified and final shape was given.

3.5.4.1 Validity and Reliability of the Questionnaire:

Validity and reliability of the questionnaire was ensured by distributing the same representative group of 30 students (10 students each from Arts, Science and Commerce). Of them 10 students selected each from the colleges of Urban, Semi-Urban and Rural Areas.

The responses made by the students were studied carefully by the investigator and those questions which were found to be irrelevant and ambiguous were either modified or omitted. Thus draft was again modified and finally the number of items was reduced from 35 to 26. After testing the validity and reliability, the questionnaire was made final for the study.

3.5.4.2 Different Dimensions of Questionnaire

Following are the dimensions of questionnaire:

Part -1: General information

This part of the questionnaire contained some general information’s like age, sex, educational status and stream, locality etc. to describe the sample of the present study as well as to analyze data as per objectives and hypotheses formulated for the study.

Part-II: Scholastic facilities

The word scholastic means academic or related to curricular transaction. The scholastic facilities mean facilities needed in the teaching learning process.
Teaching is the act of imparting knowledge, skills, providing activities, materials, directions and guidance by way of lecture, demonstration, seminar, or any appropriate method that facilitates learning of students in an educational institution.

In this dimension, the students respondents were given 16 items and they were asked to put √ (tick mark) either ‘Yes or ‘No’ against each item. In some items supportive questions were also given for collecting more essential information. There is no provision of score in supportive questions.

Part-III: Co-Scholastic facilities

Today the aim of education is not mere imparting of bookish knowledge but to make the youth good citizens by bringing about their mental, physical and social development. That is why it has become necessary to accord a proper place to the various co-scholastic activities in the educational set-up. The co-scholastic activities can be described as the extra classroom activities that an educational institution may provide for all round development of the students’ personality. These activities are in some respects more vital than the scholastic activities. So, provision should be made in every institution for co-scholastic activities and proper facilities should be provided to the students. “Adequate provision for sports, games, co-curricular activities and participation in management should be made at the tertiary level of education with the object of diverting the energy of the students to constructive channels” (NEP, 1986).

Total 10 items were given to the respondents in this dimension to find out the provision of co-scholastic facilities in the sample colleges. There were some ‘Yes / ‘No’ type and a few supportive questions also given in this aspect. The supportive questions help in analyzing the collected data.
3.5.4.3 Administration of the Questionnaire

For administering the questionnaire, firstly permission was taken from the principal and after that a good rapport was established with the student respondents who were randomly selected from the different streams. Care was also taken to maintain the equal number of students from both sexes. The respondents were informed that their responses to be used for research purpose only and will be kept confidential. They were also requested to go through the instructions given in the questionnaire and after that respond honestly. It was also announced that there was no right or wrong answers, so they may report their true feelings without any hesitation. They were asked to complete the questionnaire in a single sitting so that not a single item would be left out. Two days were given to the respondents to complete the questionnaire and after two days the investigator collected the same from them.

3.5.4.4. Scoring of Questionnaire.

The questionnaire prepared for students, consist of only ‘Yes’ ‘No’ type and leading/ supportive questions. There was no right or wrong answer. Therefore I (one) score was offered to every answer for ‘yes’ and ‘No’ to calculate the percentage of positive and negative responses for valid conclusion. The leading/ supportive answers are used in analyzing the existing phenomenon.

3.5.5 Educational Aspiration Scale (EAS) Form-V

A number of educational aspiration scales and other instruments were developed and used by different researchers depending on the nature of their problems. Hoppe (1930), Dembo (1931), Escalona (1940), Festinger (1942), Lewin (1944), Sears
(1944), Parikh and Chattopadhya (1965), Shah and Bhargava (1971), D. Sinha (1972) and Grewal Kaur, D. (1990), Choudhary, V. (2007) have used different scales to measure the level of aspiration of different samples.

The present Educational Aspiration Scale (EAS) was developed and standardized by Dr. V.P. Sharma and Dr. Anuradha Gupta (2009) in R.S. University, Raipur. The scale was prepared for college students. In order to meet the needs of the student and proper administration of the scale, the original Hindi version was translated into English by professional translator and Assamese by the investigator.

The scale contains 8 lists each consisting of 10 items from which one item of each list has to be chosen by the respondents.

3.5.5.1 Reliability

Reliability was estimated by the (a) Coefficient of stability Test-Retest method and found $r_{tt} = .798$ (b) Coefficient of infernal consistency by split half technique using SB formula found

(a) Between R and I items $\rightarrow r_{tt} = .671$

(b) Between S and L items $\rightarrow r_{tt} = .817$

3.5.5.2 Validity

(i) The EAS has been validated against scholastic attainment $r = .758$

(ii) It has also been validated against the judges opinion (N=15), $r = .542$
3.5.5.3 Norms:

Norms have been developed on a college population (N=1050) for both the sexes of High Achievers and Low Achievers as well as on total percentile.

Since the measurement of level of educational aspiration depends largely upon the verbal stimulus given to the subject after having known and realized the knowledge of result (KR), the instructions to two each of eight lists have been structured in accordance with the nature of goal period (e.g. short range or long range), as well as levels of expression (e.g. Idealistic or Realistic). Thus EAS stems contained four-fold instructions to the 10 multiple choice leads arranged in random order.

<table>
<thead>
<tr>
<th>Level of expression</th>
<th>Goal periods Long Range (L)</th>
<th>Short Range (S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic (R)</td>
<td>Of the qualifications listed below, which is the best one you are quite confident to attain even after 20 years (7, 3)</td>
<td>Of the qualification listed below, which is the best one you are quite confident to attain even after your educational career is over (5, 2)</td>
</tr>
<tr>
<td>Idealistic (I)</td>
<td>Of the qualifications listed below which one would you prefer to attain even after 20 years, if you are free to receive any one of them (8, 4)</td>
<td>Of the qualifications listed below, which are would you prefer to attain after your educational career is over, if you are free to receive any one of them (6, 1)</td>
</tr>
</tbody>
</table>
3.5.5.4 Administration of EAS

The present study also aimed at finding out the educational aspiration level of the students of different localities, viz. urban, semi-urban and rural. For that purpose the investigator administered this Educational Aspiration Scale already standardized by the developer in a group testing situation.

After taking due permission of the concern principal, the investigator established a good rapport with the students and asked them that there is no time limit, however, 25 minutes are sufficient for this test. To make them well aware, about the test, the investigator instructed in the following way.

3.5.5.5 Instruction

“There are eight lists, each containing 10 items of qualifications. In view of your past experience, your educational maturity, capacity and ability as well as the efforts that you can make in attaining them, you are requested to mark one and only one which either (A) you can attain towards – (i) the end of your educational career or (ii) after 20 years or (B) you prefer to have towards (iii) the end of your educational career or (iv) after 20 years. Please don’t omit any item’’

After giving instruction, the students were requested to choose only one from each list and put tick (√) mark against it. They were provided ample time for this purpose. After completion of the Educational Aspiration Scale by the students the investigator collected the sheets with thanks.

The interpretation of the educational aspiration level of the students were done under three categories viz. High, Average and Low in accordance with distribution of scores presented in the table 3.2
<table>
<thead>
<tr>
<th>Interval of the score obtained</th>
<th>Level educational Aspiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>53 – 80</td>
<td>High</td>
</tr>
<tr>
<td>27 – 52</td>
<td>Average</td>
</tr>
<tr>
<td>0 – 26</td>
<td>Low</td>
</tr>
</tbody>
</table>

This table is used for systematically analyzing the collected data from the students’ sample.

### 3.5.5.6 Scoring Procedure

The 10 items in each list have prestige value ranging from 1-10. Since the items having different prestige values have been randomly presented in each list, the scoring keys have presented below in the table 3.3.

#### Table 3.2: The scoring keys of EAS

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>List No.</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>2</td>
<td>8</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>6</td>
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<td>3</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>9</td>
<td>6</td>
</tr>
</tbody>
</table>

The scale contains 8 lists each consisting of 10 items from which one item of each lists was chosen by the respondents according to the instruction. For example, if the respondent choose alternative 1 (one) from the list 1 then he/she will get 10 score, if the respondent choose alternative 1 from the list 2 then he/she will get 2 score. Separate
‘Hand Scoring Keys’ for each of the eight lists also prepared for scoring EAS and the score ranged between 8 to 80. As such the whole scoring procedure was completed.

(A copy of the EAS is given in the Appendix- vii)

3.6. Collection of Data

In the process of investigation, the investigator had used both primary as well as secondary sources of data. The primary data were collected from the students, teachers and principals of the colleges through the use of above tools. The secondary data were collected from various books, and information from Directorate of Higher Education, Government of Assam and website of Dibrugarh University.

The researcher has taken utmost care in proper application of tools and test for getting accurate and adequate information. The investigator visited every sample college within the month of April 2010 to August 2011.

The investigator met the different categories teachers, such as part-time teachers, full-time non-sanctioned teachers and permanent teachers (Assistant professor and Associate professors). The investigator also interacted informally with non-sanctioned lecturers of the colleges. A few of them were also interviewed by the investigator along with permanent teachers.

The investigator also visited the colleges of flood affected Majuli sub-division in the month of December, 2010. This sub-division of Jorhat district has been devastatingly affected by the flood every year and due to the erosion of the bank of river Brahmaputra, the area of the Majuli is being decreased day by day. Though the students of Majuli remain detach from the other parts of Assam, but they are academically, or
socially much more developed in comparison to students of some other rural colleges of the same district.

The investigator also availed some secondary sources of data from the administrative office of the Dibrugarh University. The data collected from the above mentioned sources helped her most to successfully complete the study.

### 3.7 Statistical treatment of the data

The analysis of collected data in a planned way is must for any scientific study. Proper analysis of the collected data gives a meaningful result of the investigated problem. The nature of the data depends mostly upon the type of tool or data. The data gathered through questionnaires, observation or interviews are mostly qualitative data. This type of data provides depth and detail information of the study. The quantitative data are obtained through different measurement scales.

The nature of the present study is primarily descriptive and analytical. Hence percentage is adopted as the major technique of statistical treatment for the obtained data mainly in objective numbers 1, 2, 3, 4 and 6. Necessary Bar diagram, Pie diagram are used to interpret the data. As the student sample were distributed into three strata viz. urban, semi-urban and rural according to the location of place the aspiration level of the students were undertaken to find out the differences among groups. For this purpose mean, standard deviation and analysis of variance (ANNOVA) *i.e.* F-ratio are used. For comparison the Education Aspiration level of the students Post Hoc tests are used in objective number 6.

In this chapter, the method and steps of construction of tools, the procedure adopted in the collection of data and statistical treatment to be applied are described.
The following chapter deals with the analysis, interpretation and discussion of the data under the present study.
References:


