CHAPTER-IV
METHODOLOGY

4.1 Introduction

The term ‘methodology’ as defined by Oxford Advanced Learner’s Dictionary of Current English is ‘a set of methods and principles used to perform a particular activity.’ Research methodology refers to a way to solve a research problem in a systematic way. It may be understood as a process of studying a problem scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to know not only the research methods/techniques but also the methodology. Researchers not only need to know how to develop certain indices or tests, how to calculate the mean, the mode, the median or the standard deviation or chi-square, how to apply particular research techniques, but he/she also needs to know which of these methods or techniques, are relevant and which are not, and what would they mean and indicate and why. A researcher also needs to understand the assumptions underlying various techniques and he/she requires knowing the criteria by which he/she can decide that certain techniques and procedures will be applicable to certain problems and others will not. All these mean that it is necessary for the researcher to design his/her methodology for his/her own convenience as the same may vary from problem to problem (Kothari, 2004). The basic difference between research methods and research methodology is that research method is a part of the research methodology whereas research methodology is a way to find out the solution of any problem on scientific base. Thus research methodology
not only deals with research methods but also considers the logic behind the methods used. It explains why or why not a particular method or technique is used or not used so that research results can be evaluated either by the researcher himself or by others. Why a research study has been undertaken, how the research problem has been defined, in what way and why the hypothesis has been formulated, what data have been collected and what particular method has been adopted, why particular technique of analyzing data has been used and many other questions can be usually answered when we talk of research methodology concerning a research problem or study. Therefore, methodology is needed because it facilitates the smoothness of the research operation, thereby making research as efficient as possible yielding minimum expenditure of effort, time and money. It provides the researcher direction to plan, to solve the research problem systematically. A good research always follows a sound methodology and procedure which leads the investigator to the target. In the absence of the research methodology it will be difficult for the proposed study to be carried out systematically and fruitfully.

4.2 Classification of Research

It is a difficult task to classify educational research because there is too much overlapping in their purposes and procedures. Thus there is no natural system of categorizing them which may put the different methods neatly in clear-cut way.

1. On the basis of objectives of study (Koul, 2001) research has been classified as

- (a) Basic or Fundamental or Pure Research, (b) Applied Research.

- (a) **Basic or Fundamental or Pure Research:** It is designed to add to an organized body of scientific knowledge and does not necessarily produce results of immediate
practical value. It is primarily concerned with the formulation of a theory or a contribution to the existing body of knowledge (Koul, 2001).

(b) **Applied Research:** It is undertaken to solve an immediate practical problem where the goal of adding to scientific knowledge is secondary (Koul, 2001). Action research is a type of applied research but the basic difference between the two is that applied research may be carried out on a larger sample but action research is conducted on the immediately available small sample in order to solve the immediate problem.

2. **On the basis of methods of research** according to Good, Bar and Scates (1941 p.207), research may be classified from various points of view like

(a) **The field to which applied:** education, history, philosophy, psychology, biology, etc.

(b) **Purpose:** description, prediction, determination of causes, determination of status, etc.

(c) **Place where it is conducted:** in the field or in the laboratory;

(d) **Application:** pure research or applied research;

(e) **Data gathering devices employed:** test, rating scale, questionnaires etc.

(f) **Nature of the data collected:** objective, subjective, quantitative, qualitative, etc.

(g) **Symbols employed in recording, describing, or treating result:** mathematical symbols or language symbols.

(h) **Forms of thinking:** deductive, inductive etc., control of factors; controlled and uncontrolled experimentation;
(i) **Methods employed in establishing casual relationships**: agreement, difference, residues and concomitant variation (Koul, 2001).

Research methods, when classified in the above manner gives rise to a comprehensive list with much overlapping among the different method. Despite this lack of clear-cut distinction among the methods, some authors agree on two basic paradigms (a) logical positivism and (b) phenomenological inquiry. Logical positivism uses experimental and quantitative research methods which are based on assumptions of natural science. These assumptions are universal and apply to all natural science and social science. Phenomenological inquiry utilizes qualitative methods derived from humanities and social science, particularly history, philosophy, sociology and anthropology (Koul, 2009).

Again there are some researchers who agree with the following classifications:

(a) Historical Research  (b) Descriptive Research  (c) Experimental Research

(a) **Historical Research**: Historical Research is one which investigates, records, analyzes and interprets the events of the past for the purpose of discovering sound generalization that are helpful and useful in understanding the past and the present and to a limited extent, the anticipated future. It answers the question ‘what was’. It is the application of scientific method of enquiry to historical problems. In education, knowledge of history of schools and other educational agencies is an important part of professional training of the teacher. It helps teachers as well as the administrators to introduce and adopt new methods and curriculum in schools on the basis of past experience. Present educational problems can be viewed and understood in the light of its origin and their growth. It can help the educational workers and educators to avoid the mistakes of the past.
(b) **Descriptive Research**: Descriptive research methods are used when the researcher wants to describe specific behavior as it occurs in the environment. They are concerned with the description of data and characteristics about a particular population. The purpose is to gain factual, accurate and systematic data which can be interpreted by using in averages, frequencies and similar statistical calculations. Such research hardly involves experimentation, because they are more concerned with natural phenomena. In addition, such studies are designed to obtain pertinent and precise information concerning the current status of phenomena and, whenever possible, to draw valid general conclusion from the facts discovered. They are restricted not only to fact finding but may often result in the formulation of important principles of knowledge and solution of significant problems concerning local, state, national and international issues (Koul, 2001). They are concerned with the present and attempt to determine the status of the given phenomenon rather than isolating causing factors accounting for its existence and thus investigate ‘what exists’.

This method has been classified into three categories such as survey studies, interrelationship studies and developmental studies. In the present study, the investigator has used descriptive method and especially one of its categories namely survey studies. These are conducted to collect detailed description of existing phenomenon with the intent of employing data to justify current conditions and practices or to make more intelligent plans for improving them. Their objectives are not only to analyze, interpret, and report the status of an institution, group, or area in order to guide practice in the immediate future, but also to determine the adequacy of status by comparing it with established standards (Koul, 2001).

(c) **Experimental Research**: Experimental Research is the study of the relationship among variables those manipulated and those measured. It concerns with the cause
and effect relationship in educational events. It describes what will be or what will occur under certain controlled condition.

3. **On the basis of research** approach educational research is again classified into Qualitative and Quantitative approaches (Kothari, 2004). Gill and Johason (1997) attempted to map both strategies and methods into a single dimension that is labeled as ‘quantitative – qualitative’.

(a) Quantitative Research: Quantitative Research is based on the measurement of quantity or amount. It is based on statement such as ‘anything that exists in a certain quantity can be measured’. It uses measurement as the most precise and universally accepted method for assigning quantitative values to the characteristics or properties of objectives or events for the purpose of discovering relationship between variables under study (Koul, 2009). It is applicable to those phenomena that can be expressed in terms of quantity which can be subjected to rigorous quantitative analysis. Here, data that are used are numerical and are based on the assumption that the numbers will describe a single reality. In this type reality is objective and this objectivists' approach to research is also known as the positivist paradigm. Statistics are often applied to find relationships between variables. Following are the characteristics of quantitative research:

- Deductive approach is used in quantitative research where the researcher formulates and uses hypothesis and theories with data.
- It uses deductive approach where its main aim is analysis of representative and validated quantitative data, through the use of sophisticated statistical method and software packages. It uses numbers and statistical methods as key research indicators and tools.
It is based on logical positivism paradigm which utilizes experimental methods and quantitative measures to test specific hypothetical generalization with narrow angle lens (Koul, 2009).

It attempts to study behavior under controlled conditions. The nature of observation is objective, i.e. different observers agree on what is observed (Koul, 2009).

It tends to be associated with large-scale studies and with a specific focus, often condensing information from a large number of specific occurrences to search for general description or to investigate causal hypotheses.

Most of the common research objectives in this approach aim at description, explanation and prediction of social phenomenon. The emphasis is not on the deep understanding of the phenomenon or the content (Koul, 2009).

Close ended structured questionnaires, tests, attitude scales, rating scales etc. are used to collect qualitative data based on precise measurement (Koul, 2009)

Generally large sample are used in quantitative survey studies. So, probability sampling methods is used which helps in selecting a random and representative sample from the larger population.

The findings are based on identified statistical relationship and generalizable findings. Using the principles of probability, quantitative research makes prediction representative of a large population (Koul, 2009).

Validity and reliability can be measured numerically using statistical tests.

A common perception of quantitative research is that the emphasis is on proof rather than discovery.
The form of final report is statistical with details about the uses of various types of statistics i.e. correlation, comparison of means, percentages etc. and their statistical significance (Koul, 2009).

The main types of approaches to quantitative research are- Descriptive Survey Research, Correlation Research, Causal-comparative Research, Experimental Research (Koul, 2009).

(b) **Qualitative Research**: Qualitative Research is concerned with qualitative phenomena i.e. phenomenon relating to or involving quality or kind. This research is mainly important in the behavioural sciences where the aim is to discover the underlying motives of human behavior, so it is also known as non-positivistic or phenomenological inquiry or humanistic paradigm. This type of research not only aims at discovering the underlying motives and desires but also attitudes, opinions, behavior etc. Here reality is subjective and constructed by the researcher. Data are usually collected in a real life natural setting and so they are, rich, descriptive and extensive. Inductive and interpretative approaches are followed for interpreting the data. Through such research we can analyze the various factors which motivate people to behave in a particular manner or which make people like or dislike a particular thing. Following are the characteristics of qualitative research:

- Qualitative research assumes that there exist multiple realities in social and educational situations and these realities exist in concrete forms. It aims at studying real world situation without any manipulation and pre-determined constraints on outcome.
- Such research emphasized on study of meanings given to or interpretations made about objects, events and processes concerning educational situations.
Qualitative inquiry insists on generation of knowledge resulting from the interaction between the investigator and the respondents.

Phenomena are examined as they exist in a natural context, and they are viewed from the participants’ perspectives.

Data analysis of qualitative research requires organizing raw data into logical, meaningful categories and examining them in holistic way for understanding of other.

Purposive sampling is the dominant strategy in this research. The researcher used small samples. He has direct contact with and get close to the people, situation and phenomenon under study. He collects qualitative data using in-depth interviews, participant observation, field notes and open-ended question (Koul, 2009).

It is a kind of research that produces findings not arrived at by means of statistical procedure or other means of qualification (Koul, 2009).

In the case of human relations, several intrinsic factors, events and processes keep on influencing each other frequently. Therefore, it is not possible to identify one to one cause and effect relationships at this level of naturalistic studies.

In the context of education, the major qualitative research are- (a) Phenomenology (b) Ethnography (c) Case Studies (d) Grounded Theory (Koul, 2009)

4.3 Method of the study

In the present study in order to achieve the first and eighth objectives viz. emergence and development of co-curricular activities in the educational programmes; and co-curricular activities followed in the curriculum of SEBA and CBSE data have been
analyzed through documentary analysis. For this, secondary sources like books, journals, CBSE and SEBA guideline have been used by the investigator. Remaining objectives of the study i.e. existing programmes, physical facilities, financial status of CCAs, school’s problems, opinion of parents, role of different authorities with regard to CCAs have been achieved by the investigator through descriptive method specially one of its categories, namely survey study. For this, data was collected from primary sources using self-developed questionnaires and interview schedules. In the following table, objective wise methodology and sources of data has been shown.

**Table no. 1**

**Objective wise methods of study followed by the investigator**

<table>
<thead>
<tr>
<th>Sl no.</th>
<th>Objectives</th>
<th>Source</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Emergence and development of co-curricular activities in the educational programmes.</td>
<td>Books, Journals, Documentary Analysis</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Existing programmes of co-curricular activities in schools.</td>
<td>Headmasters/ Principals</td>
<td>Survey Method</td>
</tr>
<tr>
<td>3</td>
<td>Physical facilities for co-curricular activities in schools.</td>
<td>Headmasters/ Principals</td>
<td>Survey Method</td>
</tr>
<tr>
<td>4</td>
<td>Financial status for conducting co-curricular activities.</td>
<td>Headmasters/ Principals</td>
<td>Survey Method</td>
</tr>
<tr>
<td>5</td>
<td>Problems faced by the schools in carrying out co-curricular activities.</td>
<td>Headmasters/ Principals</td>
<td>Survey Method</td>
</tr>
<tr>
<td>6</td>
<td>Opinion of parents towards the co-curricular activities.</td>
<td>Parents of the students</td>
<td>Survey Method</td>
</tr>
<tr>
<td>7</td>
<td>Role of District Education Officers, District Mission Co-ordinator, Inspector of schools and School Management Committee in promoting co-curricular activities in schools.</td>
<td>District Elementary Education Officers, District Mission Co-ordinator, Inspector of schools and School Management Development Committee Members</td>
<td>Survey Method</td>
</tr>
<tr>
<td>8</td>
<td>Co-curricular activities followed in the curriculum of SEBA and CBSE.</td>
<td>Books, Web source, CBSE and SEBA guideline.</td>
<td>Documentary Analysis</td>
</tr>
</tbody>
</table>
4.4 Population of the study

The present study is delimited to Barak valley situated in the state of Assam. It consists of three districts namely Cachar, Karimganj and Hailakandi. The population of the present study comprises of government and provincialised middle and secondary schools and its Headmasters/Principals, School Management Development Committee Members, Parents of the students, District Elementary Education Officers/District Mission Co-ordinators and Inspectors of Schools. The information regarding the total number of government and provincialised middle and secondary schools of these 3 districts have been collected from District Elementary Education Offices, Inspector of schools of concerned districts. The present study mainly focuses its attention in obtaining the data regarding the existing status of co-curricular activities in middle and secondary schools of this valley. The data have been collected from the Headmasters/Principals, School Management Development Committee Members, Parents, District Elementary Education Officers/District Mission Co-ordinators and Inspector of Schools of the three districts i. e. Cachar, Karimganj and Hailakandi. From the record it has been found that there are 299 numbers of middle and 113 numbers of secondary schools in Cachar district; 240 numbers of middle and 64 numbers of secondary schools in Karimganj district and 238 numbers of middle and 33 numbers of secondary schools in Hailakandi district. So, the total number of middle schools is 777 and secondary schools are 210 in the three districts of Barak valley.

4.5 Sample of the study

Most of the researches are based on samples rather than population. The reason is that it is impracticable to conduct research on the total population. Study of the total population is neither possible nor needed because if sample is representative to the
population, it will give the same result. In order to have a representative sample we need to follow a special procedure which is termed as sampling. It is the process by which a relatively small number of individuals or measures of individuals, objects, or events is selected and analyzed in order to find out something about the entire population from which it was selected (Koul, 2001).

Sampling methods can be classified into two broad categories according to Bloomers and Lindquist. One is Probability Sampling and another is Non-probability Sampling (Sidhu, 2000). In probability sampling, each unit of the population has equal chance of being selected but in non-probability sampling, sample is selected by discretion of the researcher and no theoretical basis is taken into consideration. The researcher only thinks where he will get the required data to serve his purpose. There are different methods of selecting probability sampling like (a) Simple or unrestricted random sampling (b) Stratified random sampling (c) Systematic sampling (d) Multi stage sampling (e) Cluster sampling. On the other hand, the different methods of selecting non-probability sampling are (a) Convenience sampling (b) Purposive sampling. (c) Quota sampling (d) Judgment sampling.

In this study the researcher has followed simple or unrestricted random sampling method. Under this method every member of the sample is selected from the total population in such a manner that all the members of the population have essentially the same probability of being selected. It is considered to be the most popular and trustworthy one of securing representativeness of the whole population (Sidhu, 2000).

**Advantages:**

1. It is free of errors in classification.
2. It is appropriate for data analysis which includes use of inferential statistics.
3. It is more representative of the population.
4. It is impartial and free from prejudice.
5. The method is simple to use.
6. It is easy to assess the sampling error in this method.

Limitations:

1. It carries larger errors for the sample size than that of the other sampling methods.
2. If the items are widely distinct the selection of sample becomes impossible.
3. If the items are heterogeneous in nature than this sampling method would not be applicable.
4. Sampling procedure fails when lists of units of population are not available and population is infinite.

After getting the total number of middle and secondary schools in the three districts, the sample for the present study is selected. In order to select the sample of the present study Simple Random Sampling method has been followed by the investigator. To make the sample representative the researcher has used systematic sampling technique. It is already mentioned that there are 777 numbers of middle schools and 210 number of secondary schools located in three district of this valley. 25% of the middle schools (194) which consist of 6 boys school, 19 girls school and 169 co-educational school, and 25% of the secondary schools (52) which consist of 6 boys school, 7 girls school and 39 co-educational school are considered as the sample of the present study using every 4th unit of the population as sample. Although a systematic sample is not a random sample in the strict sense of the term, but it is often
considered reasonable to treat systematic sample as if it were a random sample (Kothari, 2007).

4.6 Tools used in the study

For the collection of data different types of tools are used. Depending upon the nature of the required data the researcher has to decide which tool will be appropriate for the study. A researcher requires many data gathering tools which may vary in their complexity, design, administration and interpretation. Some tools help in getting descriptive qualitative data and some in getting quantitative data. The present study is a piece of descriptive research mainly based on survey studies. Here the investigator attempts to find out the status of co-curricular activities in the middle and secondary schools of three districts of Barak valley. Keeping into consideration this fact the investigator feels convenient in using the tools like questionnaire for Head Masters/Principals (Appendix-A); questionnaire for Parents (Appendix-B); interview schedule for School Management Development Committee Members (Appendix-C); interview schedule for District Elementary Education Officers/District Mission Coordinators and Inspector of Schools (Appendix-D).

Questionnaire is a popular means of collecting data in research. It is widely used in educational research to obtain information about certain conditions and practices. In normative-survey research or descriptive research, it is used to gather information from widely scattered sources and also used when factual information is needed. It has been used for studying a wide range of problems.

In terms of nature of questions, questionnaire may be of closed or open form (Koul, 2001). The questions that call for short responses are known as restricted or closed form. It restricts the choice of response for the respondent. The open form includes
open ended or unrestricted type of questions which calls for a free response in the respondent's own words. Here no clues are provided. It provides for greater depth of response. In this study the researcher has used two questionnaires one for the headmasters and another for the parents. In both the questionnaires open as well as closed types of questions have been included to get detailed information about the status of co-curricular activities in the middle and secondary schools.

Interview Schedule is a device consisting of a set of questions which are asked and filled in by an interviewer in a face to face situation with another person. It has some advantages over questionnaire. For, it can be administered personally and therefore, it provides opportunity to the researcher to establish rapport with the respondents (Koul, 2001). The difference between the questionnaire and interview schedule is that schedules are being filled in by the enumerators or researchers. The enumerators or researchers along with schedules, go to respondents, put those questions from the schedule, and record the response. In some situations, schedules may be handed over to respondents and enumerators or researchers clarify the aims and objectives of the investigation and also remove the difficulties and doubts which respondent may feel in understanding the questions in the schedule. If researcher takes the help of enumerator then he must train the enumerator so that he can do his job properly. In this study the researcher used interview schedule to collect data from the School Management Development Committee Members, District Elementary Education Officers/District Mission Coordinators and Inspector of Schools.

Document analysis is another tool often used in survey studies. It is also known as content analysis or informational analysis. The documents whose analysis is to be made may be written, printed, verbal or periodical. It may include studying the census, institutional or personal records, analysis of books, syllabi, course study,
newspaper, periodicals, journals, documents etc. (Khan, 2008). Document analysis is that part of descriptive research which is very close to historical research with the difference that while descriptive research is concerned with the immediate past and the present, the historical research is related to distant past. In this study there are two objectives for which the investigator has followed documentary analysis. She has collected the information from different books, journals and periodicals.

4.7 Data collection

The sources of data are of two types viz., primary source and secondary source. The primary data are those which are collected afresh and for the first time, and thus happen to be original in character. On the other hand, the secondary data are those which have already been collected by someone else and which have already been passed through the statistical process (Kothari, 2004). The researcher has collected primary as well as secondary data. In order to collect information from Head masters/Principals and Parents about the status of co-curricular activities in schools two questionnaires are used. On the other hand, two interview schedules are used to collect information about the same from School Management Development Committee Members, District Elementary Education Officers/District Mission Coordinators and Inspector of Schools. Here, questionnaires and interview schedule are used as a tool for collecting the primary data. In order to collect information about first and last objectives i.e. the emergence and development of co-curricular activities in the educational programmes and co-curricular activities followed in the curriculum of SEBA and CBSE the researcher has used the secondary data like books, journals, e-journals, web sources, magazines, reports and publications.

After finalizing the tools the researcher started the collection of data in the month of April, 2012. During this process the researcher had to face lots of problems.
Sometimes teachers were not interested to give information; out of those who were ready, some provided wrong information; if some were ready but provided wrong information, while some questionnaires remained partially filled up. Resultantly the researcher had to visit more than 2 or 3 times in a particular school. The same was the case with the collection of data from parents and school management committee. Here the situation was more acute. In this respect, some respondents proved to be illiterate, were unable to understand the language and so were not able to fill up the questionnaire by themselves. There were a few who had no idea about co-curricular activities. Sometimes questionnaires sent to them were lost, some of the questionnaires were found to be incomplete and so on. Nevertheless, it was a good experience for the researcher to collect data from the real field. Some head masters/principals, school management development committee members were so cooperative that they had provided the investigator lots of information regarding co-curricular activities in schools. They had furnished their own views and ideas regarding how to develop or enhance these activities in school and at the same time what new programmes and steps were taken by governments and by the schools to make co-curricular activities an integral part of regular school curriculum. Some parents had also given their ideas on how to get the benefits of co-curricular activities in school curriculum. In this way it has taken long eight months to collect the data for the present study.
REFERENCES


