CHAPTER 3

PLAN AND PROCEDURE
INTRODUCTION

“Teaching is to research what is to teaching or in a sense, what logic is to thinking”

-RUSK

A well thought plan of action in advance followed by a systematic execution brings our fruitful results; this helps the researcher to proceed directly without confusing with the concomitant events. Anything to be done properly must be planned beforehand. Research is not a haphazard task but it requires proceeding in a definite direction with intention of taking a specific problem and trying to find a solution in a scientific manner on research.

“Always there is a need for thorough understanding of all research method with particular reference to their strength, limitations applicability and appropriateness from an inappropriate method can only lead to unsatisfactory results and disillusionment.”

-GEORGE J. MOULEY

Plan and procedure constitute an important part of research. No research project can be undertaken successfully without proper thinking and planning.

In a research study, the investigator has to describe the technique he used for collection of data for his investigation. He has to describe the Reliability and Validity of the tools used and the method he adopted in drawing out the sample of the study. He is required to discuss and explain the procedure of administering the tools and its scoring technique. The chapter is confined to the discussion of these points under the following steps:

1. Population
2. Sample
3. Methodology
4. Tools Used
5. Collection of data
6. Statistical techniques
STATEMENT OF THE PROBLEM

“A Study of Teaching Methods being Adopted for Teaching of E.V.S. at Primary Level.”

OPERATIONAL DEFINITIONS OF THE TERMS USED

Methods of teaching
The methodical manner or procedure which allows interaction between the students and subject theme for achieving the educational methods is known as method of teaching.

Charles Guide has said that, “In scientific language, the term method is used to designate the road that must be followed to lead the discovery of truth.”

Environmental Studies (E.V.S.)
NCERT has introduced the subject environment studies (E.V.S) as a compulsory subject by NCERT in all primary schools.

Teaching of E.V.S at primary level in urban and rural area.

Primary level
It includes classes I to V.

OBJECTIVES OF THE STUDY -
The research intends to attain the following -
1. To investigate the teaching techniques being implemented for teaching of E.V.S. at primary level in Govt. school of Delhi.
2. To investigate the teaching techniques implemented for teaching of E.V.S. at primary level in public schools of Delhi.
3. To investigate the variation amongst the teaching techniques implemented for teaching of E.V.S.at primary level in govt. schools and public schools of Delhi.
4. To investigate the teaching techniques being implemented for teaching of E.V.S.at primary level in urban area schools of Delhi.
5. To investigate the teaching techniques being implemented for teaching of E.V.S.at primary level in rural area schools of Delhi.
6. To investigate the variation amongst the teaching techniques implemented for teaching schools of Delhi.

HYPOTHESIS
1. There is important variation amongst the teaching techniques between the teaching methods being adopted for teaching of E.V.S. in govt. & public schools of Delhi.
2. There is a crucial variation amongst the teaching techniques being implemented for teaching of E.V.S. in urban and rural area schools of Delhi.

DELIMITATIONS
1. The study will be limited only to the subject of E.V.S.
2. The study would be conducted only in Delhi.
3. The study conducted would be limited to only the primary section.
4. The study would be conducted only for teachers of V class only.
5. The sample for the study would be restricted merely to 160 teachers.

POPULATION
The sample populace for the study comprised of all teachers in Delhi who were teaching E.V.S. in Class V.

SAMPLE
To make inferences related to large groups, analysts employ a sample.

Thus a sample be considered to be a tiny image that symbolizes the entire group of average from which it has been derived.

A sample is a section of the populace that stands for the entire populace. A sample preferably allows the analysts to precisely estimate the opinions and conducts of the entire populace. It is a tiny segment chosen for examination and evaluation. One can make specific deductions related to the populace which it symbolizes by studying the attributes of the sample; this is opposition to well-known perspectives that samples are not selected randomly. It is not realistic to interact with the entire populace. The researcher has to interact with few people
who symbolize the entire populace. This segment is known as the sample.

According to Good- “A sample is a miniature population. To be true, sample must be representative of the population and must be adequate in number.”

Designing the sample calls for three decisions:-

- Who would be investigated? (The sample)
  It is crucial for the analyst to analyze what kind of details would be required and who would probably have all necessary details.

- What is the number of individuals that would be investigated? (Sample size)
  When compared with a smaller sample, it is possible that a larger sample provides more dependable outcomes. On the other hand, it is not essential to target the total populace.

- What is the technique to select the sample? (sampling)
  The researcher may use a random technique to choose the sample members (probability sample)
  The analysts may chose individuals who would effortlessly provide the requisite particulars (non-probability sample)

Delhi was the selected location for the current analysis. The sample was selected by employing the stratified random sampling method. The sample size was 160 and the sample comprised of 160 teachers teaching environmental studies in Class V in both urban and rural areas of Delhi. The teachers belonged to both government and private schools.
SAMPLE DESIGN

TEACHERS

Urban area teachers

80

Govt 40
Public 40

Rural area teachers

80

Govt 40
Public 40
METHODOLOGY

“If the scholar cannot describe his methods, the chances that are too vague and general to yield him satisfactory results,” - T. H. Hillway

The logical process employed by researchers which commences from the preliminary problem recognition to its ultimate inference makes up the research methodology. Educational research can be segregated into chiefly three categories enumerated as under:

1. Historical Technique
2. Experimental Technique
3. Descriptive method or normative survey Technique

One of the most preferred techniques to resolve educational problems is the survey technique. It is employed to investigate problems at all levels including local, state, national and international levels; it is used for contrasting, measuring, segregating, assessing and generalizing with the aim to suitably comprehend and seek answers to crucial educational issues.

The researcher chose to employ the descriptive technique for the current research with comprised of the survey methodology for investigation to identify the teaching technique being employed to teach environmental science in primary schools.

METHODOLOGIES EMPLOYED

Post selecting the sample, the researcher needs to choose the appropriate methods or techniques to gather data. The researcher can select from the different techniques available for varied researches to gather novel and unidentified data. One requires particular tools to collect new details or to investigate new domains. The techniques thus used to gather data or choose techniques to for a specific research relies on different thoughts including the research aims, presence of appropriate tests and individual skills of the researcher to manage the score and understand the outcomes and dependability and authenticity of the scale. The researcher has the option of employing one or more techniques to attain the investigative aims. The researcher chose to employ the SELF PREPARED QUESTIONNAIRE in the
current study that aimed to identify the teaching techniques being implemented by teachers to teach E.V.S.

A questionnaire refers to a group of queries put forth for replies to the participant. The participants have to read the queries, understand them and reply to the queries themselves. A good questionnaire encompasses a theme that is crucial. All queries in the questionnaire must be pertinent or linked to the theme or issue being discussed. Further, the queries need to be easily comprehended and definite. A good questionnaire is one that tries to collect data that cannot be collected from other sources including schools reports, census data and the like.

For evaluating and understanding the replies provided in the questionnaire, the data qualification and quantification is needed which is attained by tabulating and counting the data. It is necessary to refine the inferences tabulated entirely or in proportion of average. The data is quantitatively articulated depending on individuals whose responses are tabulated under varied segments of the questionnaire. However, for widespread result treatment, it is crucial to form independent information segments.

**DESCRIPTION OF THE QUESTIONNAIRE**

**Self-prepared questionnaire**
The questionnaire for studying the methods being adopted for teaching of (environmental studies) E.V.S at primary level is prepared by investigator herself.
The questionnaire consisted of three parts viz. Part-A, Part-B, Part-C.
On the first page general instructions and information will be given:-

1. This questionnaire is prepared to study the teaching methods being adopted for teaching EVS in different schools.
2. Kindly give your answer by putting tick on the option of your choice.
3. Your answer will be kept completely confidential.
4. Kindly provide your trustworthy answers with the best of your knowledge and belief.
5. Your cooperation is solicited.
6. Thanks for your honest cooperation.
PART-A

The first part of the questionnaire included general information about the teachers, viz, Name, School, Type of school, Area and Qualification.

1. NAME OF THE TEACHER :-

2. NAME OF THE SCHOOL :-

3. TYPE OF SCHOOL :- Government / Public

4. AREA OF THE SCHOOL :- Rural / Urban

5. QUALIFICATION :-

6. CLASSES TAUGHT :-
PART-B

The second part of the questionnaire consisted of 20 questions based on classroom teaching and general behavior of the teacher in the class. The teacher will give his/her answer by putting tick on any one of the option amongst the five options viz.- very often; often; sometimes; very few; never.
PART-B

<table>
<thead>
<tr>
<th>S. No.</th>
<th>QUESTIONS</th>
<th>VERY OFTEN</th>
<th>OFTEN</th>
<th>SOMETIMES</th>
<th>VERY FEW</th>
<th>NEVER</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Whether story telling method is used in your class?</td>
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<td>2.</td>
<td>Whether play-way method is being used while teaching?</td>
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<td>3.</td>
<td>Whether adequate no. of questions are asked from the students while teaching?</td>
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<td>4.</td>
<td>Whether invigilation in the class is done during teaching?</td>
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<td>5.</td>
<td>Whether detailed topic – discussion is done in the class?</td>
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<td>6.</td>
<td>Whether audio-visual aids are used to describe the topic?</td>
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<td>7.</td>
<td>Whether debate competition is being organized in the class?</td>
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<td>8.</td>
<td>Whether project work is being asked to prepare by the students?</td>
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<td>9.</td>
<td>Whether students are motivated for preparing the skit?</td>
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<td>10.</td>
<td>Whether quiz competition is being organized in the class?</td>
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<td>11.</td>
<td>Whether sufficient</td>
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<td>12.</td>
<td>Whether any experiment is being undertaken in the class?</td>
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<td>13.</td>
<td>Whether field trips are organized in the school?</td>
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<td>14.</td>
<td>Whether group discussions are organized in the class?</td>
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<td>15.</td>
<td>Whether proper lesson-plan is made before teaching the lesson?</td>
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<td>16.</td>
<td>Whether any kind of demonstration is given for the explanation of the topic?</td>
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<td>17.</td>
<td>Whether democratic teaching is carried out in the class?</td>
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<td>18.</td>
<td>Whether corporal punishment is given in the class?</td>
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<td>19.</td>
<td>Whether any kind of partial behaviour is done amongst the children?</td>
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<td>20.</td>
<td>Whether any kind of gender discrimination is done in the class?</td>
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PART-C

The 3\textsuperscript{rd} part of the questionnaire contains 14 items which covers the syllabus of Environmental Science of 5\textsuperscript{th} standard. Each item consists of 1 unit and 11 options of teaching methods. In this section, they were asked to select the methods which they adopt for teaching that specific unit. Apart from these, there is another option called “Any other”, here the teachers are also allowed to mention the method they used apart from the given methods in former four options.
<table>
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<tr>
<th>Content</th>
<th>Demonstration in %</th>
<th>A.V Aids in %</th>
<th>Demonstration cum discussion in %</th>
<th>Discussion cum method in %</th>
<th>Field trips in %</th>
<th>Illustration with e.g./activity in %</th>
<th>Experimentation in %</th>
<th>Play way method in %</th>
<th>Textbook Method in %</th>
<th>Story telling in %</th>
<th>Q.A in %</th>
<th>Any Other in %</th>
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DATA COLLECTION

Generally, there are 2 types of data and they are:

1. Primary Data – The primary data will collect for the 1st time.
2. Secondary Data – The secondary are the one which is already available (i.e. it has been gathered and analyzed by some researchers else).

This study makes use of primary data collection method.

There are several methods for primary data collection:

- **Observation Method** – Here, the data is collected by researcher’s own direct observation based on people, situations, and actions without asking the data from the respondent.
- **Survey Method** – Survey method is the one, which is suited well for collecting descriptive information.
  
  There are two types of survey methods:
  
  I. **Structured Surveys** – Here, formal list of questions were used for asking the questions to all respondents.
  
  II. **Unstructured Surveys** – Here, interviewer chooses the respondents and also guide the interview based on their answers.

Surveys research may be Indirect or Direct:

- **Direct Approach** – Here, the researcher will ask direct questions about the thoughts and behaviour.

- **Indirect Approach** – The indirect approach may help the researcher to gather various kinds of information. While comparing with experimental and observation method, by using this method, cost is low and also possible to complete quickly.

- **Contact Methods**

  Here, information will be collected by: –
• Telephone
• Mail and
• Personal interview – The personal interviews will be in following types
  I. Intercept interviewing
  II. Personal interviewing
  III. Forum Group interviewing

• Experimental Method

Experimental method is also known as empirical research of effect and cause method. Experimental method is the date based research, and it includes conclusions which are verified with experiment or observation. Experimental research is most suitable when it is essential to obtain proof for the certain variables.

In this study, the researcher gathered the data personally. Here, the researchers obtain permission from head of the institute in order to collect the data. The researcher provide questionnaire to the teachers and also assured them that all the responses obtained are strictly confidential as per the rules and they were only used for research purpose only. Apart from these, the researcher clearly explained about the purpose of questionnaire and also motivated them. Here, there were no time limit and so respondents took nearly about 20 to 25 minutes to complete the questionnaire.

Area of Study

The researcher has chosen Delhi as the area of the study. Delhi is the capital of India and it is a metropolitan and also Delhi is now called as New Delhi. The area of New Delhi is about 1,484 km². New Delhi is the 2nd most populous metropolis after Mumbai in India. New Delhi is the 4th most populous metropolis around the world with the population 22 million in the year of 2011. This research makes use of the teachers of public and government schools of the Union Territory for the survey.
TIME CHOSEN FOR THE STUDY

First of all researcher took permission from the head of the schools through which the sample and data were collected. After getting the approval, the researcher started her job. The interview & the job of getting the questionnaire filled up was done by meeting personally with the teachers. This was done in the month of November as this is the time when teachers were through with the terminal exams in Delhi. The examination, checking work and making the results of the 1st terminal is over by now. The teachers were bit free from these responsibilities thus were mentally free to do the extra job given by the researcher. And the remaining samples were taken in the month of April. Reasons for choosing the April month for the data collection were-

1. The teachers have taught all the units of their prescribed EVS book recently in the present session.
2. They were through with the final exams.
3. They were mentally free, thus were more energetic.

DATA ANALYSIS

For the present study results will be interpreted in 2 sections. Section-1 deals with analysis and interpretation of result through percentile technique. The comparison of difference between the teaching methods used locality and type of school will be done with the help of ‘A’ test.

SECTION-I

ANALYSIS AND INTERPRETATION OF DATA THROUGH PERCENTAGE

Testing Of Hypothesis -1 There is a significant difference between the teaching methods being adopted for teaching of E.V.S. in govt. & public schools of Delhi.

Testing Of Hypothesis -2 There is a significant difference between the teaching methods being adopted for teaching of E.V.S. in urban and rural area schools. Of Delhi.
SECTION-II
Analysis and interpretation of data through Sandler’s ‘A’ “Test”

For analysis and interpretation of data and hypothesis statistical technique which is being adopted is Sandler’s ‘A’ test.

STATISTICAL TECHNIQUE USED:-

The technique SANDLER’S ‘A’ test is used to analyze the data. Generally, SANDLER’S ‘A’ test technique is similar to that of ‘T’ test technique which helps to measure the validity of analysis of differences between the mid values of 2 matched groups. Likewise, SANDLER’S ‘A’ test is used to demonstrate the difference between 2 matched groups.

The following is the formula:

\[ D = \frac{\sum D^2}{(\sum D)^2} \]

Here, D is obtained by collecting the acquired marks of 2 situations separately. Then, the value of acquired mark is to be squared. At last, \( \sum D^2 (\sum D) 2 \) is divided. The obtained answer is considered as the value of ‘A’. Then, its degree of freedom will be calculated by the formula:

\[ D.F = \text{No of pairs} - 1 \]

\[ = n - 1 \]

Then, the degree of significance level is found at 5% by ‘A’ test

Note: Generally, it is clear that, if the value of T test is more, than the level of significance will be more. Likewise, if the value of A’ test is less, than the level of significance will be more.

Using ‘A’ test is comparatively more comfortable and also easier.
CONCLUSION

This chapter dealt with the most important part of the research work done by the investigator. It depicted the complete plan of action from the beginning of the research work till the statistical technique used to precede, analyses, test the hypothesis and then draw the conclusions accordingly. This proper plan of action reduced the wastage of time, energy and reduced the cost of the investigator. A field text was created which comprised field notes, questionnaire and observation. This indexing is the basis for the final report of the researcher.