CHAPTER III
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METHODOLOGY

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The Research design is the conceptual structure within which research is conducted. It constitutes the blueprint for the collection, measurement and analysis of data. It helps the researcher to carry on research operation to solve a research problem with minimum wastage of efforts; time and money.¹ It is a way to systematically solve the research problem. The most important point in a research process is the methods used for the investigation of the problem. These methods describe the various steps to be adopted in solving a research problem such as the field to which applied, purpose, place of research, application, data gathering devices, nature of data collection, control of factors, methods employed in establishing causal relationships etc.

3.1 TYPE OF RESEARCH METHODS

There are three basic categories of the methods of educational research:

3.1(a) **Historical Research:**

History is a meaningful record of human achievement. Historical Research try to establish facts to arrive at conclusions concerning past events. It is the application of scientific method to the description and analysis of past events. This method of research involves the steps like selection of the problem, formulation of hypothesis, collection of data, criticism of data and interpretation and reporting of findings. Historical approach, historical subjects and historical techniques are the three different ways through which historical research can be viewed. Historical studies could be conducted with profit to the field of education and may cover the subdivisions such as Historical, documentary, bibliographical, biographical, legal, institutional and organizational. In order to know trends and achievements of the past in educational field and to gain perspective on present and future direction, this type of research has great value in the field of educational research.

3.1(b) **Descriptive Research:**

Descriptive Research studies primarily concerned with the present. Descriptive method has been the most popular and widely used method in the field of
education. It concerned with conditions or relationships that exist, opinion that are held, process that are going on, effects that are evident or trends that are developing. To obtain relevant and exact information about a phenomenon and to draw valid general conclusions from the facts discovered, this type of research studies are designed. The activities in this research study are not different from that of other researches. As in any study they i) identify the problem, ii) set objectives and hypothesis, iii) choose appropriate source material, iv) administer tools for collection of data, v) specify categories of data that are relevant to the purpose of study and capable of bringing out significant relationships and differences, vi) analyze and interpret the data in clear and precise terms and vii) draw significant and meaningful conclusions.² With these steps descriptive studies investigate phenomena in their natural setting. There are three categories of descriptive studies.³ They are-i) Survey studies ii) Interrelationship studies iii) Developmental studies

All investigations in the field of education fall exclusively within one or more than one of these categories.

3.1(b-i) Survey studies

Survey studies are conducted to collect detailed information of an existing phenomenon with a view to determine the current conditions to make more

³ Ibid. P 434.
advanced plan to improve them. The main objective of survey is to determine the adequacy of status by comparing the result with the establish standards. Some Surveys gathers three types of information such as- 1) data concerning existing status, 2) comparison of existing status with the established status and 3) means of improving the existing status and some surveys are limited to one or two of these types. There are four types of survey studies to describe the educational phenomenon. They are-1) school surveys, 2) job analysis, 3) public opinion surveys and 4) social surveys.

3.1 (b-ii) Interrelationship studies

In descriptive research, interrelationship studies means that attempt to discover relationship between various facts of the existing phenomena. There are four types of interrelationship studies through which they attempt to trace relationships between the facts that will provide deeper insight in to the phenomena. These are-

A. Case study

B. Causal Comparative studies

C. Correlation and Prediction studies

D. Cross Cultural and Comparative studies.

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3.1(b-ii-A) Case study:

The case study is a method for obtaining a true and comprehensive picture of individuality. It is an intensive study through which the researcher recognizes precisely the factors and causes of a particular phenomenon. It is a method of exploring and analyzing the life of a social unit. This social unit may be an individual, a family, an institution or community or even a cultural group. The case study method aims at deep and thorough study of a social unit. Personal documents and life history are the two main sources of case data.

3.1(b-ii-B) Causal Comparative studies:

Causal Comparative method deals with the current situations. In Causal Comparative studies the aim of the researcher is to compare the likeness and differences among phenomenon to discover what factors or circumstances seem to accompany or contribute to the occurrence of certain events, conditions or practices. Causal Comparative studies are employed when a researcher cannot manipulate the independent variable and establish the controls that are required in an experiment.

3.1(b-ii-C) Correlation and Prediction studies:

Correlation studies are concerned with determining the extent of relationship existing between the variables. These techniques are used to obtain description of
existing phenomenon and it helps to ascertain the extent to which variations in one variable are associated with variations in another. This technique helps to test hypothesis about the relationship between two variables as well as to assess the magnitude of the relationship. This technique is relatively easy to design and conduct. It involves the collection of two or more sets of measurement on a sample of subjects and computation of the coefficient of correlation between these sets of measurement. Several types relationship can hold between the two sets of measurements. The direction of the relationship may be positive or negative. The degree of relationship between the variables may vary from perfect to high to average, to no relationship. Generally, the magnitude of the correlation depends on the extent to which an increase or decrease in one variable is accompanied by an increase or decrease in the other whether in positive or negative direction.

Prediction studies:

In making predictions correlation of studies are useful. If we know that there is a substantial correlation between two variables then it is possible to predict one variable from the other.

3.1(b- ii-D) Cross Cultural and Comparative studies:

In Cross Cultural and Comparative studies, the researcher makes explicit comparisons of a number of phenomenon.
3.1(b-iii) Developmental studies:

Developmental studies are concerned with the existing status and interrelationships of phenomena and changes that take place as a function of time. There are three different types of Developmental studies:

A) Growth Studies

B) Trend Studies

C) Follow up studies

3.1(b-iii-A) Growth Studies

Growth studies may be either longitudinal or cross-sectional. The longitudinal technique is the most satisfactory for studying human development. The cross-sectional technique is more commonly used because it is less expensive.

3.1(b-iii-B) Trend Studies

Trend studies are used to make predictions from social trends, economic conditions, technological advances, etc. to future status.

3.1(b-iii-C) Follow up studies:

Follow up studies aims at investigating the subsequent development of individuals or group of individuals after a specified treatment or condition.
3.1(c) Experimental Research:

The experimental method in sociological research refers to systematic study of human relations by making the observations under control conditions. Experimenters manipulate certain influences, or variables, and observe how the condition or behaviour of the subject is affected or changed. Experimenters control or isolate the variables in such a way that they can be reasonably sure that the effects they observe can be attributed to the variables they have manipulated, rather than to some other uncontrolled influences. In testing hypotheses or evaluating tentative answers to questions, experimenters make decisions based upon probability rather than certainty. The experimental method has been used with some success in the school classroom, where to some degree, variables can be controlled.

3.2. Research methods used in the present investigation:

After discussion of different methods of research, the investigator selected the descriptive survey method as appropriate for the present study. The objective of the present study is to investigate the rate and causes of dropout among scheduled tribe students at primary level in the district. Thus in the present study normative survey method was employed to investigate the real
facts of the conditions to be studied and was expected to give a correct picture of the extent of dropout among scheduled tribes and the real socio-economic academic and personal causes of it.

3.3. STATISTICAL TECHNIQUES USED FOR THE ANALYSIS OF DATA

The data collected through secondary sources and through the schedules have been edited and analyzed manually using simple numbers and percentages. In the present study more emphasis has been given on qualitative description of the report writing. In analyzing the data tables, graphical representation and diagrams such as Bar diagram, Pie diagram, simple percentages and Chi-Square Test have been used.

3.3.(i) TABLE:

A Table is a systematic device for summarizing a huge mass of data in a detailed orderly manner within a minimum of space. It simplifies complex data and avoids unnecessary details and repetition. The relationship between different parts of the data can be studied easily with the help of the table. The data can be distinctly identified and used as a source of reference in the interpretation of a problem with the help of table.
3.3. (ii) Graphical Representation

Graphical Representation can simplify the data and give an objective view of the overall situation representing the scores. Bar graph, pie diagram has been used to present the numerical facts into more understandable one as and when necessary.

Bar graph: In this graph, the data obtained relating to different category of events are presented by drawing separate bar vertically as well as horizontally.

Pie Diagram: In Pie diagram the data appears to be more qualitative and meaningful owing to transformation of the scores into percentages.

3.3. (iii) Simple percentages: In percentages, the numbers are multiplied by hundred and the investigator use the % symbol for analysis of the results.

3.3. (iv) Kendall’s co-efficient of Concordance

Kendall’s co-efficient of concordance, represented by the symbol \( W \) Kendall’s co-efficient of concordance is considered an appropriate measure of studying the degree of association among three or more sets of ranking. The formula for computing and interpreting ‘\( W \)’ is as follows:
$S$

$W = \frac{1}{12} K^2 \left( N^3 - N \right)$

Where, $S = \sum (R_j - R_j^-)^2$

Here, $R_j = \text{sum of Ranks}$

$R_j^- = \text{sum of } R_j$

$K = \text{number of sets of rankings, no. of judges, no. of respondents}$

$N = \text{number of responses ranked.}$

$1/12 K^2 (N^3 - N) = \text{Maximum possible sum of the squared deviations}$

3.3 (v) For finding out the percentage rate of drop-out, the investigator follows the technique used by D.S. Rawat and B.R. Goyal of NCERT. The method of calculation is stated as follows

Rate of Drop-out = \frac{A-B}{A} \times 100$

In which ‘A’ is number of pupils on the role at the beginning of the school year,

‘B’ is the number of the pupils on the role at the end of the school year

The method at first involves subtraction of the number of students in

\footnote{C.R. Kothari, Research Methodology Methods and Techniques, second edition, New Delhi, New Age International (P) Ltd., 2004, P 307.}
class-IV in the year 2003 from that of the number of students enrolled in class-I (Cohort Group) in 2000 (base year is taken as 2000 in the study). The difference obviously denotes the extent of drop-out. Then the result is multiplied by 100 and then divided by 'A' that is the students enrolled in class-I for the first time and the estimate will be considered as the rate of drop-out.