

CHAPTER-3

RESEARCH METHODOLOGY

Research Methodology

3.1 Introduction:

Research design sets up a framework for the methodology and procedure to be followed by a researcher in order to achieve the objectives of the study. It is the first step that is planned before the research commences and executed at the time of actual research work.

“Design of the study is a way to systematically investigate the research problem. It bites various steps in the conduct of the research in a systematic and logical way. It provides details regarding what, where, when, how much, and which means of inquiry were concerned in the study” (Best and Kahn, 1997).

According to Kerlinger (1964), “Research Design is the plan, the structure, and the strategy of investigation conceived so as to obtain answers to research questions and to control variance. It includes an outline of everything the investigator will do from writing the hypotheses and their operational implications to the final analysis of data. Research designs are invented to enable the researcher to answer research questions as validly, objectively, accurately, and economically as possible. Any research plan is deliberately and specifically conceived and executed to bring empirical evidence to bear on research problems”.

Teacher's Attitude toward E-learning depends upon knowledge, values, physical characteristics, and environmental influences. Lack of awareness of personal characteristics, knowledge, and limited experience combined to produce a negative attitude and less interest. Knowledge of information and communication technology is only one of the requirements for a positive attitude toward E-learning. Nowadays online learning is playing a major role in delivering knowledge at all levels whether primary, secondary, vocational, or higher education. The main purpose of this study is to know the attitude of secondary school teachers towards E-learning.

3.2 Methodology:

The purpose of any research methodology is to provide a maximum amount of information relevant to the problem under investigation at a minimum cost. In fact, methodology is the prerequisite of any research. Although there are several methods of conducting research the selection of research method depends on the nature of the research problem after the analysis of the nature of the study and a detailed review of the related literature, the researcher ascertained that the Survey method is most suitable for the present study whose nature is descriptive.

The descriptive method of research has been employed for the study as this method is concerned with surveys. The Descriptive survey research method was adopted primarily due to the fact that it is one of the most commonly used means of investigation that attempts to describe and interpret what exists in the present phenomena in terms of practices, beliefs, attitudes, conditions, processes, trends, or relationships.

According to Agarwal, Y.D. (2008), “Descriptive research is devoted to the gathering of information about prevailing conditions or situations for the purpose of description and interpretation. This type of research method is not simply collecting and tabulating facts but includes proper analyses, interpretation, comparisons, identification of trends and relationships.”

3.2.1 Population:

According to Lindquist (1953), “A population may be defined as any identifiable group of individuals or as any collection or aggregate of comparable measures. Population may be either finite or infinite, either real or hypothetical. A finite population is one, all members of which may be counted. An infinite population is one of unlimited size. For example, all possible weights of eight-year-old children in this country would constitute an infinite population. While the actual weights of the eight-year-old children now living in this country would constitute a finite population”.

The population used for the study comprised the Pre-service Teachers of the Central Government as well as State Government institutes of Koraput District.

3.2.2 Sample:

According to Kaul, (1984), “Sampling is the process by which a relatively small number of individuals or measures of individuals, objects or events is selected and analysed in order to find out something about the entire population from which it was selected”.

The representative proportion of the population is called a **sample**. A researcher selects a sample of units from the sampling frame; the process of such selection is called **sampling**. In order to serve a useful purpose, sampling should be unbiased or representative. A random sampling technique was used for this study. A total of 55 pre-service teachers from two institutes were selected for the study.

Table 3.1 Shows total number of male and female selected pre-service teachers

SI. No.	Gender	No. of Pre-service Teachers
1	Male	N=27
2	Female	N=28

Table 3.2 Shows total number of pre-service teachers selected from Central & State Government Institute

Types of Institutes	No. of Pre-service Teachers
Central Government Institute	N=28
State Government Institute	N=27

3.2.3 Tools and Techniques:

For the collection of data, the researcher may choose different types of devices as per the requirement of the study, these devices are called ‘Tools’ or ‘Instruments’. The tools may be standardized or self-developed. The researcher has to select tools and techniques for data collection, carefully and judiciously.

A researcher might make use of standardized readymade tools or may develop his/her own tools, ensuring that the tools developed are reliable and valid so that the data obtained through these tools is also reliable and valid.

Tools of data collection are instruments like rating scales, checklists, questionnaires, attitude scales, etc. Whereas, the techniques of data collection are the process, through which the data are obtained.

3.2.3.1 Description of Tool-

The tool was prepared by the investigator to know the attitude of the pre-service teachers towards E-learning. In the present study Attitude scale towards E-learning was used for this study. The researcher used self-developed tools for the study. A quantitative method was used to collect data. The attitude scale was divided into two sections. Section- 1 was used to know the background information of the pre-service teachers, and Section - 2 was related to the attitude toward E-learning consisting of 24 statements. Each was rated on a five-point Likert scale. Whereas, for positive statements 5 =Strongly Agree, 4 = Agree, 3 = Neutral, 2= Disagree and 1= Strongly Disagree.

3.2.4 Procedure of Data Collection:

In the process of data collection, the investigator distributed the Likert scale which is the attitude towards E-learning individually to the respondents (Pre-Service Teachers). Person-to-person contacts were made and each individual was separately asked to understand the instruction carefully, and if necessary, by asking the investigator in case he/she felt difficulty in answering the written material. A diary was maintained for noting the names of pre-service teachers and their institutions. Pre-service teachers were generally contacted during the working hours of the institutions.

3.2.5 Data analysis

Statistical techniques used in research are methods for collecting, analyzing, interpreting, and presenting numerical data. This helps researcher draw valid conclusions and make informed decisions based on data. The collected data were analyzed by statistical techniques mean and standard deviation (SD) and t-test.

Mean: The mean is the average of a set of values, calculated by dividing the sum of all values by the number of values.

Standard Deviation: Standard deviation is a measure of the amount of variation or dispersion in a set of values.

T-test: T-test is a statistical test used to compare the means of two groups to determine if they are significantly different from each other.