

CHAPTER III

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Methodology chapter is very important for the research paper as this chapter represents in detail the plan and procedure of the study. From the methodology chapter, the reader can easily find out the population size and sample size, which research design was used, research tools and data collection procedure etc. Each and every thing and work should organize in a proper planning. So, this study was organized in proper planning by researcher which was decided before the research. Here below all procedure and planning are explained.

3.2 POPULATION

Population is well defined small portion of Universe. In this study, the population were the students of the class VII of Bhopal.

3.3 SAMPLE

Sample is a small representative portion of a population selected for observation and analysis. In this study, the researcher purposively selected the students of class VII of R.D. Convent School of Bhopal. Researcher randomly selected 70 students where 35 students were selected for experimental group and 35 students were selected for control group. So, the sample was the students of class VII of R.D. Convent School, Bhopal and the sample size is 70.

3.4 SAMPLING TECHNIQUE

In this study, the researcher applied the following sampling techniques for sample selection and data collection.

- Purposive Sampling Technique
- Random Sampling Technique

3.5 VARIABLES

- Independent variable: - Method of Teaching (i.e. ICT Integrated Teaching and without ICT Integrated Teaching)
- Dependent variables: - Achievement scores in Science
- Intervening variables: - Time of teaching, Self -study, Intelligence of students, stress, interest, family background, noise outside the classroom, attitude, socioeconomic status etc.
- Variables controlled: - Time of teaching, class size, classroom condition, presence of observer
- Variables Uncontrolled: - Intelligence of students, socioeconomic status, family background, self- study habits etc.

3.6 EXPERIMENTAL RESEARCH DESIGN

Experimental research designs are concerned with examination of the effect of independent variable on the dependent variable, where the independent variable is manipulated through treatment or intervention(s), and the effect of these interventions is observed on the dependent variables. In this study the effect of ICT integrated class (Independent variables) on the achievement test in Science (Dependent variable), where the ICT integrated teaching was manipulated through treatment or intervention, and the effect of these interventions were observed on achievement test in Science.

In this study, the researcher used Experimental Research Design. Experimental research design involves the manipulation of independent variable to observe the effect of dependent variables. Here the researcher used experimental research design to established the causality (effect of

ICT integrated class on achievement test in Science) in situation where researcher was not able to randomly assign the subjects to groups for various reasons.

In this study, the researcher used "non-randomized control group design" which is also known as "Non-equivalent control group design". In this design, the researcher selected experimental group and control group without randomization. The layout was as follows:

Experimental Group (taught with ICT) = O(pre-test) XI (ICT based treatment) O(post-test)

Control Group (taught without ICT) = O(pre-test) X2 (Without ICT based treatment) O(post-test)

There were various methods for control intervening variables. The quality of experiment depends on a large extent on the control of intervening variables. Better the control, less the error and more pronounce the treatment effect. In this experimental research, there were many intervening variables, it is difficult to control all intervening variables and to know beforehand all the intervening variables. In this experimental research, the researcher used. Constancy of condition (physical manipulation) for control intervening variables. The researcher kept time factor constant throughout experiment both in experimental group and in control group. Other intervening variables like size of classroom, presence of observer, time factor, comfortableness sitting etc. were kept constant in both groups.

3.7 DEVELOPMENT OF ICT INSTRUCTIONAL MATERIAL

The researcher had made an ICT based project on class VII Science subject on chapter 10 i.e. "RESPIRATION IN ORGANISMS". The researcher taught the learners through that ICT based project where she used pictures, cartoons, videos etc. Through this project learners enjoyed their class. The ICT based class made the class more interesting, joyful, interacting and made the understanding easier. The learners could easily link the concept of Science with their day-to-day life. This ICT based project is added in the Appendix page.

3.8 RESEARCH TOOLS

The researcher used a Questionnaire tool for data collection. The researcher made a question paper on the tenth chapter of Science" Respiration in Organisms" of class VII. This question paper was consisting of 30 questions (each question carried 1 marks) . Before preparation of ICT project first the researcher discussed with the subject expert and got some ideas and their suggestions. After getting subject expert suggestions the researcher start her works. After the preparation of ICT based project, the researcher analysed the chapter and made that achievement question paper.