

CHAPTER-4

DESIGN AND PROCEDURE OF THE STUDY

4.1 Introduction

When we go to an architect for making design of our sweet home he /she asks us about the land, residential requirement and finally the available budget. Architect prepares the plan (blue print).When the plan is sanctioned then only he/she starts construction work. Accordingly, in any research, the research design cannot be neglected and thus, research design is a blue print of the intended research. So, a research design is compared to a blue print or a navigator map for the researcher. Thus in the absence of a research design the researcher will feel directionless. Thus, the research design is of utmost importance to the researcher. The research design is defined in the following manner-

“A research design is the arrangement of conditions for collection and analysis of data that aims to combine relevance to the research purpose with economy in procedure.”

Research design sketches out the entire research plan of sampling design, statistical design and operation design. Thus, it helps researcher to organize his ideas with available time and money in a well-planned framework. As the researcher needs to visualize every step of the proposed research, which enable researcher to think over the problem, which may arise and make important decisions with regards to the method of sampling, the tools to be used and the kind of analysis to be done. Thus the research design is of paramount importance in any research, which provides motivation to researcher for moving ahead in right direction.

In this present chapter the aspect of methodology of the present study like, population and sample, procedure for development of CAL, construction and validation of tools, data collection and statistical analysis, have been discussed.

4.2 Research Design

The present study is experimental in nature. Experimental research is generally recognized as the most appropriate method for drawing causal conclusions about instructional interventions, for example, which instructional method is most effective for which type of student under which conditions. Experimental research may be able to tell that one method of instruction is better than conventional practice. Experimental researchers should be sensitive to this limitation, by using complementary methods in addition to experiments that provide new kinds of evidence. It includes a hypothesis, a variable that can be manipulated by the researcher, and variables that can be measured, calculated and compared. Most importantly, experimental research is completed in a controlled environment. The researcher collects data and results will either support or reject the hypothesis. This method of research is also referred to as hypothesis testing.

4.3 Research Type

The present experimental study has been conducted utilizing “Two groups Post Test, Delayed Post Test design.”

C	X	O ₁	O ₂
E	X	O ₁	O ₂

Where, C=Controlled Group

E=Experimental Group

X= Treatment

O₁=Post test

O₂=Delayed Post test

4.4 Population

The population of the present study comprised of all the secondary schools of Ghoghamba Taluka.

4.5 Sample and Sampling Procedure

To select the representative sample for the present study, Convenient Sampling method was used. One school that is Madhyamik Vidyamandir, Ranjitnagar was selected as the sample, as it fulfilled the requirements of the present study. The school had the required infrastructure needed for experimenting with CAL package. The following were the features available at the computer laboratory which guided the selection of the school as the sample-

- A minimum 32 computers with colour monitors.
- Networking of all computers.
- Availability of windows media player.
- Availability of Hot potatoes-6, Windows media player and Google Chrome.
- Easy access of computer laboratory to students of std.8th and the investigator.

The sample of the present study comprised of 30 students each in the experimental group and control group. In the experimental group the numbers of boys were 20 and the numbers of girls were 10 the control group comprised of 15 boys and 15 girls.

The sample selected has been represented in the tabular form as under-

Table 4.1 Sample of the Study

	EXPERIMENTAL GROUP	CONTROL GROUP
NUMBER OF BOYS	20	15
NUMBER OF GIRLS	10	15
TOTAL NUMBER OF STUDENTS	30	30
GRAND TOTAL	60	

4.6 Tools used for Data Collection

Research tools play a vital role in any worthwhile study, as it is the significant factor in procuring the sound data which in turn helps in arriving at database conclusions about the study in hand. Self constructed tools namely Achievement Test and Feedback Form were used as tools in the present study for the purpose of data collection.

4.6.1 Achievement Test

For measuring the achievement of the students of two groups the teacher made achievement test which was used as post test was used in the present study. The test was prepared by the researcher keeping in mind the content of the selected topics. The test can be divided in to two categories. The first catagory ment for vocabulary exercises with multupal choice questions and synonyms and similar meaning questions. The later is based on text based questions which has refrencial questions and contextual true or false type questions. The test has weightage 50 marks. The time allotted for taking the post test was 60 minutes. The test was given to the experts in the field of education for their comments and suggestions. As per the valuable guidance the test was modified and finalized. (SEE APPENDIX-A)

4.6.2 Feedback Form

The investigator prepared feedback form for students to know about the views of the students on developed CAL package. Investigator took in to consideration different aspects like language, videos, graphics and synchronization of A.V. and methods adopted in presenting CAL package. (SEE APPENDIX-B)

4.7 Data Collection

The present study is based on testing the effectiveness of CAL package on teaching English to the students of class VIII. This necessitated preparation of CAL package by the researcher. After preparing the CAL package it was implemented and then its effectiveness was measured. In the third stage the

feedback of the students was sought out. In this way the procedure for collecting the data for the present study can be divided into three phases-

4.7.1 Pre Implementation Phase

In the very first phase, researcher had gone through the text book of standard VIII in order to select the prose and poems and then finalized them. Then the investigator discussed with few students and mentors and collected the basic and very useful information about how to prepare CAL package. After this the essential software for the development of the CAL package was procured. Researcher started collecting different pictures, audios, animations, videos for preparation of CAL package. After collecting all important data, researcher started arranging this data in sequential mode and prepared Power Point presentation of it. Under the guidance of the mentors researcher has divided this presentation in three modes of learning they are pre-learning, main learning and post learning. Researcher used various evaluative techniques to check every phase of learning for this hyperlinks were used wherever necessary. Then the first draft of the CAL package was prepared. Then, the CD of the CAL package was sent to the technology and language experts for their suggestions and views. The necessary suggestions were incorporated and the final module of the CAL package was prepared thereafter. (SEE APPENDIX-C)

4.7.2 Implementation Phase

In the implementation Phase, researcher went to the decided school to collect data that was Madhyamik Vidyamandir, Ranjitnagar. The principal gave the permission to implement the CAL package. He had allotted the time to the researcher according to their time table. On that day researcher went through the computer lab and installed Hot Potatoes-6 in all computers and after this researcher went to the class VIII where researcher divided the class randomly into two groups that is experimental group and control group. After this the study was carried out simultaneously on the control group and experimental group as per the schedule given below-

DAY-1 on the First day, the researcher observed the Computer Lab and given the primary instruction to the Experimental Group students for using of the how to operate CAL package. On the same day they learnt the **poem no-1 If I were an apple.**

DAY-2 on the Second day , Researcher taken one hour for the implementation of the CAL package on the **poem no-2 Home, Sweet Home** and observed the responses of the students of English. They told that such type of package accepted by the schools immediately for improving the teaching method.

DAY-3 on the Third day, Researcher taken the one hour for the implementation of the CAL package on the similar **poem no-2 Home, Sweet Home** and once again observed the responses of the students as well as teachers regarding this CAL package.

DAY-4 on the Fourth day, Researcher taken the one hour for the implementation of the CAL package on the **prose no -11 Solar Energy** and the response of the students was very enthusiastic for learning through CAL.

DAY-5 on the Fifth day, Researcher taken the one hour for the implementation of the similar CAL package on the prose **no-11 Solar Energy** and observed that students were more eager to learn rest of the lesson through CAL.

DAY-6 on the Last and Sixth day, Researcher administered Post Test to both the groups, Experimental Group as well as Control Group. On the same day Researcher implemented the feedback form to the students for giving responses towards developed CAL package.

4.7.3 Post Implementation Phase

In the Post implementation phase once again researcher went there after fifteen days and conducted Delayed Post Test on both the groups.

4.8 Data Analysis

Data were analysed by using statistical methods. Post test – Delayed Post Test / Achievement Tests scores were analysed by using the t-test. The t value was calculated to find the difference between two achievement tests. For Feedback analysis, Percentage scores were found / calculated.