

CHAPTER-III

METHODOLOGY

3.0.0 INTRODUCTION

Methodology describes the nature, plan and procedure of the study. It is regarded as the main body of the research. It is desirable to have proper methodologically designed research plan to achieve the objectives of the research study. An appropriate methodology can help in getting proper and valid research outcomes. This chapter presents the methodology adopted by the investigator to realize the objectives of the present study. For better understanding of the methodology of the present study, the objectives and hypothesis of the present study are given as follow.

3.1.0 OBJECTIVES OF THE STUDY

The present study was conducted with the following objectives.

1. To develop the teaching learning material to teach English to standard VIII students of Adarsh Nivasi Schools for S.T. in Gujarat.
2. To study the effectiveness of the developed teaching learning material in terms of students' achievement in English.
3. To study the effectiveness of the developed teaching learning material in terms of students' reaction.

3.2.0 HYPOTHESIS

The following hypothesis was formulated and also be tested at 0.01 level of significance during the present study.

There will be no significant difference between the mean post-test achievement scores of standard VIII students studying English through teaching learning material and those who studying through traditional method.

3.3.0 RESEACH METHODOLOGY

This chapter presents the design and methodology adopted by the researcher to realize the objectives of the present study. The present study is a developmental cum experimental study. Quasi experimental research design was used for the present study. Details about the research methodology followed in the present study includes the components like, research design, population, sample, tools used for data collection, procedure of data collection and statistical techniques used for analysis of the data.

3.3.1 Research Design

The present study was a developmental cum experimental research where a teaching learning material in English was developed by the researcher to make the teaching learning of English easier and effective for standard VIII students. Teaching learning material in English was implemented on the experimental group. Experimental and control group design was used to study the effectiveness of the implemented teaching learning material. As the sample of the present study was taken purposively, quasi-experimental design was used. The pretest-posttest equivalent-controlled group design was followed in this research. Best and Kahn (1996) describes, '*this design is often used in classroom experiments when experimental and control groups are such naturally assembled groups as intact classes, which may be similar*'. The design of the study is presented as follow.

O₁ X O₂

O₃ C O₄

Where, O₁ and O₃ are pretest

O₂ and O₄ are posttest

X stands for Experimental Group and

C stands for Control Group

Following this design, the achievement of students in English was measured of the experimental group before and after the experimentation. The similar procedure was followed for control group. The experimental and the control groups were made equivalent on the basis of their pre-test score in English. Initially, in the experimental and control group, there were 35 and 37 students respectively. After making the groups equivalent on the basis of pre-test score, 30 students from each group were considered as the sample for the present study.

3.3.2 Population of the Study

All the students of Standard VIII studying in all 43 Adarsh Nivasi Schools for S.T. in Gujarat constituted the population for the present study. Hence the population of the present study comprises of nearly 1550 students of standard VIII of Adarsh Nivasi Schools for S.T. in Gujarat.

3.3.3 Sample of the Study

The sample for the present study was selected purposively. As per the convenience of conducting the study, the researcher selected standard VIII students studying at two Adarsh Nivasi schools for ST of Surat district namely Adarsh Nivasi School for ST, Surat and Adarsh Nivasi School for ST, Tarsadi-Kosamba as the sample for the present study. Both the Adarsh Nivasi schools for ST one at Surat and other at Kosamba were taken for the experimentation as experimental group and control group as both the schools were found very equivalent in terms of its academic environment because of the following reasons.

- Both the schools are managed by tribal development department of the state following same syllabus and other norms.
- Both the schools have similar type of infrastructure and some type of facilities.
- Both the schools have same number of teachers with similar qualifications.

. Further, standard VIII students studying at Adarsh Nivasi School for ST in Surat were considered as experimental group and standard VIII students studying at Adarsh Nivasi School for ST in Tarsadi-Kosamba were considered as the control group. These two schools were selected with the purpose of getting all the required facilities for data collection. There were 35 and 37 students in the experimental and control group respectively. On the basis of the pre-test achievement in English, the experimental and control groups were made equivalent. Achievement in English was used as a covariate as the students of these schools are quite different in terms of other variables like socio-economic etc. After making the groups equivalent, 30 students from Adarsh Nivasi School for ST, Surat and 30 from Adarsh Nivasi School for ST, Tarsadi-Kosamba were considered as the sample for the present study. The details of the students taken in experimental and control groups on the basis of their equal marks in the pre-test are given in appendix IV.

3.3.4 Tools for Data Collection

To achieve the objectives of the present study, an achievement test in English and a reaction scale were constructed by the researcher. Detailed procedure followed for the construction of tools is given as follow.

Achievement Test in English: The Researcher constructed an achievement test in English for the pre-testing and post-testing purposes. Five units (1 to 5) of English viz. - A Quiz, Let's Go to the Shopping Centre, The Fireman, Bamboo – the Wonderful Plant and The Prince and His Friends of standard VIII English text book prescribed by Gujarat Secondary and Higher Secondary Education Board, Gandhinagar were selected for the purpose of research work. Hence the achievement test in English was prepared with these selected topics. A blue print was prepared for the construction of the achievement test in English considering the type and level of questions. A blue print was prepared for the achievement test having 25 marks with objective type and short answer type of questions equally from all these five units having knowledge, understanding and application levels. Following the prepared blue print, the achievement test in English was constructed by the researcher. The prepared achievement test in English was shown to ten subject experts in English language teaching for the purpose of getting content validity. The suggestions of the experts

were duly incorporated in the English achievement test. After determining the content validity of the English achievement test, the test was administered twice within an interval of 20 days on 150 standard VIII students of four Adarsh Nivasi Schools for ST and the reliability of the achievement test was determined using test-retest method. The reliability coefficient using test-retest method was found to be $r = 0.89$. Following this procedure the English achievement test was standardized. The time allotted to complete the English achievement test was of one hour. The English achievement test is given in Appendix I.

Reaction Scale: A Likert type three point reaction scale was prepared by the researcher to measure the reaction of the students of the experiment groups about the developed teaching learning material. 20 statements related to the development and implementation of the teaching learning material were stated in the reaction scale where the students were asked to show their reaction in the form of putting a tick mark \checkmark in the appropriate box for each statement where the range of reactions were ranging from Yes, Can't say and No. All the 20 statements were positive statements. The reaction scale was shown to ten teacher educators having expertise in construction of educational tools and their suggestions were also duly incorporated in the reaction scale. The reaction scale is given in Appendix III.

Apart from these two tools, researcher took the help of observation to observe the students during the process of experimentation.

3.3.5 Development of Teaching Learning Material

The researcher went through the standard VIII English textbook of Gujarati medium, which is prescribed by Gujarat Secondary and Higher Secondary Education Board, Gandhinagar. The researcher took the first five units from the text book and analyzed the content of these five units to prepare the teaching learning material. These units were: A Quiz, Let's Go to the Shopping Centre, The Fireman, Bamboo – the Wonderful Plant and The Prince and His Friends. Development of teaching learning material was done in the form of printed material. Teaching learning material was consisted of two parts – pre-stage learning material and current learning material for the selected topics. Pre-stage learning material was developed in such a way that it

helped the students to understand the selected topic in a better way. It was developed to provide the pre-requisites to the students to learn the present units easily. The current learning material was prepared in such a way that the students could have the clear-cut idea to understand the present topics. Lots of pictures, charts, examples, quiz, games, exercises etc. were used to increase the interest of the students in learning English as well as in using the teaching learning material. Most of the pictures and examples in the teaching learning material were related to the context and environment of the students. Before preparing the material a great deal of healthy discussion was done with the English teachers teaching in different Adarsh Nivasi Schools. On the basis of the discussions, the rough draft of the material was prepared. The rough draft was first shown to the experts in the field of education as well as the English. The suggestions given by the experts were duly incorporated in the teaching learning material by the researcher. The prepared teaching learning material was tried out in one of the Adarsh Nivasi Schools of Surat district and modified according to the need of the students.

3.3.6 Procedure of Data Collection

The required data were collected with the help of pre-test, post-test achievement test in English and reaction scale which were constructed by the researcher. In the beginning the researcher administered the achievement test in English as the pre-test on both the experimental group and the control group students. Then the researcher implemented the teaching learning material for teaching English for 65 days @ 40 minutes per day on the experiment groups and control group was taught the same topics by their respected English teacher using their traditional method for the same 65 days @ 40 minutes per day. After the implementation of the teaching learning material, the researcher administered the same achievement test in English as the post-test on both the experimental group and the control group students. During the same time the prepared reaction scale was administered on the experimental group students to know their reaction on the implementation of the teaching learning material. The entire study was conducted in three phases and the details of these phases are stated as follow.

Phase - 1: Pre-Testing

In the beginning of the study, the researcher administered the constructed achievement test in English as the pre-test on both the experimental group and the control group students. The achievement test in English was of 25 marks and included objective type and short answer type questions of knowledge, understanding and application levels from five units like, A Quiz, Let's Go to the Shopping Centre, The Fireman, Bamboo – the Wonderful Plant and The Prince and His Friends. Both the control and the experimental group students were informed before two days that they were having a test on English. On the days of the pre-testing, the researcher administered the English achievement test on control and experimental groups separately. To complete the test the students were given one hour time limit.

Phase - II: Implementation of the Teaching Learning Material (TLM)

As the researcher himself was working as an English teacher in the experimental school, the researcher taking permission from the higher authority for the experimentation arranged 65 classes of 40 minutes duration for the experimental group in the time table for teaching English. A similar arrangement was done for the control group in the time table i.e. 65 classes of 40 hour duration for teaching English. The researcher implemented the teaching learning material for teaching English for 60 days @ 40 minutes per day on the experimental group. The researcher acted as a facilitator and guide and tried to clear the doubts of the students. The researcher took the help of communicative approach during the process of the implementation of the teaching learning material. During the same time the control group was taught the same topics by their respected English teacher using their traditional method for the same 60 days @ 40 minutes per day.

Phase – III: Post Testing

After the implementation of the teaching learning material, the researcher administered the same achievement test in English as the post-test on both the experimental group and the control group students to study the effectiveness of the developed teaching learning material. During the same time the prepared reaction

scale was administered on the experimental group students to know their reaction on the implementation of the teaching learning material.

3.3.7 Procedure of Data Analysis

The collected data obtained through pre-test and post-test were analyzed by employing quantitative data analysis techniques. Pre-test achievement data related to English was used to make control and experimental groups equivalent. Mean, Standard Deviation, Standard Error of Mean and Mann-Whitney U-test were used to analyze the quantitative data collected through post-test. The non-parametric Mann Whitney U-test was used to analyze the data as the sample was taken purposively as it is considered as the most powerful non parametric equivalent of t-test of parametric family. Data collected through reaction scale was analyzed quantitatively with the help of percentage and Intensity Index (II). Intensive Index (II) is an uncommon statistical technique used in the present study to get the intensity of reaction of the respondents for each statement and the average intensity of reaction for the total programme in a five point scale. The following formula was used to calculate the Intensive Index (II) for a given statement.

$$\text{II for Statement A} = [(F1 \times 5) + (F2 \times 4) + (F3 \times 3) + (F4 \times 2) + (F5 \times 1)] / (F1 + F2 + F3 + F4 + F5)$$

When, the scale values of 5,4,3,2 and 1 are assigned for the scale points of Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA) and Strongly Disagree (SDA) respectively on a given statement “A”.

And Frequencies for SA, A, UD, DA and SDA are F1, F2, F3, F4 and F5 respectively.

Average Intensity Index (II) is the sum of intensities for all the statements divided by the total number of statements.

The detailed analysis and interpretation of the data is given in chapter IV.