

CHAPTER 3

PROCEDURE OF THE STUDY

This chapter deals with the design and method of research. The discussion has been divided into the following six parts:

1. Population
2. Sampling
3. Instrumentation
4. Design of the study
5. Methodology.
6. Description of statistics and the analysis of data

POPULATION

All the 9th and 6th grade students of Government Girls Secondary and Higher Secondary Schools of Dera Ismail Khan City were included in the study.

SAMPLING

This section has been subdivided into two parts: Sampling of the students and the teachers.

1. **Sampling of the Students**

In this experimental study, one school i.e. Government Girls High School No-1, Dera Ismail Khan was selected out of the Six Government Girls High and Higher Secondary School of Dera Ismail Khan City. The school was selected by the process of simple random sampling using draw method technique. Of four 9th grade sections, two sections were randomly selected. Similarly, of the four 6th grade sections of the selected school, two sections were randomly selected. Then of the two selected groups at each level, one group was randomly assigned as the experimental and the other as the control group.

2. **Sampling of the Teachers**

Two teachers, almost similar in respect of educational qualifications, age, training, teaching experience at the secondary level, socio-economic status and their reputation at the school were selected at the secondary level. One teacher was randomly assigned to the experimental and the other to the control group. Similar procedure was adopted at the elementary level.

INSTRUMENTATION

The following were used as instruments for the study.

1. Two achievement tests (pre-test and post-test) in the subject of English both for the secondary and the elementary stages.

2. Different aspects of grammar relevant at the secondary and elementary stage.
3. Five lessons of A text-book of English for class IX (Book-I).
4. Six lessons of a textbook of English for class VI (Book-I).
5. Different group work activities.
6. Observation schedule.
7. Instructions for the teachers.
8. An attitude scale.

1. **Achievement Tests**

Two achievement tests in the subject of English were developed for each level. At each level, one was used as the pre-test (Appendix-A & G) and the other as the post-test (Appendix-B & H). In preparing the pre-tests and post-tests for the two selected levels and particularly selecting items for testing different variables through post-test e.g reading and listening comprehension, recall, speaking and writing ability, the use of structures and applying the rules of grammar, the work of the following authors served as guidelines: Cohen (1980), Carroll and Patrick (1985), Henning (1987), Shohamy (1985) and Madsen (1983). The number of items included in each test were double the number to be included in the final form of the tests. These test were first judged by a team of experts from the Institute of Education and Research, Gomal University, Dera Ismail Khan and the Faculty of Education, AIOU, Islamabad. About 23 % items were dropped as a result of judgmental validity of experts. Then each test was administered to ten students of the same level

for which it was going to be use. At this stage 27% items were rejected. Thus the final form of the test was prepared. Pre-test was used to determine that the two groups were equivalent at the time of starting the experiment. Post-test was used to measure the academic achievement of the students (with respect to different variables) after the treatment period.

2. Different Aspects of Grammar

2.1 Secondary Stage

The use of nouns, verbs, adjectives, the use of "for" and "since", the use of different tenses with the application of the relevant rules and change of narration.

2.2. Elementary Stage

The use of noun, pronoun, verb, time words and different tenses such as simple present, present continuous tense, and simple past tense.

The relevance of the selected aspects of grammar at each stage was determined in the following ways:

- 1) These aspects of grammar had been treated in the lessons of the prescribed textbook at the given stage.
- 2) The students were required to solve the questions based on these aspects of grammar in the final examination.
- 3) Discussion was made with the teachers, teaching English at the given stage.

3. Lessons from the Textbook at the Secondary Stage

- 1) Taxila.
- 2) Muslims and Technology.
- 3) Farming.
- 4) Taimur and Brave Woman.
- 5) Salt.

4. Lessons from the Text-book at the Elementary Stage

- 1) Preparation for school.
- 2) My daily program.
- 3) In the classroom.
- 4) First period in school.
- 5) Safety First.
- 6) Lala Fida Muhammad.

5. Group Work Activities

Different Group work activities for secondary and elementary stage
(Appendix D & J).

6. Observation Schedule

Observation schedule for determining the proportionate amount of time taken by the "students" "student + teachers" and "Teacher" in each group.

7. Instructions for the Teachers

The instructions for the teachers were of two types: Written and oral.

7.1. Written Instruction

The description of different group work activities and how to use them at different stages of the lesson i.e. preparation, presentation and practice stage.

Observation form for determining the proportionate amount of time given to students, teacher + students and the teacher at each level.

A separate list of lessons and different aspects of grammar to be used with the students of elementary and secondary stage.

7.2. Oral Instructions

Following general instruction were given to the teacher before starting the experiment, about:

- i) The use of group work activities.
- ii) Filling the observation schedule.
- iii) The use of attitude scale with the students of the experimental group.
- iv) The administration and scoring of pre-test, post-test and attitude scale.

8. Attitude Scale

8.1 Objective

The objective of the attitude scale was to measure the attitude of the experimental group towards group work activities.

8.2 Preparation and validation of the attitude scale

The procedure adapted was that given under the same heading in review of related literature.

8.2.1 Preparation

A catalogue of statements covering possible views on the use of group work activities for the teaching of English were selected from reading, from associates, from researcher's experience of teaching of English and by consulting the advisor. The number of items selected were double the number to be included in the final form of the attitude scale.

8.2.2 Validation

The selected items were reviewed and rated by a team of experts (judges) at the Institute of Education and Research, Gomal University, Dera Ismail Khan and the Faculty of Education, AIOU, Islamabad. A seven point scale was used for this purpose which ranged from strongly favourable (agree) to strongly hostile (disagree).

Some of the items were excluded at this stage. Thus a final form of the

three point attitude scale was prepared, each item with three options: Yes, Undecided and No to show the intensity of the opinion.

The scale was pilot tested with ten students at each selected level. Urdu version of the scale was used with elementary stage students.

DESIGN OF THE STUDY

In this experimental study, the pretest-posttest Equivalent group design was used (adopted from Watanable; Hare, and Lomax, 1984 and Iqbal 1986).

This design may be represented as (Best, and Kahn, 1986, p.127):

$$R O_1 X O_2 \quad X \text{ gain} = O_2 - O_1$$

$$R O_3 C O_4 \quad C \text{ gain} = O_4 - O_3$$

Where:

R = Random assignment of subjects to groups.

X = Exposure of a group to an experimental (treatment) variable

C = Exposure of a group to the control condition

O_1, O_3 = Pretests

O_2, O_4 = Posttests

In this design pretests are administered before the application of the experimental and control treatments and posttests at the end of the treatment period. A test of the significance of the difference between means (z test for the large sample) may be used to test the significance of the difference between means.

This design was selected because it could minimize the threats to the experimental validity and the equivalence of the experimental and control group was provided by random assignment of subjects to control and experimental treatment .

METHODOLOGY

1. Administration of the Pre-test

The relevant pre-test was administered to the students of both the experimental and control group at each stage i.e. elementary and secondary to make sure that both the groups at each stage were equivalent at the time of starting the experiment.

2. Pre-treatment Conditions

Equal conditions for both the groups at each stage were established i.e. all factors of the time of the day and treatment length in time were equalled.

3. Treatment

The students of the two selected groups at each stage i.e. elementary and secondary were taught by their respective teachers. Both the groups at each stage, were exposed to essentially the same experience, except for the method of instruction. The experimental group at each stage was taught English grammar through group work activities by using the inductive

teaching model. The following phases of activities (Joyce and Weil, 1996) were used:

- 1) Strategy One: Concept Formation
 - Phase one: Enumeration and listing
 - Phase two: Grouping
 - Phase three: Labelling, categorizing.
- 2) Strategy Two: Interpretation of data
 - Phase Four: Identifying critical relationships
 - Phase Five: Exploring relationships
 - Phase Six: Making inferences
- 3) Strategy Three: Application of principles.

For this purpose the experimental group at each stage was divided into groups of five. For this purpose mixed ability groups were used so that more proficient students would help the students who are somewhat weak in English. The scores of the students on pretest at each stage were used for grouping. The raw material for group work activities, at each stage, (given in appendices) was mainly taken from the relevant lessons of the textbooks of the students so that they would be provided opportunity to read the given sections of the lesson. The control group was taught English grammar with the help of textbook, using deductive method, i.e. the traditional method. Duration of teaching was about one month with daily period of thirty-five minutes at each stage.

3. Administration and scoring of the post-test

At the end of the treatment period, the relevant post-tests were administered to the students of both the experimental and control group at each stage. The tests were administered and scored by their respective teachers.

4. Scoring Criteria

4.1. Secondary Stage

- a) Pre-test: It consisted of four block questions and each question was further subdivided into items, each item carrying one mark.
- b) Post-test: The post-test consisted of eight block questions, which were further subdivided into items.
 - Question-I (measuring the reading comprehension) carried ten marks with 2.50 marks for each sentence.
 - Question-II and IV (measuring the application of rules) carried ten marks each. In question II one mark was assigned to each item while in question IV, each item carried 2.50 marks.
 - Question-III (measuring the recalling ability) carried ten marks with two marks for each item.
 - Question V (measuring the writing ability) was assigned 10 marks with two marks for each item.
 - Question VI (measuring the use of structures) carried ten marks with two marks for each item.

- Question VII (measuring the listening comprehension) was assigned 10 marks, each item carrying about three marks.
- Question VIII (measuring the speaking ability) carried 10 marks with four marks for part (i) and six marks for part(ii).

In the question VIII following three point scale was used for marking:

2, 1, 0.

In this scale two marks were given for a complete correct sentence. One mark was given when the student used the subject and verb correctly in a sentence. 0 denoted an incorrect sentence. No choice was given in the case of pre-test and post-test.

4.2. Elementary Stage

a) Pre-test

It consisted of three block questions. Each question was further subdivided as:

- Question I into five items, each item carrying two marks.
- Question II into five items, each carrying one mark.
- Question III into ten items and each carrying one mark.

b) Post-test

The post-test consisted of nine block questions, which were further subdivided into items.

- Question-1 (measuring the listening comprehension) carried five marks. Items 1-3 carried one mark each while item 4 carried two marks.
- Question-2 (measuring the recall) carried ten marks with five marks for each question.
- Question, 3, 4 and 6 (measuring the application of the rules of grammar) carried twenty marks which one mark for each item.
- Question-5(measuring the use of structures), carried ten marks with one mark for each item.
- Question-7 (measuring the reading comprehension), carried five marks with one mark for each item.
- Question-8 (measuring the writing ability) carried five marks with 1.5 marks for each item.
- Question-9 (measuring the speaking ability) carried six marks with two marks for each item.

The data were analyzed on computer through computer program (stagraphics).

5. Variables at Both the Elementary and Secondary Stage

5.1. Independent variables

Teaching of English grammar through group work.

5.2. Dependent Variables

Scores in the achievement test (post-test) in the subject of English at the elementary and the secondary stage.

5.3. Variables controlled

Teacher, time, sex, content of the course and classroom conditions.

5.4. Variables Uncontrolled

I.Q of the students, their previous achievement, socio-economic status, their anxieties, self-concept, interests and attitudes.

DESCRIPTION OF STATISTICS AND THE ANALYSIS OF DATA

Data were arranged and analyzed: The data were analyzed on computer through computer program "Statgraphics".

1. The Achievement tests (pre-test and post-test)

The data in respect of achievement tests were analyzed on computer by using the following statistical procedures at the elementary as well as secondary stage: mean, standard deviation, variance and the test of the

significance of the difference between the means of the two independent groups (z test). Significance of the difference between means was seen at .05 level ($\alpha = .05$) as the criterion for the rejection of the null hypothesis. The first eight hypotheses were tested through z test.

2. **The Attitude scale**

In the case of attitude scale, the data were analyzed by calculating the percentage of the frequency counts in respect of each category of the response i.e. 'Yes', 'No' and undecided.

3. **The observation schedule for calculating the proportionate amount of time taken by the "teacher", "teacher + Students" and "students".**

The proportionate amount of time in respect the secondary as well as elementary stage was calculated by finding the percentage of the time taken by the "teacher", "teacher + students" and students in each group and at each stage.

Findings, conclusions and recommendations were made on the basis of analysis of data.