Chapter III Research Design

Chapter 3 Research Design

Preface

Research methodology is the blue print of any research. It helps the researcher at various steps, in order to make the research more valid and objective in nature.

3.1 Research Design

In the view of Kerlinger (1986)’, ‘the research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme of programme of the research. It includes an outline of what the investigator will do from writing the hypothesis and their operational implications to the final analysis of data.’

The following criteria are the indicators of a good research design;

- Capability to answer research questions adequately

- Control of variables

- Generalizability
Design of present research

1. Selection of problem and decisions of limitations

2. Review of related researches

3. Selection of experimental design

4. Sampling

5. Preparation of tests, their blue prints and marking schemes

6. Preparation of language skill training programme

7. Pre test

8. Implementation of training programme

9. Post test

10. Analysis and interpretation of data

11. Conclusion and report writing

The first two steps of the research are discussed in chapter 1 and chapter 2 and the last two steps are discussed in next chapters i.e. chapter 4 and chapter 5. This chapter includes discussion of steps from 3 to 9
3.2: Experimental design

Selection of experimental design depends upon the information, the researcher wants to explore with respect to a particular problem. To test the hypothesis the experimental design selected by the researcher was a Pretest post test single group design

Research design

Pretest post test single group design
1. Pretest
2. Implementation of programme
3. Post test
Pretesting is done only to ensure the present level of the students before implementation of programme; scores of pretest were not considered for hypothesis testing.

3.2.1: Reason for selecting experimental design

The rationale for selecting the Pretest post test single group design is explained below;

The researcher expects that the students of experimental group will achieve mastery level in LSRW skills. In order to check whether the objectives have been achieved and to what extend the experiment was successful, the researcher wanted to compare the observed frequency and expected frequency of a group in terms of 80% score in every skill. This can be ascertain by selecting single group pretest post test design.

3.3 Variables in the research

Variables are the conditions or characteristics that the experimenter manipulates, controls and observes. Every experimental study has at least one dependent and one independent variable. In similar way, the present research also contains the same which are described below;
3.3.1 Independent variable

The present study helps to enhance language skills. The independent variable was the language skill training programme prepared by the researcher. Training programme consists of 40 clock hours, each having a particular training and several activities to be done by student teachers individually or in a group.

3.3.2 Dependent variable

The present research based on mastery learning intends to help student teachers to master language skill. For the measurement of mastery learning achievement tests were prepared. Therefore dependant variable in this study is achievement of the student teachers in the form of scores on the skill tests developed by the researcher.

3.3.3 Control of variables during training

Controls of variables achieved through various ways in the present study are discussed below;

- **Pretest** – the same tests were given as pretest and post test, time given for the both remained the same

- **Duration** – 40 clock hours were arranged for the implementation of the training programme

- **Syllabus** - this training programme is based on English Method B.Ed. syllabus of Pune University. It involves following selected topics from B.Ed. syllabus English method content
  - Meaning and concept of content cum methodology.
  - Structure of English Language
  - Methods of teaching English
  - Evaluation procedure.

Training programme also involves other material. This programme is mainly for teaching language skills; so emphasis is on skills i.e. listening, speaking, reading,
writing skills. Even though four skills work simultaneously emphasis is on one skill at a time.

**Evaluation of answer papers**
A detailed scoring key was prepared by the researcher for uniform assessment of answer papers to avoid subjectivity.

**3.4: preparation of tools**
**3.4.1 Achievement tests**
For the present research achievement test of language skills (pretest and post test) were used as a tool for collecting quantitative data.

**There are in all four tests**
In the present study the achievement tests (pretests and post tests) were prepared by the researcher.

1) **The tests are skill based they were in four parts**
   - Listening skill test
   - speaking skill test
   - reading skill test
   - writing skill tests

2) **Objectivity** - The researcher has developed scoring key in order to ensure the examiners objectivity in checking the answers. The clarity of questions and instructions is maintained to ensure objectivity this is done by small try outs on the similar groups.

3) **Face and content Validity** - Validity of the test is the extent to which it serves the purpose. It is the degree to which a test is capable of achieving the aims, such as making prediction about individual or describing his/her capabilities or weaknesses etc. in the present research following steps were taken to ensure validity;
   - Tests were checked by experts
Chapter III Research Design

- Changes were made according to suggestions given by experts and tryout on student teachers.

4) Reliability –

A test score is called reliable when we have reasons for believing the score to be stable and trustworthy. Stability and trustworthiness depend upon the degree to which the score is an index of “true ability” – is free of chance error. Scores achieved on unreliable tests are neither stable nor trustworthy. In fact, a comparison of scores made upon repetition of an unreliable test, or upon two parallel forms of the same test, will reveal many discrepancies – some large and some small- in two scores made by each individual in the group. The correlation of the test with itself- computed in several ways to describe later- is called the reliability coefficient of the test. (Garrett H.E. 2008 P 337)

Thus Reliability refers to the degree of consistency of results obtained. The test reliability indicates the extent to which individual differences in test scores are attributable to ‘true’ differences in characteristics under consideration and the extent to which they are attributed to chance errors. Several methods are used to estimate the reliability. These are; i) test retest reliability ii) alternative form reliability iii) split half reliability.

In the present research to test the reliability of listening, speaking, reading and writing skill post tests (which were used for summative assessment), test retest reliability method was used. Reliability was tested on different group than the actual sample but the group was chosen from the same population. List of students of this group is given in the appendix.

The reliability of listening skill test was found to be $r = 0.96$

The reliability of speaking skill test was found to be $r = 0.98$

The reliability of reading skill test was found to be $r = 0.94$

The reliability of writing skill test was found to be $r = 0.91$

All the above reliability co-efficient are high.
3.4.2 Observation diary
In the present research to collect qualitative data the researcher has maintained the observation diary which includes observations of student teachers during training programme.

3.4.3 Questionnaire
Student teachers’ opinions were taken by using questionnaire about each activity and also about the whole training programme. These opinions also provide data for qualitative analysis.

3.4.4 Development of training programme
The first step in developing or designing training programme is to identify needs and decide the task. Once the task decided, selection and sequence of the content as well as training strategies were also decided. All these matters were discussed separately in this chapter
The whole programme is shown below in the flow chart
3.4.4.1 Selection of content

Skill items –
1. Orientation about nature and importance of each skill
2. Orientation about sub skills of each skill in detail
3. Activities to develop each skill
3.4.4.2 Nature of training programme

Schematic representation of activities and learning experiences

- Orientation about nature and importance of each skill
- Orientation about sub skills of each skill
- Activities to develop listening skill and tests for formative assessment
- Activities to develop speaking skill and tests for formative assessment
- Activities to develop reading skill and tests for formative assessment
- Activities to develop writing skill and tests for formative assessment
- Teaching aids and other study material

1. Orientation about nature and importance of each skill
2. Orientation about sub skills of each skill
3. Activities to develop listening skill
   a) Listen to the pairs of words and write ‘s’ if the vowel in the pair are same, write ‘D’ if they are different.
   b) Listen to the pairs of words and write ‘s’ if the consonant in the pair are same, write ‘D’ if they are different.
   c) Listen to the words and write 1 if the stress is on the first syllable, write 2 if the stress is on the second syllable.
   d) Listen to the words and write 2 if the word is bi- syllabic, ‘3’ if word is tri syllabic and ‘4’ if word is Monosyllabic.
   e) Listen to the following sentences and write ‘F’ if the sentence is in the falling intonation write ‘K’ if the sentence is in rising intonation.
   f) Performing task.

This is individual activity. Researcher asked learners to listen attentively and selectively and perform the task accordingly. The learner is expects to extract only that information which is relevant to the task, success in this activity is measured in purely practical way whether the (non linguistic task) is performed correctly or not:-
g) Identification and selection.
   Researcher says set of words. The learner listens to the set of words and finds the odd word from the set.

h) Lerner was given set of two pictures which are similar in content but contain a number of distinguishing features. The learner listen a description of one and selects the picture which the spoken text refers to.

i) The learner has given set of five pictures in front of him. He listen 4 sentences and selects the appropriate picture being described.

j) Sequencing
   Learner identified pictures that were described through story and place them in correct sequence.

k) Locating

l) Listen to the conversation and answer the questions about conversation

4. Activities to develop speaking skill
   a) Pronunciation - Drill
   b) Sentence drill
   c) Learners were given chits each student picked up one chit think for two–three minutes and talked on the topic for 2 minutes or nearly 10 sentences
   d) Making Appropriate Response
   e) Role Playing
   f) Conversation facilitation dialogues to provide student teachers with a stock of useful expression were introduced.
      (Clichés of conversation, fluently use expressions. Conversational greeting.) Practice was given to use such expressions. Some model conversations were shown
5. Activities to develop reading skill

a) Match the sentences to pictures
b) Match the sentences halves
c) Loud reading practice
d) Silent reading
e) Word meaning from context exercise
f) Read the passage carefully and answer the questions given below

6. Activities to develop writing skill

a) copying
b) Substitution table
c) Dictation
d) Dicto comp
e) Proof reading
f) Cognitive exercise
g) Write the selection without stopping to choose the correct missing words. Read the selection again to see if it makes sense.
h) Close procedure
i) Rewrite the sentences replacing the singular nouns with plurals and make all the necessary changes
j) Rewrite the sentences replacing the plural nouns with singular
k) Combination
l) Guided composition
m) Parallel writing

More activities were added according to the needs of student teachers
Detail programme is provided in the appendix

7. Teaching aids and other study material
   a. Study material was collected from books, newspapers and internet
   b. Language games were collected from books, newspapers and internet
   c. Activities were also collected from books related to language skill from Cambridge university press and internet
   d. These activities were checked from experts and pilot test were also taken and changes were made according to the suggestion.

3.5 Sample
Non probability purposeful sampling method was used because researcher wanted to implement language skill training programme on B.Ed. students having English method. Considering the convenience and purpose of the research the researcher has selected 15 students of M.I.T. B.Ed. College who have English method. The researcher was working in M.I.T. B.Ed. College so it was convenient for her. Thus it is non probability purposeful sample because the sampling was not consistent with random sampling but it has allowed the researcher to select those participants who has provided the richest information.

Sample size - 15 student teachers of B.Ed. course having English method. The sample size was extremely suitable for implementing variety of activities planned for enhancement of skills, duration of the experiment is long it is essential for the researcher to be with the students for long time.
3.6 Implementation of programme and data collection

After planning of the programme it was executed with pre and post testing which is as follows:

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Time</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thursday</td>
<td>08/10/2009</td>
<td>7.30 to 9.00 a.m</td>
<td>Listening skill Pretest</td>
</tr>
<tr>
<td>Friday</td>
<td>09/10/2009</td>
<td>8.00 to 9.00 a.m</td>
<td>Listening skill Orientation</td>
</tr>
<tr>
<td>Saturday</td>
<td>10/10/2009</td>
<td>9.00 to 12.00 a.m</td>
<td>Listening activities and Speaking skill pretest</td>
</tr>
<tr>
<td>Sunday</td>
<td>11/10/2009</td>
<td>10.00 to 12.00 a.m</td>
<td>Writing skill pretest and recognition activity</td>
</tr>
<tr>
<td>Monday</td>
<td>12/10/2009</td>
<td>8.00 to 9.00 a.m</td>
<td>Reading skill pretest Q.1</td>
</tr>
<tr>
<td>Wednesday</td>
<td>14/10/2009</td>
<td>8.00 to 9.00 a.m</td>
<td>Reading skill pretest Q.1 Practice material is given</td>
</tr>
<tr>
<td>Thursday</td>
<td>22/10/2009</td>
<td>8.00 to 9.00 a.m</td>
<td>Speaking and writing skill orientation</td>
</tr>
<tr>
<td>Friday</td>
<td>23/10/2009</td>
<td>8.00 to 9.00 a.m</td>
<td>Speaking skill practice Basic grammar tenses</td>
</tr>
<tr>
<td>Saturday</td>
<td>24/10/2009</td>
<td>2.30 to 3.30 p.m</td>
<td>Reading skill pretest Q.2</td>
</tr>
<tr>
<td>Monday</td>
<td>26/10/2009</td>
<td>8.00 to 9.00 a.m</td>
<td>Speaking skill practice Basic grammar tenses</td>
</tr>
<tr>
<td>Tuesday</td>
<td>27/10/2009</td>
<td>8.00 to 9.00 a.m</td>
<td>Speaking skill practice Basic grammar tenses</td>
</tr>
<tr>
<td>Wednesday</td>
<td>28/10/2009</td>
<td>8.00 to 9.00 a.m</td>
<td>Speaking skill practice Basic grammar tenses</td>
</tr>
<tr>
<td>Saturday</td>
<td>07/11/2009</td>
<td>2.00 to 4.00 p.m</td>
<td>Silent reading practice</td>
</tr>
<tr>
<td>Sunday</td>
<td>08/11/2009</td>
<td>10.00 a.m to 2.00 p.m</td>
<td>Reading skill post test and writing skill activities</td>
</tr>
<tr>
<td>Wednesday</td>
<td>11/11/2009</td>
<td>8.00 to 9.00 a.m</td>
<td>Speaking and listening activities</td>
</tr>
<tr>
<td>Friday</td>
<td>13/11/2009</td>
<td>4.30 to 5.30 p.m</td>
<td>Recording of absent students</td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>Activity and Details</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Monday 16/11/2009</td>
<td>8.10 to 9.00 a.m</td>
<td>Speaking skill post test Q.1</td>
<td></td>
</tr>
<tr>
<td>Monday 23/11/2009</td>
<td>9.30 to 11.00 a.m</td>
<td>Listening skill post test</td>
<td></td>
</tr>
<tr>
<td>Saturday 19/12/2009</td>
<td>1.00 to 2.30 p.m</td>
<td>Speaking skill post test Q.1, 2 &amp; 3</td>
<td></td>
</tr>
<tr>
<td>Sunday 20/12/2009</td>
<td>9.00 to 12.00 a.m</td>
<td>Speaking skill posttest Q.3 and 4</td>
<td></td>
</tr>
<tr>
<td>Sunday 03/01/2010</td>
<td>9.00 to 11.00 a.m</td>
<td>Writing skill activities and assignment was given</td>
<td></td>
</tr>
<tr>
<td>Tuesday 26/1/2010</td>
<td>9.15 to 12.15 a.m</td>
<td>Listening activities and games, loud reading practice, Speaking activity speech on one topic, writing activity preparation of handout and news</td>
<td></td>
</tr>
<tr>
<td>Thursday 28/1/2010</td>
<td>8.00 to 9.00 a.m</td>
<td>Writing activities official and informal letter and tree diagram</td>
<td></td>
</tr>
<tr>
<td>Friday 29/1/2010</td>
<td>8.00 to 9.00 a.m</td>
<td>Writing activity summary writing, writing an application</td>
<td></td>
</tr>
<tr>
<td>Monday 01/02/2010</td>
<td>8.00 to 9.00 a.m</td>
<td>Writing activity essay and composition writing</td>
<td></td>
</tr>
<tr>
<td>Tuesday 02/02/2010</td>
<td>2.00 to 3.30 p.m</td>
<td>Writing skill post test</td>
<td></td>
</tr>
<tr>
<td>Day</td>
<td>Date</td>
<td>Time</td>
<td>minutes</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>-----------------</td>
<td>---------</td>
</tr>
<tr>
<td>Thursday</td>
<td>08/10/09</td>
<td>7.30 to 9.00 a.m</td>
<td>90 min.</td>
</tr>
<tr>
<td>Friday</td>
<td>09/10/09</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Saturday</td>
<td>10/10/09</td>
<td>9.00 to 12.00 a.m</td>
<td>180 min.</td>
</tr>
<tr>
<td>Sunday</td>
<td>11/10/09</td>
<td>10.00 to 12.00 a.m</td>
<td>120 min.</td>
</tr>
<tr>
<td>Monday</td>
<td>12/10/09</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Wednesday</td>
<td>14/10/09</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Thursday</td>
<td>22/10/09</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Friday</td>
<td>23/10/09</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Saturday</td>
<td>24/10/09</td>
<td>2.30 to 3.30 p.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Monday</td>
<td>26/10/09</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Tuesday</td>
<td>27/10/09</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Wednesday</td>
<td>28/10/09</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Saturday</td>
<td>07/11/09</td>
<td>2.00 to 4.00 p.m</td>
<td>120 min.</td>
</tr>
<tr>
<td>Sunday</td>
<td>08/11/09</td>
<td>10.00 a.m to 2.00 p.m</td>
<td>210 min.</td>
</tr>
<tr>
<td>Wednesday</td>
<td>11/11/09</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Friday</td>
<td>13/11/09</td>
<td>4.30 to 5.30 p.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Monday</td>
<td>16/11/09</td>
<td>8.10 to 9.00 a.m</td>
<td>50 min.</td>
</tr>
<tr>
<td>Monday</td>
<td>23/11/09</td>
<td>9.30 to 11.00 a.m</td>
<td>90 min.</td>
</tr>
<tr>
<td>Saturday</td>
<td>19/12/09</td>
<td>1.00 to 2.30 p.m</td>
<td>90 min.</td>
</tr>
<tr>
<td>Day</td>
<td>Date</td>
<td>Time</td>
<td>Duration</td>
</tr>
<tr>
<td>---------</td>
<td>------------</td>
<td>---------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Sunday</td>
<td>20/12/2009</td>
<td>9.00 to 12.00 a.m</td>
<td>180 min.</td>
</tr>
<tr>
<td>Sunday</td>
<td>03/01/2010</td>
<td>9.00 to 11.00 a.m</td>
<td>120 min.</td>
</tr>
<tr>
<td>Tuesday</td>
<td>26/1/2010</td>
<td>9.15 to 12.15 a.m</td>
<td>180 min.</td>
</tr>
<tr>
<td>Thursday</td>
<td>28/1/2010</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Friday</td>
<td>29/1/2010</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Monday</td>
<td>01/02/2010</td>
<td>8.00 to 9.00 a.m</td>
<td>60 min.</td>
</tr>
<tr>
<td>Tuesday</td>
<td>02/02/2010</td>
<td>2.00 to 3.30 p.m</td>
<td>90 min.</td>
</tr>
<tr>
<td>Total</td>
<td>2360 min.</td>
<td></td>
<td>38 &amp; 1/5 hours</td>
</tr>
</tbody>
</table>
Some photos taken at the time of implementation of programme are attached for pictorial illustration

Researcher giving orientation

Listening skill activities
Speech on one topic activity
Pair works activity

Conversation activity