Method of the Study
Chapter III

METHOD OF THE STUDY

In the preceding chapters, the theoretical rationale of the problem and the tools along with their development were discussed. The present chapter has been developed to discuss the method of the study which covers:

- tools used
- the sample,
- design of the study,
- procedure and
- the statistical techniques used for the analysis of the data.

3.1 TOOLS USED:

Following tools were used for collecting data:

- Instructional material based upon co-operative Mastery Learning strategy in Assamese, Hindi, and English
- Conventional instructional materials on the same content and classified under the similar number of lessons in Assamese, Hindi, and English.
- Formative unit tests: one test was developed for each unit of each instructional package of Assamese, Hindi, and English, in all 30 such formative unit tests were developed by the investigator ten in each of the three languages.
- Criterion referenced test on the content of the instructional material in Assamese, Hindi, and English-used for summative evaluation.
- Self-esteem Inventory developed by Stanley Coopersmith in 1981.

3.2 SAMPLE

The study was conducted on 242 students studying in grade V of two regions. Half of them were tribal students another half of them were non-tribal students. The sample of 242 tribal and non-tribal students were drawn from four schools. Two tribal schools were selected randomly from the total of three tribal schools of Fakiragram and two non-tribal school were selected randomly out of the total of four school of Golakganj.

Most of these students came from agricultural families where parents are mostly illiterate. However a proforma was supplied to each student and information regarding each one's family background was collected. On the basis of educational level of parents the students of both Tribal and non-tribal schools were classified into two groups each for educated family background and uneducated family background.
Family background wise-distribution of the sample has been given below in table No. 3.1

<table>
<thead>
<tr>
<th></th>
<th>CML</th>
<th>CGL</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tribals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFB</td>
<td>28</td>
<td>26</td>
<td>54</td>
</tr>
<tr>
<td>UFB</td>
<td>33</td>
<td>34</td>
<td>67</td>
</tr>
<tr>
<td>Non Tribal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFB</td>
<td>32</td>
<td>35</td>
<td>67</td>
</tr>
<tr>
<td>UFB</td>
<td>26</td>
<td>28</td>
<td>54</td>
</tr>
<tr>
<td>Total</td>
<td>119</td>
<td>123</td>
<td>242</td>
</tr>
</tbody>
</table>

These students were further divided into two groups each. One was considered as experimental group, wherein students were imparted instruction through cooperative. Mastery Learning Strategy. The second group was taken as a control group who were taught through Conventional Group Learning by their own teacher. The investigator had however given guidelines to these teachers regarding major learning outcomes, the content to be covered and the testing procedure to be adopted in the class.

During the process of instruction some students dropped out at one or the other stage. The distribution of the final sample on which analysis was done, has been given below in the following table no. 3.2.

<table>
<thead>
<tr>
<th></th>
<th>CML</th>
<th>CGL</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tribals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFB</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>UFB</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Non Tribal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFB</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>UFB</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>

3.3 DESIGN OF THE STUDY

Educational research is described as experimental when the researcher has firstly, specified the final set of researchable hypotheses and secondly, has established a systematic programme of data gathering, to test these hypotheses (Ingersoll, 1982).

The good experimental design should provide some information with respect to all the objectives of the experiment (Winer, 1971) and be kept as simple as possible (Montgomery, 1984).

The study was a comparative investigation into language learning through co-
operative Mastery Learning Strategy among tribals and non-tribal fifth graders.

Achievement in languages and self-esteem were two dependent variables. The impact of co-operative mastery learning was studied on these two dependent variables separately.

Nature of habitation was another independent variable which was studied at two levels viz: Tribals and non-tribals.

Since most of these students were neo-literates or some of them were first generation of learners, hence one classification variable viz. Family Background was also considered. This variable was studied at two levels viz: Educated family background and Uneducated Family Background.

Each of the four groups thus formed were subjected to treatment of Instructional modes. Independent variable of Instructional mode was also studied at two levels viz Co-operative Mastery Learning and Conventional Group Learning.

The schematic layout of the design has been given below :-

Achievement (in Language)

ENGLISH

Family Background- EFB UFB

Nature of Habitation

T NT T NT

Instructional mode

CML CGL CML CGL CML CGL CML CGL
Method of the Study

Achievement in Hindi

Family Background -

EFB

UFB

Nature of Habitation

T

NT

T

NT

Instructional mode

CML

CGL

CML

CGL

CML

CGL

CML

CGL

Achievement in ASSAMESE

Family Background -

EFB

UFB

Nature of Habitation

T

NT

T

NT

Instructional mode

CML

CGL

CML

CGL

CML

CGL

CML

CGL

Scores On Self-Esteem

Family Background -

EFB

UFB

Nature of Habitation

T

NT

T

NT

Instructional mode

CML

CGL

CML

CGL

CML

CGL

CML

CGL

Where

EFB = Educated Family Background
UFB = Uneducated Family Background
T = Tribal
NT = Non-Tribal
CML = Cooperative Mastery Learning
CGL = Conventional Group Learning
3.4 PROCEDURE

Procedure of the experiment comprised of two main stages which are selection of the sample and conducting the experiment.

3.4.1 Selection of the sample

Selection of the sample has already been discussed under the heading sample.

3.4.2 Conducting the Experiment

The experiment was conducted in four phases as given below:

Phase I: Administration of the entry behaviour test:

Before starting with the instructional programme, all the selected students were given an entry behaviour test. Scores of this test were used to determine whether the students had the requisite entry behaviour, required for the instructional treatments or not. In case where the students did not fulfil the condition of entry behaviour, they were provided orientation before entering into the instructional programme.

Phase II: Administration of pre-test

Criterion test was administered to all the selected groups. Separate answer sheets were provided. Scoring was done to obtain the information regarding previous knowledge of the students on the selected content. Two hours time was given to complete criterion pre-test in each of the three languages separately.

Phase III: Conducting the instructional programme

Mastery Learning Strategies believe that it is the task of the teacher to design his/her instruction so that all who can learn well, do learn well (Block, 1974). MLS groups were taught directly by the investigator. The instructional procedures and measures incorporated in the Bloom's mastery learning strategies have been described below:

- Students were motivated for the novel method of instruction.
- Students were encouraged to participate in this programme by explaining its objectives.
- Investigator, himself taught the group following the guidelines in the lessons.
developed in advance.

- New stimulus material was presented without an overdose of new material.
- Chalkboard and coloured chalks were utilized for drawing diagrams and for writing notes.
- Some placards were used for initial instruction and remedial instruction; Appendices.
- Content was recapitulated and summarized at the moderate intervals.
- Corrective feedback or confirmations were provided whenever needed.
- Unit criterion test was conducted, at the completion of each unit.
- Monitors as team leaders visual aids (charts) and co-operative learning process were used as alternative/corrective instructions.

The process continued till at least 80-90 students mastered each lesson. Generally it took two to three sittings in small groups to achieve this target. For second and third round of instruction small groups of 3-4 students with one 'master' were formed in co-operative learning situation. The sequence of initial teaching, and two rounds of cooperative group learning took at least one month to complete data collection in one school. Treatment was given simultaneous in the three language. However, in Tribal Schools only one month treatment was given by utilizing morning and afternoon shifts in two separate tribal schools. It was done in view of the disturbances in the Bodo Tribal areas. The investigator simultaneously worked in the two Tribal Schools.

For Control group

- This group was taught by their regular subject teachers in the conventional way. It generally refers to reading out the chapter by the students or some explanation by the teacher, solving exercise and providing notes for certain important questions.
- Objectives and content for ten lessons (each language) were provided to their subject teachers.
- No unit criterion test was conducted after the completion of each unit.
- The time schedule followed for this group was according to traditional way of scheduling instructions.

Phase IV: Administration of the post-test

After completion of all the ten units in each language, the criterion and achievement test was administered to all students. Answer sheets were scored. Time
limit was two hours for each test. Students were thanked for their full cooperation.

3.5 STATISTICAL TECHNIQUES

The following statistical techniques were employed to analyze the data obtained from the experiment in order to test the hypotheses:

- Descriptive statistics like means and standard deviations were used.
- Graphical representations through polygons were done.
- Comparisons on achievement were done by employing analysis of variance followed by t-tests.
- Effect-sizes were calculated to study relative effectiveness of co-operative mastery learning strategies.