Results & Generalizations
Chapter V

RESULTS AND GENERALIZATIONS

In the preceding chapters, introduction of the problem, development of the tools, method of the study and interpretation of the results were discussed. The present chapter has been devoted to the summary of results and generalizations. For providing the background of the findings, a brief description of the purpose, design and procedure, along with the conclusions and suggestions for further research have been given.

No one denies that the goal of teaching is to foster learning. Yet, the attempts made till date, to determine the effectiveness of Mastery Learning have been inconclusive. The method has exhibited its potential for maximizing attainments. It is thought that almost all students can learn all what is taught in the school. This strategy also promises effective social development of an individual through its methodology as well as the successful experiences it provides, Clark, Guskey and Benning, (1983).

During his stay in school, a student needs to attain Mastery of essential learning tasks (Erikson, 1959), to see himself as a competent student and to receive evaluations that indicate to him that his performance has been successful (White, 1960; Skinner, 1968; Kelly, 1971). If he fails to attain Mastery or to achieve the status of one who is competent and successful, his chances for healthy development can be substantially reduced.

The teacher faced with the job of creating an environment in which each student can develop his potential and attain competence, is confronted with a monumental task. This task may be impossible unless the teacher can employ varied instructional methods and material sufficiently appropriate for each student to enable him to master the basics of the curriculum. Each student needs access to instruction at the level appropriate for him. Flexible scheduling is needed to allocate the amount of time each student needs to attain Mastery (Torshen, 1977).

Based upon this philosophy, recently some modified versions of MLS have been tried and the results of these studies suggest:

- Co-operative Mastery Learning strategies lead to higher achievement gains as compared to MLS and conventional instruction [Kreider, 1992; (Physical Science), Mevarech, 1993 (Questioning behaviour)].
- Modified MLS lead to higher achievement when only one feedback cycle is provided (Luckemeyer and Chaipetta, 1981; Dillashaw and Okey, 1983; Deshpande and Handli, 1994).
Hence, MLS seem to be one alternative to many of Educational problems: A critical review of the literature in the field of Mastery Learning reveals that little work has been done to examine the conditions under which Mastery Learning is more or less effective and the limits of student learning through the Mastery Learning approach. Moreover, there are few studies conducted in India in relation to use of Co-operative Mastery Learning.

A review of the related literature reveals that Tribal in Indian society seem to be at a lower level as far as general health status, economic status and academic achievement are concerned: Rathnayya, Rajagopalan, Parvathemane, (1974); Singhi (1975); Mishra, S.K., Mishra K.P. (1984); Sahoo (1986); Reiman (1988); Fatehi (1989); Panda (1996).

Efforts are being made to boost up the status of these people. One of time major concerns of the present investigation was to ensure higher levels of achievement. Classroom teaching is usually geared to the average and sometimes to the above average and to a lesser degree, the average manage to achieve the instructional objectives but not the learner with different needs. These needs may refer to student learning styles, their entry behaviour or specific affective needs, which covers, Tribal children under investigation most of whom are also first generation of literates. Such children may be helped to master learning tasks providing sufficient time and appropriate instruction.

So the present study was undertaken with a view to investigate the efficiency of Co-operative Mastery Learning strategies in relation to performance of Tribals/Non-Tribals coming from Educated and Uneducated Family Backgrounds.

The Problem, thus, has been stated as follows:
"A COMPARATIVE STUDY OF LEARNING LANGUAGES THROUGH CO-OPERATIVE MASTERY LEARNING AMONG TRIBAL AND NON-TRIBAL FIFTH GRADERS"

5.1 OBJECTIVES

The present study was designed to attain the following objectives:

• To study the effect of mode of instruction i.e. Co-operative Mastery Learning and conventional group learning on self-esteem and achievement of fifth graders in English, Hindi and Assamese.

• To investigate the effect of habitat i.e. Tribal and Non-Tribal on self-esteem and achievement of fifth graders in English, Hindi and Assamese.
To study the effect of Family Background i.e. Educated and Uneducated on self-esteem and achievement of fifth graders in English, Hindi and Assamese.

To investigate interaction effect of mode of instruction (CML Vs CGL) and type of habitat (Tribal vs Non-Tribal) on self-esteem and achievement of fifth graders in English, Hindi and Assamese.

To investigate interaction effect of mode of instruction (CML Vs CGL) and Family Background (Educated and uneducated) on self-esteem and achievement of fifth graders in English, Hindi and Assamese.

To study the interaction effect of type of habitat (Tribal Vs Non-Tribal) and Family Background (Educated and uneducated) on self-esteem and achievement of fifth graders in English, Hindi and Assamese.

To investigate the interaction effect of mode of instruction (CML Vs CGL), type of habitat (Tribal and Non-tribal) and Family Background (Educated and uneducated) on self-esteem and achievement of fifth graders in English, Hindi and Assamese.

5.2 HYPOTHESES

The study was designed to test the following hypotheses:

For English Language

Ho.1 (E,): The instructional treatment yield equal level of learning outcomes as measured by achievement scores in English.

Ho.2 (E,): The different habitation (Tribal and Non-Tribal) groups result in equal level of learning outcomes as measured by achievement scores in English.

Ho.3 (E,): Comparable achievement scores in English are yielded on Educated and Uneducated Family Background.

Ho.4 (E,): The difference in performance as measured by achievement scores in English through Co-operative Mastery Learning and Conventional Group Learning are not qualified by habitat status.

Ho.5 (E,): The difference in the performance as measured by achievement scores in English through Co-operative Mastery Learning and Conventional Group Learning are not qualified by Educated or Uneducated Family Background.

Ho.6 (E,): The effect of Tribal and Non-Tribal habitat does not qualify the achievement scores in English of students with Educated or Uneducated Family Background.
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Ho.7 (E): The treatment group yield comparable achievement scores in English for Tribal and Non-Tribal groups coming from Educated and Uneducated Family Background.

For Hindi Language

Ho.8 (H,): The instructional treatment yield equal level of learning outcomes as measured by achievement scores in Hindi.

Ho.9 (H,): The different habitation (Tribal and Non-Tribal) groups result in equal level of learning outcomes as measured by achievement scores in Hindi.

Ho.10 (H): Comparable achievement scores in Hindi are yielded on Educated and Uneducated Family Background.

Ho.11 (H,): The difference in performance as measured by achievement scores in Hindi through Co-operative Mastery Learning and Conventional Group Learning are not qualified by habitat status.

Ho.12 (H,): The difference in the performance as measured by achievement scores in Hindi through Co-operative Mastery Learning and Conventional Group Learning are not qualified by Educated or Uneducated Family Background.

Ho.13 (H): The effect of Tribal and Non-Tribal habitat does not qualify the achievement scores in Hindi of students with Educated or Uneducated Family Background.

Ho.14 (H): The treatment group yield comparable achievement scores in Hindi for Tribal and Non-Tribal groups coming from Educated and Uneducated Family Background.

For Assamese Language

Ho.15 (A,): The instructional treatment yield equal level of learning outcomes as measured by achievement scores in Assamese.

Ho.16 (A,): The different habitation (Tribal and Non-Tribal) groups result in equal level of learning outcomes as measured by achievement scores in Assamese.

Ho.17 (A): Comparable achievement scores in Assamese are yielded on Educated and Uneducated Family Background.

Ho.18 (A,): The difference in performance as measured by achievement scores in Assamese through Co-operative Mastery Learning and Conventional Group Learning are not qualified by habitat status.
Ho. 19 (A,): The difference in the performance as measured by achievement scores in Assamese through Co-operative Mastery Learning and Conventional Group Learning are not qualified by Educated or Uneducated Family Background.

Ho.20 (A): The effect of Tribal and Non-Tribal habitat does not qualify the achievement scores in Assamese of students with Educated or Uneducated Family Background.

Ho.21 (A): The treatment group yield comparable achievement scores in Assamese for Tribal and Non-Tribal groups coming from Educated and Uneducated Family Background.

For Self-Esteem
Ho.22 (SEI,): The instructional treatment yield equal level of learning outcomes as measured by achievement scores in Self-esteem.

Ho.23 (SEI,): The different habitation (Tribal and Non-Tribal) groups result in equal level of learning outcomes as measured by achievement scores in Self-esteem.

Ho.24 (SEI): Comparable achievement scores in Self-esteem Inventory are yielded on Educated and Uneducated Family Background.

Ho.25 (SEI,): The difference in performance as measured by achievement scores in Self-esteem through Co-operative Mastery Learning and conventional group learning are not qualified by habitat status.

Ho.26 (SEI,): The difference in the performance as measured by achievement scores in Self-esteem through Co-operative Mastery Learning and conventional group learning are not qualified by Educated or uneducated Family Background.

Ho.27 (SEI): The effect of Tribal and Non-Tribal habitat does not qualify the achievement scores in Self-esteem of students with Educated or uneducated Family Background.

Ho.28 (SEI): The treatment group yield comparable achievement scores in Self-esteem for Tribal and Non-Tribal groups coming from Educated and uneducated Family Background.

5.3 SAMPLE
The research investigation was carried out on the students of class V with age ranging between 10-11 of two regions of Assam viz: Half of them were Tribal students another half of them were Non-Tribal students, all of whom were drawn from four
schools. Two Tribal schools were selected randomly from the total of three Tribal schools of Fakiragram and two Non-Tribal schools were selected randomly out of the total of four schools of Golakganj. The final sample comprised of 200 students, on the basis of educational level of parents the students of Tribal and Non-Tribal schools were classified into two groups each for Educated Family Background and uneducated Family Background.

5.4 DESIGN OF THE STUDY

The present study employed 2x2x2 factorial design. The study was a comparative investigation in to language learning through Co-operative Mastery Learning strategy among Tribals and Non-Tribals fifth graders coming from Educated and Uneducated Family Background.

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 one of the independent variables which was studied at two level viz: Tribal and Non-Tribals.

The Tribal and Non-Tribal students were further classified according to the third independent variable viz: Family Background of the students. This variable was also studied at two levels i.e. 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 modes. Independent variable of Instructional mode was also studied at two levels viz. Co-operative Mastery and Conventional Group Learning.

5.5 TOOLS

The following tools were developed and used for the purpose of data collection.

- Entry behaviour test: Separate test was developed for English, Hindi and Assamese.
- Instructional material: Based upon Co-operative Mastery Learning strategy in English, Hindi and Assamese.
- Conventional instructional materials: On the same content and classified under the similar number of lessons in English, Hindi and Assamese.
- Formative unit test: One test was developed for each unit of each instructional package of English, Hindi and Assamese, in all 30 such formative unit tests were developed by the investigator, ten in each of the three languages.
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• Criterion referenced test: On the content of the instructional material in English, Hindi and Assamese used for summative evaluation.
• Self-esteem Inventory: Developed by Stanly Coopersmith in 1981.

5.6 PROCEDURE

The experiment was conducted in two stages:
1. Selection at the sample
2. Conducting the experiment

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

2. Conducting experiment
The experiment was conducted in four phases as given below:
Phase I: Administration of the entry behaviour test.
Phase II: Administration of the pre-test.
Phase III: Conducting the instructional programme.
Phase IV: Administration of the post-test.

Phase I: Administration of the entry behaviour test
Before starting the instructional programme, all the students were given an entry behaviour test. Scores of this test were used to determine whether the students had the entry behaviour, required for the instructional treatments. Separate tests were used for Hindi, English and Assamese.

Phase II: Administration of the pre-test
Criterion test was administered to all the selected students and separate answer sheets were provided. Scoring was done to obtain the information regarding previous knowledge of the students.

Phase III: Conducting the instructional programme
Two types of instructional programme was used, for experimental groups the investigator taught according to the prescriptions of Co-operative Mastery Learning and the control groups were taught by their regular teachers.

Phase IV: Administration of the post-test
After completion of all the ten units, the criterion test was administered to all the students.
5.7 STATISTICAL TECHNIQUES
The following statistical techniques were employed to analyze the data:
- Descriptive statistics like means and standard deviations were used.
- Graphical representations through polygons were done.
- Comparisons in achievement were done by employing analysis of variance followed by t-test.
- Effect sizes were calculated to study relative effectiveness of Co-operative Mastery Learning strategies.

5.8 FINDINGS
In the light of the interpretation of the results of the present study, the following conclusions were drawn for:

Achievement in English language.
- Co-operative Mastery Learning strategy yielded higher achievement gain scores than Conventional Group Learning for fifth grade students in English language.
- Non-Tribal fifth graders yielded higher achievement gain scores than Tribal fifth grade students in English language.
- No difference was found between achievement scores of students of fifth grade coming from Educated and Uneducated Family Background in English language.
- A significant difference was found in achievement gain score of Tribal/Non-Tribal students in English language, Learning through Co-operative Mastery Learning strategy and group learning situations viz:
  - Co-operative Mastery Learning yielded almost similar achievement gain scores in English language for Tribal and Non-Tribal fifth graders.
  - Tribal fifth graders learning through Co-operative Mastery Learning strategy yielded higher achievement gain scores in English language as compared to Non-Tribals getting instruction through Conventional Group Learning.
  - Non-Tribal fifth graders of Co-operative Mastery Learning group attained higher achievement gain scores in English language as compared to their Tribal counterparts of Conventional Group Learning.
  - Tribal fifth graders yielded higher achievement gain scores in English language in Co-operative Mastery Learning situation than in Conventional Group Learning.
Result and Generalizations

For Non-Tribal fifth graders also Co-operative Mastery Learning Instructional mode yielded higher achievement gain scores as compared to Conventional Group Learning.

- No interaction was found between Instructional mode (CML/CGL) and Family Background (EFB/UFB) for achievement gain scores of fifth grade students in English Language.
- Habitation (Tribal/Non-Tribal) and Family Background (EFB/UFB) were found to operate independent of each other with regard to achievement gain scores of fifth grade students in English Language.
- No interaction was found among the Instructional mode (CML and CGL), Habitations (Tribal/Non-Tribal) and Family Background (Educated/Uneducate) with regard to achievement gain scores in English Language.

For Achievement in Hindi Language

- Co-operative Mastery Learning strategy yielded higher achievement gain scores of fifth graders than Conventional Group instruction in Hindi Language.
- Educated Family Background students yielded higher achievement gain scores than Uneducated Family Background fifth grade students in Hindi Language.
- Non-Tribal fifth graders yielded higher performance in Hindi as compared to their Tribal counterparts.
- Fifth graders coming from Educated or Uneducated Family Background yielded equal achievement gain scores in Hindi under Co-operative Mastery Learning and Conventional Group Learning, instructional mode.
- Achievement gain scores in Hindi of Tribal and Non-Tribal fifth grade students were not found different whether they belonged to Educated Family Background or Uneducated Family Background.
- Instructional mode (CML and CGL), Habitations (Tribal and Non-Tribal) and Family Background (EFB and UFB) have been found to operate independent of each other for Hindi Language Learning.

For Achievement in Assamese Language

- Co-operative Mastery Learning strategy yielded higher achievement gain scores than Conventional Group Learning in Assamese Language.
- Non-Tribal fifth grade students yielded higher achievement gain scores than Tribal fifth graders in Assamese Language.
No difference was found between achievement gain scores of fifth grade students coming from Educated and Uneducated Family Background for Assamese Language.

Equal achievement gain scores were found for Tribal and Non-Tribal fifth graders for the two Instructional modes (CML and CGL).

No interaction was found between Instructional treatment (CML and CGL) and Family Background (EFB and UFB) for achievement gain scores in Assamese Language.

Habitation (Tribal and Non-Tribal) and Family Background (EFB and UFB) were found to operate independently with regard to achievement gain scores in Assamese Language.

No interaction was found among Instructional achievement (CML and CGL), Habitations (Tribal/Non-Tribal) and Family Background (EFB and UFB) for achievement gain scores of fifth graders in Assamese Language.

For Self-Esteem

Co-operative Mastery Learning strategy yielded higher Self-esteem gain scores of fifth grade students than through Conventional Group Learning.

There was no difference in gain scores of Self-esteem for Tribal and Non-Tribal fifth grade students.

Family Background viz: Educated and Uneducated, has not been found to influence gain scores in Self-esteem of fifth grade students.

For Co-operative Mastery Learning and Conventional Group Learning, gain scores in Self-esteem of fifth grade Tribal and Non-Tribals were not found statistically different.

Gain scores in Self-esteem of fifth graders coming from Educated families or Uneducated families were not different under Co-operative Mastery Learning or Conventional Group Learning Instructional modes.

There was no difference in gain scores of Self-esteem for Tribal and Non-Tribal fifth graders having Educated or Uneducated Family Background.

No interaction was found among Instructional treatment (CML and CGL) Habitations (Tribal and Non-Tribal) and Family Background (EFB and UFB) for gain scores in Self-esteem of fifth grade.

For Effect sizes

Co-operative Mastery Learning strategy in Hindi was found to have maximum effect size, second being in English and quite high otherwise, but third in Assamese language.
5.9 EDUCATIONAL IMPLICATIONS OF THE FINDINGS

The results of the present study indicate that the Co-operative Mastery Learning Strategies may be used to enhance the performance of the students in learning language viz: English, Hindi and Assamese for the fifth graders as compared to conventional method of teaching.

It is indicated from the results that there was no difference between the gain scores of Tribal and Non-Tribal students in Co-operative Mastery Learning situation. On the other hand, in Conventional Group learning situation Non- Tribal students achieved higher scores than Tribal students. Hence, it may be concluded that through Co-operative Mastery Learning method the difference between achievement of Tribal and Non-Tribal should have been reduced and every student should be able to achieve at Mastery level. It can be suggested that for equal level of achievement, Co-operative Mastery Learning strategy should be more effective than Conventional Group learning in languages.

The results also suggested that similar achievement was found through Co-operative Mastery Learning situation for students coming from Educated and Uneducated Family Background. Generally about seventy percent of the students coming from uneducated Family Background were first generation of learners in Tribal area. They have no appropriate learning facilities in their home as Non-Tribal students have. Whereas, through Conventional Group Learning it was found that the Educated Family Background students performed no better than uneducated Family Background students. In this situation it can be concluded that for students who were coming from uneducated Family Background, school is their only source of learning, hence for these students the teacher should take this responsibility and should apply some innovative techniques to master what is taught so that the deficiency of home is compensated in school. The result of the present study indicate that Co-operative Mastery Learning instruction was found more effective as compared to conventional instruction in all the three language. It may be suggested that teachers should be given orientation in the development of Mastery Learning instructional materials in the form of study guides which will help them to deal effectively with heterogeneous groups.

Mastery Learning strategies, in general and Co-operative Mastery Learning in particular lay emphasis on most students attaining the instructional objectives. Hence learning under such circumstances becomes effective. Also, both students and teachers are motivated as they know what is expected of them in terms of specific criteria. In addition they are provided with regular feedback which underlines the feeling of continuous progress.

The teachers can no longer believe that their risk is over, if they have taught effectively once; they are held accountable for the effective learning of at least 80-90 percent of their students. Mastery Learning subscribes to success view of teaching.
rather than the intentional viewpoint of teaching (Schffler, 1971). Teaching is not sinecure for teachers who implement MLS.

Students are also held responsible for their learning as they gradually realise that their progress to the next learning task is dependent on their Mastery of the preceding one so that quality of instruction and motivation of learner may both be promoted.

The result of the present investigation have some long-range implications as well. India is one of the largest democracies which is concerned with achieving a target of equality of opportunities. Equal opportunities should go beyond providing educational facilities for all. Equality of educational opportunities demands different and not equal offerings i.e. for the slow learners, compensatory provisions like extra tutoring are necessary if the criterion of equality of educational opportunity emphasised equality of process and of results and not of equality of access. This concept is allied to the concept of redemptive egalitarianism, Husen, 1987; and Rawl's concept of social justice Tylor, 1977 which stress unequal opportunities and equality of results.

It may be suggested that greater resources might be spent on the education for the less intelligence at least over a certain time of life i.e. early years of schools. In Tribal areas of Assam schools, if 100 students enter in class I only 3-4 reach class V. In the light of these facts it may be said that if equality of educational opportunity is to be realised then methods like MLS have to be implemented rather than relying on the traditional methods of teaching, because, MLS are based on the philosophy that any teacher can help virtually all students to learn excellently, quickly and self-confidently.

5.10 SUGGESTIONS FOR FURTHER STUDY

On the basis of the experiences and findings of the present study, the following suggestions have been made for further researcher in this area.

- Effectiveness of Co-operative Mastery Learning strategy may be researched at larger scale for learners of different age groups, subject areas, different types of remediations ability levels, socio-economic status.
- Further studies may be conducted with different Mastery Learning strategies.
- Further studies may be conducted involving other affective variables like creativity, level of aspiration, test anxiety, achievement motivation, study habits, self-concept impact of feed-back cycles.
- Studies may be conducted to compare the effect of rural and urban, male and female.
- Meta-analytical studies for Mastery Learning strategies may be conducted.