CHAPTER V

FINDINGS, CONCLUSIONS IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH
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5.0.0 INTRODUCTION
In the previous chapter, analysis, interpretation and discussion of results have been given. This chapter deals with the outcomes of the experiment based on the findings of the study and conclusions drawn from them. It also includes implications of research for all those who are concerned with the process of education and a few suggestions for further research in this field.

5.1.0 FINDINGS
The results have been drawn keeping in mind the objectives framed for the study and by testing hypotheses formulated thereafter. The major findings of the study are as follow:

A. Findings related to the effect of Mastery learning model, Inquiry training model and Traditional method of teaching on student's Achievement in Science.
1. The hypothesis $H_1$, "At post-test stage, there will be no significant difference in the mean achievement scores of students taught through.
(i) Mastery learning model and Inquiry training model, rejected.

(ii) Mastery learning model and Traditional method, rejected.

(iii) Inquiry training model and Traditional method, accepted.

The statistical inference indicates that the group of pupils taught science through Mastery learning model showed significantly higher mean scores in achievement in science than the group of pupils taught science through Inquiry training model and Traditional method of teaching. Inquiry training model of teaching and Traditional method of teaching are equally effective in raising the achievement of students in science. In other words, the Mastery learning method of teaching is significantly more effective in raising achievement of students in science as compared to Inquiry training model and Traditional method of teaching.

2. The hypothesis \( H_2 \), "At the post test stage there will be significant difference in the mean gain achievement scores of students taught through

(i) Mastery learning model and Inquiry training model, rejected.
(ii) Mastery learning model and Traditional method," is rejected.

(iii) Inquiry training model and Traditional method," is accepted.

It statistically indicates that (i) Mastery learning model is significantly more effective in raising the achievement of students in science as compared to Inquiry training model of teaching. (ii) Mastery learning model is significantly more superior in enhancing the achievement of students in science as compared to Traditional method of teaching. (iii) Inquiry training model and Traditional method are equally effective in raising achievement of students in science. In other words Mastery learning method is significantly effective in raising the achievement of students in science in comparison to Inquiry training model and Traditional method of teaching.

B. Findings related to the effect of Mastery learning model, Inquiry training model and Traditional method of teaching on Self-Concept.

1. The hypothesis H₃, "At the post test stage there will be no significant difference in the mean self-concept scores of students taught through :
(i) Mastery learning model and Inquiry training model," is accepted.

(ii) Mastery learning model and Traditional method," is rejected.

(iii) Inquiry training model and Traditional method," is accepted.

It becomes evident that (i) Mastery learning model and Inquiry training model are equally effective in raising the self-concept.

(ii) Mastery learning model of teaching is significantly more effective in raising the self-concept of students as compared to Traditional method of teaching. (iii) Inquiry training model and Traditional method are equally effective in raising the self-concept of students.

2. The hypothesis H₄, "At the post test stage there will be no significant difference in the mean gain self-concept scores of students taught through :

(i) Mastery learning model and Inquiry training model," is rejected.

(ii) Mastery learning model and Traditional method," is rejected.

(iii) Inquiry training model and Traditional method," is accepted.
It implies that (i) Mastery Learning model is significantly more effective in enhancing the self concept of students as compared to Inquiry training model. (ii) Mastery learning model is significantly more effective as compared to Traditional method of teaching for enhancement of self-concept of students. (iii) Inquiry training model and Traditional method of teaching are equally effective for enhancement of self-concept of students.

C. Findings related to the effect of Mastery learning model, Inquiry training model and Traditional method on student's Creativity.

1. the hypothesis H₅, "At the post test stage there will be no significant difference in the mean scores of creativity of students taught through

   (i) Mastery learning model and Inquiry training model," is rejected.

   (ii) Mastery learning model and Traditional method," is accepted

   (iii) Inquiry training model and Traditional method," is rejected.

The statistical inference indicates that (i) Inquiry training model is significantly more effective in raising the creativity of
students as compared to Mastery learning model. (ii) Mastery learning model and Traditional method of teaching are equally effective in enhancing creativity of students. (iii) Inquiry training model of teaching is significantly more effective in enhancing the creative potential of students as compared to Traditional method of teaching.

2. The hypothesis $H_0$, "At the post test stage there will be no significant difference in the mean gain scores of creativity of students taught through:

(i) Mastery learning model and Inquiry training model," is rejected.

(ii) Mastery learning model and Traditional method," is rejected.

(iii) Inquiry training model and Traditional method," is rejected.

The results indicate that (i) Inquiry training model is significantly more effective in raising the creativity of students as compared to Mastery learning model. (ii) Mastery learning model is significantly more effective in developing the creativity of students as compared to Traditional method of teaching. (iii) Inquiry training model is significantly more
effective in enhancing the creativity in comparison to Traditional method of teaching.

D. Findings related to the effect of Mastery Learning Model, Inquiry training model and Traditional method on student's Fluency, Flexibility and Originality (dimensions of Creativity)

1. The hypothesis $H_7$, "At the post test stage there will be no significant difference in the mean fluency scores of students taught through:

   (i) Mastery learning model and Inquiry training model," is rejected.

   (ii) Mastery learning model and Traditional method," is accepted.

   (iii) Inquiry training model and Traditional method," is rejected.

It becomes evident that (i) Inquiry training model of teaching is significantly more effective in promoting fluency as compared to Mastery learning model of teaching. (ii) Mastery learning model and Traditional method of teaching are equally effective in developing fluency of students or it can be said to have equal impact upon developing fluency among students (iii) Inquiry training model of teaching is significantly more effective
in enhancing fluency among students as compared to Traditional method of teaching.

2. The hypothesis H₈, "At the post test stage there will be no significant difference in the mean gain fluency scores of students taught through
   (i) Mastery learning model and Inquiry training model," is rejected.
   (ii) Mastery learning model and Traditional method," is rejected.
   (iii) Inquiry training model and Traditional method," is rejected.

It statistically indicates that (i) Inquiry training model is significantly more effective in enhancing fluency as compared to Mastery learning model. (ii) Mastery learning model is significantly more effective developing fluency as compared to Traditional method of teaching. (iii) Inquiry training model is significantly more effective in promoting fluency as compared to Traditional method of teaching.

3. The hypothesis H₉, "At the post test stage there will be no significant difference in the mean scores of flexibility of students taught through:

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(i) Mastery learning model and Inquiry training model," is rejected.
(ii) Mastery learning model and Traditional method," is accepted.
(iii) Inquiry training model and Traditional method," is rejected.

It indicates that (i) Inquiry training model is significantly more effective in developing flexibility as compared to Mastery learning model. (ii) Mastery learning model and Traditional method of teaching are equally effective in enhancing flexibility of students. (iii) Inquiry training model is significantly more effective in promoting flexibility of students as compared to Traditional method of teaching.

4. The hypothesis H10, "At the post test stage there will be no significant difference in the mean gain flexibility scores of students taught through

(i) Mastery learning model and Inquiry training model," is rejected.
(ii) Mastery learning model and Traditional method," is rejected.
(iii) Inquiry training model and Traditional method," is rejected.
It implies that (i) Inquiry training model is significantly more effective in raising the flexibility of students as compared to Mastery learning model. (ii) Mastery learning model is significantly more effective in raising the flexibility of students as compared to Traditional method of teaching. (iii) Inquiry training model is significantly more effective in enhancing flexibility of students as compared to Traditional method of teaching.

5. The hypothesis $H_{11}$, "At the post test stage there will be no significant difference in the mean originality scores of students taught through:

(i) Mastery learning model and Inquiry training model," is rejected.

(ii) Mastery learning model and Traditional method," is accepted.

(iii) Inquiry training model and Traditional method," is rejected.

The statistical inference shows that (i) Inquiry training model is significantly more effective in developing the originality of students as compared to Mastery learning model. (ii) Mastery learning model and Traditional method of teaching are equally effective in developing originality of students. (iii) Inquiry
training model is significantly more effective in enhancing originality of students as compared to Traditional method of teaching.

6. The hypothesis $H_{12}$, "At the post test stage there will be no significant difference in the mean gain Originality scores of students taught through

(i) Mastery learning model and Inquiry training model," is rejected

(ii) Mastery learning model and Traditional method," is rejected.

(iii) Inquiry training model and Traditional method," is rejected.

It statistically indicates that (i) Inquiry training model is significantly more effective in developing originality as compared to Mastery learning model. (ii) Mastery learning model is significantly more effective in raising originality as compared to Traditional method of teaching. (iii) Inquiry training model is significantly more effective in developing originality as compared to Traditional method of teaching.

5.2.0 CONCLUSIONS

On the basis of the findings, the following conclusions have been drawn.
1. It has been found that the pupils who were taught science through Mastery learning model have shown significant improvement in achievement in science than the pupils who received instructions through Traditional method of teaching and Inquiry training model of teaching. Thus, it can be concluded that Mastery learning model is effective in raising the pupils achievement in science.

2. Inquiry training model of teaching and Traditional method of teaching did not differ in effectiveness in enhancing achievement in science among students.

3. Mastery learning model of teaching is effective in developing self-concept of students in comparison to Traditional method of teaching.


5. Master learning model is more effective in enhancing self-concept of students in comparison to Inquiry training model of teaching.
CHAPTER IV

INTERPRETATION AND DISCUSSION OF RESULTS
6. Inquiry training model is effective in promoting creativity of students in comparison to Mastery learning model and Traditional method of teaching.

7. Mastery learning model is more effective in developing creativity and its dimensions namely fluency, flexibility and originality in comparison to Traditional method of teaching.

5.3.0 EDUCATIONAL IMPLICATIONS

In the present millennium, with a rapidly changing educational scenario the role of teachers in promoting fruitful learning by exposing the students through appropriate strategies have become imminent. The concept of teaching has now changed, a teaching is not merely considered as transmission of information from teacher(source) to the learner(recipient). Effective education requires that learners interact with their peers and with teacher. Teacher should draw continuous feedback from student interaction. This feedback should be used to decide the direction of teaching-learning process. Interaction is essential to make learners active partner in teaching-learning process. Application of Mastery learning strategies and Inquiry training model in teaching learning process provide solution to aforesaid problems.
The results and conclusions arrived at during the course of present study have clearly shown that both the Mastery learning model and Inquiry training model are effective in raising the pupil's Cognitive and affective domains. Thus, the present study has several implications for teachers, teacher educators, administrators, research workers, curriculum designers and students as well.

1. The first finding of this study indicates that the pupils taught Science through Mastery learning model and Inquiry training model scored significantly higher mean score on science achievement than the pupils taught science through conventional method.

The main implication of this finding is that equality of learning outcomes can be a more meaningful goal of education rather than equality of learning opportunity. In order to achieve this goal of education, it becomes imperative for the teacher to address himself to the requirements of each pupil and help him as and when he needs it. This can be achieved if the teacher makes use of the Mastery learning model. This suggests that the teacher must help and give encouragement to each child, according
to his needs. i.e. unequal treatment may have to be given to the pupils at varying stages of the learning process. Some of the pupils may take longer time in grasping concepts and may require extra help from their peers and teachers. It is evident from the results of this study as well as from other researches that the significant majority of pupils in a class can learn upto as high a level as the most able pupils in the group. Thus, a learning environment must be created where Mastery learning strategy plays an important role.

The pupils exposed through Inquiry training model achieved significantly higher mean score on creativity than those taught through Conventional method. Inquiry training model helps the pupils to investigate concepts and thus facilitate in enriching and improving their scientific power and mental abilities which enables them to make independent and responsible decisions in their life. The Inquiry training model holds promise for future because the schools of the future will be designed not only for learning but also for developing thinking. More and more insistently today's schools and colleges are being
asked to produce pupils who can think, who can make new scientific discoveries, who can find more adequate solutions to impelling world problems and who can not be brain washed.

2. If the Mastery learning model and Inquiry training model are employed in the class efficiently, the cognitive outcome of the pupils can be achieved to the maximum level. Teachers at pre-service stage as well as in-service stage need to be trained in Mastery learning strategies and models of teaching, specially, Inquiry training model so that they are able to develop tasks in their subject according to these models. Effective use of these models is helpful in enhancing the professional growth of teachers.

Every effort should be made by the NCERT and National institutions of teacher's training and research to train the teachers in application of these models appropriately according to the need in their classrooms.

3. Even after giving necessary training to the teachers in the use of Mastery learning model and Inquiry training model, the teachers can not be expected to prepare
and provide all the necessary material to the students themselves because of their pre-occupation in school activities. It is, therefore, necessary that curriculum developers should prepare packages of instructional material pertaining to these models and provide detailed and practicable guidelines to the teachers regarding the selection and application of material to suit the requirements of their students.

4. Both Mastery learning model and Inquiry training model can prove to be economic in Indian classroom conditions as they do not require the use of any expensive technology and material. They require only the development of instructional material based on these models and the training to the teachers for using these models. As these models do not involve extra expenditure, they are more suitable for a poor country like ours and many others countries of the third world.

5. It has been found that nearly 60% children drop out between Classes I – V and 75% between classes I – VIII (National policy on education, 1986). This alarming rate of drop outs at high school level results in huge wastage of human resources, money and efforts which
a developing Country like ours can not afford. Mastery learning model and Inquiry training model can prove very effective in reducing the rate of drop outs in the schools as both these approaches help the students to raise their achievement by creating interest in teaching-learning process. This enhancement in achievement cultivates in them a sense of confidence and a desire to learn more which ultimately reduces the drop out rates.

6. Another important finding of the study is that the pupils who learnt through Mastery learning model showed significant improvement in affective outcomes, than the pupils who were exposed through Conventional method. This has a very important implication for the individual as well as the society, as a whole. Improved Self-Concept is reflected in all areas of individual's life. Mastery learning model can, thus, contribute effectively in achieving this goal by making our educational system an efficient agency of social transformation.

5.4.0 SUGGESTIONS FOR FURTHER RESEARCH
The school teacher are facing multifarious pedagogical and management problems in day to day teaching-learning process. Some of these are general in nature and some of these pertains to the quality education. The task of providing quality education is going to pose a great challenge in the 21st century. Though an enormous effort is required to meet the challenge but we can not do without it. The stakes seems high. There is an increasing emphasis on the use of models of teaching to improve the learning flexibility, student interactivity and effective instructions. The present study is a modest attempt at testing the effectiveness of Mastery learning strategy and Inquiry training model in upgrading the knowledge, skills and professional competence of teachers. This study, however, does not pretend to offer the final word on the effectiveness of Mastery learning strategy and Inquiry training model. In order to generalise the outcomes of the present research, further studies can be taken up on the following themes:

1. The present study is limited to the students of one school only. In order to confirm the findings of the present study, it is desirable to investigate the effect of
Mastery learning model and Inquiry training model on larger sample to be taken from more than one school.

2. Another area for potential research is the effects of Mastery learning strategy and Inquiry training model on the effectiveness of teachers. Since these models involve a measure of personal interaction between the teacher and the taught, it makes the teacher more observant, innovative and responsive to the needs of pupil.

3. Further research can be done to explore the effect of Mastery learning strategy and Inquiry training model on disadvantaged groups such as handicapped, educable mentally retarded and gifted.

4. Another area of research is to investigate the effect of Mastery learning strategy and Inquiry training model on the learning and retention of habitual truants, backward, low achievers and emotionally disturbed pupils.

5. The similar studies may be conducted by involving more variables such as group size, sex, intelligence level.
6. The research can be carried out to see the effect of Mastery learning model and Inquiry training model on social behaviours, attitudes and study habits of disadvantaged and low ability students.

7. The study may be replicated by drawing samples from rural and slum population where chances of drop outs and failures are high. Further the study can be conducted for various grade levels and in different content areas in Science to confirm the generalizability of the conclusion drawn. Since the present study was conducted on a sample taken from an urban school situated at Rohtak city of Haryana, studies can be conducted on schools located in rural areas, urban slums and on students of socially deprived class of society.

8. The another potent area of research is psychomotor i.e. pertaining to skills. With increasing emphasis on vocational education and industrial training it is worthwhile to investigate the effects of Mastery learning model and Inquiry training model on the development of specific skills.
9. The present study is confined to only one area of affective domain viz, Self concept. Effectiveness of Mastery learning model and Inquiry training model can be investigated in other areas such as willingness to study through various models of teaching, motivation, adjustment, attitude, classroom trust behaviour etc. of affective domain as well.

10. Curriculum planners can explore the possibility of replacing the methods of teaching by models of teaching for different subjects at various stages i.e. primary, secondary and senior secondary. This can be done through longitudinal researches and then introducing in pre and in-service teacher education programmes.