CHAPTER - V

SUMMARY AND DISCUSSION
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5.1 Introduction

Education is an important factor in human resource development, it is essential to find out strategies and methods of teaching suitable to the Indian environment to accelerate teaching-learning. In view of the importance of teaching effectiveness in education there is a need to explore the Models/Methods more scientifically and with great rigor.

Models of teaching, like plans, patterns or blueprints, present sequential steps in teaching and learning experiences to bring about a desired outcome in both teachers and pupils. A model of teaching as we understand today is an instrumental design which describes the process of specifying and producing particular environmental situations which cause the students to interact in such a way that a specific change occurs in their behaviour. According to Joyce and Weil (1985), a teaching model is a pattern or plan, which can be used to shape curriculum or course, to design instructional materials and to guide a teacher's action. Thus, a model of teaching can be used to design face-to-face teaching in class rooms or tutorial settings to shape instructional materials including books, tapes, computer mediated programmes, curricula and long-term courses of study (Joyce and Showers 1982). Apart from the above uses it creates the necessary environment, which facilitates the teaching-learning process. The core of the process of teaching is the arrangement of environment within which the student can interact (Dewey 1933).
Thus, a model of teaching consists of guidelines for designing educational activities and environments. It specifies ways of teaching and learning that are intended to achieve certain kinds of goals. It is a step-by-step procedure that leads to specific learning outcomes. Models are prescriptive teaching strategies, designed to accomplish particular instructional goals. Thus a model of teaching is designed to achieve a particular set of objectives. It is not a substitute to any teaching skill. Rather it creates a conducive teaching-learning environment in which teachers teach more effectively by making the teaching act more systematic and efficient.

The National Policy of Education (NPE-1986) has emphasized the importance of Mathematics Education in our schools. According to NPE, Mathematics should be visualized as the vehicle to prepare a child to think, reason, analyze and articulate logically, over the past few decades, efforts have been made to improve the present status of Mathematics. One common objective is to broaden the understanding of Mathematics. In spite of all our efforts, success in Mathematics is declining day by day. Both teachers and parents feel that their children are going away from Mathematics, they are losing interest or they are scared of Mathematics. How can we make our students problem solvers in Mathematics? This is possible only when we can make Mathematics education more meaningful and interesting. We can look at this problem from various angles like content, Pedagogy, Evaluation, Learning Process, Child Psychology, and Meta-cognition etc. but only collectively we can find a solution for this problem.
5.2 Need and Importance of the Study

Mathematics by and large, is taught in a stereotyped and mechanical way in schools. “Experience has shown that the majority of students normally fail in mathematics at the end of class X” (NCERT, 2000). Lack of understanding of the subject would create backwardness and phobia in the students. The result is that the students are not only scared but would also like to shun the subject. There are many reasons for the failure and backwardness in the subject, which have to be tackled from many fronts. One such way to tackle the problem is investing research results in the teaching-learning process. It is from this perspective that an attempt was made to suggest ways and means of bridging the gap between research in the subject and its classroom practices.

‘Mathematics is a true friend but worst enemy’. This saying proves itself year after year in our results, there are very few students who score cent percent marks in Mathematics, and all the maximum students fail in this subject. Why our students under achievers in Math’s? This question is being asked after the declaration of results every year. In spite of so many reference books, ample-coaching, regular coaching, extra classes and remedial teaching students do not score good marks in Mathematics. In other subjects slightest hard work and sincerity go in vein why? Do students need special aptitude for Math’s? Yes, they need but not to that extent. There are some other deep-rooted reasons also which affect student’s performance in Math’s. First of all it is a discipline, which is abstract in nature. Mathematics has its own language, which includes various symbols.
and signs. Like other languages, it has its own grammar. But this language is far more abstract than the other.

Today’s children are the tomorrows citizens of India, we don’t know who will become scientist, lawyer, doctor, engineer, teacher etc., so based on their creativity, interest they will choose their fields. The development of the students depends on the way of teaching or the type of education given to them. Hence the modern education system is amalgamation of modern methods of teaching, which would be beneficial to develop creative abilities among secondary school students.

There is a scanty of related literature on studies relating to the comparative study of the effects of different methods leading to mathematical creativity among the secondary school children. Hence the researcher has zeroed upon the highlightment of the importance on throwing some light on models of teaching in bringing out the improvement in teaching mathematics. Guided discovery and Inquiry training models are the two important models, which would definitely bring changes in our teaching-learning process and to develop mathematical creativity among secondary school students.

Education for the 21st century definitely needs a lot of rethinking on modernizing in the wake of increasing globalization. The word Mathematics is derived from Greek ‘mathesis’ (from mathein – to learn) and mathet means pupils he who learns. The mathematics processes and their study are assuming increasing importance. The basic necessities the derived requisites, means of comforts, convince and progress requires mathematical knowledge and skill in planning
and designing. The literature suggests that mathematical talent most often measured by speed and accuracy and rich mathematical tasks require divergent thinking. So, there is a need to keep the interest of the students and suggest them in mathematics by recognizing and valuing their mathematical creativity. Teachers should be most liberal in their approach. Teaching learning process in Math's should be more lively and flexible rather than dry and rigid. If we really want our students to learn and enjoy Mathematics, we need to change the method of teaching. Hence the investigator intended to study on Mathematical Creativity among secondary school students by using Guided Discovery and Inquiry Training Model teaching methods.

5.3 Statement of the Problem

The problem stated in the present study focuses on “A Comparative Study of the Effects of Teaching Methods: Guided Discovery Method and Inquiry Training Model on the Development of Mathematical Creativity among IX Standard Students of Bangalore City”.

5.4 Objectives of the Study

1. To investigate the Mathematical Creativity of IX Standard students.

2. To develop a Guided discovery method to enhance Mathematical creativity among secondary school students.

3. To develop an Inquiry training model to enhance Mathematical creativity among secondary school students.

4. To compare effectiveness of Guided Discovery Method and Inquiry Training Model of teaching in enhancing the Mathematical creativity of IX standard students.
5. To find the effect of Guided Discovery Method on the dimension of creativity such as Fluency, Flexibility, Originality and Total creativity of Experimental Group-1.

6. To find the effect of Inquiry Training Model on the dimension of creativity such as Fluency, Flexibility, Originality and Total creativity of Experimental Group-2.

7. To find out the difference in the dimensions of creativity such as Fluency, Flexibility, Originality and Total creativity among IX standard students.

5.5 Hypotheses of the Study

1. There is no significant difference in Mathematical Creativity between the experimental group 1, experimental group 2 and control group on pretest scores of Mathematical Creativity of secondary school students.

2. There is no significant difference in Mathematical Creativity between the experimental group 1, experimental group 2 and control group on posttest scores of Mathematical Creativity of secondary school students.

3. There is no significant difference between the pretest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores among experimental group 1 and control group of secondary school students.

4. There is no significant difference between the posttest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores among experimental group 1 and control group of secondary school students.

5. There is no significant difference between the pretest scores of Mathematical Creativity related to fluency, flexibility,
originality and total scores among experimental group 2 and control group of secondary school students.

6. There is no significant difference between the posttest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores among experimental group 2 and control group of secondary school students.

7. There is no significant difference between the pretest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores among experimental group 1 and experimental group 2 of secondary school students.

8. There is no significant difference between the posttest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores among experimental group 1 and experimental group 2 of secondary school students.

9. There is no significant difference between the pretest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores of experimental group 1 secondary school boys and girls.

10. There is no significant difference between the posttest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores of experimental group 1 secondary school boys and girls.

11. There is no significant difference between the pretest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores of experimental group 2 secondary school boys and girls.

12. There is no significant difference between the posttest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores of experimental group 2 secondary school boys and girls.
13. There is no significant difference between the pretest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores of secondary school control group boys and girls.

14. There is no significant difference between the posttest scores of Mathematical Creativity related to fluency, flexibility, originality and total scores of secondary school control group boys and girls.

5.6 Variables of the Study

Variable is one, which undergoes changes. The researcher selects the variables, observes the variables, and measures the variables for the purpose of conducting research. In the present study researcher has considered three variables i.e. Independent, Dependent and Moderate variables.

An independent variable is the presumed cause of the dependent variable and it is the antecedent—the dependent is the consequent. The dependent variable is the presumed effect, which varies concomitantly with changes or variation in the independent variable. Moderate variable is that variable selected for the study to determine if it modifies the relation between Independent and Dependent variables. The researcher selected the following variables in the present study. They are -

**Dependent variable** - Mathematical Creativity of IX Standard students

**Independent variables** -
1. Guided Discovery Method
2. Inquiry Training Model

**Moderate variable** - Gender (Boys & Girls)
5.7 Method of Research

In the present study the Experimental Method of research is selected, in this pretest posttest parallel group experimental design is used. The design is one of the most effective in minimizing the threats to experimental validity. In this design the experimental and control groups are equated by random assignment, then pretest is administered. After treatment to experimental groups, posttest is administered to both experimental groups and control group. Scores fetched by the student will be compared and tested for a ‘test of the significance of the difference between means’. Pretest and Posttest scores are also be used in analysis of variance (one-way) to find the statistical control for any differences between the groups at the beginning and of the study.

5.8 Sample of the Study

A sample is a small representative portion of population selected for observation and analysis. The process of drawing or detection of sample from the population is known as sampling.

In the present study, the researcher adopted the random sampling technique. The sample constitutes the total 90 number of the students studying in IX standard of Bangalore city. Selection of the sample was as represented flow chart.

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Sample (90)

Experimental Groups (60)          Control Groups (30)

Experimental Groups 1 (30)        Experimental Groups 2 (30)
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Researcher selected three High Schools randomly out of 1631 Schools of Bangalore city according to survey conducted at 2007. They were Seshadripuram High School Yehalanka, Cauvery Public School Sahakarnagar and Seshadripuram High School Seshadripuram of Bangalore city. 30 students were selected from each school. Out of 141, 30 students were selected randomly from Seshadripuram High School Yehalanka and they were considered as experimental group 1. Out of 86, 30 students were selected randomly from Cauvery Public School Sahakarnagar and they were considered as experimental group 2 and out of 124, 30 students were selected randomly from Seshadripuram High School Seshadripuram and were considered as control group.

Table No. 5.1
Sample Selected for Pretest Posttest Experimental Design

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Groups</th>
<th>Name of the School</th>
<th>No. of Students</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Experimental group-1</td>
<td>Seshadripurum High school Yehalanka</td>
<td>30</td>
<td>Guided discovery method</td>
</tr>
<tr>
<td></td>
<td>Experimental group-2</td>
<td>Cauvery Public School Sahakarnagar</td>
<td>30</td>
<td>Inquiry training model</td>
</tr>
<tr>
<td>2</td>
<td>Control group</td>
<td>Seshadripurum High school Seshadriprum</td>
<td>30</td>
<td>Traditional method</td>
</tr>
</tbody>
</table>
5.9 Statistical Techniques used for the Analysis of Data

Following techniques are used in analysis of data

i. Mean (M)

It is a measure of central tendency in a distribution of measures. It is found by dividing the sum of all measurements by number of measurements.

\[ M = \frac{\sum X}{N} \]

Where:
- \( M \) = Mean
- \( X \) = Scores in a group
- \( \sum \) = Sum of
- \( N \) = Total number of scores

ii. Standard deviation (SD)

The square root of the mean of squared deviations in a normal distribution of measurements ±1SD occurs at the points of inflections of the graph of the curve and encompasses about 68% of all measurements in the distribution.

\[ SD (\sigma) = \sqrt{\frac{\sum x^2}{N}} \]

Where SD (\( \sigma \)) = Standard deviation
- \( x \) = The deviated score from the mean.
- \( N \) = Total number of scores.

iii. t-test

It is the ratio of variability between two groups of measurements as expressed by the difference of means to the variability expected within the population (S) from which the groups were selected.

The t-ratio provided a method by which measured differences between groups may be compared to those expected as a result of
chance. If the difference is sufficiently large, the conclusion can be made that it is unlikely that the two samples were selected from the same population.

\[ t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} \]

Where

\( \bar{X}_1 \) = Mean of the scores of group 1,
\( \bar{X}_2 \) = Mean of the scores of group 2,
\( \sigma_1^2 \) = Square of the deviation of group 1,
\( \sigma_2^2 \) = Square of the deviation of group 2,
\( N_1 \) = Total number student of group 1,
\( N_2 \) = Total number student of group 2,

iv. F-ratio (One - way ANOVA)

It is a mathematical comparison of the variability found between the two or more groups of measurements with variability expected to found within the population (S) from which the groups were selected. The F-ratio provides a method by which measured differences between groups may be attributed to those expected as a result of chance were selected at random from the same population or if the differences are unlikely to result from a chance and thus may be attributed to the fact that groups were selected from different population.

\[ F = \frac{SS_b}{df_b} \cdot \frac{SS_w}{df_w} \]

Where

\( SS_b \) - between group sum squares,
\( df_b \) - between group degree of freedom,
\( SS_w \) - with in group sum squares,
\( df_w \) - with in group degree of freedom,
5.10 Findings of the Study

1. Two methods Guided discovery method and Inquiry training model are effective in enhancing Mathematical creativity, among these Guided discovery method is more effective than Inquiry training model in enhancing Mathematical creativity.

2. Girls’ performance is better in fluency, flexibility and total creativity and Boys’ performance is better in originality of Mathematical creativity after treatment through Guided discovery method.

3. The Performance of boys and girls do not differ in fluency, flexibility, originality and total Mathematical creativity after treatment through Inquiry training model.

5.11 Conclusion

The process of teaching is different from the process of learning. Hence theories of learning are not adequate to form the development of the process of teaching. Teaching strategies are known as models of teaching. As the teaching process has to release different instructional goals, a single way of teaching process has to release different instructional goals, a single way of teaching does not exist. According to Egg et al, models of teaching are prescriptive teaching strategies and they differ from general approaches in such a way that they are designed to realize specific instructional objectives. Therefore, the single, the best way to teach does not exist.

The present study the comparative study of effect of teaching methods on the development of Mathematical Creativity is really useful in enhancing the effectiveness of Guided discovery method and Inquiry training model among IX standard students. The result of the
present study reveals that Guided discovery method is more effective than Inquiry training model in enhancing the Mathematical creativity of secondary school students, and between Boys and Girls, Girls performance is better in fluency, flexibility and total creativity and Boys performance is better in originality of Mathematical creativity after treatment through Guided discovery method.

Hence Education aims at the all-round development of the students. But at present it has been seen that all the qualities of the students are not developed properly. This is happening because of faulty teaching methods. The methods (models) adopted in secondary schools are not useful to develop the qualities of the students. So it is essential to adopt these two methods of teaching by which the qualities of the students will develop and this will ultimately lead the country towards modernization and development.

5.12 Discussion
1. The present study revealed that ‘three methods Guided discovery method, Inquiry training model and Traditional method are effective in enhancing Mathematical creativity, among these Guided discovery method is more effective than Inquiry training model & Traditional method, between Inquiry training model and Traditional method, Inquiry training model is effective in enhancing Mathematical creativity. This is in agreement with the studies conducted by different research scholars.

B.Y. Khasnis & Manjunath. Aithal (2011) in their study “Guided Discovery Method A Remedial Measure In Mathematics”, they found that There is a significant difference in the performance of students in
mathematics, in the post test scores of traditional method and guided
discovery method. This shows that gain percentage for total scores of
Guided discovery method is higher than Traditional method. The
posttest performance indicates the students learn better through
Guided discovery method.

**Shivakumar P & Sumathi S (2005)** the efficiency of Guided discovery
strategy of Teaching Biology science at higher secondary level is
superior than the traditional method,

**Ajitha Nayar K (2004)** in his study the Effectiveness of Discovery
Learning Method with Respect to Achievement in Biology teaching
through Discovery learning enhances the immediate posttest
achievement.

**Rajcoomar S (1999)** in his study An Investigation into the Efficacy of
Guided Learning as compared with Traditional Method of Teaching
Chemistry in Mauritian Secondary School, indicates that the guided
learning was more effective than the traditional method.

**Smith, K (1996)** in his study Guided Discovery, Visualization and
Technology Applied to the New Curriculum for Secondary
Mathematics, Linear programming has recently been integrated into
the high school mathematics curriculum. Graphical problem solving
offers methods for teaching systems of constraints and objective,
which emphasize visualization and student discovery. Activities, which
highlight major concepts of linear programming are presented. These
activities demonstrated how technology allows students to solve linear
programming problems using exploration prior to learning algorithmic methods.

Bhalwankar A G (1985) in his study on a study of effects of expository and guided discovery methods of teaching mathematics on the achievements of students of different levels of intelligence, Guided discovery and expository methods were equally effective on knowledge and comprehension objectives with respect to both immediate posttest as well as retention test and the guided discovery method was more effective than the expository method on the criterion of percentage of retention scores on the application objective in the case of students of low intelligence, middle intelligence.

Yadav R S (1982) in his study An Experimental Study of Effectiveness of Lecture and Guided Discovery Methods in Developing a Hierarchy of Learning in Cognitive Domain, analysis of variance indicated a highly significant difference among cumulatively treated learning objectives on posttest in group B taught through the Guided discovery method, significant differences were found in the mean scores of the superior, the high average, the average, the low average and the borderline defective subjects of group B taught through the Guided discovery method on pretest and posttest respectively, the subjects of group B taught through the Guided discovery method gained significantly better the concept of knowledge on posttest than did the subjects on pretest, A significant difference was found in the mean achievement scores obtained for the objective understanding on pre and posttests, respectively in favour of posttest in group B taught through the Guided discovery method, Similarly, significant difference in the mean scores obtained on pretest and posttest by the subjects of group B
were identified for application, discovery and creativity components. Likewise, there were significant differences between the mean scores obtained on posttest by the subjects of group A taught through the traditional Lecture method, and B taught through the Guided discovery method, respectively, on knowledge, understanding, evaluation and creativity.

**Joshi S C (1994)** in his study *A Comparative study of the effects of teaching methods on the Development of Mathematical Creativity*, the effect of Guided discovery method (GDM) and Inquiry Training Model of Teaching (ITMT) were found significantly better on fluency, flexibility creative production and mathematical creativity as a whole among low creative but not on originality dimension, the effect of GDM on dimensions fluency, flexibility, originality, creative product and mathematical creativity as a whole was found significant, the GDM of teaching was found to be better than ITMT in enhancing originality in mathematics, GDM was found to be significantly better than ITMT in fostering mathematical creativity as a whole among high creative & average creative students, the effect of ITMT on dimensions fluency, flexibility, creative product and mathematical creativity as a whole was found significant.

**Chitkara M (1985)** in his study *To study the Effectiveness of different strategies of teaching on achievement in mathematics in relation to intelligence, sex and personality*, found that All the three strategies, namely i. Lecture discussions, ii. Inductive drill, and iii. Auto instruction group discussion were found to be equally effective in terms of achievement in Mathematics disregarding levels of intelligence, sex and personality type.
Pal R (2000) in his study An Experimental study to assess the Impact of Information Processing Model on the Achievement of objectives of science teaching at secondary level, result shows that Information processing models was more effective than traditional method in developing understanding of facts, concepts and principles related to science, reasoning ability, creativity, rational outlook, objectivity, spirit of inquiry, decision making ability, courage to question, ability to draw conclusions and aesthetic sense among the students.

Veerpal Singh (2008) in his study on "Effectiveness of Jurisprudential Inquiry model of Teaching on verbal Fluency of Ninth Graders, found that Jurisprudential inquiry model group students for verbal fluency (total scores) as well as for its four areas viz. word fluency, ideational fluency, expressional fluency and associational fluency.

Ashok K Kalia (2005) in his study on Effectiveness of Mastery Learning Strategy and Inquiry Training Model on Pupil’s Achievement in Science, Inquiry training model of teaching and traditional method of teaching are equally effective in raising the achievement of students in science and there was no significant difference in the mean gain level of achievement between experimental and control groups.

Kasinath H M (2000) in his study on Effectiveness of Inquiry Method of Teaching Science in Fostering Science Process Skills, Creativity and Curiosity, the results found that, Experimental and Control groups were alike with regard to the dependent variables, i.e., science process skills, creativity – fluency, flexibility, originality and curiosity; The
significant interaction between the treatments and levels of intelligence in fostering science process skills suggested that differentiating variance was contributed by both, thereby subduing the exclusive effect of each of them separately; ITM method of teaching was more effective than Conventional Method in fostering fluency.

Sivakumar P & Prema P (1997) in their study on Effectiveness of Suchman’s Inquiry Training Model in Learning Biology, Suchman’s Inquiry Training Model is more effective than teaching based on the conventional methods in improving the achievement of the learners in biology.

Pandey S N (1986) in his study on Effectiveness of Advanced Organizer and Inquiry Training Models for teaching social studies to class VIII students, There was no significant difference between the Advance Organizer Model and the Inquiry Training Model, Advance Organizer Model and conventional teaching, and Inquiry Training Model and conventional teaching in terms of pupils attitude towards social studies; Difference due to Inquiry teaching model and conventional teaching was significant, the difference due to Advanced organizer model and Inquiry Training Model was not significant.

Passi B K, Singh L C And Sansanwal D N (1985) in their study on Models of Teaching- Developing Training Strategy, Training in ITM in the form of Lecture, Demonstration, Discussion and Peer practice plus feedback did enhance the Understanding of Teacher Educators theoretic aspects of ITM, Training in ITM did bring about favourable reactions of Teacher educators towards ITM.
Al-Khayyat & Abdul Jareen A (1980) in their study on An experimental study comparing the effects of the inquiry method and the traditional method for teaching social studies in two secondary school boys, that the inquiry second year students in the two schools performed significantly better than the traditional second year students in the same schools on the achievement test and Watson Glaser Critical Thinking Appraisal.

Rao A V, & Ragavendra (1986) in their study on “An Investigation into the Relative Effectiveness of Guided Discovery and Expository Approaches of Teaching Mathematics”. They found that There was no significant difference in achievement in mathematics when taught by the guided discovery and expository approaches, There was no significant difference in achievement in mathematical concepts when taught by the guided discovery and expository approaches, There was no significant difference in problem solving when taught by guided discovery and expository approaches, except in the case of girls where a significant difference was found, these results are contradict to the result of the present study.

2. The present study revealed that Girls performance is better in fluency, flexibility and total creativity and Boys performance is better in originality of Mathematical creativity after treatment through Guided discovery method. This is in agreement with the studies conducted by different research scholars.

Ajitha Nayar K (2004) in his study the Effectiveness of Discovery Learning Method with Respect to Achievement in Biology teaching
through Discovery learning enhances the immediate posttest achievement, and there was no significant difference between boys and girls with respect to the immediate posttest and delayed memory achievement scores. However the retention power of girls was found to be better than boys when taught using discovery learning.

Thangarajathi S, & Adlin Viola (2007) in their study there was an extremely significant difference between the pretest and posttest scores of experimental method group with respect to sex.

Sanjeev Kumar Jha & Tomar D P (2010) from their study the mean scores of mathematical phobia test of the boys is greater than girls, so the boys have more mathematical phobia than girls. it may be because the girls are harder working than the boys.

Chitkara M (1985) in his study To study the Effectiveness of different strategies of teaching on achievement in mathematics in relation to intelligence, sex and personality, found that Boys and Girls of superior ability did not show any significant difference between their mean scores on achievement in Mathematics; Girls of average ability scored significantly higher in Mathematics than Boys of average ability.

5.13 Educational Implications

It has been found out that in the present study Guided discovery method and Inquiry training model were significantly effective with the experimental group 1 & 2 in achieving the objectives. This implies that, these techniques/methods of teaching could be used in schools after developing the model for various units to different courses of the study whenever possible.
Following are some of the implications:

1. These models sketch a sequence on various activities involved to teaching – learning process.

2. This sequence facilitates learning by individuals. The present study undertaken to determine the instructional efficiency of the model from the 'Information Processing of model' is significant in suggesting that tried and established models of teaching to be followed in the teaching – learning process of concepts.

3. It has been found that the Guided discovery method is more effective than Inquiry training model and traditional method of teaching, hence the structure extended curriculum sequences or courses and to instruct students systemically in the key ideas of the field.

4. The present study is used to investigate the Mathematical Creativity of IX Standard students.

5. The present study helps to assign the IX standard students into Experimental and Controlled groups.

6. The present study is useful to assess the Mathematical Creativity of secondary school students.

7. The present study helps us to develop the Guided discovery method and Inquiry Training model to enhance Mathematical creativity.

8. The present study helps to compare effectiveness of Guided discovery method and Inquiry training model of teaching in development of Mathematical creativity of IX standard students.

9. The present study helps us to assess the effect of Guided discovery method on the dimension of creativity such as fluency, flexibility and originality.
10. The present study helps us to assess the effect of Inquire training model on the dimension of creativity such as fluency, flexibility and originality.

11. The present study helps the classroom teacher for adopting proper method of teaching for teaching Mathematics.

12. Both methods motivate in teaching and learning process. Both methods helps in improving thinking power, analyses of thinking, critical thinking as well as creative thinking, so we can apply these methods in our in-service & pre-service training programmes organized by DIET, CTE, etc.,

5.14 Limitations of the Study

The researcher is quite aware of the limitations under the present study was conducted. Hence suggests that no sweeping generalistions could be made as they have to be viewed in the light of the following limitations.

1. The present study is confined only to the selected secondary school students of Bangalore city.

2. The present study is confined only in enhancing Mathematical creativity of selected secondary school students of Bangalore city.

3. Guided discovered method and Inquiry training models prepared by the researcher on the Units Surface area of Prism and Algebraic Structure respectively in Mathematics chosen from IX Standard text.

4. The present study is confined to only Private English medium schools.

5. The present study is limited to only performance of boys and girls in mathematical creativity. It has not included factors like socio-economics status, type of school and other psychosocial factors.
5.15 Suggestions for the Further Research

The researcher, by virtue of his experience, while studying the present problem, offers the following suggestions for further research. A few of them have been enumerated in order to indicate the possible studies that could be undertaken immediately in this important area of training in mathematical creativity for secondary school students by prospective researchers.

1. The present study is confined only to secondary school students of Bangalore city. The similar programme can be extended to other cities and districts of Karnataka state.

2. A similar study can be carrying out to VIII, X and Pre-university college students.

3. Experimental study can be taken up to enhance the Mathematical Creativity among average, above average and below average normal and educationally challenged students as well as socially disadvantaged children.

4. A study can be undertaken to foster Mathematical Creativity through different methods of teaching.

5. A same study can be under taken up to compare the mathematical creativity and intelligence with demographic variables like Government and Private schools or Urban and Rural secondary schools.

6. A similar study can be taken up by comparing the mathematical creativity with the other psychological factors like emotional intelligence, problem solving ability, mathematical aptitude, etc.,

7. A comparative study can be undertaken for the mathematical creativity of gifted and abnormal students.

8. A comparative study can be undertaken by included factors like socio-economic status, type of school and other psycho-social factors.