CHAPTER VI

SUMMARY AND CONCLUSIONS.

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CHAPTER VI.

SUMMARY AND CONCLUSIONS.

This concluding chapter contains the summary of the study conducted. The theoretical basis of Concept Attainment Model is preceded by the significance of the problem, presentation of the problem, hypotheses and objectives of the study. A brief description of the procedure adopted for the study is also presented. The analysis of the data and major findings are also described. The concluding part of the chapter includes a discussion of the implications of the present study and suggestions for further research in the area of teaching strategies.

Significance of the Problem.

The Constitution of India provides special concessions to the deprived and disadvantaged sections of the society, to enable them to catch up with the rest of the population in the process of development. Most of the academically disadvantaged children show decline in intellectual functioning. They are having cumulative academic deficits, premature school termination and high dropout rates. Besides these, their behavioural characteristics include distractibility, poor self-concept, low motivation and impulsive behaviour.
Passow (1990) is of the opinion that there is no need of providing a less challenging curriculum and limited achievement goals for the academically disadvantaged children. Through this type of curriculum, students receive more instruction in factual and lower level skills – drill and practice – and less in higher order skills. This hampers the ability of academically disadvantaged students to develop thinking skills, lower their learning expectation and stigmatise them as inferior.

For successful achievement in the case of students with educational disadvantage, ‘good teaching’ means appropriate modifications and accommodations. Assuming the curricular content is appropriate for academically disadvantaged students, the challenge is to adapt it, as necessary to facilitate learning. If an objective of education is to enhance children’s acquisition of knowledge, educational methods need to be consistent with how children acquire knowledge. Many children do not ‘learn’ because they literally cannot understand what they are being asked to learn.

Cheney (1989) suggested that modifications should address three general matches: the level of achievement of the student and the level of instructional material; the characteristics of the learner and the response mode required by the material and the motivational aspects of the learner; and of the material.
For many students, school activities may appear irrelevant or uninteresting. This concern becomes more problematic at the secondary level, where children are taught in a way that prevents subsequent motivational problems. Motivation can be enhanced through attention to both the motivational qualities of the material and the characteristics of the student (Cheney 1989). Some techniques for enhancing motivation (adapted from Cheney, 1989 p.29) are

- provide experience that ensure success and provide feedback when students are successful
- incorporate drill and practice into a game format
- provide immediate feedback on the correctness of work.

Our educational practice is generally based on the premise that knowledge is something that can be transmitted directly from teacher to students. The typical form of mathematics instruction is some sort of direct effort by the teacher to 'pour' mathematical facts and computational procedures into children. Typically the students are passive participants. When the students are intellectually blocked by the method of teaching, they adapt the way of memorising everything with no comprehension. There is no construction of mathematical knowledge. Students, even the "brightest" ones, may be conditioned to disregard their natural tendency to try to understand. Instead they frequently develop an affective habit of memorising and not seeking to understand.
Although educational disadvantage is closely related to family, it is possible to compensate for this to a significant extent. Intensive school based programmes can also have a strong effect, and nurture groups, as devised by Bennathan and Boxall (1996). Clark (1983) identified African American students who were academically successful, despite low family income or only having a single parent.

Planning a unit or lesson involves a number of instructional decisions. The teacher must identify the content and process to be addressed, the strengths, needs and interests of students, the Common Essential Learning that could be incorporated, and the most effective instructional approaches. Effective teaching is not a set of generic practices, but instead is a set of context-driven decision about teaching. Effective teachers do not use the same set of practices for every lesson. Instead, what effective teachers do is constantly reflect about their work, observe whether students are learning or not, and, then adjust their practices accordingly. Common Essential Learning and Adaptive Dimension are central to effective instructional decision making. Decision making regarding instructional strategies requires teachers to focus on curriculum, the prior experiences and knowledge of students, learner interests, students' learning styles and the developmental levels of the learner. Innovative approaches, based on research will have to be evolved in order to handle the learning difficulties of educationally disadvantaged groups. The
teacher can make a difference in the life of the pupils and more so in the life of educationally disadvantaged groups.

Therefore, in this study the investigator adopted the Concept Attainment Model of Instruction in the field of Mathematics education. Many researchers like O'Malley and Chamot (1990) and Chaudron (1988) suggested the need for classroom based pedagogical research and hence there is a need for a more systematic teaching method to academically disadvantaged students.

**Concept Attainment Model of Instruction.**

Concept Attainment Model is an indirect instructional strategy that uses a structured inquiry process. It is based on the work of Jerome Bruner. In Concept Attainment Model, students figure out the attributes of a group or category that has already been formed by the teacher. To do so, students compare and contrast examples that contain the attributes of the concept with examples that do not contain those attributes. They then separate them into two groups. Thus concept attainment is the search for and identification of attributes that can be used to distinguish examples of a given group or category from non-examples. It is designed to clarify ideas and to introduce aspects of content. It engages students into formulating a concept through the use of illustrations, word cards or specimens called examples. Students who catch on to the idea before others are able to resolve the concept and then invited to suggest their own examples, while others still trying
to form the concept. It is well suited to classroom use because all thinking abilities can be challenged throughout the activity.

**Steps**
1. Select and define the concept.
2. Select the attributes.
3. Develop positive and negative examples.
4. Identify the super ordinate, subordinate, and co-ordinate concept.
5. Prepare the content goals.
6. Introduce the process to the students by establishing a relaxed atmosphere in the class.
7. Analyse the conceptual network involved.
8. Present examples and non-examples
10. Give additional examples and non-examples
11. Ask the students to give examples and non-examples.
12. Define the concept.
13. Evaluation of the process.

Concept attainment model helps to make connections between what students know and what they will be learning. Students go beyond merely associating a key term with a definition, and concept is learned more thoroughly
and retention is improved. Concept attainment model can be effectively used to introduce or conclude a unit of study.

**Statement of the Problem.**

The problem selected for the study is entitled as "Effect of Concept Attainment Model of Instruction on Achievement in Mathematics of Academically Disadvantaged Students of Secondary Schools in the Kerala State."

**Hypotheses Formulated.**

**Major Hypothesis.**

The achievement in mathematics and the cognitive ability of the academically disadvantaged students taught in Concept Attainment Model of instruction are significantly higher than that of the academically disadvantaged students taught in Conventional Teaching Method.

**Hypothesis I.**

There is no significant difference in the achievement in mathematics and in the cognitive ability of the academically disadvantaged and of the academically advantaged students when they are taught using Concept Attainment Model of instruction.

**Hypothesis II.**

The relative progress in achievement in mathematics and in the cognitive ability, when taught using Concept Attainment Model of instruction and Conventional Teaching Method, is higher for the
academically disadvantaged students than the academically advantaged students.

Hypothesis III.

The intelligence and socio-economic status of academically disadvantaged students who learned mathematics using Concept Attainment Model of instruction have only minimal influence on their achievement in mathematics and also on cognitive ability.

Objectives of the Study.

The main objectives to collect data to prove the Hypotheses are:

(i) To find out the achievement in mathematics of the academically disadvantaged students taught using Concept Attainment Model of instruction and Conventional Teaching Method.

(ii) To find out the cognitive ability of the academically disadvantaged students taught using Concept Attainment Model of instruction and Conventional Teaching Method.

(iii) To find out the achievement in mathematics of the academically advantaged students taught using Concept Attainment Model of instruction and Conventional Teaching Method.

(iv) To find out the cognitive ability of the academically advantaged students taught using Concept Attainment Model of instruction and Conventional Teaching Method.
(v) To assess the intelligence level of the academically disadvantaged students.

(vi) To assess the socio-economic status level of the academically disadvantaged students.

(vii) To examine the influence of socio-economic status and intelligence of academically disadvantaged students on their achievement in mathematics and also on cognitive ability when taught using Concept Attainment Model of instruction.

**Experimental Design.**

The study was aimed to find out the effectiveness of Concept Attainment Model of instruction over Conventional Teaching Method to academically disadvantaged students. So the experimental method was found appropriate for the study.

In this study, non-equivalent pretest-posttest control group design was used. This design provides reasonable control over most sources of invalidity. The investigator conducted experiments in the intact classrooms and the groups were statistically equated using the technique ANCOVA.

**Variables.**

The independent variables or experimental variables of the study were the teaching strategies, namely, Concept Attainment Model of instruction and
Conventional Teacher-Centred Approach. The dependent variables in this study were the achievement score in mathematics and the cognitive ability scores obtained in the standardised tests. The difference in achievement and the cognitive ability that would have been caused by the extraneous factors was made minimum by adopting the statistical technique ANCOVA.

**Sample of the Study.**

The sample involves two groups- experimental group and control group. The sample was selected from four schools, which follow the Kerala State Syllabus. The schools are Govt V.H.S. Nattakom, C.M.S.H.S. Pallam, P.G.M.B.H.S. Parakode and P.G.M.G.H.S. Parakode. The experimental group consisted of 268 students of whom 145 students were identified academically advantaged and 123 as academically disadvantaged. The control group consisted of 237 students of whom 111 students were identified as academically advantaged and 126 as academically disadvantaged.

**Tools Used in the Study.**

The following tools were used for the collection of data:

1. Lesson Transcripts Based on Concept Attainment Model of Instruction.
2. Achievement test in Mathematics (standardised).
3. Cognitive Ability Test (Standardised).
4. Lesson Plans based on Conventional Teaching Method
5. Rao Achievement Motivation Test.
7. Self-concept Inventory.
8. Study Habits Inventory.
9. Mathematics Interest Inventory.
10. Mathematics Attitude Scale.
11. Home Learning Environment Inventory (Revised).
12. Raven's Progressive Matrices Sets A, B, C, D and E.

**Experiment Conducted.**

The main objective of the experiment was to collect data pertaining to the effectiveness of Concept Attainment Model of Instruction and Conventional Teaching Method. The experiment conducted was on intact unequated classroom groups. The experimental and control groups were pretested with mathematics achievement test prepared and standardised by the investigator.

The experimental group was taught through the Concept Attainment Model of Instruction while the control group was taught the same topics using Conventional Teaching Method. Thirty-two concepts were selected for the study from three topics 'Sets', 'Expansion of Algebraic Expansions using identities', and 'Simple Equations'. In the control group, Conventional Teaching Method was used.
The investigator took care of keeping the standard of explanation of concepts in the conventional method as high as possible.

The different phases of the Concept Attainment Model were strictly followed in all classes of the experimental group. The students were very active in the class. All the groups were posttested using the same tests. A cognitive ability test, prepared and standardised by the investigator, was also used as pretest and posttest to assess cognitive ability of the students.

**Analysis of Data.**

The pretest and posttest scores of the experimental and control groups were consolidated for statistical analysis along with intelligence and socio-economic status scores. From the experimental and control groups, the academically disadvantaged students were identified. At first, an index (ADI - Academic Disadvantage Index) representing the academic disadvantage of a student was calculated. The index comprises the variables like cognitive ability, home learning environment, mathematics interest, achievement motivation, self-concept, attitude towards mathematics and study habits. Proper weightage was given to each of them. Then by applying the principle of the operation ‘central tendency splits’ the educationally disadvantaged students were identified.

The achievement test scores were subjected to ‘t’ test. Since the groups were intact and unequated, Analysis of Covariance (ANCOVA) was used for comparison.
Multiple regression analysis was done in order to find out the influence of socio-economic status and intelligence on achievement in mathematics and in cognitive ability scores of academically disadvantaged students in the experimental group.

Conclusions of the Study.

The following are the major conclusions that were obtained from the results of the analysis of data.

Conclusion 1.

The Concept Attainment Model of instruction (CAM) is more effective than the Conventional Teaching Method (CTM) in teaching mathematics to academically disadvantaged students.

The above conclusion is deducted from the following findings:

1. The Fy.x ratio obtained from the analysis of covariance of the pretest and posttest scores of academically disadvantaged students in the experimental group (CAM) and control group (CTM) was significant (Fy.x for df = (1/ 246) is 2244.05; p < 0.001).

2. The difference between adjusted posttest means of experimental (CAM) and control group (CTM) was significant. (My.x for CAM=70.18, My.x for CTM =42.34, t is 47.97 for df = (246); p < 0.001).

3. The difference between the mean of the gain scores of academically disadvantaged students in the experimental group (CAM) and control group
(CTM) was subjected to test of significance, it was found significant at 0.001 level. (Mean gain (CAM) is 48.76, Mean gain (CTM) is 22.02, C.R is 36.75; p < 0.001).

**Conclusion 2.**

*The Concept Attainment Model of instruction (CAM) is more effective than the Conventional Teaching Method (CTM) in enhancing cognitive ability of the academically disadvantaged students.*

The above conclusion is deduced from the following findings:

1. The $F_{yx}$ ratio obtained from the analysis of covariance of the pretest and posttest scores in cognitive ability test by the academically disadvantaged students in the experimental group (CAM) and control group (CTM) was significant. ($F_{yx}$ is 84.81 for df = (1/246); $p < 0.001$).

2. The difference between the adjusted posttest means for the experimental (CAM) and control (CTM) groups were calculated and tested for significance. It was found significant. ($My.x$ for CAM = 15.88 and for CTM = 12.21, $t$ is 9.24 for df = (246); $p < 0.001$)

3. The difference between the mean gain scores of academically disadvantaged students in the experimental (CAM) and control (CTM) groups were subjected to test of significance, it was found significant at 0.001 level. (Mean gain for CAM is 6.59, and for CTM is 1.91, C.R is 12.85; $p < 0.001$).
Conclusion 3.

The Concept Attainment Model of instruction (CAM) is more effective than the conventional teaching method (CTM) in teaching of mathematics to academically disadvantaged students at all categories of objectives (knowledge, comprehension, application, and analysis).

The following findings substantiate the above conclusion:

1. The difference between the pretest and posttest scores of the academically disadvantaged students in the experimental (CAM) and control (CTM) groups under the categories of objectives - knowledge, comprehension, application, and analysis is significant as shown by the significant Fy.x for df = (1/ 246) obtained in the respective analysis of covariance. (Fy.x (knowledge) = 707.27, Fy.x (Comprehension) = 473.93, Fy.x (Application) = 675.13, Fy.x (Analysis) = 49.99; p < 0.001).

2. The difference between the adjusted posttest means for the posttest scores of academically disadvantaged students in the experimental (CAM) and control (CTM) groups when tested for significance for df = (246), the ‘t’ values were found significant. (My.x (Knowledge) for CAM is 19.741, for CTM is 12.832, t = 26.888; p < 0.001), (My.x (comprehension) for CAM is 21.197, for CTM is 13.162, t = 23.350; p < 0.001), (My.x (application) for CAM is 14.942,
for CTM is 7.667, \( t= 29.526; \ p < 0.001 \), (My.x (analysis) for CAM is14.427, for CTM is 12.169, \( t= 7.556; \ p < 0.001 \))

**Conclusion 4.**

The Concept Attainment Model of instruction (CAM) can enhance the achievement in mathematics of academically advantaged students to a significantly higher level than the academically disadvantaged students, but the latter can achieve a higher progress through the Concept Attainment Model of instruction (as per conclusion 8).

The following findings substantiate the above conclusion:

(i) Result of the analysis of covariance of pretest and posttest scores of the academically disadvantaged students and academically advantaged students in the experimental group (CAM) showed that Fy.x ratio obtained was significant. (Fy.x for df = 1/265) is 411.46; \( p < 0.001 \).

(ii) The difference between adjusted posttest means of the academically disadvantaged students and academically advantaged students in the experimental group (CAM) was significant. My.x (academically disadvantaged) is 70.18, My.x (academically advantaged) is 82.34, \( t = 23.93 \) for df = (265); \( p < 0.001 \).
Conclusion 5.

The Concept Attainment Model of instruction (CAM) can enhance the cognitive ability of academically advantaged students to a significantly higher level than the academically disadvantaged students, but the latter can achieve a higher progress through the Concept Attainment Model of instruction (as per conclusion 9).

The following findings substantiate the above conclusion:

(i) The Fy.x ratio obtained from the analysis of covariance of pretest and posttest scores of the academically disadvantaged students and academically advantaged students in the experimental group (CAM) was significant. (Fy, x for df = (1 / 265) is 11.54; p < 0.001).

(ii) The difference between adjusted posttest means of the academically disadvantaged students and academically advantaged students in the experimental group (CAM) was significant. My.x (academically disadvantaged) is 18.93, My.x (academically advantaged) is 16.68, t is 4.53 for df = (265); p < 0.001.

Conclusion 6.

The achievement in mathematics of academically advantaged students is significantly higher at all categories of objectives (knowledge, comprehension, application, and analysis) than the academically
disadvantaged students when both the groups were taught through Concept Attainment Model of instruction.

The Fy.x ratio obtained from the analysis of covariance of the pretest and posttest scores of academically advantaged students and academically disadvantaged students in the experimental group showed a significant difference among the adjusted post test means of the two groups.

(i) Fy.x for df = (1/ 265) for different levels of objectives were found to be significant. Fy.x (knowledge) is 199.16; p < 0.001., Fy.x (comprehension) is 132.78; p < 0.001., Fy.x (application) is 39.09; p < 0.001., Fy.x (analysis) is 117.68; p < 0.001.

(ii) The difference between adjusted posttest means of the academically advantaged students and academically disadvantaged students in the experimental group (CAM) was found significant at all levels. All the t values for df = (265) was found to be significant.

Knowledge: My.x (AA) is 23.27, My.x (AD) is 19.69, t is 15.34; p< 0.001.

Comprehension: My.x (AA) is 25.52, My.x (AD) is 21.25, t is 12.77; p< 0.001.

Application: My.x (AA) is 16.28, My.x (AD) is 14.93, t is 6.06; p< 0.001.

Analysis: My.x (AA) is 17.17, My.x (AD) is 14.38, t is 10.59; p< 0.001.
Conclusion 7.

The influence of intelligence and socio-economic status on achievement in mathematics and cognitive ability of academically disadvantaged students who learned mathematics using Concept Attainment Model of instruction is minimal.

This is supported by the following findings:

On comparing the adjusted posttest means of scores of achievement test in mathematics of the three intelligence groups of academically disadvantaged students significant difference is observed only when with low intelligence group is compared with other two groups as revealed by the result of the 't test'. (My.x of High intelligence group is 70.61; My.x of Average intelligence group is 70.73; My.x of Low intelligence group is 68.53, t (1&2) is -0.137 for df = (90); p > 0.05, t (3&2) is -2.12 for df = (72); p < 0.05, t (3&1) is -2.03 for df = (75); p < 0.05).

The adjusted posttest means of scores in achievement test in mathematics of the three groups of academically disadvantaged students based on their socio-economic status have no significant difference as shown in the 't test'. (My.x of High SES group is 70.54; My.x of Average SES group is 69.79; My.x of Low SES group is 70.11, t (1&2) is 0.718 for df = (73); p > 0.05, t (3&2) is 0.321 for df = (81); p > 0.05, t (3&1) is -0.435 for df = (83); p > 0.05).
The adjusted posttest means of scores in cognitive ability test of the three groups of academically disadvantaged students based on their level of intelligence have no significant difference according to the results of the 't test'. (My.x of High intelligence group is 15.65; My.x of Average intelligence group is 16.15; My.x of Low intelligence group is 15.1, t (1&2) is -0.64 for df = (90); p > 0.05, t (3&2) is -1.18 for df = (72); p > 0.05, t (3&1) is -0.62 for df = (75); p > 0.05).

The adjusted posttest means of scores in cognitive ability test the three groups of academically disadvantaged students based on their socio-economic status have significant difference only with high SES group as obtained in the 't test'. (My.x of High SES group is 14.36; My.x of Average SES group is 16.08; My.x of Low SES group is 16.61, t (1&2) is -2.06 for df = (73); p < 0.05, t (3&2) is 0.66 for df = (81); p > 0.05, t (3&1) is 2.86 for df = (83); p < 0.01).

In the multiple regression analysis R square is 0.063 and Adjusted R square is 0.031 for gain in achievement in mathematics; R square is 0.074 and Adjusted R square is 0.042 for gain in cognitive ability test scores.

**Conclusion 8.**

The relative progress in achievement in mathematics when taught using Concept Attainment Model of instruction (CAM) and Conventional Teaching Method (CTM) is higher for academically disadvantaged students than academically advantaged students.
This conclusion is substantiated by the following findings:

The progress in achievement in mathematics made by the academically advantaged students is 11.84. (For academically advantaged students My.x (CAM) is 82.32, and My.x (CTM) is 70.48.). The progress in achievement in mathematics made by the academically disadvantaged students is 27.87. (For academically disadvantaged students My.x (CAM) is 70.18, and My.x (CTM) is 42.). Comparing the above figures (11.84 and 27.87), rate of improvement of academically disadvantaged students can be seen well ahead of academically advantaged students.

**Conclusion 9.**

The relative progress in cognitive ability scores when taught using Concept Attainment Model of instruction and Conventional Teaching Method is higher for academically disadvantaged students than academically advantaged students.

The conclusion is deduced from the following findings:

The progress in cognitive ability scores made by the academically advantaged students is 3.491. (For academically advantaged students My.x (CAM) is 19.95, and My.x (CTM) is 16.459). The progress in cognitive ability scores made by the academically disadvantaged students is 4.576. (For academically disadvantaged students My.x (CAM) is 15.872 and My.x (CTM) is 11.296).
Comparing the above figures (3.491 and 4.576), rate of progress made by academically disadvantaged students is slightly higher than that of academically advantaged students.

**Implications of the Study.**

Concepts are important building blocks of thoughts. As developed from the work of Bruner, Goodnow and Austin (1977), Concept Attainment Model of instruction provides a chance to analyse the students' thought process and to help them develop more effective strategies of thinking as its main focus is on developing inductive reasoning.

All thinking abilities can be challenged throughout the classroom activity. With experience, children become skilled at identifying relationships. It is also possible to teach almost any concept in any subject with carefully chosen examples.

From the present study, it was found that the Concept Attainment Model of instruction was more effective over traditional method for better achievement in Mathematics by the academically disadvantaged students. This method was also found very effective to develop cognitive ability of academically disadvantaged students. From the results of the study, it is obvious that Concept Attainment Model - based teaching is an effective method to teach mathematics in schools in India. The academically disadvantaged students will be benefited both in achieving higher
scores in mathematics and in developing their cognitive ability if this method is adopted in our schools.

The Concept Attainment Model can be introduced to teach mathematics in the whole class since both disadvantaged and advantaged students have scored significantly higher scores while teaching through this model. So the authorities should introduce Concept Attainment Model of instruction as early as possible for the teaching of Mathematics. The research studies can be undertaken to determine the effectiveness of Concept Attainment Model of instruction on other school subjects. It is also very effective when the different cognitive levels of achievement are taken into consideration.

In this model, students are not passive listeners. They have an important place in the learning process. It takes the students to a position where learning becomes a pleasant experience. They are automatically elevated to high esteem of self-satisfaction due to the facility of immediate reinforcement and are encouraged to think reflectively.

Characteristically, the academically disadvantaged students are deficient in cognitive, affective and psychomotor abilities compared to a normal child. But their disadvantage is not genetic. In order to achieve education for all, attention to this group of children is a primary step. Educational provisions for these children can be conceived by way of school readiness programme, remedial instruction, curricular
adaptation and creating motivation. The Concept Attainment Model will help these children create motivation and reflective thinking.

The regular teachers were to be trained to deal with academically disadvantaged students and remove from their minds the stigma attached to ‘disadvantaged’. Teaching strategies built on humanistic ground, culture specific curriculum and self-instructional materials may be recommended for use by teachers to teach the disadvantaged students using this method. The educational authorities therefore can take necessary steps to start preparing textbooks for the teaching of all the concepts in mathematics through concept attainment model of instruction.

Majority of the student population in India comes either in the average or low intelligence group or in the average or low socio-economic status groups. Bose (1990) also found that majority of the student population belonged to average- and low socio-economic status groups. For them concept attainment model of instruction is found a better means while this strategy is very effective irrespective of intelligence and socio-economic status.

The concept attainment model of instruction has great relevance for teachers who intend to improve their own instructional system. One of the obvious implications for teachers is that they have to organise the instructional material by collecting large number of examples and non-examples of the concepts, and to use
specific strategies for enabling the pupils to see the similarities and differences in the relevant stimuli or responses belonging to the concept.

The Concept Attainment Model helps teachers to cultivate in students power of observation, discrimination, remembering and generation of knowledge through inclusion of concrete examples and non-examples of concepts. Further it is suggested to plan for the development of inductive reasoning by adopting the concept attainment model of instruction on the strength of the finding that it (CAM) develops the reasoning ability and thereby enhances the cognitive ability of children.

Suggestions for Further Research.

Generally, studies in models of teaching have been confined to the information processing models only. The purpose of education is not only to develop the cognitive domain. Hence, studies need to be taken up with concept attainment model that can develop both affective and psychomotor domains. Feasibility of concept attainment model for different subjects may also be studied.

The present investigation is tried to find out the effectiveness of concept attainment model of instruction over conventional teaching method in terms of the scores achieved by students in mathematics and in cognitive ability. While assessing the effectiveness of a method of teaching, the teacher also may be taken as a
reference factor. From this angle, the time taken by the teacher in order to acquaint him with new technique of teaching, the teaching time and the impressions of teacher and learner should also be considered as factors of comparison. Hence a study can be conducted by considering those factors.

Factorial experiments should be conducted to study the interactive effect of conceptual style preference with Concept Attainment Model of instruction and other models in the information processing family.

Social disadvantage appears to be the main factor in educational disadvantage. Hence a study may be conducted to search the factors affecting the educational disadvantage of a child and how modern instructional models including concept attainment model could help to overcome those barriers, and how schools can compensate for the problem.

The study is worth if the findings lead the curriculum designers and textbook writers to use this type of approach to present concepts in each topic and to give training to teachers in developing their own lessons based on concept attainment model of instruction and undertaking further studies in the field.

The investigator is of the view that the present study opens up many an avenue for more studies that would, in future, contribute to the Nation's endeavour to eradicate the academic disadvantage of the students.
References:


