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EFFECTIVENESS OF CONCEPT ATTAINMENT MODEL ON CREATIVITY IN MATHEMATICS AMONG SECONDARY SCHOOL STUDENTS

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I.ABSTRACT

Concept Attainment is an indirect instructional strategy that uses a structured inquiry process. It is based on the work of Jerome Bruner. In concept attainment, students figure out the attributes of a group or category that has already been formed by the teacher. Here the investigator has tried on the sample of 60 students by teaching them with concept attainment model and convention method of teaching. Pre-test and post test design is used. The findings of the study shows that the students who belonged to the experimental group, which is taught by concept attainment model significantly have better creativity in mathematics than those students who belonged to the control group. Consequently, the concept attainment model proved to be an effective intervention to help the students become active learners and enhance their creative thinking.

KEYWORDS: *indirect instructional strategy ,concept attainment model and convention method of teaching.*

II.INTRODUCTION

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 the content. It engages students into formulating a concept through the use of illustrations, word cards o specimens called examples to form the concept. It is well suited class rooms to use because all thinking abilities and creativity can be developed throughout the activity.

Steps:

- Select and define the concept
- Select the attributes.
- Develop positive and negative examples.
- Identify the super ordinate, subordinate, and co-ordinate concept.
- Prepare the content goals.
- Introduce the process to the students by establishing a relaxed atmosphere in the Class
- Analyze the conceptual network involved.
- Present examples and non examples
- Conduct response-sensitive &discussion
- Give additional examples and non-examples
- Ask the students to give examples and non- examples.
- Define the concept.

- Evaluation of the process.
- Analysis of thinking strategy involved.

NEED AND SIGNIFICANCE OF THE STUDY

Bruner give more emphasis than Piaget to the process of thinking and stresses the role of language. He has given three modes of learning Enactive, Ionic and Symbolic. These three modes of learning form a developmental order.

A very young child will learn principally by the enactive mode and as he grows older, the ionic and then the symbolic became more important. Prof. Bruner has studied the growth of children from the point of intellectual development. He recommended the use of discovery approach, intrinsic motivation and providing instructional material for learning. Systematic interactions between a teacher and learner are necessary for cognitive development The main purpose of teaching is to induce learning. Most of the teacher use the word 'learning' in a broad sense and organize their teaching without keeping in view the learning requirement. Perhaps they even forget the environmental factors which increase learning. Systematic interaction between a teacher and a learner are necessary for cognitive development. The child maintains a balanced relationship with environment. The investigator kept in mind these ideas about the development of thinking and chosen concept attainment model of teaching.

OBJECTIVES OF THE STUDY

• To prepare lessons transcripts based on concept attainment model on selected topics of mathematics of standard IX state board syllabus.
• To find out the effectiveness of lessons transcripts based on concept attainment model with respect to creativity in mathematics of IX standard students.
• To study the difference between pre-test scores of creativity in mathematics of control and experimental group.
• To study the difference between post-test scores of creativity in mathematics of control and experimental group.

HYPOTHESES OF THE STUDY

1.There is no significant difference in the pre test scores of creativity in mathematics of control and experimental group.
2.There is no significant difference in the post test scores of creativity in mathematics of control and experimental group.

PROCEDURE OF THE STUDY

Experimental design was adopted. Before starting experimentation, the investigator conducted creativity in mathematics test to the both the experiment group and control group and found that there is no significant difference in their mean scores. The students of the experimental group were taught using lesson transcripts based of concept attainment model and the other group using traditional method of teaching. After the treatment the post test was too administered to both the groups. The collected data was subjected to the statistical analysis and the results obtained were interpreted.

Sample: The sample of the study consisted of 60 students studying in ninth standard under the State board syllabus in Bangalore city. The sample included both boys and girls.

Tool: The tool on mathematical creativity is developed, validated and reliability is established by the researcher. The reliability is found to be 0.73.

Analysis and Interpretation

Hypothesis 1: There is no significant difference in the pre test scores of creativity in mathematics of control and experimental group.

Table 1: Comparative Mean Scores of Pre-Test Scores of Experimental Group and Control Group

Group	N	Mean	SD	t-value	Remark
Experimental Group	30	12.67	3.24	0.32	Not Significant
Control group	30	12.39	2.61		

From Table-1, It is found that obtained t-value of experimental group and control group with respect to their creativity in mathematics is less than the table value. Hence the hypothesis-1 is accepted and there is no significant difference between the experimental group and the control group in their creativity in mathematics in the pre-test. Therefore it may be concluded that, the experimental and control group were alike and equal with reference to creativity in mathematics in before subjected to experimentation.

Hypothesis 2: There is no significant difference in the post test scores of creativity in mathematics of control and experimental group.

Table 2: Comparative Mean Scores of Post-Test Scores of Experimental Group and Control Group

Group	N	Mean	SD	t-value	Remark
Experimental Group	30	6.51	4.24	5.95*	Significant at 0.01 level
Control group	30	1.68	1.87		

From Table-2, it is found that obtained t-value of experimental group and control group with respect to their creativity in mathematics is greater than the table value. Hence the hypothesis-2 is rejected and alternative hypothesis is accepted that there is significant difference between the experimental group and the control group in their creativity in mathematics in the post- test. Therefore it may be concluded that, the experimental group shows better thinking with respect to creativity than the control group after subjected to experimentation.

SUMMARY OF THE FINDINGS

The students who belonged to the experimental group which is taught by concept attainment model significantly have better creativity in mathematics than those students who belonged to the control group. Consequently, the guided discovery proved to be an effective intervention to help the students become active learners and enhance their creative thinking.

CONCLUSION

- The group taught using concept attainment model had better mathematical creativity than the group taught using the traditional lecture method.
- The use concept attainment model significantly and positively affects the creativity of the students in mathematics.
- Students are more interested and motivated to do the activities in Concept attainment model.

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