EFFECT OF CONCEPT ATTAINMENT MODEL ON ACADEMIC ACHIEVEMENT IN SOCIAL STUDIES

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Abstract

Concept Attainment learning is a pedagogical practice that promotes inductive - deductive thinking and learning across different curriculum areas and classroom settings. Attainment, a close relative to inductive thinking, focuses on the decision making and categorization processes leading up to creation and understanding of new concepts. However, while the benefits of implementing Concept Attainment learning are widely acknowledged, many schools and teachers still experience difficulties in knowing how to embed this practice into their teaching curricula. In the present study, pre-test and post-test experimental design was used to assess the effectiveness of Concept Attainment learning in Social Studies on the academic achievement of secondary school students. A sample of 60 students, randomly selected from one of the government schools of Chandigarh, was divided equally into control and experimental groups of 30 each by equating them on the basis of their pre-test scores of academic achievement. After the intervention, the subjects of control group revealed no significant improvement in the percent scores of academic achievement, the t-value being 0.55 which is not significant at 0.05 level, (P>0.05). However, the subjects of experimental group revealed a highly significant improvement in mean percent scores of academic achievement, as evident from the t-value of 11.8 which is significant at 0.01 level (P<0.01). Findings of this study lead one to conclude that Concept Attainment Model is well recognized as a pedagogical practice that promotes learning, higher level thinking, and a greater understanding of children with diverse learning.

Keywords: *Concept Attainment learning, Academic Achievement, Social Studies*

Introduction

Teaching is complex activity, which includes a cluster of different roles and responsibilities. A teacher has to master multiple roles in order to become more professional. The professional competence can be expanded in two ways; first by increasing the range of teaching strategies that are needed to be employed; second by becoming increasingly skillful in the case of these strategies because the purpose of teaching is to maximize learning. Teaching models are the best way to transit effective learning (Bhargava, 2013).

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Amongst various models of teaching, the concept attainment model was developed by J.S Bruner in 1956. Usually, it is named as Bruner's Concept Attainment Model. The model emerged out of the study of thinking process in human beings. It is based on the assumption that a human being is endowed with the capacity to discriminate and to categorize things in groups. This model is used for teaching concepts to the students. Concept attainment is, thus, an ability of cognition. Concept attainment is an indirect instructional strategy that uses a structured inquiry process and is based on the work of Bruner (1997).

In concept attainment model, students figure out the attributes of a group or category that has already been formed by the teacher. While doing so, students compare and contrast examples that contain the attributes of the concept, then it is the search for and identification of attributes that can be used to distinguish examples of a given group or category from the non-examples. The concept attainment is a meaningful construct and multidimensional (Gogna, 2015).

Despite varied statements about the aims of education, the academic achievement of pupil continuous to be a primary concern and the most important goal of education. In general, academic achievement is considered to be the knowledge attained and skills developed in the subject in which one is imparted training in school. Academic achievement is the measure of attainment of concepts and perhaps none would deny the importance of academic achievement in child's success.

Statement of the Problem

The statement of problem is as under:

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Objectives of the Study

The objectives of the present study were as under:

1. To study the academic achievement in Social Studies of secondary school students.
2. To develop and impart modules in Social Studies using concept attainment model for secondary school students.
3. To assess the effect of concept attainment model on academic achievement in Social Studies of secondary school students.

Hypotheses of the Study

The hypotheses of the present study were as under:

1. There is no significant difference in academic achievement in Social Studies of students of control and experimental group.
2. There is no significant effect of concept attainment model on academic achievement in Social Studies of secondary school students.

Design of the Study

Pre-test and post-test experimental design was used in the present study to assess the effect of concept attainment model in Social Studies on the academic achievement of secondary school students.

Sample of the Study

In the present study, one of the Government schools of the Chandigarh administration, namely Government Model High School, Sector 20-D, Chandigarh was randomly selected. There were 100 students in class IX. From those 100 students, investigator selected 60 students randomly. Then, pre-test of academic achievement was conducted on the selected sample of 60 students. On the basis of scoring of the pre-test, investigator equated the two groups of 30 each

experimental and control groups. Then, the intervention constited of imparting modules based on concept attainment model in Social Studies to the subjects of experimental group and control group was taught the same content by traditional method. After the intervention, post- test of academic achievement was administered again on the subjects of both the control and experimental groups.

Tools Used for the Study

Following tools were used for the present study:

1. Self prepared Academic Achievement Test in Social Studies.
2. Self developed Modules of Social Studies using Concept Attainment Model.

Procedure of Data Collection

The study was conducted on 60 students of Government Model High School, Sector 20-D, Chandigarh. The data from the selected sample was collected personally by the investigator after taking the permission from the principal of the school.

Before conducting the experiment, sympathetic and friendly attitude was adopted to establish rapport with them. The subjects were made to understand the significance of the study and ensured that the test will be used only for research purpose and not to evaluate their performance. Students were also assured of the confidentiality of the information given by them. They were asked to be honest and free while answering the test.

For data collection, following steps was followed:

Step 1:-Pre-test: Academic Achievement test was administered on the students of both the experimental and control groups.

Step 2:-Intervention: At this stage, teaching was done through 15 modules of Social Studies based on Concept Attainment Model to the subjects of experimental group, on the topics taken from C.B.S.E affiliated syllabus of Social Studies textbook for class IX. At the same time, subjects of control group were taught the same content through traditional teaching approach. This process continued for one month in which alternatively classes were taken by the investigator for both the groups.

Step 3:-Post-test: After one month of intervention, post-test on academic achievement was again administered on the students of both the experimental and control groups .i.e. taught through concept attainment model and the group taught through traditional teaching approach respectively.

Step 4:- After that, scoring was done. Raw data was subjected to statistical analysis to draw the inferences.

Statistical Techniques

The following statistical techniques were employed to analyze the data:

1. Descriptive statistical measures such as mean, median and standard deviation were computed in both the groups separately.
2. t-values were computed to determine the significance of difference between the mean percent scores of academic achievement in group taught through concept attainment model and group taught through traditional teaching approach.

Results & Discussion

Table 1

Showing Measures of Central Tendencies of Percent Scores of Academic Achievement of Subjects of Control and Experimental Groups

Measures of Central Tendencies	Control Group (n=30)		Experimental Group (n=30)	
	Pre-test (n=30)	Post-test (n=30)	Pre-test (n=30)	Post-test (n=30)
Minimum	18.00	17.00	15.00	43.00
Maximum	40.00	45.00	44.00	80.00
Range	22.00	28.00	29.00	37.00
Mean	28.96	29.53	28.13	59.64
Standard Deviation	8.53	7.06	8.85	10.63
t-Value	0.55#		11.8**	

**P<0.01

Table 1 shows the measures of central tendencies of scores of percent scores of academic achievement of subjects of control and experimental groups. As seen in the table, there is no significant difference in mean percent scores of academic achievement of control and experimental group during pre-test, the t- value being 0.19, which is not significant at 0.05 level ($p>0.05$).

As seen in the table, the subjects of control group revealed no significant improvement in the mean percent scores of Academic Achievement during post-test, the t-value being 0.55 which is not significant at 0.05 level ($p>0.05$). Since no treatment was given to subjects of control group whatever the marginal improvement was there, that could be attributed to sharing of information off campus, their previous knowledge and information gathered from internet, visit to library regularly, influenced by other teachers, information given in traditional classrooms, reading other relevant books of Social Studies, help given by parents, their tuition teachers about new concepts that they might have read in newspapers, magazines and journals for new information.

So far as the subjects of experimental group were concerned, a highly significant improvement in mean percent scores of academic achievement was observed during post-test, as evident from the t-value being 11.8 which is significant at 0.01 level ($p<0.01$). The probable reasons for this significant improvement in mean percent scores of academic achievement could be the effect of intervention, comprising of modules based on concept attainment model, which led to an increase in their motivation level, thereby increasing their interest in subject like Social Studies. Concept attainment model helps to make connections between what students know and what they will be learning. It helps students how to sort out relevant information. It extends their knowledge of a concept by classifying more than one example of that concept. Through this model, concept is learned more thoroughly and academic achievement is improved.

In an analytical study conducted by **Portwood (1995)** to determine if generalities examples and practice presentation form display theory that would affect the learning of concept - classification, procedure- using and principle - using tasks among Malaysian students. The result of the study indicated that significant differences did exist among the treatment groups within the presentation forms for the principle - using tasks.

Another study carried out by **Mason (1997)** also found that student's performance at school level depend on solving algorithm and conceptual problems whose solution requires some underlying concepts and application and manipulation of certain mechanism underlying Science formulae without understanding underlying Scientific concepts.

In a similar study, **Bindu (2002)** conducted an experimental study on effectiveness of Concept Attainment Model of teaching on achievement in Chemistry of secondary school students. Result of the study revealed that concept attainment model is more effective than conventional method in terms of achievement in Chemistry of secondary school Students.

Another study carried out by **Chaurasia (2015)** predicted intelligence, concept attainment in Science and learning style as predictors of performance in Science among IX grade students. The findings of the study revealed that intelligence and concept attainment in Science are positively related to performance Science. It was concluded that intelligence and ability to identify concept belonging to examples emerged as the best predictors of Science performance.

Concept attainment model of teaching was, thus, found to be superior and effective in comparison to traditional methods. Concept attainment model encourages the students to engage in learning activities with maximum enthusiasm and this will help them to understand the subject matter more. The method also helps to correlate the theoretical concepts and its application, which is not so effective in the conventional methods. The Concept attainment model helps the students to learn the theory and apply the newly acquired knowledge simultaneously. Concept attainment model is, thus, strategy to encourage critical thinking skills. The importance of concept attainment model in contrast to the traditional classroom

teaching as an effective approach in teaching cannot be undermined.

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