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Effectiveness of Concept Attainment Model of Teaching on Achievement of XII Standard Students in Social Sciences

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Abstract
The study aimed at finding the impact of the Concept Attainment Model of teaching on the achievement of XII standard students in social sciences. A sample of 400 students of XII grade was randomly selected for each controlled and experimental group. In this study, innovative -control (pre-test post-test) parallel group was used. Descriptive and inferential statistics were used to compare the means between the groups. The finding of the study revealed that the concept attainment model is useful in terms of achievement of students in the teaching of social sciences.
Keywords: Concept Attainment Model, Social sciences

Introduction

Successful teachers are those that can maximise the learning potential of all students in their class. Developing positive relationships between a teacher and student is a fundamental aspect of quality teaching and student learning. Positive teacher-student relationships promote a sense of school belonging and encourage students to participate cooperatively. Students develop the confidence to experiment and succeed in an environment where they are restricted by the fear of failure.

The most recent concept of teaching is to teach the child to learn, how to discover, how to think, and how to inquire. The emphasis is upon, 'know how' rather than 'know what'. In the modern world, knowledge increase at a terrific pace and social change are very rapid. Education can no longer be taken as the preparation of a finished product. During the last two decades, many new methods of teaching and training have been developed, tested, modified and adapted to different kinds of teaching-learning situations. Model of education is an innovative method of teaching. There is need to direct efforts towards transformation of teaching methods right up to the development of science and technology, as we are living in the high-tech era curriculum and material research along with teacher orientation to receive attention. The ultimate responsibility of information processing has been enshrined by the society in teachers. Thus, a theory of teaching must attempt to set forth the means of maximising learning in the part of children. For achieving needed learner behaviour, intellectual developments and acquisition of knowledge and specific mental processes like reasoning, logical thinking, deductive reasoning and scientific creativity be primary concerns for effective and efficient information processing.

A variety of teaching approaches have been evolved to design instruction but which approach/ model of teaching is most appropriate having a better impact, active, efficient and exciting can only be answered through research keeping each model's instructional nurturing effects in view.

Concept Attainment Model

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. To do so, students compare and contrast examples that contain the characteristics of the concepts with models that do not include those attributes. They then separate them into two groups. Concept attainment then is the search for and identification of characteristics that can be used to distinguish examples of a given group or category from non-examples.

Concept attainment 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 into the idea before others can resolve the idea, and these are invited to suggest their models, while other students are still trying to form the concept. For this reason, concept attainment is well suited to classroom use because all thinking abilities can be challenged throughout the activity. With experience, children become skilled at identifying relationships in word cards or specimens. With carefully chosen examples, it is possible to use concept attainment to teach almost any concept in all subjects.

Review of Related Literature

Vyas (2014) reported that the effect of concept attainment model of instruction was significantly high on the over, standard and underachiever students. **Yaghini (2008)**, in her study, concluded that there is a relationship between preschool children learning who trained statistical mathematics concepts by concept attainment and children in the traditional group. **Anuj Pretha (2007)** conducted the study on the effectiveness of concept attainment model in teaching English at the high school level. The objectives of the study were to determine the effectiveness of concept attainment model in teaching English in the total sample and to determine the effectiveness of concept attainment model in teaching sex base. The study was conducted on a sample of 62 students of IX standard of Evans HS Parassala, TVPM and experimental method was adopted. The study concluded that teaching of the concept attainment model is more effective than the traditional method for achievement in English. **Shamnad (2005)**, in his research, found that the concept attainment model is more effective than the conventional method in teaching Arabic grammar in IXth class. **Thomas (2005)** conducted the study on the effectiveness of concept attainment model and test book method in chemistry at HS level. The objective of the study was to determine the effectiveness of concept attainment model in learning chemistry in the total sample. The study was conducted on a sample of 110 students of standard XI of three division in Govt. HSS Karapusha Kottayam, experimental method was used. The study concluded that teaching through the concept attainment model is more effective than the textbook method for the achievement of chemistry. Sreelekha and **Nayar (2004)** conducted a study to compare the achievement level between the traditional approach and concept attainment model concerning knowledge objectives, understanding objectives and application objectives. They found that the concept attainment model is effective in improving the overall level of achievement in chemistry. **Verma (2001)** reported that the concept attainment model improves the inductive reasoning ability of the students. **Antonym (2001)** compared the effectiveness of concept attainment model and active teaching model in math achievement at the secondary level. The objectives of the study were to determine the effectiveness of concept attainment model in performance in maths and to compare the efficacy of the concept attainment model in achievement in mathematics based on sex. The study was conducted on a sample of 80 students of VIII standard of two divisions in SHCGHSS Chalakudy, Trissure, experimental method was adopted. The study concluded that teaching of the concept attainment model is more effective than the traditional method for achievement in English.

Researches conducted on concept attainment model depict that student achievement improves when taught through this model. However, studies determining the effectiveness of concept attainment model on the performance of the student in social science teaching at the secondary school level is nil or negligibly small. Therefore, this little research inspired the investigator to undertake the present study to ascertain the effectiveness of concept attainment model of teaching on the achievement of 12th standard students in social sciences.

Objectives of the study

The following purposes were set for the study:

1. To investigate the difference in achievement in the mean pre-test scores of control and experimental groups of XII standard students in social science teaching.
2. To investigate the difference in achievement in the mean post-test scores of control and experimental groups of XII standard students in social science teaching.

Hypotheses of the study

Based on the review of the literature and the objectives mentioned above, the present research formulated the following purposes:

1. There is no significant difference in achievement in the mean pre-test scores of control and experimental groups of XII standard students in social science teaching.
2. There is no significant difference in achievement in the mean post-test scores of control and experimental groups of XII standard students in social science teaching.

Delimitations of the study

The study is limited to

1. The secondary school students are studying in 12th class only.
2. A sample size of 400 only.
3. Achievement is compared to those who fall in the average intelligence group.

Methodology

The experimental method was adopted.

Sample: The present study was conducted on a sample of 400 12th class students selected using purposive sampling technique from government and private schools of district Ganderbal.

Tools used

The researcher used the following devices for collecting the data to study the research in hand:

1. Group Test of General Mental Ability (GTMA) 1972 by Jalota
2. Achievement test in social science prepared by the investigator

The Procedure of Data Collection

For the present study, pre-test post-test experimental design was used. The objective type achievement test made by the investigator was given to all the selected 12th standard students, and the achievement test scores were recorded. Intelligence test, developed by Dr S.S Jalota, was also simultaneously administered to them for selection of the groups. Students were selected based on their intelligence score. The students were then divided into two groups, i.e. the experimental group and control group. The experimental group was taught through the concept attainment model of teaching, and the control group was guided through the traditional method. Both the groups were again tested with the same test that was administered in the beginning before starting the experimentation. The scores obtained by both the groups in post-test were also recorded. These scores of pre-test and post-test were utilised in the analysis of the data.

Analysis of the Data

Statistical techniques like mean and standard deviation were used to compare group on pre-test scores, and post-test scores and inferential statistics ‘t’ test was applied to compare the mean post-test scores of experimental control groups to ascertain the effect of concept attainment model in achievement in social sciences.

Results and Discussion

The comparison of the samples was made by testing the significance of the difference between mean pre-test scores and post-test scores, and inferential statistics ‘t’ test was applied to compare

the mean post-test scores of experimental and control groups to ascertain the effect of concept attainment model on academic achievement in social sciences.

Hypothesis 1: There is no significant difference in achievement in the mean pre-test scores control and experimental groups of XII standard students in social science teaching.

Table 1: 't' value of mean pre-test scores of control and experimental groups of XII standard students in social science teaching

Groups	N	Mean	S.D	t-value	Level of Sig.
Control	200	95.57	19.1451	0.005	In sig.
Experimental	200	95.56	8.762		

Pursual of the table -1 reveals that the mean pre-test scores of control and experimental groups are 95.57 and 95.56 and their S. Ds are 19.1451 and 8.762 respectively. When the t-test was applied to compare the mean pre-test scores of both the groups, t-value is found to be 0.005, which is insignificant. This shows that there exists no significant difference between the mean pre-test scores of control and experimental groups of XII standard students. Hence, the null hypothesis 1 is accepted.

Hypothesis 2: There is no significant difference in achievement in the mean post-test scores of control and experimental groups of XII standard students in social science teaching.

Table 2 Showing 't' value of mean post-test scores of control and experimental groups of XII standard students in social science teaching

Groups	N	Mean	SD	t-value	Level of Sig.
Control	2002	66.94	8.491	3.963	Sig. at 0.01 level
Experimental	200	63.82	7.197		

Pursual of the table -2 reveals that the mean pre-test scores of control and experimental groups are 66.94 and 63.82 and their S.Ds are 8.491 and 7.197 respectively. When the t-test was applied to compare the mean pre-test scores of both the groups, t-value is found to be 3.963, which is significant at 0.01 level of significance favouring the later. This suggests that the experimental group has higher mean post-test scores as compared to the control group. It can, thus, be inferred that the experimental group is more encouraged and enthusiastic in learning, applying and correlating the concepts simultaneously, resulting in their better achievement. Hence, the null hypothesis 1 is rejected.

Findings

1. No significant difference is found in achievement in the mean pre-test scores of control and experimental groups of XII standard students in social science teaching.
2. The significant difference is found in achievement in the mean post-test scores of control and experimental groups of XII standard students in social science teaching.

Conclusion

Concept attainment model was found to be effective in influencing the achievement in social science among XII standard students as it is evident from post-test scores of control and experimental groups. The findings of this study have significant implications for parents, teachers, educational planners and learners. They need to know the causes affecting students' achievement level and build on their strength to sustain their motivation. A cooperative and participatory educational system providing space to the students should be in a place where they will have an ample of opportunities to test their abilities and quenches their intellectual thirst. Therefore, all learners should be given equal opportunity and the same level of encouragement irrespective of their locale, gender and types of school.

Educational Implications

Concept attainment model should be used by school teachers in classroom teaching in general and education of social science in particular. CAM helps in strengthening the cognitive structure of the students. It helps to clarify ideas and to introduce aspects of content. To orient the interest of teachers towards the of CAM in classroom teaching,

workshops and seminars should be organised.

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