



INVESTIGATING THE CONSTRUCTIVIST CONCEPT ATTAINMENT MODEL'S INFLUENCE ON SOCIAL STUDIES CONCEPT ACQUISITION OF SECONDARY SCHOOL STUDENTS

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Abstract

This study explores the integration of concept attainment model of educational practices and constructivist approach of teaching to propose a Constructivist Concept Attainment Model. It also examines the impact of this Constructivist Concept Attainment Model on concept acquisition in social studies of secondary school students. A randomized pre-test post-test design was employed, involving 200 ninth-grade students from two CBSE schools in Ludhiana, Punjab, India. The experimental group was taught using the Constructivist Concept Attainment Model, while the control group received traditional lecture-based instruction. Data analysis revealed that the experimental group showed significantly higher mean gain scores ($M = 21.23$, $SD = 8.93$) compared to the control group ($M = 13.30$, $SD = 9.96$), with a t-ratio of 5.93 ($p < .01$). The results demonstrate that the Constructivist Concept Attainment Model significantly enhances concept acquisition in social studies compared to traditional teaching methods.

Keywords: Constructivist Concept Attainment Model, Experimental Group, Control Group, Social Studies Concept Acquisition

Introduction

The NEP 2020 emphasizes a holistic, flexible, multidisciplinary approach to education, striving to cultivate critical thinking, creativity, and problem-solving skills in students. This policy resonates well with the Constructivist Concept Attainment Model, which is based on constructivist learning theories advocating that learners build their own understanding and knowledge of the world by experiencing things and reflecting on those experiences. The Concept Attainment Model, developed by Jerome Bruner (1956), provides a framework for how students can attain and understand concepts through active engagement, exploration, and reflection.

Hein (1991) describes constructivism as a learning theory where students build their own knowledge through individual and social engagement with new concepts, experiences, and activities. This theory emphasizes that learning involves creating meaning rather than imitation, with teachers facilitating opportunities for students to interact with sensory data and construct their understanding. Constructivism views the acquisition of knowledge as an active, constructive process where each learner participates in forming their own understanding. In the 1950s, American psychologist Jerome Bruner emerged as a prominent figure in cognitive psychology. Like Jean Piaget, Bruner emphasized the significance of children exploring and discovering independently. However, Bruner also highlighted the crucial role of adults and more

knowledgeable peers in expanding a child's understanding and enhancing their learning capabilities (Takaya, 2008). Jerome Bruner believed that with the right guidance and resources, a child could learn any concept at any age if it was presented appropriately. He termed this support "instructional scaffolding." Bruner's constructivist theory posits that learning new material is most effective when following a progression from enactive (hands-on) to iconic (visual) to symbolic (abstract) representation, a principle that applies to adult learners as well (McLeod, 2008). Jean Piaget, a Swiss psychologist, is often associated with psychological constructivism. His theory of learning involves the mental organization and reorganization of new information and experiences. He emphasized that the new experiences are integrated with previously well-understood and meaningful frameworks of knowledge (Ruixue, 2021). The integration of the Concept Attainment Model with Piaget's constructivist approach forms the basis of an integrated Constructivist Concept Attainment Model.

The Constructivist Concept Attainment Model aligns well with modern educational goals by promoting active, critical, and experiential learning. By leveraging this model, educators can enhance students' conceptual understanding, critical thinking, and problem-solving skills, ultimately leading to a more effective and meaningful educational experience. The Constructivist Concept Attainment Model encourages group discussions and collaborative hypothesis testing, enhancing learning through social interaction. It provides opportunities for immediate feedback as students test their hypotheses, allowing them to adjust their understanding in real-time. It can be effectively implemented using digital tools to present dynamic examples, interactive simulations, and provide instant feedback. The Constructivist Concept Attainment Model requires students to actively engage with examples and non-examples, promoting deeper understanding.

Kinghorn (1991) detailed and assessed a teaching strategy rooted in a constructivist model of concept attainment. His model proposed that students actively construct their own knowledge by integrating new information with their existing understanding. In contrast, traditional transmission-based teaching methods may distort concepts to align with students' pre-existing beliefs. Kinghorn (1991) also demonstrated a constructivist approach to concept learning through an experimental session with a peer group of student teachers enrolled in a certificate course in Education.

The purpose of this paper is to investigate the impact of Constructivist Concept Attainment Model on concept acquisition in social studies of secondary school students. It aims to explore how Constructivist Concept Attainment Model influence students' understanding of the concepts related to the subject of social studies.

Review of Related Literature

According to Sanwal (2018), groups taught using radical and social constructive learning approaches demonstrated significantly higher levels of higher-order thinking compared to those taught through traditional methods in mathematics. Kauts and Sikand (2019) found that using a constructivist approach to teaching was more effective than traditional methods in improving achievement scores in social science. Mala (2019) found significant positive effects of the constructivist approach on both academic achievement and social competence among the students. Noreen, Arshad and Bashir (2020) indicated that constructivism transforms students from passive learners to active participants in the teaching-learning process. Andhale (2022) observed that children learn best when they construct their understanding through experiential learning and reflection on those experiences. Ahmedi, Kurshumlija & Ismajli (2023) noted that teachers' attitudes towards the constructivist approach significantly influence the learning outcomes.

Alam (2017) explored that the Concept Attainment Model effectively enhanced students' achievement in science. Kaur (2018) found the effectiveness of the Concept Attainment Model in enhancing academic achievement in chemistry. Acharya and Punjabi (2018) revealed that Concept Attainment Model offers students a structured framework that fosters critical thinking and analytical skills. This approach enables students to connect concepts and uncover the underlying principles within the subject matter. Chaudhary and Pandey (2018) concluded that Concept Attainment Model enables teachers to assess the performance of students with visual impairments by pinpointing misconceptions and gaps in their comprehension. Habib (2019) investigated that Concept Attainment Model is recognized as a potent approach for teaching social sciences, known for its ability to enhance student achievement. Putri, Hidayati, Rosidi and Hadi (2020) underscores the importance of integrating concept attainment models and student worksheets into teaching strategies to promote the development of analytical thinking skills among students. Wikanta and Juniawan (2022) explored how the Concept Attainment Model fosters students' critical thinking skills and enhances

their conceptual understanding. Ramadhanti and Simamora (2023) explored the effectiveness of the Concept Attainment model combined with fractional card media in enhancing students' grasp of fractions.

Emergence of the Problem

Investigator found only one study (Kinghorn,1991) assessed a teaching strategy rooted in a constructivist model of concept attainment and proposed that students actively construct their own knowledge by integrating new information with their existing understanding. The integration of the Concept Attainment Model with Piaget's constructivist approach forms the basis of an integrated Constructivist Concept Attainment Model. The presented study has been conducted to investigate the effect of Constructivist Concept Attainment Model on concept acquisition in social studies. The investigators could not find any other study related to this theme, so, the study's goal appears to be entirely justified.

Statement of the Problem:

Investigating the Constructivist Concept Attainment Model's Influence on Social Studies Concept Acquisition of Secondary School Students

Objective

To examine the significance of the difference in concept acquisition in Social Studies between groups taught using the constructivist concept attainment model and those taught through traditional methods.

Hypothesis

There will be no significant difference in concept acquisition in Social Studies between groups taught using the constructivist concept attainment model and those taught using traditional methods.

Design and Procedure of the Study

To investigate the effectiveness of the constructivist concept attainment model on concept acquisition in Social Studies, a randomized groups pre-test post-test design was employed. In Phase I, groups were randomly assigned, with one group designated as the experimental group and the other as the control group. Both groups underwent a pre-test assessing concept acquisition in Social Studies and were matched based on these scores. In Phase II, the experimental group received treatment through the constructivist concept attainment model over a period of 40 days, while the control group received treatment through traditional lecture methods. Phase III involved post-testing, where both groups were assessed using a post-test to measure achievement. Analysis focused on comparing the gain scores between the groups.

Sample of the Study

For the current study, a sample of 200 students (100 in the experimental group and 100 in the control group) from the ninth grade of two CBSE schools in Ludhiana district, Punjab, India, was selected using randomization techniques.

Tools Used

The following tools were used for the present study

1. Concept Acquisition in Social Studies test was developed by the researcher.
2. Lesson plan based on Constructivist concept attainment model were prepared by the researcher.

Analysis and Interpretation of Data

Table 1 reveals that the mean gain scores for Concept Acquisition in Social Studies were 21.23 (SD = 8.93) for the group taught through the Constructivist Concept Attainment Model and 13.30 (SD = 9.96) for the group taught through the Conventional Teaching Method. The t-ratio was 5.93 ($p = .000$), indicating a

significant difference at the 0.01 level. This suggests that there is a significant difference in Social Studies Concept Acquisition between the two teaching methods.

Table 1: Significance of difference in mean gain scores in concept acquisition in social studies of the students taught through constructivist concept attainment model and conventional teaching method

Groups	N	Mean	Standard Deviation	t- ratio
Experimental	100	21.23	8.93	5.93**
Control	100	13.30	9.96	

**Significant at 0.01 significance level

Therefore, the hypothesis stating that there will be no significant difference in concept acquisition in Social Studies between groups taught using the constructivist concept attainment model and those taught using traditional methods stands rejected.

Further, since the mean gain scores of the group taught through the Constructivist Concept Attainment Model were significantly higher than those of the group taught through the Conventional Teaching Method, it can be concluded that Concept Acquisition in Social Studies was higher in the group taught through the Constructivist Concept Attainment Model compared to the group taught through the Conventional Teaching Method.

Conclusion:

The study investigated the effectiveness of the Constructivist Concept Attainment Model on concept acquisition in social studies of secondary school students. A randomized groups pre-test post-test design was employed, with one group exposed to the Constructivist Concept Attainment Model and another to traditional teaching methods. Results indicated significant differences in mean gain scores between the groups, with higher scores observed in the group taught through the Constructivist Concept Attainment Model. This suggests that the model enhances students' conceptual understanding in social studies compared to traditional methods. The findings support the adoption of constructivist approaches in education to promote deeper learning and skill development among students.

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