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COMPARATIVE STUDY OF SCIENCE ENQUIRY MODEL AND ADVANCE ORGANISER MODEL IN ATTAINING MASTERY IN BIOLOGY

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ABSTRACT

It refers to the effect of particular treatment given to a learner which produces a significant change in pupil's behavior in terms of their achievement and Self Concept. Research design is the blueprint of the procedure that enables a researcher to test hypothesis by reaching valid conclusions about relationships between independent and dependent variables (Best, 1981). Fate of any activity and its outcome depends essentially upon its design. Kerlinger (1974) described "Research design as the plan, structure and model of investigation conceived so as to obtain answers to research questions and control variance" Thus, design provides a picture of what and how to do the work. In any research project, design provides the investigator a blue print of research dictates the boundaries of project and helps in controlling the experimental, extraneous and error variances of the problem under investigation.

This describes about the design employed, procedure followed, sample selected, tools used, and sequence of events that occurred, procedure adopted for data collection and statistical analysis conducted to realize the objectives of the study.

INTRODUCTION

In the present study, pre-test, experimental treatment and post-test design was employed. It involved three groups of students, two experimental groups and one control group. The Experimental Group-I was taught Biology through Science Enquiry Model. Experimental Group- II was taught Biology through Advance Organiser Model and the Control Group was taught through Conventional Method. The design comprised three stages. The first stage involved pre- testing of all the students of three groups on achievement in Biology, Intelligence, Socio- Economic Status and Self-Concept.

The second stage involved treatment of twenty weeks. The experimental treatment consisted of teaching of four units of Biology through Science Enquiry Model to Experimental Group-I, through Advance Organiser Model to Experimental Group-II and through Conventional Method to Control Group. In the third stage, the students were post tested on Achievement in Biology and Self-Concept.

OBJECTIVES

1. To compare the mean achievement scores, on the criterion achievement test in Biology, of the three groups of students, to be taught Biology with the use of Science Enquiry Model, Advance Organiser Model and Conventional Method of teaching before the experimental treatment.
2. To compare the mean achievement scores, on the criterion Achievement Test in Biology, of the three groups of students, to be taught Biology with the use of Science Inquiry Model , Advance Organiser Model and Conventional Method of teaching after the experimental treatment.
3. To compare the mean gain scores, on the criterion Achievement Test in Biology, of the three groups of students, to be taught Biology with the use of Science Enquiry Model, Advance Organiser Model and Conventional Method of teaching after the experimental treatment.
4. To compare the mean scores, on the test of Self-Concept, of the three groups of students, to be taught Biology with the use of SIM, AOM and CM of teaching before the experimental treatment.
5. To compare the mean scores, on the test of Self-Concept, of the three groups of students, to be taught Biology with the use of Science Enquiry Model, Advance Organiser Model and Conventional Method of teaching after the experimental treatment.
6. To compare the mean gain score, on the test of Self-Concept, of the three groups of students, to be taught Biology with the use of Science Enquiry Model, Advance Organiser Model and Conventional Method of teaching after experimental treatment.

HYPOTHESES

In order to realize the objectives of the study following hypotheses were tested.

H1 There is no significant difference in the mean score, on the criterion Achievement Test in Biology, of the three groups of students, to be taught Biology with the use of Science Enquiry Model, Advance Organiser Model and Conventional Method of teaching before the experimental treatment.

H2 There is a significant difference in the mean scores, on the criterion Achievement Test in Biology, of the three groups of students, to be taught Biology with the use of Science Enquiry Model, Advance Organiser Model and Conventional Method of teaching after the experimental treatment.

H3 There is a significant difference in the mean gain scores, on the criterion Achievement Test in Biology, of the three groups of students, to be taught Biology with the use of Science

Enquiry Model, Advance Organiser Model and Conventional Method of teaching after the experimental treatment.

H4 There is no significant difference in the mean scores, on the test of Self Concept, of the three groups of students, to be taught Biology with the use of Science Enquiry Model, Advance Organiser Model, and Conventional Method of teaching before the experimental treatment.

H5 There is a significant difference in the mean scores, on the test of Self Concept, of the three groups of students, to be taught Biology with the use of Science Enquiry Model, Advance Organiser Model and Conventional Method of teaching after the experimental treatment.

H6 There is a significant difference in the mean gain scores, on the test of Self-Concept, of the three groups of students, to be taught Biology with use of Science Enquiry Model, Advance Organiser Model and Conventional Method of teaching after the experimental treatment.

DELIMITATION

Keeping in view the constraints of time and resources, certain delimitations need to be imposed for conducting the study. Following were the delimitations of the present study.

- The study was confined to a single Centenary Public School at Sirsa in Haryana only.
- The sample was chosen from IXth class only.
- Only four units from Biology syllabus of IXth class have been selected for collecting the data.
- The study was conducted in the subject of Biology only.
- The experiment was limited to twenty weeks of the academic season.
- Although there are various teaching models the present study was confined to Science Enquiry Model and Advance Organiser Model only.
- The study can be conducted on a variety of other educational outcomes but it was conducted only on achievement and Self-Concept.

CONCLUSIONS

Analysis, interpretation and conclusion of the present study indicate that the modernteaching strategies in the form of models of teaching should be applied in Indian classroom teaching. The aim of teaching should be not only to acquaint the learners with the knowledge of their subjects but also surrounding awareness has equal importance for the learners in the present day of scientific world.

The teacher seems to be more active than the learner in the present day teaching learning process. This may be due to over work load of teachers so they may not be able to implement new techniques of teaching, or may be due to overloaded curriculum of the school, they are not in a

position to introduce new techniques in teaching. New techniques in teaching-learning process always helps in developing the interest of the learners to understand instructional material well. This may be due to over work load of teachers so they may not be able to implement new techniques of teaching, or may be due to overloaded curriculum of the school, they are not in a position to introduce new techniques in teaching. New techniques in teaching-learning process always helps in developing the interest of the learners to understand instructional material well. Toachieve the most important educational objectives with reference to 'Blooms Taxonomy of Educational Objective', Traditional Method or Teacher Dominated Method will not help. New teaching strategies should be given due importance.

From the present experimental study, it has found that Advance Organiser Model is most effective when the achievement and Self-Concept are taken into consideration. However Science Enquiry Model is also found effective over Traditional Method of teaching in terms of achievement and Self Concept. From the results of the study, Model based teaching can be introduced in the Indian situation.

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