



A STUDY OF EFFECTIVENESS OF BIOLOGICAL SCIENCE INQUIRY MODEL FOR SUBJECT OF SCIENCE

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Abstract

This article focus on the effectiveness of biological inquiry models on teaching science. Biological science inquiry model consist of following phases i.e. engagement, exploration, explanation, elaboration & evaluation. The study was taken up to following objectives. To prepare the lesson note of biological science inquiry model of selected unit. To teach the selected unit with the help of biological science inquiry model. To check the effectiveness of the biological science inquiry model. Applied research was used for the present research. Achievement Test(Posttest) was used for the data collection. t test was used as the statistical tool for data collection. The present study explore, The correlation between day to day cited examples and the subject matter proved to be useful in enhancing the student's participation and interest in teaching learning process. The students come with innovative ideas while replying the questions asked during the course as compared to the traditional method of teaching science. Model of teaching need to be introduced while teaching science subject as they bring desirable changes among students.

Keywords: - Biological Inquiry Models, Engagement, Exploration, Explanation, Elaboration & Evaluation



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Introduction:- Science is both body of knowledge and the process of acquiring and refining the knowledge. As a method for tackling problems, the scientific method consists of the processes of observation, and experimentation leading to a rational explanation for the nature of things or of processes. Often new ways of doing things are discovered in the effort. Teachers can aid, creativity by stimulating students, by uncovering latent talents and by respecting the originality and individuality of their students through inquiry emphasis. The goal of science teachers should be to lead the student from passivity to activity and from imitation to creativity. This new educational system is aimed at presenting the sciences as system of inquiry rather than simply as bodies of knowledge. Science teachers continuously strive to improve their instructional practice to enhance students learning. Complementing the aims of science teachers, developers systematically attempt to identify research findings they can incorporate in materials that will facilitate connections between teachers, curriculum and students. Teaching students how to learn, how to develop their sense of curiosity are goals of educators in general and science teachers particular. Biology concerned with the life, offers many fascinating natural phenomenon that provoke thought and stimulate curiosity.

To teach any subject effectively, one must know what the subject is all about and for what purpose the subject has been introduced into the school curriculum. Hence, it is pertinent for science teachers to raise questions, thus: For what purpose was science first introduced into elementary and secondary school programme? What are the historical backgrounds of the development of science programme from their early appearances as part of the general education of children? The questions are important for those engaged in the teaching of science whether at the elementary or secondary school level. It is no gain-saying that interest in science learning is increasing in all countries of the world. Each country is striving towards producing more and better trained corps scientist and technologists. This is justified for; science has lately assured the importance of the foundation of national power and productivity. Therefore, the primary task of the science teacher is the transmission of selected experiences in science to his students. Much of the current interest in inquiry can be traced back to the work of John Dewey. He maintained that the learner should develop the intellectual tract and sensitivity to solve problems by inquiry constantly to the classroom. The system is based on the scientific method of investigation on which requires posing a problem, generating hypothesis about the problem, testing the hypothesis and applying the solution.

PHASES OF BIOLOGICAL SCIENCE INQUIRY MODEL

Biological science inquiry model consist of following phases i.e. engagement, exploration, explanation, elaboration & evaluation. Each phase has specific function and contribution to the teachers coherent and to the learner's formulation of better understanding of scientific technological knowledge, attitudes and skills.

PHASE ONE

Area of investigation is posed to student

PHASE TWO

Students structure the problem

PHASE THREE

Students identify the problem in the investigation

PHASE FOUR

Students speculate on ways to clear understanding.

STATEMENT OF PROBLEM:-

A study of effectiveness of Biological Science Inquiry Model for subject of Science of 7th standard, English medium SSC board pattern

OBJECTIVES:-

- To prepare the lesson note of biological science inquiry model of selected unit.
- To teach the selected unit with the help of biological science inquiry model.
- To check the effectiveness of the biological science inquiry model.

FUNCTIONAL DEFINITION:

• **BIOLOGICAL SCIENCE INQUIRY MODEL:-**

Biological Science Inquiry Model is; teaching to the experimental group with the help of the prepared lesson note so as to follow the steps of Biological science Inquiry Model.

- **EFFECTIVENESS:** - A significant difference between the mean scores of post tests of experimental group and control group.

ASSUMPTIONS:

- Biological Science Inquiry Model creates enthusiastic & inquisitive environment for students.
- Biological Science Inquiry Model increases the active participation of students.
- Biological Science Inquiry Model increases in-depth knowledge of the subject.

HYPOTHESIS:

• **Research Hypothesis:**

There will be significant difference between the mean scores of post tests of Control group and Experimental group.

• **Null Hypothesis:**

There will be no significant difference between the mean scores of post tests in Experimental group and Control group.

SCOPE OF RESEARCH STUDY:

- This research was for 7th standard's science subject in English medium.
- In this research the boys and girls of 7th std. were involved.
- This research study was useful for students & teachers also.

LIMITATIONS:

- Attitudes, fatigue, interest, attention, motivation, atmosphere of surroundings were the aspects which are beyond the control of researcher.
- Some students had knowledge about the unit through internet, magazines, tuitions and media etc.

DELIMITATIONS:

- The present research study was restricted to Manchar city.
- The study were limited to 60 students.
- The research study were delimited to 7th standard.

Type of Research :-

Applied research was used for the present research.

Research Method

For the present research, Experimental Method was used. The research methodologies are discussed at length in chapter 3.

Research Design:-The Posttest-Only, Two Equivalent Group Design was used for the present research.

Research Variables

➤ **Independent variables**

Traditional teaching method

Biological science inquiry model

➤ **Dependent variable**

Achievement

➤ **Controlled variables**

age of students, type of school, content were controlled by the researcher.

Population:-The population for the present research work were all the students of VII standard of the English medium School which follows SSC board.

Sample and Sampling method

Selection of school :- the school was selected by Simple Random Sampling method from Non-Probability Sampling method.

Selection of Students :- the Students of VII std. were selected from the school by incidental Sample Technique from Non-probability Sample Method.

Number of Students:- Total students 60

For Control Group - 30

For Experimental Group - 30

Tools for Data Collection :-Achievement Test(Posttest) was used for the data collection.

Tools for data Analysis:- t test was used as the statistical tool for data collection.

RESEARCH FINDINGS:-

1. The students come with innovative ideas while replying the questions asked during the course as compared to the traditional method of teaching science.
2. Model of teaching need to be introduced while teaching science subject as they bring desirable changes among students.

HYPOTHESIS TESTING :-

The following hypotheses were stated for the research study:-

1. Research Hypothesis:-

There will be significant difference on the achievement of students of seventh standard in science subject by using biological science inquiry model than traditional teaching method.

2. Null Hypothesis:

There will be no significant difference on the achievement of students of seventh standard in science subject by using biological science inquiry model than traditional method of teaching.

- according to analysis of data, Hypothesis No.1 is accepted and Hypothesis No.2 is rejected. It means there is a significant difference on the achievement of students of seventh standard using biological science inquiry model than traditional teaching method.

CONCLUSION: -Biological science inquiry model of teaching for science is significantly more effective than traditional method of teaching in terms of academic achievement of students. Biological science inquiry model of teaching is significantly more effective as compared to traditional method of teaching in developing information processing strategies

SUGGESTIONS FOR FURTHER STUDY:-

Based on the experience of the researcher following suggestions are put forward for further study:-

1. The study may be replicated for various standards and for different topics in science subject to test the generalizations of the result and conclusion of the study.
2. The use of the model of teaching to the education of various disadvantaged group, handicaps gifted and the like may be helpful.
3. Role of the positive and negative examples in identifying the concepts can also studied further.
4. The effect of biological science inquiry model on the retentions of the students can also be studied.

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