

EFFECTS OF INNOVATIVE APPROACHES FOR TEACHING AND LEARNING OF SOCIAL SCIENCE WITH REFERENCE TO SUSTAINABLE DEVELOPMENT

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ABSTRACT

This paper deals with to know how optimizing available resources of the Institute for application in the day to day classroom process. Teacher doesn't have to run here and there for seeking the support of others, rather they can independently proceed along the right track for improving the learning achievement of the students. The Researchers took resources to innovative approaches by installing Resource room in the institute which was used by the student-teachers during their practice teaching and conduct of project work. The exercised in this direction proved beneficial to the students, teachers and teacher educators at large. National curriculum framework, 2005 focuses on skill building rather than completing the particular number of units as mentioned in the curriculum of elementary level. Teachers play an important role in shaping children. So the teacher must be competent one for allround development of the child. In this regard, the following objectives are famed, such as (i) To raise awareness among the students of Upper Primary School about the need for protecting the immediate environment. (ii) To help them use resources available in the environment this can be used for teaching-learning the concepts of science at primary level. (iii) To develop a positive attitude in protecting the environment through field observation and (iv) To study the impact of the intervention on the protection of the environment. Forty (40) nos. of students of Class-VI were purposively selected as the sample for the study.

KEYWORDS: Resources, Innovative Methods, Installation, Learning Achievement, Field Visit

Article History

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INTRODUCTION

Science has guided our lifestyle and brought about tremendous changes in our way of thinking, attitude, outlook etc. It promotes the power of thinking, reasoning, curiously, open-mindedness and scientific attitude. Kothari Commission (1964-1966) reports that "We lay great emphasis on making science an important element in the school curriculum. Similar to this, UNESCO's International Commission in 1972 stressed the need for science education. Herbert Spencer (1820-1903) not only advocated the teaching of science but also proved science to be the most worthy subject of study from the utilitarian point of view in his book, 'What Knowledge is of Most Worth'? National Policy on Education (1986) reports, "Science education will be strengthened so as to develop in the child well-defined abilities and values such as the spirit of inquiry, creativity, objectivity, the courage to question and an aesthetic sensibility". Science is the most exhaustible storehouse of knowledge, which opens new horizons of knowledge every day it is continuously adding to the cultural heritage of mankind, the ever-increasing new knowledge, new explorations, and new ideas. As education is aimed at the integrated development of personality through attitudinal change or behavioral modification, the importance of social, cultural and ethical aspects of science cannot be ignored. Day by day the environmental is being degraded because of our

careless behavioral approach to the environment. As a result, sustainable development is yet to be accomplished. National Policy on Education (1986) says that, "Science Education programmes will be designed to enable the learner to acquire problem solving and decision-making skills and to discover the relationship of science with health, agriculture, industry and other aspects of daily life. Every effort will be made to extend science education to the vast numbers who have remained outside the pale of formal education.

Environmental education and sustainability are familiar concepts and introducing environmental education are often viewed as a key step toward sustainable development (UNESCO, 2004). Environmental Education for Sustainable Development (EESD) is a dynamic concept that utilizes all aspects of public awareness, education and training to create or enhance an understanding of the linkages among the issues of sustainable development and to develop the knowledge, skills, perspectives, and values which will empower people of all ages to assume responsibility for creating and enjoying a sustainable future (UNESCO, 2004).

The goal of environmental education is to develop a world population that is aware of and concerned about the environment and its associated problems and who has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively towards the solution of current environmental problems and prevention of new ones. School system provides the largest organized base for environmental education and action.

Teaching Of Science on the Concepts of Sustainable Development

Science is not storehouse information to be transferred as a finished product and to be learned by rote. Scientific method or scientific attitude that enables the students to search in the current knowledge base of the world should be developed by means of science education. The primary objective of the teaching of science is to develop a scientific attitude. It ascends from the basic knowledge level to the development of right attitudes and effective manipulation of skills. Dr. A.D. little says that "the fifty estate is composed of those who have the simplicity to wonder, the ability to question, the power to generalize, the capacity to apply. It is, in short, the company of thinkers, workers, expounders, and practitioners upon whom the world is absolutely dependent for the preservation and advancement of that organized knowledge which we call science.

The researcher thought over the matter and ideas flashed in her mind to use the immediate environment, the school campus and the nearby marketplace to help them acquire practical knowledge about birds, animals, plants and various fruits, vegetables etc.

RATIONALE

Day by day the environment is found deteriorated in the following manner. Trees are cut down but not replaced by new plants which are also applicable to the school environment. The school garden is not properly taken care of so far as growing fruit plants and flower plants are taken into account. The stray cattle enter the school campus and destroy the plant where there no fence around the school. The cows and dogs are seen wandering here and there in the school campus and the children throw stones at them and they get hurt. It is not good and the students are hardly made aware of how to take care of birds and animals, plants and trees above all the environment. Schools act as an agent of this process to change the minds of young learners at the early stage. So the role of the teacher is most important to change the minds of learners through his/ her innovative teaching-learning process.

OBJECTIVES OF THE STUDY

- To create awareness among the students of Upper Primary School about the need for protecting the immediate environment.
- To develop a positive attitude in protecting the environment through field observation.
- To study the impact of the intervention on the protection of the environment.

HYPOTHESIS

The intervention will exert a positive impact on the learners' achievement to learn the concepts of environmental protection.

DELIMITATION OF THE STUDY

The study was concentrated on the following topics meant for the students of Class-VI; viz

- Erosion of soil.
- Pollution of water

METHODOLOGY

Design: Single group Pre -test and Post- test experimental design

Sample: forty (40) nos. of students of Class-VI, one school of Rayagada district of Odisha were selected purposively for the study.

Tools:

- **Teacher Made a Test:** Pre-test and Post-test for class VI students to assess their knowledge, skill, and understanding of environmental issues and problems.
- Questionnaire for the students to know their attitude towards environmental issues.
- Observation Schedule.

Visuals Used

Erosion of soil due to cutting down the trees, different causes of water pollution etc. visuals was displayed to the students to provide the knowledge of concerned concepts.

INTERVENTION

To provide the direct experience to the students in the above said concepts, some strategies like spot visit and observation were adopted during the experiment. Some activities/examples were given below:

Activity 1:

Strategies Adopted: Spot Visit and Observation

Taking the students outside to a nearby field and asking them to observe and fill in the observation schedule what do you observe? Do you find some amount of soil has been washed away? Where it is observed? Places of trees and plants

without trees? Now go to your school garden and observe. Note down your observation pertaining to the erosion of soil? What should we do to check erosion of soil? Write five sentences on the space provided in the observation schedule.

Activity 2

Taking the students to a nearby pond and asking them to observe and note down the behavioral approach of the people towards using water.

- Q1. How is water polluted?
- Q2. Do you think that people are conscious of keeping the water free from pollution?
- Q3. What should be done to keep the water source free from pollution?

Activity 3

Take the students to the well and discuss the pollution of water and then ask them to fill the observation schedule. After the intervention of one month, the post-test was administered.

RESULTS AND DISCUSSIONS

Table 1

Sl. No.	Test	N	Mean	Standard Deviation	'T' Value	Level of significance
1.	Pre-test	40	8.92	1.72	13.15	0.01
2.	Post-test	40	14.47	2.07		

The mean value of pre-test is 8.92 while the mean value of post-test is 14.47. The difference between the Mean of pre-test and post-test is significant at 0.01 level to be employed 't' test. The students' score is unable to understand the concept of sustainable deviations in the beginning but after they understand the variance, method of forming compounds and naming them to become an easier task. Such a keen of motivation, well-defined methodology and adoption of innovative techniques equip the students to score higher in the post-test. The result reveals the fact that students should be well clarified with the basic concepts of the topics in the light of sustainable development.

MAJOR FINDINGS

- Innovative Approaches of teaching-learning process has the significant impact on enhancing the understanding level of class VI students in environmental science.
- Mostly used strategies like; role play, field trip, experimentation, observation, exposure visit, discussion, and project has the greater impact on teaching environmental science for sustainable development.
- Students were enjoying and spontaneously participate in the teaching-learning process.
- They anxiously planted trees and saplings in the school garden and community to protect the environment with the help of teachers and community members.

EDUCATIONAL IMPLICATIONS

- Learning becomes holistic if it has a long-term effect.
- Learning of one concept facilitates the learning of another concept. Hence concept clarity is very important for developing interest on a subject.
- If the students are provided with such activities as done by the investigator, the students can understand the concept very easily.
- They need not memorize them blindly without any thinking process.
- Designing such activities enriches the students' level of learning and they get empowered to coin the formula of any compound without any difficulty. If this is not done at the earlier part of schooling, they get used to the habit of rote memory and they memorize equations at higher levels.
- They develop a kind of aversion on the subject, Chemistry. It would be better and feasible for the teachers to adopt such strategies to teach chemical formula and thereby arouse the interest of students in learning Chemistry.

CONCLUSIONS

Environmental education is important to stimulate active participation of the masses in addressing, debating and protesting on significant environmental issues. School system provides the largest organized base for environmental education and action. Environmental education plays a vital role in creating interest in the environment. Quality of Elementary Education can be ensured by the adoption of innovative, learner-centered, participatory approached of teaching and learning. The teachers should be innovative in designing suitable teaching-learning methods which enhance the learning of students' up to the higher cognitive levels. The schools should provide a platform for all-round development of a child and attainment of all the competencies as prescribed in the curriculum and syllabus. The teachers of science, especially chemistry should ensure the understanding and application of competencies whereas mere accumulation of knowledge or facts for the sake of examinations will fetch the outcomes for the short term only without contributing for transfer of learning.

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