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Role of educational technology as a tool for environmental awareness

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Abstract
Since time immemorial even before the advent of formal education environmental awareness was generated by socio-cultural and religious practices by indigenous people in different part of various countries. With the process of modernization in education sector in terms of development of innovative tools for imparting knowledge it has become easy to spread awareness among masses about environmental sensitization. Present study focuses on "Development and Effectiveness of Activity Based Instructional Strategy in Terms of Environmental Awareness & Achievement in Environmental Science at High School level**"** can be put under the area "Education Technology." In the present study Activity Based Instructional Strategy was designed to develop Environmental Awareness and Achievement in Environmental Science. It is assumed that the teaching learning should involve activities on the part of the learners, so that they remain all the time active and learn better. Considering these activities like Power Point Presentations, Project, Quiz, Herbarium, Exhibition and Presentation were included as important components of Instructional Strategy in order to achieve the target of environmental awareness among children.

Introduction
The concept of Instructional study was introduced in Indian education area way back in 1975. Previous researches also showed that between the periods 1980 – 1996 many researches have been conducted in the area of designing instructional strategy (Seshadri, 1980; Basu, 1981; Ravindranath, 1983; Houtz, 1993; Wagner, 1993; Buttler, 1995; Ahuja, 1995; Pena, 1996 and Arya, 1996). They designed instructional strategies taking various components to teach various subject and found that the instructional strategies are very much effective than traditional teaching in the context of many variables like achievement, higher mental ability, concept attainment etc.

One cannot develop environmental awareness only with the help of lecture method. Actually environmental awareness is related with cognitive, affective, psychomotor domain. So it is important to develop awareness about environment through activity. Through activity the involvement of learners in teaching learning process can be increased. Some activities like debate, Project, Quiz, seminar, power point presentation, herbarium and exhibition take more time, so that the concepts in the mind of student remain for a long time. It is useful in assimilating the knowledge and reflection in behavior.

Objectives of the present study were as under:

(i) To compare the adjusted mean scores of achievement in environmental science of the students taught through developed instructional strategy with those taught through traditional method by taking pre achievement in environmental science as covariate.

(ii) To study the effect of treatment, sex and their interaction on environment awareness by taking pre environmental awareness as covariate.

(iii) To study the reaction of the students towards instructional strategy.

HYPOTHESES

The following were the hypotheses of this study

(i) There is no significance difference in adjusted mean scores of
Achievement in environmental science of the students taught through developed instructional strategy with taught through traditional method by taking pre achievement in environmental science as covariate.

(ii) There is no significant effect of treatment, sex and their interaction on environmental awareness by taking pre-environmental awareness as covariate.

METHODOLOGY

The random sample technique was employed to select the sample. The age of the students ranged from 14 to 16 years. The medium of instruction was Hindi but the students were able to write and understand English also.

TOOLS

Variable included in the study were, environmental awareness, achievement in environmental science, reaction towards treatment.

ACHIEVEMENT IN ENVIRONMENT SCIENCE

The students achievement in environmental science was assessed with the help of achievement test developed by the researcher on three units, selected for treatment namely unit-1 environmental pollution, unit-2 Ecosystem, and unit-3 conservation of wild life. The students were asked to answer all the questions.

Environment awareness ability scale based on the following dimension –

A. Environment as a whole
B. Cause of pollution
C. Conservation of soil forest, air etc.
D. Energy conservation
E. Conservation of human health
F. Conservation of wild life and animal husbandry.

REACTION T OWARDS ACT IVITY BASED INSTRUCTIONAL STRATEGY

The reaction towards activity based instructional strategy of the experimental group students was assessed by the reaction scale developed by the researcher.

EXPERIMENTAL DESIGN

The present study was experimental in nature Pre-test Post-test Control group design was used.

Layout of the design was as follows:-

- $R\ O_1\ X\ O_2$
- $RO_3\ C\ O_4$

O_1, O_3 – Pre-test
R – Randomized subject
O_2, O_4 – Post-test
X – Treatment
O_1, O_2, O_3, O_4 – Same test C – Control

There were two groups one experimental and other one control group. The experimental group that received the treatment through Activity Based Instructional Strategy, while the control group taught through traditional method. Both the groups were intact and there was no scope for their interaction.

Nature of the variable in the present study is shown here under:

Dependent Variable

Dependent variables were achievements in environmental science, environmental awareness and reaction of the students towards developed instructional strategy.

Independent Variable

Method of teaching was independent variable. It has two levels

(i) Developed instructional strategy
(ii) Traditional method

Moderate Variable

(i) Gender

Covariate

Achievement in Environmental science.
Environmental awareness.

TREATMENT

Detail about the experiment is given here under:

After pre-testing the treatment was given the students of the experimental group. The components of the treatment were

Power Point Presentation
Project work
Quiz
Herbarium
Exhibition
Presentation

Researcher started Unit-1 with power point presentation. The student was eager to see the power point presentation and their participation was excellent. After this researches assigned the project work related to some topics for project work, duration 10 days were given. The topic for project work were –

Uses of Medicinal plant
National park in India and specific in M.P.
Sources and Control of Air pollution
Herbarium file

During the lecture, students were taught types of eco system. (i) Pond eco system, (ii) Forest eco system, (iii) Desert eco system, (iv) Food chain & food web.

This type of learning which not only generates curiosity among the learners to learn rather it has

long lasting impact even during their professional phase of individuals lifetime.

CONCL USION

1. The Activity Based Instructional Strategy was found to be significantly more effective than the traditional method in terms of achievement in environmental science when Pre-achievement of environmental science was taken as covariate.
2. Environmental awareness was found to be independent of gender when Pre-environmental awareness was taken as covariate.
3. Environmental awareness was found to be independent of interaction of treatment and gender when Pre-environmental awareness was taken as covariate.
4. Students showed favorable reactions towards developed Activity Based Instructional Strategy.

This study has implication for teachers, students, principals, curriculum, framers, school administration and social workers to give a re-think in terms of devising tool for generating long lasting and practical approach for environmental awareness with the motive of sustainable development.

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