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## **Effectiveness of Self Instructional Module on Environmental Education on level of Awareness of Prospective Teachers**

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### **Abstract**

The present study was designed to experiment the effect of self instructional module on environmental education on level of awareness of prospective teachers. Environmental Education is a way of implementing the goals of environmental protection. National Policy on Education (1986) has also stressed the need to create a consciousness of environment in order to reduce and prevent the present and future environmental imbalances. The teacher acts as a change agent in the society. If the teacher is aware of environmental problems and their consequences, he is able to generate awareness among the young generation who are the future of any country. For this very purpose, a self instructional module on environmental education has been developed and empirically validated and also has been administered on the selected sample of 30 prospective teachers. The findings suggested that self instructional module was sufficiently effective. It was found that self instructional module has significant effect on awareness level of prospective teachers. The self instructional module has implications for students, parents, teachers, administrators and policy makers

**Keywords:** Environmental Problems, Environmental Education, Self instructional Material, Awareness level, Prospective teachers.

### **Introduction**

Human being act in the environment in response to their quest for development. The interaction and interdependence between man and his environment is a reciprocal one. As man influences his environment, he in turn is influenced by his environment. The period 1990 to 2011 saw a 30% increase in radiative forcing – a measure of the warming effect on the climate – because of increased atmospheric concentrations of greenhouse gases. The chemical composition of the atmosphere is monitored by over 50 countries participating in the WMO Global Atmosphere Watch network. Human-induced climate change is caused by greenhouse gas emissions from industry, transport, agriculture and other vital economic sectors. With over a billion people and at least 17 major languages, with poverty and low literacy levels, with over 650,000 primary schools, with a rapidly increasing population, the development and environmental challenge is enormous [8,9].

Recent climate changes have had significant impact on high-mountain glacial environment. Rapid melting of snow/ice and heavy rainfall has resulted in the formation and expansion of moraine-dammed lakes, creating a potential danger from dammed lake outburst floods as occurred on 16 and 17 June 2013 in Uttarakhand. The heavy rains together with moraine

dammed lake (Chorabari Lake) burst caused flooding of Saraswati and Mandakini Rivers in Rudraprayag district of Uttarakhand resulting into loss of large number of human lives and damage to the property and livestock <sup>[4]</sup>.

The environmental damages already inflicted due to alarming ongoing population explosion, rapid movement towards urbanization and industrialization, increasing needs of energy and fast scientific and technological advancement cannot be reversed unless there is a collective thinking, will and efforts. These call for public awareness and participation for bringing about an attitudinal change and finally restricting further damage to the environment. Effective implementation of the environmental management and conservation programmes depends on education, awareness raising and training in the relevant areas. Without an understanding of how to conserve natural resources and the compelling need to do so, few people would be motivated to participate actively in the programmes on environmental conservation, environmental education and awareness thus assume critical importance.

Increase in agricultural products, construction of roads and houses and social amenities, fishing for food, mining and excavation and soon all have led to a serious environmental impact. However, mankind is yet to have the knowledge of the total environment. There is either little or no awareness of the danger inherent in the misuse of the environment. There is the need to instill the knowledge of the use of environment to the children when they are in the primary school. Hence, the incorporation of Environmental Education in to the curriculum is a way of enhancing the peoples' awareness on the danger of environmental degradation. It is also believed that by incorporating environmental education throughout the curriculum at every grade, a more comprehensive treatment of environmental issues and concerns can be accomplished (Simmons, 1989).

Environmental Education is a not only a subject but a process of recognizing values and clarifying concepts in order to develop skills and added tools necessary to understand and appreciate the inter relationship among man, his culture and his bio physical- surrounding. It creates an overall perspective, which acknowledges the fact that natural environment and manmade environment are interdependent. It is through this process of education that people can be sensitized about the environmental issues <sup>[10]</sup>. Teachers are the torch bearers of the society and they can bring greater impact on societal attitude shape the mind of future generation. Teachers act as catalyst in spreading environmental education integrated with the teacher education curriculum. The United Nations Environmental Programme (UNEP), launched in January 1975, aimed in promoting educational awareness among masses. Same way, if the teacher is aware of environmental problems; he will be able to generate awareness among masses through students.

### **Rationale of the study**

Environmental education is a field of education incorporated into the educational system in order to enhance the awareness of pupil- teachers on environmental issues at all levels of education. Through Environmental Education, it is believed that pupil teachers will be able to find out a mechanism that will help in solving environmental problems.

Environmental Education (EE) will, therefore, be an intervening mechanism of teaching masses about the world, events and the laws that govern man's existence. Man must be active and creative and learn in ways natural to him in order to grasp the understanding of natural phenomenon around him. Based on this background is the need of development and empirical validation of self instructional module for prospective teachers. Moreover, self instructional module was also administered to know their level of awareness as well as improving the same through the module.

### **Statement of the Study**

In the context of the above rationale, the problem can precisely be stated as follows:

### **“Effectiveness of Self Instructional Module on Environmental Education on Level of Awareness of Prospective Teachers”**

### **Objectives of the Study**

The objectives of the study are as following:

1. To develop and empirically validate the self instructional module on environmental education by the investigator.
2. To develop criterion test to study the effectiveness of self instructional module on environmental education on awareness level of prospective teachers by the investigator.
3. To study the effectiveness of self instructional module on environmental education on awareness level of prospective teachers.
4. To study the effectiveness of self instructional module on environmental education on awareness level of male and female prospective teachers.

### **Hypotheses of the Study**

There is no significant effect of Self Instructional Module on Environmental Education on level of awareness of Prospective Teachers.

### **Research Design and Methodology:**

The present study was developmental cum experimental in nature. The researcher used quantitative approach to compare the pre test- post test scores of the prospective teachers who were administered the criterion test before and after the administration of self instructional module on environmental education. The study consisted of two parts. The first part consisted of development and empirical validation of self instructional module. The second part was concerned with the experimental administration of the developed self instructional module on environmental education on prospective teachers.

### **Tools Used**

The study employed following tools:

1. Self instructional module on environmental education for prospective teachers developed and standardized by investigator.
2. Criterion test to know the level of awareness of prospective teachers.
  1. The module was presented in a booklet form consisting of total 24 frames in three sections: concept of environmental education, major environmental problems and projects of environmental education at national level and international level. The module was standardized by adopting different stages i.e. writing a module, editing and reviewing, try out phase and evaluation. The evaluation of module was done in terms of error rate, density and gain ratio. Error rate was calculated separately for each section. Module was comprehensive in terms of each section. Density of the module came out to be high

(9.6). Gain ratio for the module was 0.53. From all these module elements it was concluded that module is satisfactory and was ready to be administered.

2.The criterion test consisted of 20 questions in all with various types of questions I.e. fill in the blank, objective type test items, multiple choice questions, true false and match the column type. The duration of the test was 20 minutes and was of 20 marks in maximum. Each question carries one mark for right answer and 0 mark for wrong answer. – Test – retest reliability was 0.77 and for the purpose of validity ‘face validity’ was considered that was fairly high.

### **Sample of the study**

A target population for the study of effectiveness of self instructional module was restricted to the students of B. Ed. Colleges of Ambala (Haryana). In the present study, thirty students of one B. Ed. College of Ambala through purposive sampling were taken as sample.

### **Procedure used in the Experiment**

The experiment was conducted in three phases. In the first phase, the prospective teachers were administered pre test i.e. criterion test to know the level of awareness of prospective teachers. In the second phase, the prospective teachers were administered self instructional module on environmental education. In the third phase, the prospective teachers were administered the post test i.e. criterion test to know the effect of self instructional module on level of awareness of prospective teachers. Thus the data was collected on two occasions. One was pre-test (before the treatment) called as occasion I. The other one was after the treatment called occasion II.

### **Statistical Technique used**

Keeping in view the objectives and design of the study, apart from the measuring of central tendency and dispersion, t-test was applied to know the level of significance of study.

### **Analysis and interpretation**

By the analysis and interpretation of data following outcomes were found out:

- a) It was clear from the analysis of the pre test as well as post test score that t-ratio was 6.25 which was significant at 0.01 level of significance. When the same was interpreted with the help of the mean scores, it was found that mean score of post test on criterion test to know the level of awareness of prospective teachers was 13.4 which is higher than the mean scores of pre- test which was 9.9. From the analysis, it was interpreted that the self instructional module was effective in developing awareness among prospective teachers.
- b) It was found out that t-ratio for the pre test as well as post test score in case of male prospective teachers was 2.01 which was significant at 0.01 level of significance and for female prospective teachers t-ratio was 5.78 which was also significant at 0.01 level of significance. That means there was significant difference between the pre test and post test scores of both genders i.e. male as well as female prospective teachers.
- c) When the same was interpreted with the help of the mean scores, it was found that mean score of post test on criterion test to know the level of awareness of prospective teachers was 10.6 for male and 14.3 for female showing differences in the

level of awareness between the two genders of prospective teachers. From the analysis, it was interpreted that female prospective teachers have developed higher level of awareness in comparison to the male prospective teachers.

d) From the above interpretation it was analyzed that the self instructional module was effective in developing more awareness among female prospective teachers than male prospective teachers.

## Findings

1. The study has resulted in the development of self instructional module on environmental education for creating environmental awareness among prospective teachers. The content of the module consisted of concept of environmental education, major environmental problems and projects of environmental education at national and international level.
2. The developed self instructional module on environmental education was found significantly effective on the awareness level of prospective teachers.
3. There existed gender differences among the prospective teachers. Females developed higher level of awareness than their male counterparts.

## Conclusion

From the analysis, it was concluded that self instructional module on environmental education has affected the level of awareness of prospective teachers in a positive manner. The study has implications for student-teachers, teachers, trainee teachers, parents, administrators, teacher educators, policy makers and even the curriculum makers.

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