

Periodic Research To Study The Effect of Computer Aided Instructions on Environmental Awareness among School Students

Abstract

The present study was conducted on a sample of 70 students of 10th class of Moga District & the sample was further divided into 2 groups of 35 students each namely section A experimental group and section B control group. A self prepared scale – Environmental Awareness Test was used. The study suggests that experimental group students show better performance than controlled group students. Male students show better performance than female students. The study also reveals that rural area students show better performance than urban area students.

Keywords: Environment, Experimental, Computer-Assisted Instruction.

Introduction

Computer-Aided Instruction (CAI), diverse and rapidly expanding spectrum of computer technologies that assist the teaching and learning process. CAI is also known as computer-assisted instruction. Examples of CAI applications include guided drill and practice exercises, computer visualization of complex objects, and computer-facilitated communication between students and teachers. In the computer age in which we are living, with the most important value being knowledge, studies are performed in order to elucidate the importance of environmental education. With the development of technology and the passing of time, the traditional techniques, in which the teacher plays the most active role in the students' education, are being transformed into new techniques, which are technology-assisted and encourage learning and reasoning techniques. In pedagogical knowledge, the conception of new ideas is as important as the application themselves. Most important, teaching techniques that are developed involving technological tools and applications provide great opportunities to educators and students. Computer-assisted applications have been developed in the subject area of environmental education. The source which was prepared by the North American Association for Environment Education (NAAEE) and was entitled "computer-aided Environmental Education", involves the problems and promises of environmental hypermedia, computer simulation/modeling interactive software (Rohwedder, 1990). Another studies by the same author, the usage of multimedia and online education in environmental education will be very useful (Rohwedder, 1999). The factor affecting students' environmental knowledge, attitude, awareness and behaviors are investigated beginning in kindergarten at all levels of education by scientists.

"The universe is the creation of the supreme power meant for all the benefits of all his creation. Individual species must, therefore learn to enjoy its benefits by forming a part of the system in close relation with other species. Let not only one species encroach upon the other's right".

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de Haals and Gillespie (1979) that relate to planning environmental change and measuring environmental awareness. Palmer (1995) studied the effect of early childhood experiences; family and education on environmental conception and behaviors. Howe and Designer (1988) investigated the variables in improving the responsible environmental behaviors. Musser and Diamond (1999), in their study on the environmental awareness of kindergarten students, examined the factors affecting the improvement of environmental knowledge and awareness. They found that the behaviors of the students were not related to the private applications that the parents actualize at home. Ballantyne (1998) examined the improvement of the student` environmental knowledge through interactive study recording. Musser and Malkus (1994) developed a scale to assess the attitudes of school children towards the environment. Ballantyne (1996) designed an environmental concept improvement model in co-education with environmental knowledge, attitude and behaviors. Ballantyne et al. (2001) developed environmental education programs focusing on the students` knowledge and attitudes related to the environment and their environmental activities. Similarly, Thomson (1989-1990) and Hits (2001) discussed the context of environmental education curriculum, education techniques, and education tools and how to improve student motivation. The studies were to inform people about the environment and to create awareness in them about the environment that they live in. this clearly demonstrates the importance of the environmental awareness (Klemmer, Hutter, & Howard, 1996). It is very important to asses the knowledge of individual on environment, ecology, or pollution and their attitude toward these issues during or after period of education (Maloney, Wand, & Braucht, 1975). The environmental concept that the individual attains is the most important factor that explain their attitudes toward the environment and environmental protection (Weigel & Weigel, 1978; Kuhlemeir & Bergh, 1999; Banerjee, 2001).

Keeping in a view these objectives if we provide the students with proper computer aided education and awareness campaigns regarding the environmental health, we can enhance the protection and well use of natural resources. So, in the present study an attempt has made to study the effectiveness of computer aided instruction on the environmental awareness programme. The Computer aided instructions selected for this purpose was a power point presentation. In present study an attempt has been made to study the effectiveness of computer aided instructions in creating environmental awareness and awaking our young generation.

Environment has become a global concern and its protection is one of the challenging tasks facing the mankind today. Environmental education is a process of identifying 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. The government has also done various efforts through various legislations, mass awakening programmes through mass media, electronic media

and print media. Ministry of Environment and Forests after collaboration with MHRD, NCERT and various State departments of Education to ensure covering of environmental components at school level, undertook a project in 1999. Based on the findings of the study, the textbooks in Sciences, Social sciences and Languages at middle school level were modified for infusing the environmental concepts. Under non-formal environmental education, Eco-clubs are established in various schools with financial assistance provided by the government. The main objectives of Eco-clubs are to educate children about their immediate environment and impart interdependence and their need for survival, through visits and demonstrations & to mobilize youngsters by instilling in them the spirit of scientific inquiry into environmental problems and involving them in the efforts of environmental preservation (Ministry of Environment and Forests, 2010). The objectives of environmental education categorized by UNESCO as: awareness (sensitivity to the total environment and its allied problems), knowledge (to acquire variety of experiences), attitudes (to acquire set of values and feelings of concern for the environment), skills (for identifying and solving environmental problems) and participation (to be involved at all levels in working towards the resolution of environmental problems) The senior secondary stage is an important phase of education as from here the students will enter the world of adult. Hence it is imperative to find out the level of environmental awareness among senior secondary students and what kind of efforts are needed in changing their mindset towards environment.

Gupta and Mehra (2002) determined the effectiveness of an instructional package for promoting environmental awareness and attitude towards environment of primary school and children and found the package to be helpful for developing environmental awareness and attitude toward environment.

Kaur, Gurpreet (2002) made a study of the impact of scholastic attitude and scientific attitude on environmental awareness of 10+2 students of Moga district in Punjab. It was found that there was a significant difference of environmental awareness between boy and girls. Girls were more aware than boy`s moreover rural girls were more aware than rural boys about environment.

Balkrishnan and Shanmugan (2003) conducted a study to know the environmental awareness level respondents in two remote village kandam and yakanpatty and ellaipatti and to find out the causes for the environmental problems existing in the village Result revealed that more than half (54%) reported to unaware about the pollution and its effects and remaining were aware abut pollution from different sources like T.V and radio.

Mahajan (2003) emphasized the impact of science oriented T.V Programmers on environmental awareness of high school students and found that the difference among high school boys and girls on environmental awareness was not significant.

Alibeli, Madalla A (2004) conducted a study on environmentalism in the Middle East. He found

significant difference in attitude toward presentation and conservation according to respondent's country, gender, social class, family income and personal environmental efficiency. The empirical finding indicated that level of supports for the environmental in the Middle East were in line with Ingleharts (1995) thesis of environmentalism in which severity of environmental problems create trends of public support for environmental protection in rapidly developing countries.

Sharma (2004) conducted a study to compare environmental awareness among higher school boys and girls in government school and private school in Chandigarh and found higher percentage of environmental awareness in students of government school as compared to students of private schools.

Anuradha (2005) conducted a study on environmental awareness and attitude about environment of students-teachers and teacher-educators of college of education of Punjab and Chandigarh and found that rural student's passes more environmental awareness than urban students, Teachers passes more environmental awareness than students and girls are more aware of their environment than boys. Urban teachers pass more environmental awareness reveals that their exists environmental awareness among teacher, but the awareness level of science teachers was found to be more as compare to arts teachers. More over art teachers and science teacher were found to differ significantly in their level of awareness on management of different type of waste. The awareness level of science teachers was found to be more regarding industrial, nuclear and agricultural waste. Compared to this art teachers were found to be more aware on domestic, Municipal and hospital waste.

Shahnawaj (2006) worked on environmental awareness and attitudes (towards environmental issues) of secondary and higher school teachers and students at Udaipur. He found a very high level of awareness on part of teachers and students regarding the environment and it were more in Urban than rural areas.

Flong (2007) carried a study on environmental awareness and action for elementary school students and their parents in Taiwan, the republic of china. To achieve this purpose, survey research was employed with descriptive and correlations on techniques were briefly used for data analysis. The sample included 531 grade 5 students and their parents. The finding showed that everyone should perfect this. This study suggests and encouragement action made a significant difference for awareness and encouragement action.

Objectives

The study was conducted with the following objectives in view:

1. To compare the environmental awareness among students taught by computer aided instructions and traditional instructions.
2. To compare the effects of computer aided instructions on the environmental awareness of rural and urban area students.

3. To compare the effect of computer aided instruction on environmental awareness of male and female students.

Hypotheses

In the present study, following hypotheses were formulated :

1. There will be no significant difference in the mean scores on environmental awareness among students taught by computer aided instructions and traditional instructions.
2. There will be no significant difference in the mean scores on environmental awareness of rural and urban area students.
3. There will be no significant difference in the mean scores on environmental awareness of male and female students.

Tools

Environmental Awareness Test

A self made test comprising 50 items on the topic (sources, impact and management of waste) was used as pre-test and post-test (For both the groups to measure the environmental awareness). The questions were objective type in the format of multiple choice questions with four choices.

Analysis of Scores on Test on Environmental Awareness and Attitude toward Environment

It deals with the testing of following hypotheses:

H1

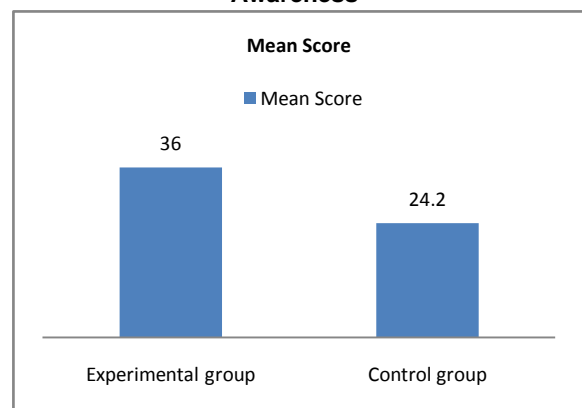
There is no significant difference in the mean scores on environmental awareness of students taught by computer aided instructions and traditional instructions. The mean score, standard deviation, t-score of the group for environmental awareness have been presented in table 4.1

Table 4.1

The Mean Scores, S.D. and t-Ratio of Computer Aided Instructions & Traditional Instructions towards Environmental Awareness

Statistics Groups	N	Mean	S.D	t-ratio	Remarks
Control Group	35	24.2	2.66	12.46	Significant at 0.01
Experiment Group	35	36	4.93		

Mean Score of Computer Aided Instructions & Traditional Instructions toward Environmental Awareness



The value of mean score among control group and experiment group was 24.2 and 36

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respectively against the value of S.D ie 2.66 and 4.93. Our calculated value of C.R is 12.46 which is greater than 2.58 (table value). Hence the result is significant. Since our hypothesis which states that, There will be no significant difference in the mean score on environmental awareness among students taught by computer aided instructions and traditional instructions is rejected.

H2

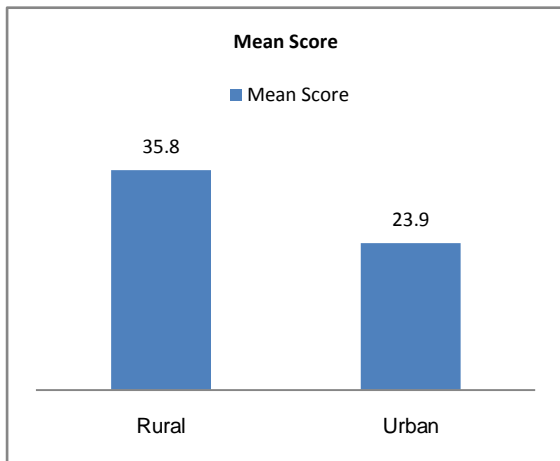
There is no significant difference in the mean score on environmental awareness of rural and urban area students.

The mean scores, standard deviation, t-ratio of the group for environmental awareness have been presented in table 4.2

Table 4.2
The Mean Scores, S.D and t-Ratio of Computer Aided Instructions for Rural and Urban Area Students toward Environmental Awareness

Statistics Groups	N	Mean	S.D	t-ratio	Remarks
Urban	17	23.9	2.64	5.72	Significant at 0.01 level
Rural	18	35.8	5.49		

Figure 4.2
Mean Score of the Environmental Awareness of Rural and Urban Area Students



The value of mean score among control Urban group and experiment Rural group was 23.9 and 35.8 respectively against the value of SD ie 2.64 and 5.49 our calculated value of CR is 5.72 which is greater than table value 2.58. Hence the result is significant since our hypothesis which states that there will be no significant difference in the mean score on environment awareness of rural and urban area student is rejected

H3

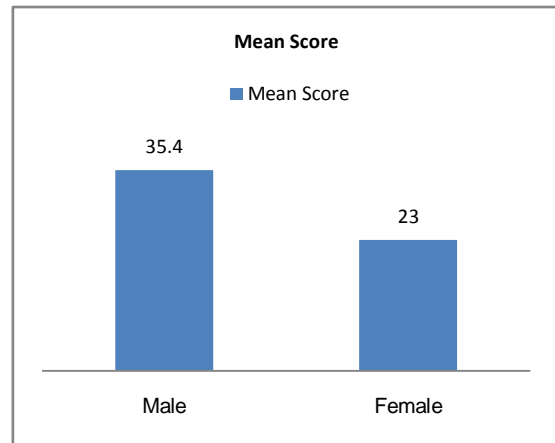
There is no significant difference in the mean scores on environmental awareness of male and female students.

The mean scores, standard deviation, t-ratio of the group for environmental awareness have been presented in table 4.3.

Table 4.3
The Mean Scores, S.D and T-Ratio of Computer Aided Instructions for Male and Female Students towards Environmental Awareness

Statistics Group	N	M	SD	t-ratio	Remarks
Female	17	23	4.77	9.25	Significant at 0.01
Male	18	35.4	3.42		

Figure 4.3
Mean Score for Environmental Awareness of Male and Female Students



The value of mean score among control Female group and experiment Male group was 23 and 35.4 respectively against the value of SD ie 4.77 and 3.42 our calculated value of CR is 9.25 which is greater than table value 2.58. Hence the result is significant since our hypothesis which states that there will be no significant difference in the mean score on environment awareness of female and male student is rejected

Discussion of Results

Hypothesis H1, viz., “There is no significant difference between mean score on environmental awareness of students taught by Computer Aided Instruction and Traditional Instructions” was rejected, as there is significant difference in mean scores for environmental awareness of controlled and experimental groups. Both groups vary with respect to their environmental awareness.

Hypothesis H2, viz., “There is no significant difference between mean scores on environmental awareness of Rural and Urban area students” was rejected, as there is significant difference in the mean scores for environmental awareness of urban and rural area students. Both groups vary with respect to their environmental awareness.

Hypothesis H3, viz., “There is no significant difference between mean scores on environmental awareness of Male and Female student” was rejected, as there is significant difference in the mean scores for environmental awareness of male and female students. Both groups vary with respect to their environmental awareness.

Interpretation

The data analysis revealed that both groups exhibited significant difference in environmental awareness of computer aided instruction also there is significant difference in the environmental awareness

of the rural and urban area students and male and female students. The study suggests that experimental group students show better performance than controlled group student. Male students show better performance than female students. The study also reveals that rural area students show better performance than urban area students.

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