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RESEARCH ARTICLE

"EFFECT OF INTERVENTION PROGRAMME ON DEVELOPMENT OF AWARENESS ON ENVIRONMENTAL POLLUTION"

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Abstract

Environment is the utmost important part of our life. Out of the existing eight planets that constitute the solar system, earth is the only planet with an environment that supports life. Life, on this planet, has also passed through several stress and strains ever since the first form of it emerged on the earth. The three major environmental aspects like air, water and soil process have been facing undesirable and unexpected changes that adversely affect the biotic and abiotic aspect. Such pollutants cause harm and health hazards. The present work is an experimental method of one group pre-test post-test design. Fifty students from school, Bokaro Ispat Vidyalaya-VI-A, Jharkhand in India was selected as the sample of the study. The purpose of this study was to find out the effect of intervention programme on improving awareness level of class VI students. The finding revealed that the intervention programme has a significant effect on the development of awareness on environmental pollution. The present study can help the school curriculum in improving awareness of environmental pollution.

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INTRODUCTION

Environment is the utmost important part of our life. Out of the existing eight planets that constitute the solar system, the earth is the only planet with an environment that supports life. Earth has experienced several evolutions involving wide-range changes. It has endured bombardment by meteors, abrupt shift in magnetic field dramatic realignment of its land and water and the advance and retreat of massive ice mountains. Life, on this planet, has also passed through several stress and strains ever since the first form of it emerged on the earth more than 3.5 billion years ago.

Population explosion, rapid industrialization coupled with indiscriminate exploitation of natural resources has affected in a large scale the different aspects of human existent. Environmental pollution is defined as unfavourable alternation of our surrounding by the presence of extraneous materials in a concentration greater than the normal, as a byproduct of man's actions. The adverse effects have contributed a lot towards ecological imbalance, the various components of ecosystem like functional as well as structural aspects. This has resulted increase of pollutants both the biological as well as cultural processes. The three major environmental aspects like air, water and soil process have been facing undesirable and unexpected changes which adversely affect the biotic and abiotic aspect. Such pollutants cause harm and health hazards.

Rationale of the study

The existence of individuals can only be thought of in this planet, provided they will face congenial and more comfortable environmental condition to live. In-spite of the attempts made for better equilibrium it does not last long due to many reasons, for which the individual always faces difficulties resulting in sufferings for the mankind. Therefore such adverse effects need to be totally eliminated or brought under control to its maximum level at an early date. Environmental protection includes programme like wide scale afforestation, recycling waste materials and adoption of environmental safeguards. Therefore, to check further deterioration and damage in healthy living conditions of human beings time has come to urgently implement environmental education programme. 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, awareness and commitment to work individually and collectively towards solution of current environmental problems and prevention of new ones.

The National Policy of Education 1986, Programme of Action 1992 and the Parliament Bill of 1995, gave more emphasis on the environmental education. According to N.C.F. (National Curriculum Framework), 2005 the teaching of environment science must be introduce from lower primary level and the emphasis will be on the natural environmental its preservation and the urgency of saving its degradation. The critical importance of environmental education at all levels has been duly recognized by NCFTE (National Curriculum Framework for Teacher Education), 2009 and efforts have been made to treat it as an inseparable part of school curriculum and teacher education curriculum at all stages. Emphasis is on content that should reflect the day-to-day experiences of children and their life.

Objectives

1. To explore the level of awareness on environmental pollution of class VI students before intervention programme.
2. To find out awareness level on environmental pollution of class VI students after intervention programme.

Hypothesis

Intervention programme will have significant effect on improving awareness level of class VI students.

Review of Literature

Isabell (1973) has conducted research studies on structural organization and conceptual framework of environmental education. In all these studies the topic that have been found to useful in developing environmental knowledge and awareness are different types of pollution, air, water, thermal noise etc.

William, B. Stapp (1975) developed an instructional model based on pollution, population, urbanization, land use, planning, energy consumption and food supply. The model later becomes prototype for later curriculum development in environmental education.

Rajput, et.al. (1980) made an attempt to identify the awareness of children of primary level, towards the scientific and social environment. The study revealed that only one of the four group (2 schools X 2 class) were significantly different on environmental awareness at pretest stage, whereas at the post test stage two experimental group were significantly better than the control group.

Joshi (1981) found that environment outside the class patent enough to intimate learning and hence environmental education should be considered essential at learnt primary level.

Gupta, V. P. (1981) studies the awareness of environment among rural and urban schools and non-formal education centers with the help of 20 rural, 35 urban and 60 non-formal center students of class four. It was found that school going rural children did better than urban sample. Also non-formal center students were more aware than urban students.

Manuja (1982) constructed environmental attitude inventory to assess the knowledge, attitude and values of high school students.

Pradhan (1983) in her study entitled "environmental education across the secondary school curriculum" found out environmental education concepts and importance of environmental education in the school curriculum.

Mann (1983) found that high school students become more aware about the magnitude of environmental problems after they were told about harmful effects of misuse of environment.

Praharaj (1985) in his study entitled "Contribution of science education to environmental education in the solution of environmental problems in the Indian state of Orissa: A case study" found that science education is helpful for solving environmental problems.

Armstrong and Impara (1992) found positive impact of environmental education programme on knowledge and attitude of the students.

Gupta and Rodriques (2007) in their study of the perception of secondary school teachers towards environmental education found that many teachers realized that environmental education should be introduced in school from an early stage onwards and they also proposed that those from the arts stream could take up the subject of environmental education in school since this is a subject that cuts across all disciplines.

Gnanadevan (2007) conducted study on environmental awareness of higher secondary students. The study explored the understanding of students about the importance of environment in which they live. In this study environmental awareness of higher secondary students was found to be high. The environmental awareness scores of higher secondary students differ significantly with respect to gender, type of school, residential area, parents education, parents occupation, parents income, and nature of family.

Sudaravalli (2012) conducted research on topic student teacher's awareness on environmental pollution. The result states that those who study science subject and those who practice reading newspaper and magazines possess higher level of environmental pollution awareness.

Design of the study

The investigator used experimental method of one group pre-test post-test design that is represented in the Table-1

Table –1: Design of the Study

Design of the study	**Pre-test (T1)**	**Intervention**	**Post-test (T2)**
Design of the study	Environmental awareness test	Environmental awareness programme	Environmental awareness test

Sample of the Study

A representative sample of 50 was taken from Bokaro Ispat Vidyalaya-VI/A. The school is in Bokaro, Jharkhand in India. This sample was drawn on the basis of the attendance of students of class VI of above-mentioned school that is shown in Table-2.

Table – 2: **Sample of the Study**

Name of the School	Class	No. Of Students		Total
		Boys	Girls	
Bokaro Ispat Vidyalaya-VI/A	VI	34	16	50

Tools and Technique

For the present study, the investigator has taken Questionnaire and Intervention Programme as the tool of the study.

Intervention Programme

For this study, the investigator prepared environmental awareness programme as intervention programme in which the scholastic and non-scholastic activities were executed as per following schedule. The schedule of programme is mentioned in the Table-3.

Table-3: Environmental Awareness Programme Schedule

Day	Scholastic activities	Non-scholastic activities	Total days
I		Visit of a dirty pond.	1
II	Classroom teaching about water pollution.		1
III		Visit of a weekly market.	1
IV	Classroom teaching about cleanliness and sound pollution.		1
V		Visit of a brick yard	1
VI	Classroom teaching about air pollution		1
VII		Visit of a private park.	1
VIII	Classroom teaching about tree and forest.		1
IX		Visit of a hospital.	1
X	Classroom teaching about health and hygiene.		1
XI	Classroom teaching about environmental pollution through chart and images.		1
XII	Organize a seminar on environmental pollution.		1
		Total	**12**

In order to explore the awareness level of class VI students on environmental pollution before intervention, the investigator conducted a pre-test. Then remedial intervention was given to experimental group of students. In order to test the effectiveness of intervention programme on development of awareness on environmental pollution mean value, standard deviation, percentage and‘t’ value were calculated.

Table-4 shows the frequency and percentage of the sample falling under different categories on the basis of the scores obtained by the sample before and after intervention in the form of pre-test and post-test.

Table-4: Frequency and percentage of students in different categories in pre-test and post-test

Categories	Pre-test (%)	Post-test (%)
Excellent (25-30)	00 (00%)*	00 (00%)
Very good (20-25)	00 (00%)	02 (04%)
Good (15-20)	01 (02%)	33 (66%)
Average (10-15)	27 (54%)	15 (30%)
Poor (5-10)	18 (36%)	00 (00%)
Very poor (0-5)	04 (08%)	00 (00%)
Total	50 (100%)	50 (100%)

* Figures in brackets indicate respective percentage.

The table 4 shows that before intervention 27 (54%) of the students were below Average in which 18 (36%) were under Poor and 4(8%) were under Very poor categories. The table also shows that the percentage of students below Average in post intervention fell drastically. Now no students are in the category of Poor and Very poor, which is shown in Figure-1 and Figure-2.

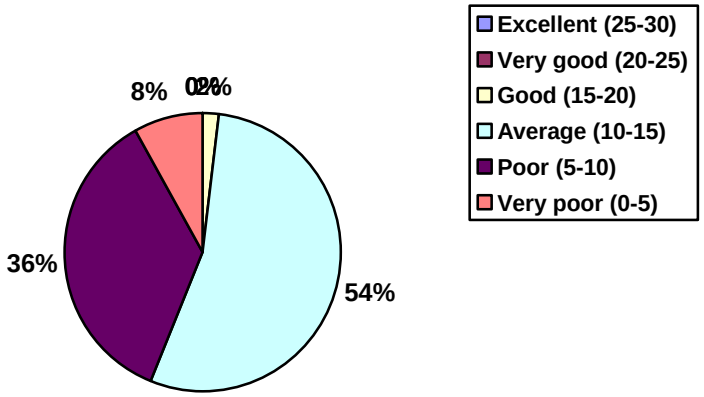

Figure –1

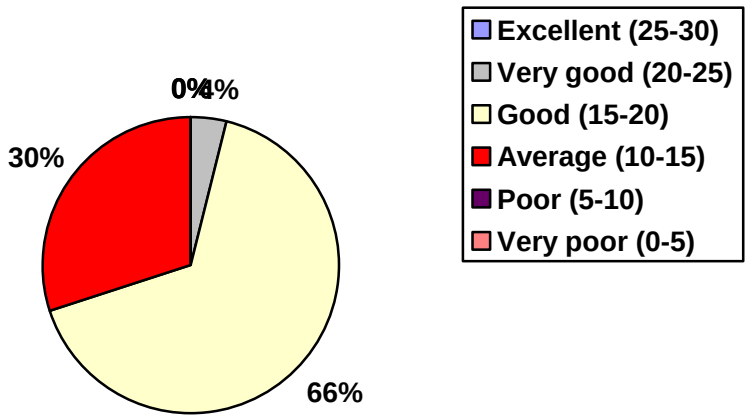

Figure –2

Figure-1 and figure-2 showing the percentage of students in different categories in pre-test and post-test respectively.

The table 4 also shows that there were only 2% of students in the Above Average categories before intervention. It should be noticed that the 2% of the Above Average student fall only in Good category and no student in the Excellent and Very Good category. Post intervention score tests say a different story. The percentage of students falling under Above Average category rose astronomically from 2% to 70%. Though the percentage of students falling under Excellent category remained all the same at zero percent and that of Very Good rose to 4% and good to 66%. The table also shows that before intervention most of the students were Average student (54%). But after the intervention most of the students are Good students (66%).

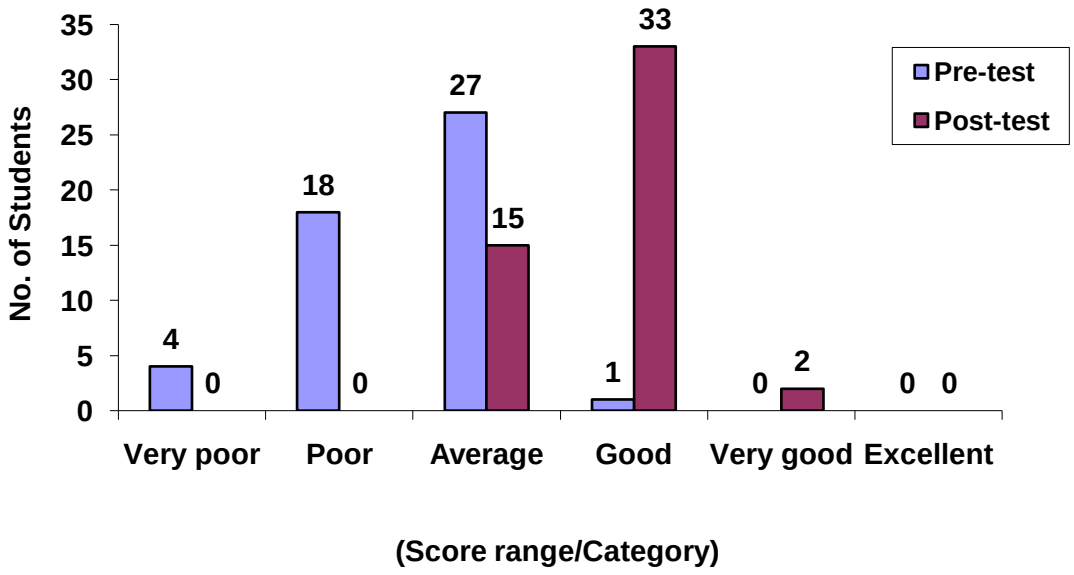

Figure-3 showing frequency of students of different categories in pre and post-test.

Table-5: Awareness level of Boys and Girls in pre-test

Students	No. of students	Mean	SD	't' value
Boys	34	10.94	7.11	1.215
Girls	16	9.875	11.25	

It is observed from table-5 that the mean and SD scores of pre-test of boys are 10.94 and 7.11 respectively. The mean and SD scores of pre-test of girls are 9.875 and 11.25 respectively. Hence, in the pre-test the awareness level of boys and girls are approximately the same, the 't' value of boys and girls of pre-test is 1.215, which is not significant, which indicates that there is no significant difference between the scores of boys and girls in the pre-test. The Figur-4 shows the awareness level of boys and girls in pre-test.

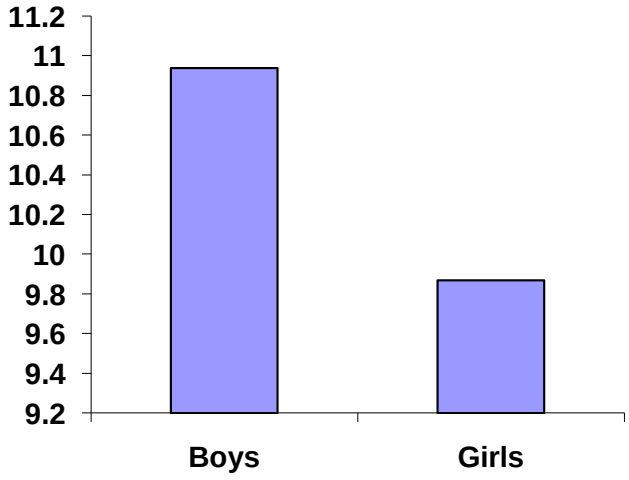

Figure-4: Showing awareness level of Boys and Girls in pre-test

Table-6: Awareness level of Boys and Girls in post-test

Students	No. of students	Mean	SD	't' value
Boys	34	17.00	6.352	0.51
Girls	16	17.375	4.375	

Table-6 shows that the mean and standard deviation scores of post-test of boys are 17.00 and 6.352 respectively. The mean and standard deviation of the same test of girls are 17.375 and 4.375 respectively. The table also shows that boys and girls approximately same, the 't' value of boys and girls of post-test is 0.51 which is not significant. The following Figur-5 shows awareness level of boys and girls in post- test.

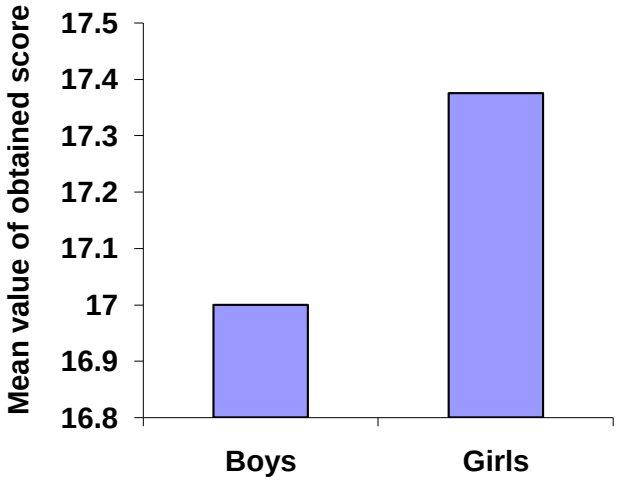

Figure-5: Awareness level of Boys and Girls in post-test

Thus, the investigator concluded that there is no significant difference between the awareness level of boys and girls on environmental pollution.

Table-7: Mean value of experimental groups of children's score in pre-test and post-test.

No. of children	Group of children	Mean
50	Pre-test	10.6
50	Post-test	17.12

It is observed from the Table-7 that the mean score of the pre-test is 10.6 and the mean score of post-test is 17.12. Hence, in the post-test the awareness level of class VI students on environmental pollution is more than pre-test. So the investigator explored awareness level of class VI students on environmental pollution as mean score of pre-test and post-test. Hence, the hypothesis as done previously is retained, which is clear through the given below bar diagram.

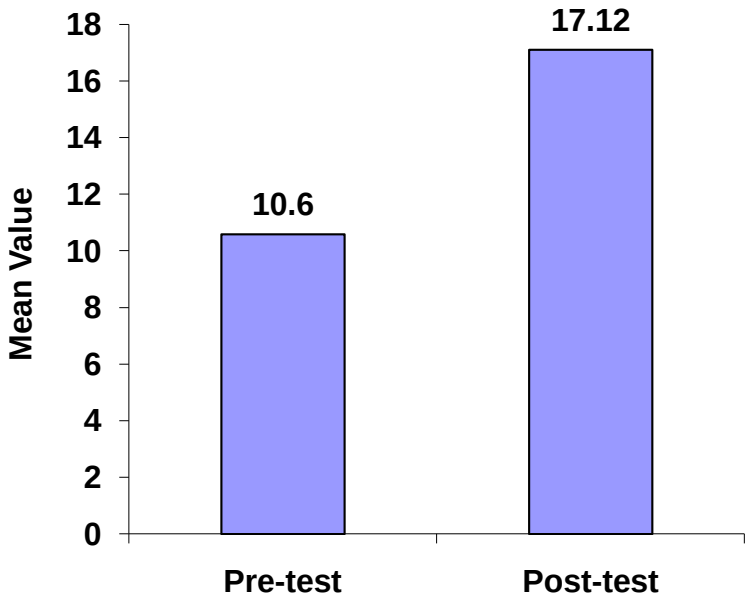

Figure-6 : Showing mean value of obtained score by the experimental group of students in pre and post-test.

Table-8: Mean, SD and 't' value of pre-test and post-test on environmental pollution of class VI students.

No. of students	Test	Mean	SD	't' value
50	Pre-test	10.6	2.97	12.07
50	Post-test	17.12	2.41	

From the table-8, it is observed that the mean score of the pre-test is 10.6 and the standard deviation (SD) of the pre-test score is 2.97. The mean score of post-test is 17.12 and the standard deviation (SD) of the post-test is 2.41. Hence, in the post-test the awareness level on environmental pollution of class VI students is increased by mean score 6.52 and the 't' value is 12.07 which is significant at 0.01 level, which indicates that there is a significant difference between pre-test and post-test score. The awareness level of the class VI students on environmental pollution is improved significantly after teaching through the intervention programme of environmental pollution. Hence the hypothesis as done previously is retained.

Major findings

- The intervention programme has a significant effect on the development of awareness on environmental pollution.
- There is no significant difference between the awareness level of boys and girls on environmental pollution.
- The intervention programme has no significant impact on the high achiever of the class, (Excellent and Very good categories).
- The intervention programme has very significant on the below Average and Average categories of students.

Educational Implications

- This study can be used in the same class of other schools in development of awareness on environmental pollution.
- It can help change the school curriculum in improving awareness of environmental pollution.
- It can help for suitable method of teaching and techniques to improving environmental awareness.
- It can help in teacher training to raise awareness on environmental pollution among future teachers.

Conclusion

Man through his activities creates environmental pollutions to such an extent that the natural process fail to clear them and ultimately man face the hazardous effect of the pollution. The most perplexing problem confronting our civilization is how to protect the environment from further deterioration. 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, awareness and commitment to work individually and collectively towards solution of current environmental problems and prevention of new ones. School system provides the largest organized base for environmental education and action. It offers an effective instrument for embedding in them the desirable environmental ethics. Students are one of the important factors, which is bound to affect this programme, student can provide a vital link in the delivery of environmental knowledge, its associated problems and their solutions. Taking into consideration this situation the investigator felt on urgent need to create environmental pollution awareness among all human beings to conserve, protest and nature of our environmental resources.

References

Armstrong, J. B., & Impara, J. C. (1992). The impact of an environmental education program on knowledge and attitude. *Journal of Environmental Education*, 22 (4), 36-39.

Gnanadevan, R. (2007). Environmental awareness of higher secondary students, *Research and Reflection on Education*, 5 (1), 9 - 11.

Gupta, K. & Rodriques (2007). A study of the perception of secondary school teachers towards environmental education. *Quest in Education*. 31 (2) 5 –11.

Gupta, V. P. (1981). A study of the environmental awareness among children of rural and urban schools and non-formal education canters, LXVIII (3), 58-60.

Isabell, l. O (1973). Identification of concepts that will serve as a basis for development of environmental education. Dissertation Abstract International, Washington State University.

Joshi, B. P. (1981). Development of science Education for upper primary class based on the environmental approach, SIE, Pajagthan (NCERT Financed-4).

Mann, A. (1983). Creating awareness among the high school students about environmental pollution through education an experimental study. Unpublished doctoral dissertation, Punjab University, Chandigarh.

Manuja, S. (1982). Construction and standardization of environmental attitude inventory for high school student, M.Ed. Dissertation, Lovely Professional University, Firozpur.

NCERT (2005). National Curriculum Framework, New Delhi.

NCTE (2009). National Curriculum Framework for Teacher Education, New Delhi

Pradhan, G (1983). Environmental education across the secondary school curriculum. *Indian Educational Abstract*, 30 (2), 22-26.

Praharaj, B. K (1985). Contribution of science education to environmental education in the solution of environmental problem in Indian state of Orissa. Unpublished Degree of Master of Science Dissertation, Utkal University, Orissa.

Rajput, J. S., et. al. (1980). A research study in environmental approach of teaching at primary level, third survey of research in education. Edited by M. B. Buch, NCERT, 1987.

Sudaravalli (2012). Students teachers' awareness on environmental pollution. *International Journal of Teacher Education Research*, 1 (4), 52-58.

William, B. S. (1975). Environment Education: A guide to Information. *The Journal of Environmental Education*, 1(1), 30-31.