



Environmental Awareness Among School Students: A Case Study of Nanded City, Maharashtra

Anand R. Ashturkar, Sudhir V. Shivanikar and Prabhakar N. Wayde*

Department of Environmental Science, Netaji Subhashchandra Bose College, Nanded-431 601, Maharashtra, India

*Department of Environmental Sciences, University of Pune, Pune-411 007, Maharashtra, India

Key Words:

Environmental education
Environmental awareness,
School students
Nanded city

ABSTRACT

Environmental education creates an overall perspective, which acknowledges the fact that natural environment and man-made environment are interdependent. Environmental education should consider the environment in its totality and should be a continuous lifelong process beginning at the school level and continuing through all stages because the best way to attempt to bring about a change in the attitude in the society is through children. With this realization the present study assesses the status of environmental awareness, impact of environmental teaching programmes and the need for environmental education among school students of Nanded city, Maharashtra. Lack of environmental awareness among the students was observed. It is unequivocally demonstrated that environmental education is essential among these students to increase the awareness about the environmental issues.

INTRODUCTION

When should environmental education begin – at the high school level, primary school level, kindergarten or even earlier? Environmental education based on life experiences should begin during the very early years of life. Such experiences play a critical role in shaping life-long attitudes, values, and patterns of behaviour towards natural environment (Tilbury 1994, Wilson 1994). Because young children learn about the environment by interacting with it, educators and other adults must attend to the frequency, nature, and quality of child-environment interactions during the early years. Many young children have limited opportunities for such experiences. Studies also indicate that children growing up in urban areas tend to develop unfounded fears and feelings of disgust in relation to natural objects (Bixler et al. 1994). Childhood is the time when the child's basic outlooks, values and habits are shaped to a great extent. The experiences, which the child has to undergo at school and at home in these formative years, determine the behaviour of the young child. The young children have great curiosity about their surroundings. They possess great love for nature and want to understand myths and mysteries of nature. Therefore, at this stage stress should be laid.

It is not just children living in urban areas who should be focused for environmental education during their preschool years. Many young children, regardless of where they live, spend most of their time in settings and activities that keep them essentially isolated from direct contact with the natural world. The result is that many young children are at risk of never developing positive attitudes and feelings toward the natural environment or achieving a healthy degree of competency on the environmental literacy continuum (Disinger & Roth 1992). Attention to environmental education at the early childhood level is proposed as a partial antidote to this concern.

The goal of environmental education is to develop a world population who is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones (UNESCO 1975).

Environmental education focusing on real-world contexts and issues often begins close to home, encouraging learners to forge connections and understand their immediate surroundings. The ultimate goal of environmental education is to develop an environmentally literate public. It needs to address the connection between our conception and practice of education and our relationship as human cultures to life-sustaining ecological systems. It should be interdisciplinary and examine major environmental issues from local, national and international points of view. It should utilize various educational approaches to teach and learn about and from the environment with stress on practical activities and first-hand experience. It is through this process of education that people can be sensitized about the environmental issues. To realize this vision, both ecological and environmental education must become a fundamental part of the education system at all levels of education.

There are several questions coming from researchers and educators referring to the most efficient approaches for developing an environmental awareness; it is difficult to document which approach can generate increased sensitivity and behavioural changes for effective environmental protection. Therefore, research and discussions on the issue are demanding. This paper presents observations concerning the awareness about environmental issues among the school students of Nanded city. The positive impact of teaching programme on the students is also seen. Nanded is one of the largest districts in Marathwada region in Maharashtra with strong economic base in the agriculture and related sectors. It also has significant potential to emerge as one of the foremost religious tourism destinations in India.

MATERIALS AND METHODS

Nanded city is situated at longitude 77°7' to 78°15' E and latitude 18°15' to 19°55' N. It covers an area of 1006.81 sq. km and a population of 4.25 lakh (2001 census), which is projected to reach 6.5 lakh by 2011. It has a relatively better population size within the city area with a high literacy rate and a reasonably good per capita income. Overall, the city has a potential to emerge as one of the metropolis in relatively shorter time period provided its strengths are leveraged/complemented through appropriate infrastructure development and economic positioning. Nanded has a very vibrant education sector. There are 11 major colleges (which include 2 engineering and 1 medical college) and 16 major schools in the city. The city has registered a literacy level of 72.1% in the 2001 census. Thereby Nanded urban region has a well-educated and skilled population.

Three Marathi language, one Hindi language, three English language and two Urdu language medium schools were selected for the present study. The students selected were from seventh, eighth and ninth class. Total number of students participated in this study was 1056, among which 429 students (187 boys, 242 girls) were from Marathi medium, 48 students (25 boys, 23 girls) from Hindi medium, 327 students (150 boys, 177 girls) from English medium and 252 students (122 boys, 130 girls) from Urdu medium. The questionnaire of total 50 questions was prepared by referring the textbooks from standard 1st to 10th.

Before preparing the questionnaire, information about environment was delivered through some lectures and using some project ideas from these text books. The questions were essentially based on various aspects related to basic environment. Broadly, it covers concept of environment, plantation,

ecology, natural calamities (flood/drought), deforestation, solar energy, plastics, endangered species, air pollution, water pollution, effects of pollution, control measures of pollution, population and ozone layer. The questionnaire was of objective type with total marks of 200. The data obtained were analysed by standard deviation and 't' test for drawing the results.

Table 1: Results showing the mean and S.D. of the obtained marks by students.

Sr. No.	Medium	School	Class	Students (Total 1056)			
				Boys	Girls		
1	Hindi	Gandhi Rashtriya Hindi Vidyalaya	7 th	4	4		
			8 th	11	11		
			9 th	10	8		
			Total	25	23		
			Mean of the obtained marks (out of 200)	110.28	121.5		
			Standard Deviation	27.32	24.97		
2	Marathi	Pratibha Niketan High School	7 th	20	31		
			8 th	36	42		
			9 th	25	26		
		Gujrathi High School	7 th	39	39		
			8 th	37	42		
			9 th	30	35		
		Priyadarshini High School	7 th	0	11		
			8 th	0	11		
			9 th	0	5		
		Total	187	242			
		Mean of the obtained marks (out of 200)	159.83	156.2			
		Standard Deviation	11.63	20.85			
't' Test - The girls of Hindi medium have more awareness than boys							
3	Urdu	Faizal Uloom High School	7 th	22	25		
			8 th	16	16		
			9 th	16	16		
		Madinatul Uloom High School	7 th	20	24		
			8 th	22	22		
			9 th	26	27		
		Total	122	130			
		Mean of the obtained marks (out of 200)	128.03	128.77			
		Standard Deviation	23.11	24.20			
		't' Test - Marathi medium boys have more awareness than girls					
		4	English	Gyanmata Vidyavihar High School	7 th	24	25
					8 th	23	23
9 th	15				16		
Nehru English High School	7 th			13	14		
	8 th			07	11		
	9 th			11	17		
Nagarjuna High School	7 th			33	34		
	8 th			20	32		
	9 th			04	05		
Total	150			177			
Mean of the obtained marks (out of 200)	149.9			153.1			
Standard Deviation	15.02			15.64			
't' Test - English medium girls are more aware than boys							

RESULTS AND DISCUSSION

The results of the study are given in Tables 1, 2 and 3. Boys of the Gandhi Rashtriya Hindi Vidyalaya showed mean value of marks of 110.28 with a standard deviation of 27.32, and the girls 121.5 average marks with a standard deviation of 24.97. As per the 't' test it is clear that girl students have higher awareness about the environment.

Boys of the two Marathi medium schools (Pratibha Niketan High school and Gujrathi High School) showed average marks of 159.83 (SD 11.63), while the girls of these two schools and Priyadarshini Girl's High School showed the mean value of marks as 156.2 (SD 20.85). The overall mean of the obtained marks was found to be 136.95. Overall evaluation of the present study shows that the school students were aware about the general environmental issues like pollution, effects of pollution, deforestation, wastes, etc. but they were unaware of rather important issues like pollution prevention, conservation of environment, waste minimization, recycling and reuse of waste, etc. It seems that they know which are the factors affecting environment but do not know how to trim down their effects indicating that there is much scope to increase their consciousness. The students not attended the lecture series on environment given under this study secured less marks pointing out that teaching can be an effective method to create or increase awareness about environment.

Although all the topics were covered during the lectures, students were unable to answer some specific questions on pollution control, conservation of natural resources, waste management, etc. These topics are not common and perhaps students did not understand them merely through oral teaching. Some practical aspects must be combined with theoretical teaching to make it more interacting with the students. The teaching should be made with the help of audio-visuals, case studies and field work. Visit to any river, dam, forest, sanctuary, industry, water treatment plants, waste disposal plants, etc. will surely develop more interest among the students. Teachers should use low cost educational and teaching resources like flip chart, flannel board, poster charts, etc., as well as traditional communication media like folk songs, street plays, puppetry, etc. which are people oriented communication methods for effective and long lasting message dissemination.

There should be initiation of awareness programmes to understand the economic, political and ecological interdependence in the form of exhibitions and fairs, seminars and discussions, group projects, field trips, games, debates, lectures, elocution competitions, quiz, effective use of mass media, etc. (Schwaab 1982). Themes and concepts selected should include traditional use and practices particularly in rural areas especially in the field of agriculture, grain storage, conservation techniques and biodiversity conservation including food crops, forests and wildlife.

Shahnawaz (1990) derived similar conclusion, when he studied awareness about environmental issues among students of Udaipur (Rajasthan). Furthermore, he observed that urban students were more aware as compared to rural students. Praharaj (1991) studied the views of teachers towards environmental education and observed the poor status of teachers' knowledge.

Number of researchers studied students' knowledge, opinion and beliefs about environmental aspects from different parts of the world (Blum 1987, Hausbeck et al. 1992, Kwan & Miles 1998, Lyons & Breakwell 1994, Szagun & Mesenholl 1993). Analysis of students' knowledge and attitude in developed and developing countries showed that the level of environmental knowledge was rather poor (Lee & Tan 1994). These results suggest that schools should play an active role in improving the knowledge base that will better inform practical solutions. Weak substantive knowledge amongst school children was often compounded by different conceptions about environmental issues.

Table 2: Results showing the mean and S. D. of the obtained marks by girls.

Marks	No. of Students	Mean Value	Dx (X = 155.5)	dxi (i = 10)	fdxi	fdxi ²
31-40	01	35.5	-120	-12	-12	144
41-50	01	45.5	-110	-11	-11	121
51-60	02	55.5	-100	-10	-20	200
61-70	01	65.5	-90	-9	-9	81
71-80	05	75.5	-80	-8	-40	320
81-90	06	85.5	-70	-7	-42	294
91-100	09	95.5	-60	-6	-54	324
101-110	16	105.5	-50	-5	-80	400
111-120	32	115.5	-40	-4	-128	512
121-130	35	125.5	-30	-3	-105	315
131-140	42	135.5	-20	-2	-84	168
141-150	83	145.5	-10	-1	-83	83
151-160	170	155.5	00	0	00	00
161-170	91	165.5	10	1	91	91
171-180	65	175.5	20	2	65	130
181- 190	05	185.5	30	3	05	15
Total	N = 511				Σ fdxi = -507	Σ fdxi ² = 3198

Mean = 145.579; Standard Deviation = 22.96

Table 3: Results showing the mean and S. D. of the obtained marks by boys.

Marks	No. of Students	Mean Value	Dx (X = 155.5)	dxi (i = 10)	fdxi	fdxi ²
31-40	01	35.5	-120	-12	-12	144
41-50	01	45.5	-110	-11	-11	121
51-60	01	55.5	-100	-10	-10	100
61-70	03	65.5	-90	-9	-27	243
71-80	04	75.5	-80	-8	-32	256
81-90	03	85.5	-70	-7	-21	147
91-100	10	95.5	-60	-6	-60	360
101-110	12	105.5	-50	-5	-60	300
111-120	19	115.5	-40	-4	-76	304
121-130	47	125.5	-30	-3	-141	423
131-140	63	135.5	-20	-2	-126	252
141-150	99	145.5	-10	-1	-99	99
151-160	123	155.5	00	0	00	00
161-170	113	165.5	10	1	113	113
171-180	43	175.5	20	2	86	172
181- 190	03	185.5	30	3	09	27
Total	N = 545				Σ fdxi = -467	Σ fdxi ² = 3061

Mean = 146.932; Standard Deviation = 22.09

*t' Test: Boys of all mediums have more environmental awareness as compared to girls.

An assessment of school students at selected ages found that they had some misconceptions such as anything natural is not pollution and biodegradable materials are not pollutants (Brody 1990-91). A study of students' (aged 15-17) perception revealed that the major causes of environmental problems were perceived to be lazy people and oppressive institutions with money and power (Hillcoat et al. 1995).

Education and awareness is one of the most effective forces towards saving our besieged environment. The basis of a healthy environment is good air, water and soil. These basic building blocks of life are obviously essential for life to continue and must be cared for, preserved and enhanced. No programme can be a success without education as education is what makes people aware of the need for any activity and can generate much needed support for that activity. Environmental education has been in vogue since human beings have been interacting with the world around them and teaching their children to do the same.

There are historical reasons for environmental education. People acquire basic environmental functions in order to grow food, find water and protect themselves from the climate. We still need knowledge of science and technology to shape and perpetuate the modern world. However, a more complete and constructive reason for environmental education has emerged out of the combination of all the other reasons.

REFERENCES

- Bixler, R., Carlisle, D.L., Hammitt, W.E. and Floyd, M.F. 1994. Observed fears and discomforts among urban students on field trips to wildland areas. *The Journal of Environmental Education*, 26(1): 24-33.
- Blum, A. 1987. Students knowledge and beliefs concerning environmental issues in four countries. *Journal of Environmental Education*, 18(3): 7-13.
- Brody, M. J. 1990-91. Understanding of pollution among 4th, 8th and 11th grade students. *Journal of Environmental Education*, 22(2): 24-33.
- Disinger, J. F. and Roth, C. E. 1992. *Environmental Literacy*, (ERIC Digest EDO-SE-92-1), Columbus, OH: ERIC Clearing House for Science, Mathematics and Environmental Education.
- Hausbeck, K., Milbrath, L. and Enright, S. 1992. Environmental knowledge, awareness and concern among 11th grade students, New York State. *Journal of Environmental Education*, 24(1): 27-34.
- Hillcoat, J., Forge, K., Fien, J. and Baker, E. 1995. I think it's really great that someone is listening to us.....: Young people and the environment. *Environmental Education Research*, 1(2): 159-72.
- Kwan, T. and Miles, J. 1998. In the worlds of children and young people: The opinions and concerns about their environments of some Brisbane school students. *Australian Journal of Environmental Education*, 14: 11-18.
- Lee, C.K. and Tan, I.G. 1994. A preliminary meta-analysis of students knowledge and attitudes towards environmental issues in developed and developing countries. *International Research in Geographical and Environmental Education*, 3(2): 35-44.
- Lyons, E. and Breakwell, G. 1994. Factors predated environmental concern and indifference in 13 to 16 year olds. *Environment and Behaviour*, 26: 223-38.
- Praharaj, 1991. A Study on Views of Duty Teachers and Ex-government Teachers Towards Environmental Education. Ph.D. Thesis submitted to Maharaja Sayajirao University, Baroda.
- Schwaab, K. E. 1982. Instructional methods: Their use and effectiveness in environmental education. *The Journal of Environmental Education*, 14(2).
- Shahnawaz, 1990. Environmental Awareness and Environmental Attitude of Secondary and Higher Secondary School Teachers and Students. Ph.D. Thesis, Rajasthan University, Jaipur.
- Szagun, G. and Mesenholl, E. 1993. Environmental ethics: An empirical study of West German adolescents. *Journal of Environmental Education*, 25(1): 37-44.
- Tilbury, D. 1994. The critical learning years for environmental education. In: R.A. Wilson (Ed.) *Environmental Education at the Early Childhood Level*, Washington, DC, North American Association for Environmental Education, 11-13.
- UNESCO 1975. The Belgrade Charter, Adopted at the International Workshop on Environmental Education, 13 to 22 October, Belgrade, Yugoslavia, p3.
- Wilson, R.A. 1994. *Environmental education at the early childhood level*, Washington DC, North American Association for Environmental Education.