



Environment Education: An Indian Perspective

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Abstract

This paper focuses in developing working model of Environmental Education in the formal sector and to evaluate and statically analyze the Environmental education knowledge perception of the different sectors of the society in India through structured questionnaire surveys of 500 teachers from India, out of which 250 were working at schools and 250 at colleges. This paper aims to study the importance of the environmental education with specific emphasis on sustainability and various environmental education patterns in the educational institutions in India. With the use of questionnaire survey among. In the end the research try to device the Strategies and Framework for promoting Environmental Education. Lastly, it can be concluded that though the existing Environmental Education programs do not seem to be satisfactory, the future looks promising. Moreover in planning to develop school curricula on conservation education at the national level. It is hoped that the steps mentioned in the research work will bring desirable results in the future in sustaining precious natural resources of India.

Keywords: Environment, environmental education, sustainability, waste management, indian education.

Introduction

Education has been recognized as a necessary constituent for sustainable development all over the world. The function of education could also optimistically manipulate the administration of the stressed out natural resources through the integration of victorious procedures of environmental education. The environmental education offers students with the skills, experience and knowledge that are necessary to turn out to be victorious community leaders, and also making clever decisions pertaining to the administration of their natural resources¹.

The globally evolved concept of environmental education is a continuing lifelong procedure. As it is mentioned by Tbilisi², environmental education is considered as an everlasting process. In that, the community and the individuals obtain awareness of their surrounding and acquire the skills, experiences, values, and knowledge. They also possess the willpower to act collectively and individually to resolve current and future environmental problems. Teaching the people at huge regarding the environment and its features would build up decisive thinking, problem solving and analytical capabilities in them. Also it would enhance insights and knowledge to progress the quality of human life on earth.

India being a diverse nation, geographically, economically, climatically and geologically, the environmental education here has to be necessarily location – specific. It is at the initial level, that major attention has to be paid to the school going children and women, (that is, around 50 % of the population). They are to be made conscious about family planning, rural development, sanitation, food and water contamination, fuel wood, nutrition, slum improvement, hygiene, fodder etc.

Barrier and Constraints in Indian Environmental Education:

The widespread practices for the promotion of Environmental Education in India have been unsuccessful through the years in many ways. Unfortunately, to-date the subject of Environmental Education is linked with the subject of Environmental Studies', which focuses on providing children with scientific facts and figures on global environmental problems. It addresses environmental issues from a viewer's point of view by identifying the primary sources and proposing corrective measures needed to redress the symptoms, for example, ozone depletion and global warming. Therefore, students end up knowing what is wrong with the planet but do not understand what should be done by 'them' as individuals to prevent such damage, neither can they see how to become responsible for the environmental problems and hence, understand how they need to help solve issues by changing their own lifestyles.

The main problems that India seems to be facing regarding Environmental Education can be summarized as follows:

Curriculum load: There is a tremendous pressure from parents and community regarding how heavy the school curriculum has become, which in turn is responsible for development of stress among students and thereby affecting their normal developments. This problem of curriculum load seems to be complex and has its roots in many related issues.

Preparation of Teachers: Pre-services preparation and In-service training of teachers are major problems in implementation of environmental curriculum. Given the huge

number of teachers and geographical character of the country, management of in-service programmes is indeed a challenge.

Methodology

Methods of Assessment: The present assessment/evaluation system in education is a major bottleneck in bringing improvement in the education system of our country. Unfortunately, what is not relevant to examination is not considered relevant in teaching and learning. Framework of assessment used is not conducive to the development of problem-solving skill among the pupils – given the fact that instruction is mainly assessment-driven in India. Further, assessment of practical work is not attached much importance – resulting in utter neglect of practical work in school education.

The way Environmental Education is being dealt with in schools in India therefore, needs to be completely revamped and clearly-defined methods should be laid out for easy applicability in schools, bearing in mind the following aspects which have to be the foundation of this change.

Indian Environmental Education – The Study: The study population for the present survey consisted of 500 teachers from India, out of which 250 were working at schools and 250 at colleges. The respondents were picked on the basis of random sampling. The sampling location was the capital city of Delhi. The areas covered were North, South, East, West and Central Delhi. The research instrument used was the one developed by the researcher, after reviewing the literature and consulting the experts. The instrument was first pilot tested on a group of 52 persons, where the reliability of the scale was tested using cronbach's alpha. In the words of Shuessler, 1971, a scale is said to be reliable if the alpha value is greater than 0.06³. All the values were found to be satisfactory, falling within the range of 0.6 to 0.8. All the responses were recorded on a five point Likert scale, ranging from 'Strongly Disagree' to 'Strongly Agree'.

Keeping in mind the barriers, the following research questions were framed:

RQ1: What are the flaws existing in the current environmental education patterns adapted at present in Indian educational institutions.

RQ2: What is the various environmental education patterns adapted at present in the educational institutions in India?

RQ3: How is environmental education important in the attainment of sustainability?

Research Analysis: For the purpose of this study, personal administration of questionnaires was carried out as it is one of the best ways for data collection when the survey is confined to limited region. Another reason for collecting data using a questionnaire was the application of the same methodology by previous researchers in the field of environmental education. On conducting the analyses, the following results were obtained.

Table-1
Age of the respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
21 - 25 Years	62	12.4	12.4	12.4
26 - 35 Years	149	29.8	29.8	42.2
36 - 45 Years	152	30.4	30.4	72.6
46 - 55 Years	80	16.0	16.0	88.6
55 - 60 Years	57	11.4	11.4	100.0
Total	500	100.0	100.0	

The respondents' age ranges from 21 years to 60 years. Nearly, 29.8% respondents participated in this study were in the age group of 26 and 35 years and 30.4% of them are in the age group of 36 and 45 years and 16% respondents were in the age group of 46 and 55 years

Table-2
Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	189	37.8	37.8	37.8
Male	311	62.2	62.2	100.0
Total	500	100.0	100.0	

Nearly 62.2% respondents participated in this study were male respondents and 37.8% of them were female respondents.

Table-3
Respondent's Designation

	Frequency	Percent	Valid Percent	Cumulative Percent
School Teacher	202	40.4	40.4	40.4
School Headmaster	48	9.6	9.6	50.0
Lecturer	184	36.8	36.8	86.8
HOD	40	8.0	8.0	94.8
Directors	26	5.2	5.2	100.0
Total	500	100.0	100.0	

Regarding the respondent's designation, nearly 40.4% respondents participated in this study are school teachers and 36.8% of them were lecturers

Table-4
Years of Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
< 2 Years	86	17.2	17.2	17.2
2 - 5 Years	136	27.2	27.2	44.4
6 - 8 Years	200	40.0	40.0	84.4
> 8 Years	78	15.6	15.6	100.0
Total	500	100.0	100.0	

Most of the respondents participated in this study are having good experience in the educational domain. Nearly 40% respondents said that they are having about 6 to 8 years of experience in educational domain and 27.2% respondents said that they are having about 2 to 5 years of experience in educational domain

ANOVA test: Nearly 38.2% respondents agree that their institution offers environmental education to all its students ($F = 139.24$, $p - \text{value} = 0.000 < 0.05$). This indicates that the present status of environmental education offered by the educational institutions is at higher standard and there also exists great awareness over the importance of environmental education.

Table-5

My institution offers environmental education to all its students

	N
Strongly Disagree	41
Disagree	75
Neutral	69
Agree	191
Strongly Agree	124
Total	500
F value	139.24
Sig.	.000

Table-6

Pursuing environmental education is mandatory

	N
Strongly Disagree	98
Disagree	50
Neutral	66
Agree	162
Strongly Agree	124
Total	500
F	80.800
Sig.	.000

Table-7

Most frequently used resources in educational institution in imparting environmental education

Resource	Never been used	Used very rarely	Used occasionally	Frequently used	Most frequently used
Printed material	42 (8.4%)	83 (16.6%)	83 (16.6%)	131 (26.2%)	196 (39.2%)
CD	59 (11.8%)	77 (15.4%)	77 (15.4%)	131 (26.2%)	197 (39.4%)
Diskette	79 (15.8%)	116 (23.2%)	116 (23.2%)	132 (26.4%)	40 (8%)
Geographic information systems	52 (10.4%)	72 (14.4%)	72 (14.4%)	139 (27.8%)	203 (40.6%)
OHP sheets and projectors	62 (12.4%)	76 (15.2%)	76 (15.2%)	153 (30.6%)	37 (7.4%)
Internet or worldwide web	23 (4.6%)	30 (6%)	30 (6%)	135 (27%)	259 (51.8%)

Nearly 32.4% respondents feel that pursuing environmental education is mandatory for all students studying at their institution ($F = 80.80$, $p - \text{value} = 0.000 < 0.05$). This indicates that, all educational institutions take possible steps to create the awareness over the environment and its uses to their students through their subject areas.

Regarding the resource that was used most frequently in imparting environmental education, most of the respondents said that internet resource was used most frequently in imparting environmental education. Nearly 39.2% respondents participated in this study said that Printed Material was used in their educational institution in imparting environmental education, 39.4% respondents participated in this study said that CD was used in their educational institution in imparting environmental education, 40.6% respondents said that Geographic Information Systems was used in their educational institution in imparting environmental education and 51.8% respondents said that internet or world wide web was used in their educational institution in imparting environmental education.

Majority of the respondents feel that their educational institution includes Alternate Energy (92%), Environmental Health (91.8%), Carbon Cycle (89.4%), Climate Change (89.6%), Community Development (86.8%), and Agriculture (84.4%) while imparting environmental education.

Nearly 82.8% respondents said that some the listed green activities adapted within their campus. Out of those, nearly 76.2% respondents said that Recycling program green activity was adapted in their campus. In addition, nearly, 75.8% respondents said that their campus adapted policies to ensure hygiene of premise and 76% respondents said that garden is available within the campus. Plantation of trees (73.6%), Pollution control activities (75.4%) and Policies against using toxic substances are the other activities that was adapted within the campus

Table-8

Areas covered in the educational institution while imparting environmental education

Subject areas covered	No	Yes
General environmental education	107 (21.4%)	393 (78.6%)
Forestry	121 (24.2%)	379 (75.8%)
Solid Waste management	128 (25.6%)	372 (74.4%)
Pollution control	103 (20.6%)	397 (79.4%)
Natural resource management	109 (21.8%)	391 (78.2%)
Marine or fisheries	91 (18.2%)	409 (81.8%)
Water management	86 (17.2%)	414 (82.8%)
Agriculture	78 (15.6%)	422 (84.4%)
Biodiversity/ wildlife preservation	70 (14%)	430 (86%)
Community development	66 (13.2%)	434 (86.8%)
Urban management	61 (12.2%)	439 (87.8%)
Carbon cycle	53 (10.6%)	447 (89.4%)
Alternate energy	40 (8%)	460 (92%)
Sustainability	48 (9.6%)	452 (90.4%)
Population control	53 (10.6%)	447 (89.4%)
Climate change	52 (10.4%)	448 (89.6%)
Environmental health	41 (8.2%)	459 (91.8%)
Environmental laws	52 (10.4%)	448 (89.6%)

Table-9

Green Activities adapted in our Campus

Green activity	No	Yes
Recycling program	33 (6.6%)	381 (76.2%)
Waste reduction program	45 (9%)	369 (73.8%)
Pest management within premise	45 (9%)	369 (73.8%)
Reduction of carbon emission	96 (19.2%)	318 (63.6%)
Water resource management activities	106 (21.2%)	308 (61.6%)
Food waste management	111 (22.2%)	303 (60.6%)
Policies to ensure hygiene of premise	35 (7%)	379 (75.8%)
Pollution control activities	37 (7.4%)	377 (75.4%)
Garden within campus	34 (6.8%)	380 (76%)
Plantation of trees	46 (9.2%)	368 (73.6%)
Policies against using toxic substances	46 (9.2%)	368 (73.6%)

Nearly 44.4% respondents feel that the present environmental education in India contributes towards sustainability (Chi – Square test statistic = 34.468, p – value = 0.000 < 0.05). This means that the education institutions in India shows high importance over the environmental education with specific emphasis to sustainability and various environmental education patterns

Table-10(a)

Present Environmental Education

	Observed N	Expected N	Residual
Yes	222	166.7	55.3
No	115	166.7	-51.7
Maybe	163	166.7	-3.7
Total	500		

Table 10 (b)

Test Statistics

Present Environmental Education	
Chi-Square	34.468 ^a
Df	2
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 166.7

Nearly 41.9% respondents feel that the present environmental education in India contributes towards sustainability. They also agree that lot of time is not allocated for teaching sustainable environment as a subject to students (Chi – Square test statistic = 16.820, p – value = 0.032 < 0.05).

Results and Discussion

The following are the answers to the proposed research questions about the study.

RQ1: What are the flaws existing in the current environmental education patterns adapted at present in Indian educational institutions: It was seen that in the educational institutions, a lot of time is not allocated for the teaching of sustainable environment as a subject to students. The management of the educational institutions finds it difficult to avail funds for offering high quality sustainable environmental education and they also find it difficult to access resources necessary for offering high quality sustainable environmental education. Some of the other challenges that exist in the current environmental education patterns present in the Indian educational institutions are that the teachers / lecturers are not at all offered with adequate resources by the management to impart sustainable environmental education and also most of the teachers / lecturers lack sufficient knowledge to impart sustainable environmental education. Added to that, students also do not give importance in learning environment as a subject since they consider it to add no academic value to them.

RQ2:What is the various environmental education patterns adapted at present in the educational institutions in India?: The environmental circumstances and the arrangement of India are very wide. India is a country that is to a great extent diversified on the foundation of geologically, edaphically, fantastically, lingually, economically, climatically, geographically, floristically, ethnically, economically and socially. So that, the education regarding environment in India, is specific to the location. the Indian education system gives high

Table-11 (a)
Crosstab for Present Environmental Education in India

			Time constraint					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Present Environmental Education	Yes	Count	32	14	33	93	50	222
		% within Present Environmental	14.4%	6.3%	14.9%	41.9%	22.5%	100.0%
	No	Count	10	11	7	57	30	115
		% within Present Environmental	8.7%	9.6%	6.1%	49.6%	26.1%	100.0%
	Maybe	Count	13	20	27	62	41	163
		% within Present Environmental	8.0%	12.3%	16.6%	38.0%	25.2%	100.0%
Total	Count	55	45	67	212	121	500	
	% within Present Environmental	11.0%	9.0%	13.4%	42.4%	24.2%	100.0%	

Table-11(b)
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.820 ^a	8	.032
Likelihood Ratio	17.848	8	.022
Linear-by-Linear Association	.564	1	.453
N of Valid Cases	500		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.35.

importance to environmental education and it is that in India, the environmental education is conveyed in a greater part of schools and colleges. Also it is found from the study that the quality of the current environmental education system in India is remarkably good, while in some areas the system of environmental education in India requires improvement. It is very important to make conscious of family planning, rural development, sanitation, food and water contamination, fuel wood, nutrition, slum improvement, hygiene, fodder etc.

RQ3: How is environmental education important in the attainment of sustainability?: The environmental education is the mechanism and a tool for the development of sustainability. The environmental education helps environment in a number of ways. Added to that, it helps the society by providing a critical likeness of the world. This is specifically its failings and awful injustices, and by the way of endorsing greater consciousness and awareness, analyzing new terms and vision and discovering fresh techniques and tools. It is that the environmental education is the superior expectation of humanity and the most efficient means to accomplish sustainable development. It is that the environmental education might not be associated with the schooling education or formal environmental education alone. This includes the non-formal and informal medium of instruction and learning and also comprises of the conventional knowledge that are obtained in the home and community.

Conclusions

The following are some of the suggestions that are recommended to improve the environmental education in India.

Content of environmental education should be modified: At present, the content of the Indian environmental education is not much attractive and informative for the students. It should be enhanced in such a way that it expresses a clear association to the environment and the environmental concerns. The content must help highlight an incorporated thematic or an interdisciplinary approach in which the ideas are uttered through big ideas and unifying themes rather than the isolated segments. The content should associate the learning with the actual world. Personally it has to be applicable to the learners and include issues that are significant to the society and also it should equip the learners with the adequate skills in order to continue learning all through the life.

Design of the course material: The course material should be intended so that it is practical by nature, specific to the locale and endorses a holistic understanding of the particular area's environment. Also the material should establish an association among the day – to – day life and actions of the students and that of their environment.

Development of sustainability: The sustainability of the program depends on the recognition by the teachers and their capability to provide the course efficiently. The training of the teachers should be considered as a main concern within the proposal. Camps should be arranged in order to train the teachers from time to time. Also a manual should be offered to teachers in order to enable them to guide the students in their practical work and also the self - contained and self-explanatory workbooks should be provided.

The above recommendations when followed will help in improving the environmental education in India.

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