



## Environmental awareness of the visually impaired students : an explorative study

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### Abstract

The existence, survival and progress of mankind in this world are largely dependent on the quality of environment as a whole. Today there is environmental crisis in man's life due to over consumption of natural resources. Truly speaking, the problems of varied nature in human life are directly or indirectly related to the environment not because people are unaware or have less knowledge about their environment, but because, people are developing a careless attitude towards their environment. Even 'educated-elite' and so called environmentally aware section of people are contributing more in destroying their environment as their needs are more. We live in a world of diversities and individual differences. None of us is identical in true sense either physically or mentally. Those who are fortunate known as gifted, talented and creative, possess superior capacities and potentials in abundance and the unfortunate ones called disabled or impaired are found to suffer from some deficits and deficiencies. Amongst the impaired group, the Visually Impaired (VI) are the most unfortunate in the sense that they cannot see this beautiful environment through their eyes. Therefore, the modest objective of this paper is to explore how much this category of people is aware about their environment. The sample of the study is comprised of 60 VI students studying in class VI to class X in a high school of a metropolitan city of north-east India. The investigator has used self-structured standardized data gathering tools to know the awareness of the VI students towards their environment where they live. To test the hypotheses, appropriate statistical technique has been used. The findings of the study reveal that in spite of being deprived of observing the environment through their eyes, the VI students possess high awareness and clear perception towards the environment.

**Keywords :** Environmental Crisis, Environmental Awareness, Visually Impaired.

### 1. Introduction

The existence, survival and progress of mankind in this world are largely dependent on the quality of environment as a whole. Man's environment consists of natural as well as manmade, i.e. socio-cultural, political, economic, education, psychological etc. Today, there is environmental crisis in human life due to overconsumption of natural resources, over-population, urbanization, industrialization and unscientific attitude of mankind. But if we turnover the pages of history, it is found that

without the knowledge of environmental education, man had been aware of the importance of environment since the very beginning of his religious, intellectual and cultural development. Even in the Rig-vedic period, man and environment were so integrally knitted together that it was difficult to think of man as something separate from the natural environment.

Vedic sages had knowledge about the importance of various floral and faunal environments for survival of the community and therefore, these were included in religion so as to preserve and protect those.

But now man is exploiting the natural environment to his will. The situation is gradually becoming so alarming that the natural environment is being affected seriously, challenging the survival of many species including man himself. Building up of strong awareness among the people mainly in the students is one of the potent strategies for protecting our environment. The awareness can be aroused only through education. With recent developments and advances, Environmental Education is virtually a new source of concern for educators, teachers and students. During the last four decades, Environmental Education has assumed greatest importance worldwide. "If you have a plan for a year, plant rice, if you have a plan for 10 years, plant trees and if you have a plan for 100 years, educate people." So education is a strong weapon to change the attitude of the people against all evils.

In the international seminars and conferences starting from Stockholm (1972), Belgrade (1975), Tbilisi Conference (1977), United Nation's Conference on Environment and Development held in Rio-de-Janeiro (1992) and in the World Summit on Sustainable Development held at Johannesburg (2002), all have considered Environmental Education as one of the most powerful instruments in understanding, protecting and preserving environment from further degradation.

Environmental education is defined as the "process of providing learning experiences to obtain knowledge, understanding, skills and awareness with desirable attitudinal changes about man's relationship with natural and man-made surroundings which includes the relation of population, pollution, resource allocation, transportation technology and urban & rural planning to the total human environment. Environmental education should be a continuous life-long process, beginning at the pre-school stage level and continuing through all formal and non-formal stages and should be interdisciplinary in making possible a holistic and balanced perspective."

Environmental education aims at developing in child the awareness and understanding of the physical and social environment in its totality. Therefore, schools are the most suitable places for sensitizing the students towards environment.

Prior to 1991, there was no separate subject in our formal educational system to develop environmental awareness among the students in India. In 1991, the Hon'ble Supreme Court of India asked the concerned authorities to take immediate steps to introduce compulsory education on environment in a graded manner from 1992-93 in the school curriculum. But unfortunately no state came forward to implement the decision of the court for which the apex court again directed (2003) all the states and union territories to include environment as a subject in school & college syllabi from 2004-05. The Hon'ble Supreme Court of India made the verdict following the petition filed by noted environmentalist and lawyer, M.C. Mehta. From 2005, in Assam (one of the states of India) also, schools under State or Central Board introduced Environmental Education as a separate subject.

Many questions arise when one is considering about the teaching of Environmental Education to the disabled children, specially to the visually impaired students, like –

- Do they possess concepts regarding ecology, pollution, disaster etc.?
- How can they manage to gather knowledge on environmental education like other subjects?
- How far do they able to assume or feel the severity of environmental problems like the normal children etc. etc.

Children With Special Education Needs (CWSN) require special inputs in educational field. They find it difficult to learn without special inputs. Amongst all categories of disabled children, the Visually Impaired (VI) are the most traumatic in the sense that without observing this beautiful environment through their eyes, they have to gather knowledge and bound to understand the environment to feel the severity of environmental crisis faced by the human society.

In the light of the above discussion, it is necessary to explore the extent of environmental awareness possessed by the visually impaired children and how much do they understand about the environment and its different issues. The study will also try to find out the present status of Environmental Education as a subject in school meant for VI children. The findings of the study will help not only the teachers but also will help the curriculum designer as well as administrators to arrange and include various programmes of environmental education to facilitate the Visually Impaired children to understand the environment where they live in. Hence, the rationale for the present piece of investigation can be explicated.

## 2. Objectives of the study

The study was based on the following objectives –

- a) To find out the level of environmental awareness of the VI students.
- b) To explore the extent of knowledge and understanding of the VI students about the environment.
- c) To study the status of environmental education as a subject in the school meant for VI students.

## 3. Hypotheses

Following hypotheses were framed on the basis of the objectives :

**H<sub>0a</sub>** : The VI students do not have awareness towards the environment.

**H<sub>0b</sub>** : The VI students do not possess sufficient knowledge and understanding about their environment.

**H<sub>1</sub>** : The present status of environmental education in school meant for VI students is satisfactory.

## 4. Methodology

**4.1 Method** : The present study has been designed to explore the Environmental Awareness of VI students falls under descriptive survey method of educational research.

**4.2 Sample** : The population of the study comprised of all the visually impaired students studying in class VI to class X under Secondary Board of Education Assam (SEBA), India.

There is only 1 (one) government high school (provincialised) meant for visually impaired students in Guwahati, a growing metro city of north-east India. The school is fully residential in nature with limited enrolment capacity, where students(visually impaired) from all over Assam including a few from north-east India are been enrolled. Therefore, Guwahati Blind School, a vernacular medium school situated at this metropolitan city of north-east India has been taken as the sample school for the study. Keeping in mind the limited number of visually impaired students in that school, all the students studying in class VI up to class X have been taken as sample by following the purposive sampling procedure. So, 60 numbers of students from class VI to class X have been taken as sample of the study. The school is under Board of Secondary Education, Assam (SEBA).

**4.3 Tools used** : A self-structured Environment Awareness interview schedule having statements was prepared for the visually impaired students. The interview schedule was comprised of 50 statements having 3 options. 3 levels of awareness were taken into consideration on the basis of 3 options like - Strongly Agree ↔ High Awareness, Agree ↔ Aware, Strongly Disagree ↔ Low Awareness. The statements were based on common components of environment like – different types of pollution and diseases related to pollution, health and hygiene, population explosion and its harmful effect on environment, ecology, global warming, environmental protection movements, natural resources and their conservation, effects of polythene, ozone layer, UV radiation, wildlife, environment protection laws, environmental ethics etc. Besides, some additional statements were incorporated in the schedule to know the present status of environmental education in the school.

**5. Delimitation of the study :**

- The study was delimited to one vernacular medium government high school of Guwahati , a growing metropolitan city of north-east India.
- Only 60 (sixty) number of students were taken as sample students.
- All sample students were Visually Impaired (VI).
- Only 10 (ten) very simple environmental components were taken into consideration for preparing 50 (fifty) statements for the interview keeping in mind their disability.

**6. Analysis and interpretation of the data :**

Data collected were systematically arranged on three awareness levels, like— High Awareness (HA), Aware (A), and Low Awareness (LA) on the basis of the interview on different environmental components (Table 1).

**6.1 Analysis of Null Hypotheses  $H_{0a}$  and  $H_{0b}$** 

**$H_{0a}$**  : The VI students do not have awareness towards the environment.

**$H_{0b}$**  : The VI students do not possess sufficient knowledge and understanding about their environment.

**Table - 1** : Environmental awareness score of VI students.

Sl. No.	Environmental components	Awareness, knowledge & understanding level regarding	Awareness level score			
			HA	A	LA	
1	Environmental Pollution	Air, water, soil & Radioactive pollution.	15	37	8	
2	Diseases related to pollutants & hygiene	Related to common pollutants, water borne disease, bronchitis, asthma, related to poor personal hygienic.	10	42	8	
3	Ecology & ecosystem	Man-environment relationship, different kinds of ecosystem, food chain & food web	8	39	13	
4	Natural resources	Renewable & non-renewable resources.	20	36	4	
5	Eco-friendly technology	Wind generated power, solar energy, bio gas etc.	8	31	21	
6	Population explosion	Problem of food, shelter, man-made disaster.	15	31	14	
7	Environmental protection movements	Chipko movement, narmada bachao andolan, big dams etc.	10	32	18	
8	Ozone layer & UV Radiation	Ozone hole, CFCs, cosmic rays.	21	27	12	
9	Green house gases	Green house gases, long waves, short waves.	18	35	7	
10	Global warming	Causes & producers of green house gases, impact of global warming on climate change, measure to minimize.	25	30	5	
<b>Total no. of VI students : 60</b>			<b>Average score :</b>	<b>15</b>	<b>34</b>	<b>11</b>

### 6.2 Interpretation of Table - 1

After putting the data into their respective awareness level, it is found that out of 60 VI students, 15 show High Awareness (HA) towards environment, judged on the basis of knowledge and understanding possessed on different environmental components and issues; 34 VI students show Awareness (A) but not high towards their

environment and 11 students show Low Awareness (LA) towards their environment (Table - 1).

To test the significance of awareness, knowledge and understanding of visually impaired students ( $H_{ob}$ ) towards their environment  $\chi^2$  (chi-square) test is applied (Table - 2) on the basis of Table - 1.

**Table - 2 :**  $\chi^2$  (chi-square) values of different environmental components related to environmental awareness, knowledge and understanding of VI students.

Sl. No.	Environmental components	(chi-square) value	Level of significance
1	Environmental pollution	22.8	**
2	Diseases related to pollutants & hygiene	36.4	**
3	Ecology & ecosystem	27.7	**
4	Natural resources	25.6	**
5	Eco-friendly technology	13.3	**
6	Population explosion	9.1	*
7	Environmental protection movements	12.4	**
8	Ozone layer & UV Radiation	5.7	N.S.
9	Green house gases	19.9	**
10	Global warming	17.5	**

df = 2      \* P > 0.05 = 5.991  
 \*\* P > 0.01 = 9.210

### 6.3 Interpretation of Table - 2

From the result of the ' $\chi^2$ -test', marked divergence is significant. The results of the study show that the VI students are not only aware about their environment but also possess a good deal of knowledge and understanding regarding environmental related issues. Table-2 reveals that, the calculated values of  $\chi^2$  except serial number 6 and 8, all are found to be significant at 1% level of significance. However, the knowledge and understanding level of VI students regarding only one environmental issue i.e. ozone layer and UV radiation is found to be not significant. Hence,

both the null hypotheses are rejected. VI students have good amount of knowledge as well as awareness towards their environment. But due to non-availability of suitable Teaching Learning Materials (TLM), they do not possess vivid understanding regarding some of the environmental components.

### 6.4 Analysis and interpretation of hypothesis $H_1$

The investigator went through the environmental education subject introduced by Board of Secondary Education, Assam known as SEBA. The subject's knowledge is evaluated under

grading system. The school does not have sufficient aids and TLM like tactile maps or models to give geographical knowledge to the students, but still they are very enthusiastic to know about their environment. All the portions of subjects like General Science are not taught to the VI students due to non-availability of practical method, aids and apparatus meant for them. Therefore, the scientific understanding is lacking in case of environmental education also. Regarding pollution, environmental disaster, natural resources and wildlife etc., the VI students possess fair knowledge and their valuable suggestions in this regard may also be counted. Senses play a very important role in concept formation. Though the VI students do not have visual ability, but most of the concepts they form through smell-based feeling. Their olfactory sense is very strong.

It has been found that the present status of environmental education in the school meant for VI students is not very satisfactory. The common syllabus is followed without proper guideline for the teachers how to teach the differently-abled children. The VI students possess different skills but sufficient scope for their outlet is not been provided. Therefore, hypothesis  $H_1$  is also rejected.

## 7. Discussion and conclusion

VI children are one of the parts of a nation's Human Resources and our endeavour should be to empower and infuse all kinds of knowledge & understanding to these children. But unfortunately,

our society continues to treat disability with apathy and they are still segregated from the normal society. Different studies show that these children have different talents in abundance, only proper outlet has not been provided to them to exhibit their talents. We are suffering from different environmental crisis due to over-consumption of natural resources. As 5% population of the world constitutes the disabled group, so, they should also be properly made aware towards their environment. The study reveals that although the VI group of children is quite aware about their environment but still the status of environmental education in the school meant for VI children is not satisfactory & successful.

A comprehensive and workable approach in this regard is necessary for giving proper knowledge and understanding, mastery skills, developing environment-friendly attitude and behaving in a responsible way with commitment to preserve and protect our mother earth. For that tactile and kinaesthetic devices are to be developed for VI children to give vivid concepts on environment, mobility devices and assisted movements to be developed, navigation strategies like land marking, auditory perception features to be used at school.

The study explores that sensory impairment does not come in the way of developing environmental awareness and it can be concluded that the visually impaired students possess fair knowledge and awareness towards environment.

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