

STUDENTS CONSCIOUSNESS ON ENVIRONMENT – A STUDY

Arunraj*

Assistant Professor

Department of Education

M.E.T. College of Education

Dr. K.C. Bindhu**

Abstract

The world is facing rather passing through many crises but the most dangerous crisis is that of gross and constantly increasing pollution of the environment. Needless to say that if immediate attention is not paid, ways are not rooted out; plans are not implemented in their right direction to put a check on the growing hazards of pollution the entire humanity may be in the grip of destruction, devastation and it may be a sigh of doom and loom for all of us. For this, proper environmental education is inevitable if we are to attack the problem, not only at the roots but also with a view to have a final salvation to our growing gigantic problems of the devilish pollution. This study made an attempt to find out the level of consciousness on environmental awareness among higher secondary school students in Kanyakumari District, Tamilnadu, India. Random sampling technique has been used by selecting 600 higher secondary students from rural and urban. The study was adopted by interview technique by various teaching faculty. The findings of the study create new insight that students taught by teachers adopting various methods of teaching for transacting the curriculum and conducts tests periodically differ in their Public Awareness on Environment.

Introduction

Environment refers to surroundings those natural things around us, from the essentials which sustain human life, such as the earth's atmosphere or healthy air or drinkable water, to the non-essentials that nevertheless make life sustainable, such as wild animals, clean places or human living space. Thus the environment is not just partly trees and tigers, threatened species of birds, animals and plants and the acro-systems. It includes the entire entity on which we live and on which our agricultural and industrial development depends. Savings or preservation of the essential ingredients of life and of the rich natural diversity of the planet is consequently necessary for healthy existence.

The environment has become the world's common problem. The environmental health of a country is in fact an indicator of the quality of life of the people. The need for an environmental ethic is now universally accepted. The environment is in grave danger, but it can certainly be saved. Conservation has necessarily to be adopted as a long term strategy. It must be made a mode of life. We need air, water and adequate land of sufficient quality to sustain life. Continuous research and monitoring have to be done to ensure that these precious resources are preserved. The importance of their preservation is apparent from the fact that air, water land are finite, limited sources. And can be exhausted. To use a term of economics, air, water and land must be regarded as capital, not as income. Even the Vatican and the Holy see, representing the pope, said "steward-ship of the resources of the physical,. World has always been a key concern of religion".

Besides this, it will be worthwhile to note that atmosphere implies both natural as well as social in natural atmosphere generally, air, water, trees, vegetables are included. Again it is divided in to two parts biological and non-biological. There may be further sub division such roots of bio-atmosphere in the forms of generator, consumer and destroyer. Under natural atmosphere all the living beings fall under the head of consumer. The second atmosphere takes into its compass social, economic, political and family relations.

Pollution: A World Wide Problem

The United Nations has repeatedly expressed deep anxiety over the ceaseless pollution all over the world and the innumerable problems it creates. Y. Naidymma has rightly stated that the unlimited exploitation of the natural resources has led to dangerous consequences and now there are only tow ways left before the entire human race for its existence one is to make the environment useful keeping the needs of life while the other is to put a check on waste material along with the use of natural resources. Following are causes of pollution:

1. Rapid rate of Development
2. Chemical pollution
3. Acids Rains
4. Disturbing the nature
5. Population pressure

Environmental Education

According to the IUCN commission of Education (1970) “Environmental Education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture and his bio-physical surroundings. Environmental education also entails practice in decision-making and self-formulation of a code of behaviour about issues concerning environmental quality”.

According to the Finnish National Commission for UNESCO (1974) “Environmental Education is a way of implementing the goals of environmental protection. Environmental education is not a separate branch of science or subject or study. It should be carried out according to the principles of life-long integral education”.

According to the report of a conference of African Education Nairobi (1968) “Environmental Education is to create awareness and an understanding of the evolving social and physical environment as a whole, its natural, man made cultural, spiritual resources, together with the rational use and conservation of these resources for development”.

According to krasilchik “Due to mechanism of cultural dissemination, there is a tendency in underdeveloped countries to suty and worry more about problems typical or regions in an advanc4ed stage of industrialization, than about those themes which to them are more typical and more urgent/ thus, topics related to the different types of industrial pollution and the inappropriate use of natural resources are very popular, while problems of neutrino basic sanitation, housing, agriculture and employment do not receive the attention that they deserve in studies dealing with Environmental Education”.

According to Atchia “Environmental Education can be seen as a progression through a concentric series of environment zones of decreasing familiarity, defined in terms of spatial, social and temporal characteristics, and taking into account the internal environment, (Physical and Mental environment) as well as the external environment”.

The general aim of Environmental Education has been stated and restated many times. The aim of Environmental Education is to improve the quality of life through an understanding of an environment, the eco-system, and the factors that affect living things. Environmental Education is a holistic approach towards a comprehensive, interdisciplinary study of the Environmental issues. Environmental Education seeks to improve the responsibility for Environmental conservation.

Present Status Of Environmental Studies

Environmental studies are largely experimental with an emphasis placed on field work, so that Environmental problems can be studied in the systems where they occur. Perceived in different ways in different institutions and nations, Environmental studies have not progressed as a distinctive integrated discipline. Instead, it is an evolving field, developing in response to the growing concern with national and international Environmental problems. Environmental studies are usually problem focused rather than discipline centered. They are often organized around broad themes of Environmental management and involve a detailed study of one or more of the following topics:

Land use, pollution abatement and prevention protection of nature and natural resources use and human ecology. Programmes may include various mixes of the basic disciplines (Biology, Geology, Metrology, Chemistry and Mathematics etc), Management Studies (Engineering Sciences, Computer Science, Systems Analysis, Forestry and Wildlife Management), Planning Studies (Landscape Architecture, Urban and Regional planning) and policy area (Law, Public Administration, Business and Political Science).

The basic objectives of Environmental studies are to provide specialists with a wide understanding of Environmental problems; provide them with an in-depth knowledge of a particular professional field and to educate generalists and to help them understand and Environmental systems that are being studied or managed. The term Environmental studies has been used some what loosely to cover any organized programme of study or individual course whose purpose or effect is to produce greater awareness or improved understanding of the complex elements of the nature and manmade Environments and of the impact of the Environment on human life.

Towards A Philosophy For Environmental Education

National education systems are generally considered to be rooted in some philosophy, some system of beliefs, ideology, or convictions, about living from which certain ethical or moral principles and certain values are extracted to serve as the desired goals of education.

The educational process then concerns itself with the encouragement of those values, attitudes and actions which reflect the national philosophy. The last five centuries however, have brought the world closer together and so, educational philosophy as well as other cultural features has crossed national frontiers. Thus the call for v education becomes a call for global action in response to the problem of the abused Environments physical and social of the whole world.

The tenets of the new philosophy translated into an all embracing goal for the guidance of teachers of Environmental education were expressed at the Belgrade workshop (1975) in this way:

- be interdisciplinary in its approach, drawing on the specific content of each disciplines in making possible a holistic and balanced prospective;

- examine major Environmental issues from local, national, regional, and international points of views so that students receive insights into Environmental conditions in other geographical areas;
- focus on current and potential Environmental situations, while taking into account the historical perspectives;
- Promote the value and necessity of local, national and international co-operation in the prevention and solution for Environmental problems.
- Help learners discover the symptoms and real causes of Environmental problems;
- Utilize diverse learning Environments and a broad array of educational approaches to teaching / learning about and from the Environment with due stress on practical activities and first hand experience.

It follows from these objectives and guiding principles that there is a certain knowledge component which is essential as a base for building the skills and fostering the attitudes which are the main focus of environmental education.

Significance Of The Study

Environmental problems cannot be solved merely by technologies, legislative regulations and administrative restructuring unless there has been a change in the life style of people and patterns of development. Environmental Education is the basic towards the inculcation of proper Environmental values and sensitivity. In the Environmental Studies programme, the learning is through activities based on observation of the local Environment. Children are encouraged to investigate their immediate Environment as well as to perform experiments using locally available resources. There is an urgent need to gear up our activities concerning Environmental education in our country. To generate understanding and to enable handling the problems of Environment, the educational system needs to be revamped. A strong Environmental understanding may result in a strong concern for the protection and conservation of Environment. Education is the best instrument to develop the Environmental understanding among students. The present study will help to modify the present curriculum according to the need. Hence there arises a need to carry out this investigation.

Objectives Of The Study

The following are the objectives of the present investigation.

- To find out the differences in the higher secondary school students consciousness on Environment based on the following variables.
 - a. locality
 - b. sex
 - c. types of school
 - d. methods of teaching

Hypothesis Of The Study

1. There is difference in the all Public Awareness on Environment students taught by teachers adopting different methods of teaching for transacting the curriculum.
2. There is difference in the Public Awareness on Environment of the students taught by teachers who conduct small tests after every two weeks and at the end of each month for transacting the curriculum.

3. Students taught by teachers giving different types of encouragement differ in their environmental awareness.
4. The students taught by teachers who conduct educational tour and who do not conduct educational tour for transacting the curriculum differ in their Public Awareness on Environment.
5. The students of urban and rural schools differ in their Public Awareness on Environment.

Sample

Six hundred higher secondary students from Kanyakumari District, Tamilnadu, in India has selected as sample. It includes three hundred boys and three hundred girls.

Tools Used

The investigator collected the data for this study through the Achievement test and Interview. The public awareness on environment among students is assessed by interview conducted with the help of teachers. The investigator conducted an interview with twelve, teachers of twelve colleges. Their opinions about time duration for completing one lesson, the methods of teaching, the use of Audio-visual aids in the class room, Physical arrangements of the class room, extra curricular activities and the library facilities etc., are noted by the investigator.

Statistical Techniques Applied

Mean and SD's are calculated. The investigator applied CR test for finding out the difference between variables.

TABLE -1

SHOWING THE VALUES FOR THE TOTAL SAMPLE

N	Mean	Median	Mode	SD	QD	SK	K
600	37.68	35.92	48.4	12.58	10.105	-1.986	0.31

The distribution is said to be negatively skewed. Since the obtained value of kurtosis for the distribution is 0.31, the distribution is platy Kurtic

Hypothesis – 1

There is difference in the Public Awareness on Environment of the students taught by teachers adopting various methods of teaching for transacting the curriculum.

TABLE – 2

Sources of variations	df	Sum of squares	Mean	f	p
Between sets	5	6253.14	1270.63	13.25	Significant at 0.01 and 0.05 levels
Within sets	944	82272.66	83.25		

The computed 'f' value 13.25 is higher than the table value at 0.01 and 0.05 levels of significance. Hence the hypothesis is accepted. It is inferred from the above table that the difference in the Public Awareness on Environment of students taught by teachers who adopt various methods of teaching for transacting the curriculum is significant. Hence the scores are further analyzed.

TABLE – 3

GROUPS	MEAN	SD	t	P
--------	------	----	---	---

Lecture method	28.5	9.27	4.51	S
Play way method	28.6	9.85		
Lecture method	28.5	9.27	8.53	S
Demonstration method	34.9	8.81		
Lecture method	28.5	9.27	2.83	NS
Discussion method	26.3	11.14		
Lecture method	28.5	9.27	1.31	NS
Observation method	25.83	10.23		
Play way method	28.6	9.85	4.80	S
Demonstration method	34.9	8.81		
Play way method	28.6	9.85	3.53	S
Discussion method	26.3	11.14		
Play way method	28.6	9.85	3.63	S
Observation method	25.83	10.23		
Demonstration method	34.9	8.81	7.62	S
Discussion method	26.3	11.14		
Demonstration method	34.9	8.81	7.46	S
Observation method	25.83	10.23		
Discussion method	26.3	11.14	0.43	NS
Observation method	25.83	10.23		

From this table it is made clear that the comparison of the achievement of the students taught by teachers adopting lecture method Vs Discussion method Vs Observation method do not differ in their Public Awareness on Environment. But in the other methods of teaching the students differ in their Public Awareness on Environment. From the mean achievement scores it can be observed that even for students demonstration method is suitable than any other method.

Hypothesis – 2

There is difference in the Public Awareness on Environment of the students taught by teachers who conduct small tests after every two weeks and at the end of each month for transacting the curriculum.

TABLE – 4

SMALL TESTS	MEAN	SD	t	P
After two weeks	33.37	12.93	5.51	S
End of the month	24	9.10		

The obtained 't' value 5.51 is greater than the table value at 0.01 and 0.05 levels of significance. Hence the hypothesis is accepted. The table indicates that the students perform better when test is administered after two weeks of teaching a unit than such a test given at the end of the month.

Hypothesis – 3

Students taught by teachers giving different types of encouragement differ in their Public Awareness on Environment.

TABLE – 5

ENCOURAGEMENT	MEAN	SD	t	P
---------------	------	----	---	---

Oral appreciation	27.1	10.77	1.1	NS
Prizes	28.25	10.36		

The above table indicates that the students taught by teachers giving different type of encouragement do not differ in their awareness, since the obtained 't' value is less than the table value at 0.05 and 0.01 levels of significance. Hence the hypothesis is rejected.

Hypothesis – 4

The students taught by the teachers who conduct educational tour and who do not conduct educational tour for transacting their Public Awareness on Environment.

TABLE – 6

EDUCATIONAL TOUR	MEAN	SD	t	P
College conduct educational tour	23.36	10.42	1.63	NS
College do not conduct educational tour	28	10.66		

The obtained t' value 1.63 is higher than the table value at 0.01 and 0.05 levels of significance. Hence the hypothesis is rejected. The above table shows that there is no difference in the Public Awareness on Environment of students studying students taught by teachers who conduct educational tour and who do not conduct educational tour for transacting the curriculum.

Hypothesis – 5

The students of urban and rural schools in their achievement in Public Awareness on Environment.

TABLE – 7

VARIABLES	MEAN	SD	t	P
Urban	28.3	10.11	4.19	S
Rural	25	9.17		

The obtained t' value 4.19 is higher than the table value at 0.01 and 0.05 levels of significance. Hence the hypothesis is accepted. From the scores it is found that students in urban school score is high in Environmental science. This can be attributed to the availability of facilities in urban colleges.

Major Findings And Its Implications

- *Students taught by teachers adopting various methods of teaching for transacting the curriculum differ in their Public Awareness on Environment.*

The teachers adopt various methods of teaching like lecture method, play way method, discussion method, observation method and demonstration method. But it is found that the students learn faster when demonstration method is used. This finding supports the study of Swantantra Devi (1992) were she suggested a few activities to facilitate teaching and learning process of environmental knowledge to secondary school students. The study suggested demonstration method as effective strategy and also delineated the benefits and risks involved in sticking to a single strategy.

- *Students taught by teachers who conduct small tests after two weeks and at the end of each month for transacting the curriculum differ in their Public Awareness on Environment.*

After completing one lesson the teachers give special attention to his students and assess the Public Awareness on Environment. Some teachers conduct small tests after two weeks and others at the end of one month. The analysis of data shows that the students taught by teachers conducting small tests after two weeks show high achievement in environment. It implies that small tests conducted frequently help in learning. “Nothing is more revealing of the purpose underlying a course of study than the nature of examinations given at its close. Nothing is more effective in telling the students what we want him to do than the method we take of finding out whether or not and how well he has done it”. Alexander Meikle-john. So teachers have to ascertain very frequently the growth and change, taking place in pupils as a result of teaching learning experience against the back ground of anticipated objectives. So the process of evaluation is not restricted to the results of the tests or the teachers estimate only. It also includes the learner’s estimates. It tests their abilities. E.B.Wesley states, “Evaluation is an inclusive concept which indicates all kinds of efforts and all kinds of means it ascertains the quality, value and effectiveness of desired outcomes. It is a compound of objective evidence and subjective observation. It is the total and final estimate. It is a valuable and indispensable guide to modifications of policies and further action”.

➤ *The students of urban and rural colleges differ in their Public Awareness on Environment*

The corporation area students score more in environment than the panchayats union area schools students. This result supports the findings of Mutlauri (1981) study that rural students had significantly less ecological knowledge. The year of the two studies has a huge gap but the level of changes is very less. The corporation areas are situated in the city areas and they have all facilities like mass media – TV, radio, newspapers etc. This influences the students’ Public Awareness on Environment in a positive manner but in rural areas lack of such facilities affect the student’s awareness. Hence facilities are to be provided in rural schools also since this will help in transacting the curriculum in a better way.

- Students taught by teachers giving different types of encouragement do not differ in their Public Awareness on Environment.
- The standards taught by teachers who conduct educational tour and who do not conduct educational tour for transacting the curriculum not differ in their Public Awareness on Environment.

Conclusion

Education is the most effective tool for modifying the behaviour of individuals and of the community to create a new environment conscious citizenship in which man will come to understand his role and responsibility as a custodian of life. In the interest of present and future generations, all should take a vow to protect and make scientific, rational use of the land and its minerals and water resources and the plant and animal kingdoms to preserve the purity of air and water, ensure reproduction of natural wealth and improve human Environment. Understanding of the multidimensional problems of depleting resources, ever increasing population and long term planning is vital to the survival of human species. Environmental Education can lead the way to such an understanding by giving people the knowledge and conscious about the universe, society and individual, and by helping them in understanding their attitudes towards each other and their bio-physical and social environment. The place of

the Environmental education is a significant correlate of other cognitive experiences of school education.

References

1. Aitken, John and Mils, George (1989), *Scientific Problems Solving an introduction to Technology*, Belmont, CA.D.S. Lake Publishers.
2. Broad, William J. (1984) *Does Genius of Technology Rule Science?* New York, Times August.
3. Bringuier, J.V. (1980) *Conversations with Jean Piaget*, the University of Chicago Press.
4. Barnes, James, I., (1989), *Learning to solve Tomorrow's Problems the Technology*, Teacher, 48 (6) 25-29.
5. Bloch, Erich (1986) *Scientific and Technological Literacy One Need and the Challenge* Bulletin of Science, Technology and Society 6(2/3),138-145.
6. DUBEY R.M. "Human Ecology and Environmental Education" chugh publications., Allahabad India (1992)
7. DEOPURIA "A Comparative study of teaching science through Environmental and Traditional Approach in Schools" fourth survey of research in education, (1984).
8. Eijkelhoi, Hairrie MC. And Kortland.K (1988) *Broadening. The Aims of Physics Education in Development and Dilemmas in Science Education*, ED. Peter J. Fersham London. The Falmer Press.
9. Eraut, Michael and Squires, Geoffrey, (1970) *An Annotated Select Bibliography of Educational Technology* National Council for Educational Technology Books for schools Ltd., London.
10. ESHAN .A "An Evaluative study of the Environmental Education Programmes in the Primary Schools". Fourth survey of Research in Education (1985).
11. Grant M. and Squires (1971). *An Annotated Select Bibliography of Educational Technology*, National Council for Educational Technology.
12. GUPTA. A "Study of attitude of teachers towards Environmental education" Nehru Memorial Junior College, Pune, (1986)
13. Hare.R (1970) *Know How – A Student Guide to Project Work*, International Text Book Company, Insight Series, London.
14. James H. Street and Dilmus D. James (eds). *Technological Progress in Latin America* (1979).
15. Lamp. B (1970), *New Methods and Media in Further Education* National Committee for Audio – Visual Aids in Education, London.
16. Lewis. JL. And Kelly, P/J Edsi (1987). *Science and Technology Education and Future Human Needs*. New York: Pergamoni Press.
17. MAHARAN V.S. "Environment Protection challenges and Issues" Deep and Deep Publications New Delhi (1993).
18. Morris. F.C. (1950), *Effective Teachings: A Manual for Engineering Instructors*, McGraw – Hill, New York.
19. MUNDANTHRA BALAKRISHNA "Environmental Problems and Prospects in India" Oxford and IBH Publishing Co. Pvt. Ltd. Calcutta (1993).

- 20. MUTTAGAI I.A.** “Develop a Curriculum for Ecology which was suitable and effective in developing Environmental Literacy among the students”. III Survey of research in Education (1981).
- 21. NAJMA HEPTULLA** “Environment Protection in Developing Countries” Oxford and IBH Publishing Co. Pvt. Ltd. Calcutta (1993)
- 22. Nickson, Marylyn** (1971), Educational Technology, A Systematic Approach for Teachers, Ward Lock, London.
- 23. National Council for Educational Technology** (1969). Towards more effective learning, (The Report of the National Council for Educational Technology 1967-68). Education Press London.
- 24. Paul Harison** “Appropriate Technology” New Scientist (November 20, 1980) Science and Technology Times, New York Times.
- 25. Rahman** (1990), Science and Technology in India, Pakistan, Bangladesh, and Sri Lanka – Longman Group. UK Limited.
- 26. Skinner, B.F.** The Technology of Teaching Appleton – Century Crofts, New York.
- 27. Sherwood Washburn,** “Tools and Human Evolution” Scientific American, September 1960.
- 28. Trefo. Ka, es S** (1983). The Moment of Creation Prigt, Bang – Physics from Before the Multi second of the Present Universe, New York. Mac Millan.