

## **A comparative study of environmental awareness among the senior secondary school teachers and students in relation to their stream and locality”**

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### **Abstract**

The present study shows that male teachers are more aware than male students about environmental awareness. Female teachers are more aware than female students about environmental awareness. The study also revealed that about environmental awareness urban teachers are more aware than urban students. Rural teachers are more aware than rural students about environmental awareness. The study indicates that science teachers are more aware than science students about environmental awareness. The study investigates that arts teachers are more aware than arts students about environmental awareness.

**Key words:** Environmental awareness, Rural and Urban areas, Pollutions.

### **Introduction**

India is a unique country with great cultural diversity, associated with all kinds of climates and rich flora and fauna. Living in harmony with nature has always been emphasized with the philosophy to take from nature only what we actually need and not more. We must conserve resources for our future generations. The sum of physical, chemical and biological factors to which we are exposed to, constitute our environment.

Today, Environmental Education is an important segment within the educational system. It includes all educational activities consciously confronting and attempting to overcome the environmental crisis. The objective of Environmental Education is to acquire awareness and knowledge, develop attitudes, skills and abilities to participate in solving real life environmental problems. It is common knowledge that substance of human life is dependent on Mother Nature and as such environment has become a global concern and its protection is one of the challenging tasks facing the mankind today. “Conserve or perish” has become the slogan of mankind all over the world. The imminent threat to humanity comes from the destruction of the earth’s environment without realizing that the earth is the only nations across the Globe give ecology a low priority. The most urgent problem at the International level today is to maintain the balance of nature and to make the earth a safe and healthy place to lie in for the present and future generation.

So, due to all this, nature and environment have always been a source of human reflection and investigation and an intimate knowledge of the environment has been a crucial element in many human societies. Environment problems have been a matter of concern form people

in one way or the other for generations. It is perhaps to his and that in India all Student and teachers education programmes carry a component on environment education.

The term “environment” which etymologically means surroundings is considered as a composite term for the conditions in which organisms live and thus consists of air, water, food and sunlight which are the basis needs for all living beings and plant life, to carry out their life functions. The environment also includes other not living things, temperature, wind, electricity etc. In other words, environment consists of both biotic and biotic substances. Environment creates favorable conditions for the existence and development of living organisms. On the basis of kind of pollution involved we can classified as:

sewage pollution, thermal pollution, plastic pollution, marine Pollution, Smoke Pollution, chemical pollution, drug pollution, industrial pollution, oil pollution, acid rain pollution, etc.

**Air pollution** is defined as the occurrence of foreign particles or gases in the atmospheric which are harmful to man, vegetation, animals and buildings. Air pollutant is any solid, liquid or gaseous substance present in the atmosphere in such a concentration that it may or become harmful to human beings, other living creature, human assets, natural resources and environment. Most of the air pollution is natural due to dust storms, marsh gas, respiration of organisms, decay and decomposition, forest fires, spores, pollen grains etc. Only 0.05% of the air pollution is main- made but its amount is enormous  $5 \times 10^8$  tones. According to WHO, “ The substances put into the<sup>3</sup> air by the activity of mankind into concentrations sufficient to cause harmful effects to his health, vegetables, property or to interfere with the enjoyment of his property.

**Water pollution** is defined as the addition of some foreign substance (organic, inorganic, biological) to water or change in its physical properly that constitutes a health hazard or otherwise make it less fit or unfit for use. Water is said to be polluted when it contain ineffective and parasitic agents, poisonous, chemical substances, industrial or other waste or sewage. WHO defines water pollution as follows:

The river is polluted when the composition of water is changed as a consequence of the direct or indirect activity of man in such a way as to make it less suitable for certain or all purposes for which is suitable in natural state.As per WHO statistics, 80% in developing countries are related to unfit water supply and inadequate sanitation causing high child morality life expectancy and poor quality of life.In India more than million children below 5 years died from dehydration caused by diarrhoea annually while 280 thousand are victims of tetanus.

**Soil pollution** means addition of unwanted materials in the soil which render it unfit and unfertile resulting in reduced productivity of soil. The alkalination and acidification by addition of industrial waste, excess use of fertilizers, insecticides and pesticides are responsible for soil pollution. Biological causes e.g. excreta of man and animal waste water disposal open defecation. The land or soil pollutants remain for long period leading to

harmful effects. This change the physical and chemical properties of soil which reduced the productivity of soil.

There are numerous causes for the pollution of the environment but basic cause of all the pollution is man himself. He has befouled the clean cause land, water and air initially provided by nature. This has been caused through overuse, misuse and mismanagement of natural resources to fulfill not only the human needs but the greed.

Environment pollution is a world-wide problem. The protection of environment is thus a global issue and it is not as isolated problem of any area or nation. Notwithstanding worlds interconnected whole and winds that blow overt the countries are also one. If the nuclear test is carried out in one part of the world, the fallout may be carries by winds to any part of world and such fall out of irresponsible disposal of radioactive waste from a remote energy plant in one country may turn out to have greater adverse effect on the neighboring countries and its dangers are more even than of full-fledged war.

Environment pollution may also be defined as the unfavorable alteration of our surroundings, wholly largely as a by product of man's action, through direct or indirect effects of changes in energy patterns, radiation levels, chemical and physical constitution of organisms. These changes may affect man directly or through his supplies of water and of agricultural and other biological products, his physical objects or possessions or his opportunities for recreation and appreciation of nature.

Pollution befouls the air, poisons water and land. Pollutants released in the air pollute the air and make it unsuitable for breathing. Pollutants released in water bodies and on land (soil) damages their quality. Polluted water becomes unsuitable for drinking and quality of the soil gets degraded. The food produced in such a soil contains harmful substances. Our other natural resources which are part of our environment are gradually getting depleted and damaging the environment. Mining activities, quarries, brick klin activities, deforestation and dumping of garbage on the land and in water has caused large scale pollution of land and water.

Since humanity has become more concerned with the protection of environment, environmental education has assumed great importance. Environmental education is education through, about and for environmental. Its scope is, therefore, very wide. It begins from using environment as a medium of learning and includes all what great nature poets such as Kalidasa, Wordsworth and others have said in appreciations of nature and also all those scientists and scholars who have unfolded mysteries about our physical and social environment, and finally it includes all that we say and do for conserving our resources and for beautifying our surroundings including urban and country planning.

Thus, it will be seen that even before the formation of the National Association of Environment Education in the U.K. in 1972 and the enactment of the law on environmental

protection and conservation in 1972 in the U.S.A. Some sort of environmental education was being carried out by learned people including poets, naturalists, ornithologists, town and country planners etc. But as the problem has turned out to be serious, the emphasis has, however, recently been shifted from individuals and specific groups to nations and also to international bodies such as UNESCO and International Union for the conservation of Nature and Natural Resources (IUCN) in the hope that it may help people to know hazards and frightful aspects of environmental pollution leading to very serious consequences to the mankind.

In short, it can be said that environmental education is education through environment, about environment and for environment. It is both a style and subject matter of education is education through environment, about environment and environment. It is a both a style and subject matter of education. In so far as the style is concerned, it means using environment as a teaching-learning aid and as an approach to education. In so far as the subject matter is concerned, it means using environment as a teaching-learning aid and as an approach to education. In so far as the subject matter is concerned, it means teaching about the components and constitutes of environment. In so far as the subject matter is concerned, it means teaching for environment as a mean to control the environment, establishing proper ecological equilibrium which entails proper use and conservation of resources. It also includes proper environmental planning so that environment is not only functionally useful but is also aesthetically enjoyable. This aspect would include horticultural planning, rural planning, urban planning and planning of all other natural resources like rivers, stream, land use, wild life, forest etc.

Environment Awareness is the ABC of environmental literacy, Environmental Education, Environmental Issues, Environmental Programs and so on. **It is the First Step of the Ladder to Environmental Security for Sustainable Development.** Environment is closely linked to human beings and hence influences their health and quality of life. As such improving our environmental awareness and education will improve human health and well being of all.

Public education and awareness are the key factors in any attempt to maintain a proper balance and ensure sustainable development. Recognizing the potential of environmental education as an effective instrument in preventing environmental crises and as an essential element of sustainable development, Indian environmental society has been engaged in spearheading environmental education and awareness from the very beginning. IES has undertaken a few new projects on environmental education and is also continuing with some of the ongoing programs.

Education institutions play a very important part in the society and can in apt modes propagate these concepts easily –SASP for PAPP- Students Awareness to student participation. Environmental education has been an area of great concern for the last few years. Environmental education in schools is taught as a separate and interdisciplinary subject according to the syllabus framed by NCERT since 2004. The main objective of imparting

environmental education in school curriculum is to create awareness and knowledge, develop attitude, skill and abilities and prepare our students to participate in solving environmental problems. Education is a powerful instrument to control social problems. For the environmental awareness, union and state governments have made efforts. The programs conducted should study the level of awareness and attitude of the target group. The study of awareness remains an important one.

### Material and Methods

The present research method is “Survey Method”. This method is selected by the investigator because, it is concerned with the present and attempts to determine the status of the phenomena under investigation. It deals with “What is ?”

Its scope is very vast. It describes and interprets what exists at present. The survey method collect the following three types of information---

- i. Of what exist,
- ii. Of what we want, and
- iii. Of how to get there

### Data collection

For the present study, two hundred (200) senior secondary school teachers and students (60 teachers and 140 students) individuals are picked up as a true representative proportion of the population. This sample is taken from the senior secondary school teachers and students in district Hisar. For this sample, the simple random sampling technique is use.

#### SAMPLE OF SENIOUR SECONDARY SCHOOL TEACHERS AND STUDENTS IN DISTT. HISAR

Sr. No.	Name of the Colleges	Teachers	Students
1.	Jat Senior Secondary School, Hisar.	6	14
2.	Girls Senior Secondary School, Hisar.	6	14
3.	Govt. Senior Secondary School, Dabra.	6	14
4.	Govt. Senior Secondary School, Ladwa.	6	14
5.	Govt. Senior Secondary School, Dhiranwas.	6	14
6.	Jain Girls Senior Secondary School, Hisar.	6	14
7.	Govt. Senior Secondary School, Mirzapur, Hisar.	6	14

8.	Govt. Senior Secondary School, Talwandi Rana.	6	14
9.	Govt. Senior Secondary School, Gangwa.	6	14
10.	Snt. Sopia Senior Secondary School, Hisar.	6	14
<b>Total</b>		<b>60</b>	<b>140</b>

### **Tool Used**

After the selection of the sample, next step is to select suitable tools for the data collection. For the completion of the present study, the investigator chose two standardized scale one “Environment awareness ability measure” by P.K. Jha and other Environmental awareness test by Dr. Seema Dhawan.

### **ENVIRONMENT AWARENESS ABILITY MEASURE**

This test is developed by Dr. P.K. Jha. The test has 51 items to test the environmental awareness belonging to abilities and strengths pertaining to the affective, cognitive and conative areas.

### **Validity**

To determine validity of the Environment Awareness Ability Measure coefficients of correlation between the scores of the present scale and Environment Awareness Scale of Tarniji was computed. The coefficient of correlation was found to be 0.83. The scale also possesses face and content validity since each item was judged by experts.

### **Scoring**

There are 51 items in EAAM. Each agreed item carries the value of 1 mark and each disagree item of zero mark but the negative items are scored inversely. Thus, on the total scale the scores ranged between 0-51. The scale gives a composite scores of environment awareness ability of the subject. Negative items were indicated by the star-mark

### **ENVIRONMENTAL AWARENESS TEST OF TEACHERS**

This test is developed by Dr. Sheema Dhawan. Environmental awareness test scale is used to access the awareness of teacher about their environment, environmental awareness of teachers play very important role in developing the environmental values among the students.

### **Reliability and Validity of EATT:**

The reliability of the scale (EATT) was determined by split half method and rational

equivalence devised by kuder and Richardson. The EATT have 100 statement. The overlapping of the items with one another was critically examined. Some statements were included for cross checking the environmental awareness of teacher. The items written in Hindi were positive and negative and of yes and no type response category. In this way, after various consideration finally the preliminary draft being of 75 questions was constructed and subjected to Pre- try out and post- tryout.

### Statistical technique used

Keeping the nature of the study and the nature of objectives, investigator used such statistical techniques which helped in the analysis and interpretation. The data were analyzed with the help of t-test.

### Levels of significance

Two levels of significance, 0.05 levels and 0.01 levels of significance were studied. If the probability of obtaining the value of the statistics by chance were less than 0.05, it was considered significant at the level. Similarly when the probability was less than 0.01, it was recalled that level of significance denote the type I error which a researcher is prepared to commit in rejecting a true null hypothesis.

### Results and Discussion

The data were based on a sample of 200 senior secondary school teachers and students (60 teachers and 140 students). The data collected have analyzed through different description and statistical techniques. The Mean and S.D were computed to study the general nature of the sample in relation to the variable i.e. ‘t’ test was applied to see the significance of difference between the environmental awareness among the senior secondary school teachers and students.

### DIFFERENTIALS 1

This section deals with the study of significance difference in environmental awareness of male teachers and students of senior secondary school in distt. hisar.

**TABLE-4.1:** Significance of difference in environmental awareness of male teachers and students of senior secondary school

VARIABLE	N	MEAN	S.D.	S.Error	‘ t ’ ratio
TEACHERS	30	51.16	5.00	1.00	8.24
STUDENTS	70	42.92	3.57		

df =98, level of significance at 0.05=1.96, at 0.01=2.58

It can be observed from the above Table 4.1 as above that the mean scores of male teacher and student on environmental awareness comes out to be 51.16, 42.92 with standard deviations of 5.00 and 3.57 respectively. The significance of difference between mean scores comes out to 8.24 which is significant at 0.01 and 0.05 level of significance. It means that there is significance difference in the mean scores of male teacher and student towards environmental awareness. Hence, it may be concluded that the both male teacher and student are having difference on environmental awareness.

## DIFFERENTIALS 2

This section deals with the study of significance difference in environmental awareness of female teachers and students of senior secondary school in distt. hisar.

**TABLE-4.2:** Significance of difference in environmental awareness of female teachers and students of senior secondary school

VARIABLE	N	MEAN	S.D.	S.Error	' t ' ratio
TEACHERS	30	50.5	4.74	1.05	7.55
STUDENTS	70	42.57	5.09		

df =98, level of significance at 0.05=1.96, at 0.01=2.58.

It can be observed from the above Table 4.2 as above that the mean scores of female teachers and students on environmental awareness comes out to be 50.5, 42.57 with standard deviations of 4.74 and 5.09 respectively. The significance of difference between mean scores comes out to 7.55 which is significant at 0.01 and 0.05 level of significance. It means that there is significance difference in the mean scores of female teacher and student towards environmental awareness. Hence, it may be concluded that the both female teacher and student are having difference on environmental awareness.

## DIFFERENTIALS 3

This section deals with the study of significance difference in environmental awareness of urban area teacher and student of senior secondary school in distt. hisar.

**TABLE-4.3:** Difference in environmental awareness of urban area teachers and students of senior secondary school

VARIABLE	N	MEAN	S.D.	S.Error	' t ' ratio
TEACHER	30	51	5.3	0.96	8.11
STUDENT	70	43.21	4.45		

df =98, level of significance at 0.05=1.96, at 0.01=2.58

It can be observed from the above Table 4.3 as above that the mean scores of urban teacher and student on environmental awareness comes out to be 51, 43.21 with standard deviations of 5.3 and 4.45 respectively. The significance of difference between mean scores comes out to 8.11 which is significant at 0.01 and 0.05 level of significance. It means that there is significance difference in the mean scores of urban area teacher and student towards environmental awareness. Hence, it may be concluded that the both urban area teacher and student are having difference on environmental awareness.

#### DIFFERENTIALS 4

This section deals with the study of significance difference in environmental awareness of rural area teacher and student of senior secondary school in distt. hisar. **TABLE-4.4:** Difference in environmental awareness of rural area teacher and student fo senior secondary school

VARIABLE	N	MEAN	S.D.	S.Error	' t ' ratio
TEACHER	30	50.66	4.3	0.81	9.80
STUDENT	70	42.72	3.95		

df =98, level of significance at 0.05=1.96, at 0.01=2.58

It can be observed from the above Table 4.4 as above that the mean scores of rural area teacher and student on environmental awareness comes out to be 50.66, 42.72 with standard deviations of 4.3 and 3.95 respectively. The significance of difference between mean scores comes out to 9.80 which is significant at 0.01 and 0.05 level of significance. It means that there is significance difference in the mean scores of rural area teacher and student towards environmental awareness. Hence, it may be concluded that the both rural area teacher and student having difference on environmental awareness.

#### DIFFERENTIALS 5

this section deals with the study of significance difference in environmental awareness of science teacher and student of senior secondary school in distt. hisar.

**TABLE-4.5:** difference in environmental awareness of science teacher and student fo senior secondary school

VARIABLE	N	MEAN	S.D.	S.Error	' t ' ratio
TEACHER	30	50.66	5.1	1.05	7.09
STUDENT	70	43.21	4.33		

df =98, level of significance at 0.05=1.96, at 0.01=2.58

It can be observed from the above Table 4.5 as above that the mean scores of science teacher and student on environmental awareness comes out to be 50.66, 43.21 with standard deviations of 5.1 and 4.33 respectively. The significance of difference between mean scores comes out to 7.09 which is significant at 0.01 and 0.05 level of significance. It means that there is significance difference in the mean scores of science teacher and student towards environmental awareness. Hence, it may be concluded that the both science teacher and student are having difference on environmental awareness.

## DIFFERENTIALS 6

this section deals with the study of significance difference in environmental awareness of arts teacher and student of senior secondary school in distt. hisar.

**TABLE-4.6:** Difference in environmental awareness of arts teacher and student fo senior secondary school

VARIABLE	N	MEAN	S.D.	S.Error	' t ' ratio
TEACHER	30	51	4.65	0.97	9.13
STUDENT	70	42.14	4.14		

df =98, level of significance at 0.05=1.96, at 0.01=2.58

It can be observed from the above Table 4.6 as above that the mean scores of arts teacher and student on environmental awareness comes out to be 51, 42.14 with standard deviations of 4.65 and 4.14 respectively. The significance of difference between mean scores comes out to 9.13 which is significant at 0.01 and 0.05 level of significance. It means that there is significance difference in the mean scores of arts teacher and student towards environmental awareness. Hence, it may be concluded that the both arts teacher and student are having difference on environmental awareness.

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There will exist significant difference in the environmental awareness among urban and rural area teachers and student of senior secondary school in distt. hisar. There is significant difference between environmental awareness among urban area teachers and students of senior secondary school in distt. hisar. There is significant difference between environmental awareness among rural area teachers and students of senior secondary school

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