

## **Environmental Awareness Level amongst Secondary School Students in Kangra District Based on Different Variables**

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**Abstract:** *The purpose of this article is to identify the level of environmental awareness among secondary school students. Questionnaire technique is used to collect the data. The collected data are tabulated and computed applying simple statistical tools. The results show that the level of environmental awareness among students is low. No significance difference is found with respect to age and settlement in the environmental awareness level of the students. On the other hand significance difference was found in the environmental awareness of secondary school students belonging to different age group.*

**Keywords:** *Environmental education; environmental awareness etc.*

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### **I. Introduction**

Over the past four decades, there has been a remarkable transformation in public attitude toward the environment. Accompanying this revolution, and in part inspiring it, has been widespread incorporation of environmental themes in to education in all levels. Elementary school curricula are being infused with concepts of pollution, recycling, and renewable energy. Secondary school teachers are adding renewed emphasis on earth science and ecology and on environmental citizenship. At the university level, environmental studies programs become common parts of liberal and scientific curricula.

The concept of environmental education is now wide spreading national educational policies, curriculum documents, curriculum development initiative and conservation strategies<sup>1-4</sup>. Across the entire landscape there is a ground swell of interest in environmental matters among the most talented of our young people, which was almost completely absent a generation ago.

World educators and environment specialist have repeatedly pointed out that a solution to environmental crises will require an environmental awareness and its proper understanding which should be deeply noted in the education system at all levels of school education<sup>5</sup>. An environmental crisis is real. Now the time has come when we should be careful.

Environmental awareness on the other hand is “to understand the fragility of our environment and the importance of its protection”<sup>6</sup>. Environmental education is all about being conscious of the environment around us. Environmental awareness is classified into two aspects: perception of environmental problems and behavioral inclination to protect the environment. The perception is the people should have knowledge of environment and their issues. The behavior inclination is to protect the environment includes two major aspects: firstly, the value of environmental protection in people minds which indicated by the balance between environmental protection and economic development and also the willing to pay for the protection of the environment; secondly, attitudes about participating in the environmental protection<sup>7</sup>.

Environmental education is the main interests of school organizations, local communities, the private sector and local governments for the last 50 years. These organizations ask to the government to put the environment education under curriculum educational. Therefore, environmental education is considered as a life-long process that is interdisciplinary and holistic in nature and application. It concerns the relationship between human and natural ecosystem and encourages the development of environmental protection e.g. environmental ethic awareness, understanding of environmental problems, development of critical thinking and problem solving skills. Moreover, environmental awareness is the initial step ultimately leading to the ability to carry on responsible citizenship behaviour<sup>8</sup>.

Numbers of research works<sup>8-12</sup> have been taken up in this respect. But being a location of specific issue, research on environmental education should be familiar in different parts of the world in order to develop a clear understanding of all the perspective of the issue involved. In the case of this research, the researcher would focus on identifying the environmental awareness level amongst secondary schools with Kangra District in Himachal Pradesh as the study area

### **II. Significance of Research**

The environmental scenario of India is very wide. Ours is a country highly diverse climatically, geologically, geographically, edaphically, floristically, ethnically, lingually, socially and economically. Therefore, environmental education has to be essentially location specific.

The identification of any problem act as a fundamental spring board for its solution, it is hoped that this study would generate a greater significance to the area of study as well the nation to boosting the students environmental awareness level, and also to attain the international priority of sustainable development. This can be attained by the integration of principles, values, and practices of sustainable development in all aspects of education and learning, in order to address the social, economic cultural and environmental problems.

**Research Questions:**

The study is aimed at finding out answers to the following questions for the students:

1. What is the level of environmental awareness, environmental attitude of students towards environmental education among secondary school students?
2. What is the relationship between environmental awareness and environmental attitude?
3. What is the significance difference in the environmental awareness between male and female students?
4. What is the significance difference in the environmental awareness between students of different age group?

**Objectives of the Study:**

The objectives of study are:

1. To determine the environmental awareness level, attitude towards environment, and attitude of the students toward environmental education among secondary school students in Kangra.
2. To find out the relationship between environmental awareness and environmental attitudes of secondary school students.
3. To compare the significance difference in the environmental awareness level of students of different age and gender.

**Hypotheses of the Research:**

The hypotheses formulated for the present study are as follows:

1. The level of environmental awareness of students is low.
2. The students have low attitude towards environment.
3. The attitude of students towards environmental education is low.
4. There is no relationship between environmental awareness mean scores and environmental attitude mean scores.
5. There exists no significant difference in environmental awareness mean scores between male and female students.
6. There is no significance difference in the environmental awareness of secondary school students belonging to different age groups.

### **III. Research Methodology**

**Study Area:**

The Kangra District of Himachal Pradesh in India is the steady area. The Kangra District of Himachal Pradesh is situated in the western Himalayas between 31°2 to 32°5 N and 75° to 77°45 E. The district has geographical area of 5,739 km, which constitutes 10.31% of the geographical area of state. The altitude of the district ranges from 427 to 6401m above sea level. According to the 2011 census Kangra district has a population of 1,507,223 roughly equal to the nation of Gabon or the US state of Hawali. This gives it a ranking of 331<sup>st</sup> in India (out of a total of 640). The district has a population density of 263 inhabitants per square kilometer (680/sq mi). Kangra has sex ratio of 1013 females for every 1000 males and a literacy rate of 83.49%.

**Research Design:**

The first task of investigation is to select appropriate methodology of research. There are several methods of research. Research is determined by the nature of the problem. The present study attempts to study the awareness towards environment among the students. Survey method is preferred by this study in order to have direct contact with the population of its study and because of its relevance in terms of efficiency and usefulness and wide range of range of data collection. The research is designed to find the views and opinions of people about the environmental awareness level amongst secondary school students.

**Population of the Study:**

The selected school in this study comprises of five secondary schools from the urban area and the other five secondary schools from the rural area. The aim is to make the study comparison and provide reliable and valid information to have a clear representation of the targeted schools. Also to have good representation of the subject of the study, one thousand respondents were drawn. Each school was allocated with one hundred questionnaires respectively.

**Sampling Size:**

Sample is both necessary and advantageous because by sampling we study the problem at reduced cost, at greater speed, with greater scope and with greater accuracy.

To serve a useful purpose, sampling should be adequate and unbiased or representative. As earlier stated that before, a total number of one thousands respondents were randomly selected from the ten selected secondary schools. Simple random sampling is heavenly preferred because it is evident that among the elements that make up the total population. There are many similarities as such a study of a few of these elements will provide sufficient knowledge of what is obtained from the entire population. It is obviously more economical to study the samples of the total population of the study area, so also the respondents selected in each school. Five of the selected schools are selected from the urban area and the remaining five schools are selected from the rural area. Each school was allocated with one hundred questionnaires to the students respectively.

**Data Analyses:**

Data were analyzed using Data editor of SPSS version 16. Basic data were taken in to consideration. In order to analyze and interpret the questionnaire scores the investigator adopts the following statistical techniques:

- (i) Mean
- (ii) Standard deviation
- (iii) ANOVA
- (iv) t-test
- (v) Person coefficient of correlation

**IV. Result And Discussion**

On the basis of analyses and interpretation of the data, the following findings were drawn:

**1. Environmental awareness level among secondary school students:**

The students’ environmental awareness level was measured in this section using a descriptive statistics method. There were ten statements used to measure the awareness level. The awareness level was indicated by a “Level Indicator Mean of 0.10-0.49 as low awareness and 0.50-1.00 as higher awareness level”. The result of descriptive statistics as given in the Table-1 shows that level of environmental awareness of the secondary school students is low with a mean value of 0.45 which is not up to average level. Therefore, hypothesis 1 is accepted.

**Table-1:** Environmental awareness means scores and total percentage base on “Correct answer (CA)” and “wrong answer (WA)”

Item	Statement	Mean	Total Percentages (%)	
			CA	WA
1	World Environmental Day is celebrated every year on.....	0.48	48.2	51.8
2	The best way of disposing the domestic waste would be to .....	0.53	52.8	47.2
3	In order to conserve natural resources, we should.....	0.15	15.4	84.6
4	Natural resources are exhausted faster because of .....	0.26	26.3	73.7
5	Fuels should not be wasted because they are.....	0.74	74.0	26.0
6	Oil spills are highly dangerous because.....	0.79	78.9	21.1
7	Excessive use of pesticides will .....	0.22	22.3	77.7
8	Loss of biodiversity may be due to .....	0.45	44.7	52.3
9	Which of the following is true statement related to pollution?	0.12	12.3	87.7
10	Which of the following is the non-renewable source of energy?	0.76	76.1	23.9
<b>Overall level of awareness</b>		0.45		

**2. Attitude of students towards environment:**

Attitudes among respondents were investigated by the responses of ten questions on attitude towards environment. It can be observed from Table-2 that, the overall mean score of respondents with regards to students attitudes towards was found to be 2.45 which is moderate. This indicates that students having moderate attitude towards environmental issues. Therefore, hypothesis 2 is accepted.

**Table 2:** Environmental attitude mean scores and total percentage “agree (A)” and “strongly Agree (SA)”

Item	Statement	Mean	Total Percentages (%)
			A+SA
1	Over population leads to poverty.	2.36	54.9
2	Over pollution of the environment can cause misery and sufferings to human beings.	1.32	98.2
3	Environmental pollution leads to health hazards.	1.19	96.8
4	One should participate in campaigns on ‘stop Pollution’.	1.42	95.6

5	Water pollution is not a serious problem because 80% of the world's surface is water.	3.29	17.2
6	Participation in afforestation programs is a mere waste of time and energy.	3.61	8.47
7	Destruction of ozone layer will hardly affect the near future.	3.05	35.4
8	The government should increase its revenue by clearing the forests.	2.17	65.8
9	Environment is least affected through domestic garbage is dumped on the roadsides.	3.52	11.4
10	It is not wrong to hunt animals for food.	2.61	56.4
<b>Overall attitude of students towards environment</b>		2.45	

**3. Attitude of students towards environmental education:**

In this study, attitude of the students towards environmental education was investigated among respondents with ten questions. The level indicator of attitudes was measured base on 'low', 'medium' and 'high'. Tables-3 describes the result of the average environmental attitude mean scores of respondents, and it was observed that the students have low attitude towards environmental education with cumulative mean value of 1.97 and standard deviation (SD) of 0.691 which is not significant. Hence, hypothesis 3 is accepted.

**Table 3:** Environmental attitude mean score for secondary school students, SD and total percentage "agree (A)" and "strongly agree (SA)"

Item	Statement	Mean	SD	Total Percentage (%)
				A+SA
1	Organizing environmental field trips should be an integral part of the school activities.	1.49	0.668	93.8
2	School should provide for setting up a school garden.	1.51	0.682	94.8
3	Protection of environment is every individual's first priority.	1.21	0.506	98.9
4	Environmental education can be infused as an independent subjected in the school curriculum.	1.86	0.672	89.4
5	Environmental related concepts can only be infused in Biology and Geography.	2.54	0.879	46.3
6	Infusion of environmental concepts can lead to the deviation of students concentration from the subject on hand.	3.09	0.919	25.2
7	Internets do more in modifying the students attitudes towards environmental education.	2.02	0.838	79.2
8	Students learn how to protect environment from the books they read.	1.86	0.743	88.2
9	Students would understand the beauty of nature more when environmental education is	1.75	0.807	90.2
10	It is seldom possible to learn anything serious about environment through nature games.	2.38	0.872	56.8
<b>Overall mean and SD of attitude toward environmental education</b>		1.97	0.691	

**4. Relationship between environmental awareness and environmental attitude:**

A bivariate correlation was undertaken between students environmental awareness mean scores and environmental attitude mean scores. It was hypothesized that a low positive relationship exists between these two variables but is less significant. Result of correlation indicates that higher environmental awareness scores are less associated with higher environmental attitudes scores ( $r=0.176$ ,  $p<0.01$ ) for the sample of 1000 thousands secondary school students. Thus, it can be concluded that there exist relationship between environmental awareness and environmental attitude among secondary school students, but the correlation is very low. Hence, hypothesis 4 is rejected.

**Table 4:** Relationship between environmental awareness and environmental attitude:

Sample (N)	Relationship between	Coefficient of correlation ('r')	Degree of freedom	P-value	Significance
All students (990)	Awareness and attitude	0.176	998	P<0.01	Significance

**5. Environmental awareness means scores between male and female:**

In order to check the environmental awareness with respect to gender, the t-test was employed. The mean score of male secondary school students (N=475) is found to be 0.3995 with a SD of 0.1398. The mean score of female secondary school students (N=515) is found to be 0.3978 with a SD of 0.1432. The calculated t-value is 0.512 which is not significant at 0.05 levels. Therefore, since the computed t-value is lesser than the table value, the hypothesis 5 is accepted. The Table-5 summarizes the result of t-test.

**Table 5:** Significance difference in the environmental awareness of male and female

Variables	Gender	Sample (N)	Mean	SD	t-test	p-value	CI	
							Lower	Upper
Environmental awareness	Male	475	0.3995	0.1398	0.512	0.588	-0.0166	0.0283
	Female	315	0.3978	0.1432				

**6. Environmental awareness level of secondary school students with respect to different age groups:**

Table-6 shows that the environmental awareness of secondary school students belonging to different age groups shows a remarkable difference. The mean score of the students belonging to 12-13 years age group (N=226) is found to be 0.3242 with SD of 0.1736. The mean score of the other category of students of age 15-17 years (N=774) is found to be 0.4423 with SD of 0.1345. The calculated t-value is 7.413 which is greater than table value at  $p=0.000 < 0.05$ . Hence, the hypothesis 6 is rejected.

**TABLE 6:** Significance difference in the environmental awareness of secondary school w.r.t. age group

Variables	Gender	Sample (N)	Mean	SD	t-test	p-value	CI	
							Lower	Upper
Environmental awareness	12-13 years	226	0.3242	0.1736	7.413	0.000	-0.1402	-0.0846
	15-17 years	774	0.4423	0.1345				

From the far going analysis of the results, it can be observed from the above tables that the level of environmental awareness among the secondary school students is low, the similar behavior is observed in literature<sup>6</sup>. This is disappointing and signifies a low level of awareness among secondary students. The result is contradicted with the result of Aminradet al<sup>13</sup> in his study on Environmental awareness of Iranian students in Malaysian University. He found that the environmental awareness of students is moderate. Mathivanan et al<sup>14</sup> found that secondary school students have high environmental awareness. Romani et al<sup>15</sup> suggested that environmental education should be incorporated as a subject in the B.Ed. curriculum, so that future teachers can be instilled in their students environmental sensibilities.

Table-2 shows that secondary school students having moderate attitude towards environment. In this regards, four options were given to students to express their opinion. Agree (A) and Strongly Agree (SA) were recorded together as given in the Table-2. Little percentage of students responded positively on the attitude toward environment. This result was in contrast with the result of Aminradet al<sup>13</sup> where he found that the environmental attitude of students was high.

The secondary school students were also reported to have low attitudes toward environmental education as shown in Table-3. In this study, students were not engaged in environmental field trips; in this research work 93.8% respondents agreed that environmental education aims can best be achieved when organization of field trips became an integral part of the school activities. It will give students chance to see and observe environmental issues by themselves, not only be thought in classes what you hear you forget and what you see you will remember. 89.4% of the respondents agree that Environmental education to be taught as an independent subject in the school. Nevertheless, 90.2% says students would understand the beauty of nature more when Environmental Education is taught as an independent subject in the school.

From Table-5, the relationship between environmental awareness and environmental attitude is quite low. This may be due to the fact that secondary school students were found to have low awareness regarding environmental awareness because it is when you know then you will practice. Never do what you don't know. The students may be when they are aware of the environment, and then they will act upon it. The relationship between environmental awareness and attitude of students towards environmental education were found positive and strong in literatures<sup>16-18</sup>.

Furthermore, from the result of tables above, no significance difference was found between sex groups. The result is in line with the result of Aminradet al<sup>16</sup>, where he concluded that age is not significant in determining the environmental awareness level among students. Bhim and Jayanta<sup>17</sup> in their study indicated that no significance difference was found between boys and girls students. Kumund<sup>18</sup> also found that there is no significance difference in the environmental awareness and attitudes towards environmental education between male and female. The similar results are also in literatures<sup>18-21</sup>.

In another finding, it was found that there is significance in difference in the environmental awareness of secondary school students of different age groups, the higher the age, the higher the environment awareness of the students. This type of behavior is supported in the literature<sup>13,16</sup>. Maryam<sup>22</sup> in study on assessment of environmental awareness among higher primary school teachers found that age has impact on the level of environmental awareness of students. This means that when age increases, it will result in the increase in the environmental awareness of the students.

**V. Conclusion**

From the results obtained in the analyses of the data above, it can be concluded that the level of environmental awareness of secondary school students is low. No significance difference is seen between gender and different locations of schools. Age was reported to have a relatively low significance in the environmental awareness of secondary school students. The attitude of the students towards environment and environmental education was quite low.

## VI. Recommendations

The present study emphasizes the need of developing awareness towards environmental education among students of secondary level to solve the problems of environment. This study has its educational implications for the teachers, educational planners, parents' educators and educational administrators. Special awareness programmes in the form of seminars, symposium, camps and community visits should be arranged among the environment teachers, students, parents and also masses.

Environmental awareness should be provided to the youths and young children through the formal system of education. Environmental consciousness should be developed among teachers by introducing the course of environmental education in teacher education programmes and their teaching subjects.

Environmental awareness programs should be encouraged in our secondary schools. This is what will motivate the students to develop environmental awareness skills and also to have solutions to different environmental treats. More researches are encouraged to be carried out at different parts of India.

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