

Correlation Between Environmental Knowledge and Environmental Attitude among Highschool Students

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Abstract

Climate change exists when changes in the earth's climate system result in new weather patterns that remain in place for an extended time. Climate has been very much affected by human activities like industrial revolution which leads to global warming. Environmental awareness is a very serious issue in the present world. If the people will still not make any changes to their lifestyle it is not very soon. We will destroy our planet ourselves. It is very important to make people realise their mistakes and encourage them to work towards the betterment of the environment. We all together should change our attitude towards the environment and also create awareness among all. The children of secondary school should be made aware of the issues by providing them with proper knowledge and making them understands the value of the environment to lead a better life. Keeping this objective in mind researchers have administered two tests viz. Environmental Knowledge Test and Environmental Attitude Scale on the secondary school students of grade 7th, 8th, 9th and 10th from four different schools in Sangli city. The test was administered on 100 students out of which 47 were male and 53 were females. The results were analysed through the student t-test and Pearson Product Moment test. Results revealed that those who have a high level of environmental knowledge scored a higher level of environmental protection attitude than those who have a low level of environmental knowledge. It was also revealed that environmental knowledge and environmental attitude are positively related to each other. Moreover, in the study it was also seen that the psychological intervention is very beneficial to enhance the environmental knowledge and environmental protection attitude among high school students.

Keyword. Environmental Protection, Environmental Knowledge and Environmental Attitude

Nowadays we can see a drastic change in the climate like no proper season cycle or not enough rainfall etc. and all these are directly or indirectly caused due to human activities which are harmful to the environment. Human activities like deforestation cause air pollution, soil pollution and also are very harmful to animal life. Gases like CO₂ coming from industries and vehicles was first absorbed by trees but now due to rapid cutting of forest the gas CO₂ stays on the earth's surface which traps the sun's heat on the Earth surface because of which the temperature of the Earth surface is increasing and as a result the Glacier are melting and we can see the increasing water level due to deforestation no proper percolation of water takes place and also the amount of rainfall is decreasing which is inversely affecting the crop grown also human activities like mining causes earthquake and landslides environment and human being are interdependent on each other so even the human activities have an impact on the

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environment so it can be said that all the individuals are responsible in some or the other way for the damage to the environment. Unfortunately it is a very sad thing that most of the people are not aware about the activity causing environmental degradation and the people who are aware about this do not considered as an serious issue the people today are not concerned to the environmental issues the people are are only concerned for their own comfort but unknowingly they are sacrificing their own health for a little comfort. With the increasing excessive use of water level, the toxicity of the water has also increased and it is increased to such a level that the shells of crabs are melting so one can think how much the Marine animals are suffering. It is a time that all should come together and work seriously for improving the environmental condition there are also many examples who can be followed as in India once Surat was the most unclean City and due to which the city was struck by plague and the condition what's so bad that no trains where allowed to heart at Surat station but then the local people decided to clean it up and now it is included in the top 5 cleanest cities some people are aware and know the seriousness of the the problem and one of them is a 16 year old young girl GretaThunberg she is young but still is working towards improvement of environment similarly we should all consider her as a role model and work towards the improvement of environment and a better life for the future generation. We should all come together and try that the right of children to breathe in fresh air and live in healthy environment. Nature has started to giving warning signs in which for the first-time warm water found under the Glacier in Antarctica. Environment protection is not responsibility of children's only but all the individuals around the world. So, each and every individual should try on his or her personal level to their best to work for an environmental protection. This moment of awareness and protection should be started from school level students and so the the environment education should be made compulsory in school and students should be made aware of this issue and should be taught and trained to work for environment protection. Giving environmental knowledge at school days is very important in terms of positive environmental attitude (Tilbury, 1994; Phenice & Griffiore, 2003; Goodall, 1992;). So school teachers should concentrate to give knowledge of environmental protection to their students. The related literature reveals the significance of developing positive attitudes towards the environment (Vlaardingerbroek & Neil Taylor, 2007; Ekborg, 2003;). School Teachers who have a positive attitude towards environmental protection are found to have more tendencies to give an environment knowledge to their students (Kim & Fortner, 2006; Chung Ko & Kin Lee, 2003;) It is also found from the various studies that the teachers who have lack environmental protection attitude they are neglecting to provide environmental knowledge (Smith-Sebasto & Smith, 1997; Simmons, 1998; Ferry, 1995). So, all school faculties also came forward to enhance the environmental protection attitude among their students. Concerning these realities, this study aims to investigate the relationship between environmental knowledge and environmental attitudes among the school students. Many researches have been done in the same context they are as follows.

Review of Literature:

1. Rosta Harun, Kuang Hock Lim , Fadhilah Othman (2011).

They have researched environmental knowledge and attitude among students in Sabah and they found that the attitudes of the students were influenced by the level of knowledge they have concerning the environment.

2. Vikas S. Minchekar and Rutuja Sabane (2017).

“The effect of the SSC model on environmental cognition”

They surveyed 85 students from various departments out of which 50 female and 35 male of age group 18 to 25 participated. They found that the students are not so active in solving environmental problems. But repeated hammering on youngsters' mind can make them eco friendly. A study for determining the elementary school student's environmental knowledge and environmental attitude level

3. Fatma Tayci and Fusun Uysal from Corlu, Turkey (2012)

This research was conducted by sampling 841 students from four elementary schools in Corlu, in 2007-2008 academic years. Out of 841 students, 231 were female and 187 were males. When the results were generally evaluated, it was observed that the elementary students did not have enough level in terms of both environmental knowledge and environmental sensitivity. Concerning with environmental education, youth must be helped to developmental skills, which enable them to identify the environmental problems, to collect info about the subject to give correct decisions in the light of this info and to solve the environmental problems.

Objectives of the Study:

1. To find out the effect of environmental knowledge on environmental attitude among adolescent students.
2. To search the correlation between environmental knowledge and environmental attitude among adolescent students.
3. To suggest the psychological intervention to increase the environmental attitude among adolescent students.

Hypotheses of the Study:

1. Those who have a high level of environmental knowledge would be a high level of an environmental attitude than those who have a low level of environmental knowledge.
2. Environmental knowledge and environmental attitude among adolescents would be positively and significantly related to each other.
3. The psychological intervention significantly increases the environmental protection attitude among adolescent students.

Method

Sample: Present research was carried out to check the attitude of the young generation towards environmental protection and also to check the knowledge they have about the environment. The students studying in 7th to 10th class from different schools in Sangli city were recruited. A hundred students participated in the study out of which 47 were male and 53 were females. The age of participated students was 13 to 16 years.

Measures:

- 1) **Environmental Knowledge Test (EKT):** The environmental knowledge test is developed by Dr Seema Dhawan. It consists of 80 questions with 'Yes' or 'No' response options. The environmental knowledge test has seven subdimensions viz. forest or trees, pollution (noise, air, water, soil), population, plants and animals, energy conservation, teaching method, current environmental problems, etc. The reliability and validity of this scale are .78 and .88 respectively.
- 2) **Environmental Attitude Scale (EAS):** The environmental attitude scale is developed by Dr Haseen Taj. It includes 60 items with four responses for each item as strongly agree, agree, disagree and strongly disagrees. The EAS has six subdimension viz. health and hygiene, wildlife, forests, polluters, population explosion and environmental concern. The reliability and validity of this scale are .79 and .75 respectively.

Results and Discussion:

Table 1 Showing mean, SD and t value of two different groups.

Dimensions	Environmental Knowledge level	N	Mean	Std. Deviation	df	t
EAS 1	Low	50	13.64	2.81	98	2.376*
	High	50	15.24	3.84		
EAS 2	Low	50	12.86	2.08	98	.105
	High	50	12.90	1.70		
EAS 3	Low	50	14.50	2.65	98	1.99*
	High	50	15.58	2.82		
EAS 4	Low	50	66.12	5.97	98	4.309**
	High	50	71.94	7.45		
EAS 5	Low	50	12.58	3.39	98	2.032*
	High	50	13.98	3.49		
EAS 6	Low	50	38.38	5.07	98	1.717
	High	50	40.32	6.17		
EAS Total	Low	50	158.08	12.98	98	3.934**
	High	50	169.96	16.95		

* significant at 0.05 level, ** significant at 0.01 level

EAS 1= health and hygiene, EAS 2 = wild life and animals, EAS 3 = forest, EAS 4 = polluters, EAS 5 = population explosion, EAS 6 = environmental concerns.

Table 1 indicating the first area EAS 1 which is health and hygiene. Those who have low environmental knowledge have low health and hygiene attitude than those who have high environmental knowledge and hence both groups significantly differ on 0.05 level of alpha ($t = 2.376$, $p < 0.05$). Environmental attitude toward wildlife and animals is significantly different between low and high environmental knowledge holders because both groups have approximately equal mean value and t value .105 is not significant. The mean value of high environmental achievers about the forest is 15.58 while low environmental knowledge holders are 14.50 and its t value is 1.99 which is significant at .05 level of alpha. It means that those who have high knowledge of environment have a high environment attitude than their counterparts. Moreover, it is also seen that high knowledge of environment lead high environmental attitude towards polluters and population explosions because it's t values 4.309 and 2.032 respectively are significant. However, it is also seen that the environmental attitude towards environmental concerns is not remarkably different between low and high environmental holders as t value 1.717 is not significant.

Table 2 Effect of sex on environmental attitude.

Dimensions	SEX	N	Mean	Std. Deviation	df	t
EAS 1	Male	47	14.31	2.85	98	.329
	Female	53	14.54	3.92		
EAS 2	Male	47	12.78	1.79	98	.458
	Female	53	12.96	1.99		
EAS 3	Male	47	14.68	2.82	98	1.217
	Female	53	15.35	2.73		
EAS 4	Male	47	70.27	7.51	98	1.615
	Female	53	67.92	7.04		
EAS 5	Male	47	13.53	4.04	98	.676
	Female	53	13.05	2.95		
EAS 6	Male	47	39.44	6.27	98	.159
	Female	53	39.26	5.20		
EAS Total	Male	47	165.04	16.42	98	.594
	Female	53	163.11	16.03		

EAS 1= health and hygiene, EAS 2 = wild life and animals, EAS 3 = forest, EAS 4 = polluters, EAS 5 = population explosion, EAS 6 = environmental concerns.

Table 2 shows results for independent 't' test which is performed between the male and female high school students towards environmental attitude. The first area which is health & hygiene in which the value of 't' is .329. The second area is wildlife for which the 't' value is 0.458, the third area is Forest which shows 't' value as 1.217, the fourth area which is polluters shows the value of 't' as 1.615, the 5th area is population explosion with a value of 't' as 0.676, the 6th area is an environmental concern which shows the 't' value as 0.159 and t value for total environmental attitude is 0.594. It is seen that all t values are not significant and hence it can be concluded that environmental attitude is not significantly different according to the sex of high school students. Boys and girls are having an equal level of environmental attitude.

Table 3 shows Pearson correlation between environmental attitude and environmental knowledge test.

Environmental Attitude		Environmental Knowledge	
EAS 1	Pearson Correlation	.312**	
	Significance		.01
	N	100	
EAS 2	Pearson Correlation	.014	
	Significance		NS
	N	100	
EAS 3	Pearson Correlation	.235*	
	Significance		.01
	N	100	
EAS 4	Pearson Correlation	.495**	
	Significance		.01
	N	100	
EAS 5	Pearson Correlation	.204*	
	Significance		.05
	N	100	
EAS 6	Pearson Correlation	.201*	
	Significance		.05
	N	100	
EAS Total	Pearson Correlation	.448**	
	Significance		.01
	N	100	
Environmental Knowledge	Pearson Correlation	1	
	Significance		
	N	100	

** . Correlation is significant at the 0.01 level

* . Correlation is significant at the 0.05 level

EAS 1= health and hygiene, EAS 2 = wild life and animals, EAS 3 = forest, EAS 4 = polluters, EAS 5 = population explosion, EAS 6 = environmental concerns.

The first area is EAS1 which is health and hygiene indicates positive correlation with 'r' value 0.312 ($p < 0.01$) which means if environmental knowledge increases the attitude toward environmental protection will also increase and if environmental knowledge decreases environmental attitude will also decrease. The second dimension EAS 2 which is wildlife shows no significant relation with environmental knowledge as r value .014 is not significant. Then, the third area is EAS 3 is of Forest which shows the significant correlation at the 0.05 level and the value is 0.35 which is a positive value and it means if

knowledge for the forest will increase attitude will change upwards. The fourth area EAS 4 is polluters which also a positive value 0.495 and shows the correlation is significant at 0.01 level which means if knowledge increases attitude will change. Next, the fifth EAS 5 is population explosion having a positive correlation and it is significant at 0.01 level with value 0.204 which again interprets as if knowledge increases attitude will change. Last sixth dimension is EAS 6 which is environmental concern has a positive value of correlation is significant at 0.05 level and if knowledge increases attitude will change.

Table 4 showing the mean, SD, r and t value of Environmental Attitude

Conditions	Paired Samples Statistics					
	Mean	N	Std. Deviation	r	t	Significance
Pre-Test	14.83	85	2.13	.20	2.916	0.05
Post-Test	15.76	85	2.03			

Table 4 depicts the clear picture of environmental attitude in pre-test and post-test conditions. In the pre-test, the value of mean EAS is 14.83 with SD 2.13 while mean and SD for a post-test condition is respectively 15.76 and 2.03. The r-value and t value are 0.20 and 2.916 respectively which is significant at .05 level of alpha. It means that the psychological intervention which is developed by the researcher makes a significant difference in the environmental attitude of high school students. The reason with counselling and storytelling, the attitude is changed positively and love for nature is developed among the students. Hence, the developed model worked almost 95% only in one setting.

Table 5 showing the mean, SD, r and t value of Environmental Attitude Knowledge

Conditions	Paired Samples Statistics					
	Mean	N	Std. Deviation	r	t	Significance
Pre-Test	41.70	85	4.33	.196	2.192	0.05
Post-Test	42.95	85	3.92			

Table 5 depicts the clear picture of Environmental knowledge in pre-test and post-test conditions. In the pre-test, the mean value of environmental knowledge is 41.71 with SD 4.33 while mean and SD for the post-test condition is respectively 42.95 and 3.92. The r-value and t value are 0.196 and 2.192 respectively which is significant at 95% of confidence. It means that psychological intervention makes a significant difference in environmental knowledge of high school students. Hence, the developed model worked almost 95% to change the environmental knowledge of high school students.

Conclusions

Following conclusions were drawn from the study.

1. Those who have a high level of environmental knowledge scored a higher level of environmental protection attitude than those who have a low level of environmental knowledge.
2. Environmental knowledge and environmental attitude are positively related to each other.
3. Psychological intervention found significant to increase people participation to protect the environment

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