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A study of the concept of global warming and climate change among the senior college students

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Abstract

The purpose of the current study was to investigate senior college student's concept of global warming and climate change. The prevalence of the ideas of senior college students about causes, consequences and remedies of global warming and climate change was determined using a closed form of questionnaire. The results revealed that majority of the students had only an average concept of Global warming and climate change. Also there is difference in the concept of Global warming and climate change among the belonging to different faculties.

Keywords: India, senior college, global warming and climate change

Introduction

Environmental problems are caused by the exploitation of the environment by human beings. Industrialization began in the 17th century and developed rapidly in the 19th century. It resulted in rapid increase of population, the pressure of this population over sources on earth and ecological systems, nutrition, accommodation, education, problems of health services, extinction of species, over pollution, global warming and climate change, rapid urbanization and ordinary industrialization that caused significant environmental problems which our world faced in the 21st century. As globalization continues and the earth's natural processes transform local problems into international issues, few societies are being left untouched by major environmental problems. Some of the largest problems now affecting the world are Acid rain, Air pollution, Global warming and climate change, Hazardous Waste, Ozone Depletion, Smog, Water Pollution, Overpopulation, and Rain Forest destruction. One of the major environmental problems that the World is facing today is Global Warming and Climate Change.

Although India has emerged as a key player in global climate negotiations, the average Indian still remains unaware of Global warming and climate change. The survey conducted by Gallup, before the climate summit in Copenhagen, showed just 32% Indians were of climate change, compared with 75% Brazilians, 59% Chinese and 14% South Africans. In contrast, a high 94% Americans said they were aware of the issue. It is believed that the individuals and future generations who are conscious about; global warming, the reasons of global warming, the predicted results of it and the possible precautions will be sensitive about the environment and will be a part of the society as responsible and conscious adults. The basic way of overcoming global warming and other environmental problems necessitate a conscious and organized environment education. Thus it is vital the students learn about the greenhouse effect in order to understand global warming and climate change an understanding that is essential if future citizens are to assume responsibility for the management and policymaking decisions facing our planet. Therefore, if science education is to promote a citizenry that is knowledgeable about global warming and climate change it is essential to identify student's mental models of the greenhouse effect in order to plan curriculum and design instruction that builds on student's models.

Objectives of the Study

1. To study the concept of Global Warming and Climate Change among Senior College students of Aurangabad.
2. To study the gender difference among boys and girls belonging to different faculties regarding the concept of Global Warming and Climate Change of Senior College students.
3. To study the concept of Global Warming and Climate Change among Senior College students belonging to different faculties.

Hypothesis of the Research

1. The students have a poorly developed concept of Global Warming and Climate Change.
2. There is significant difference in the concept of Global Warming and Climate Change among the students belonging to different faculties.
3. There is no difference in the concept of males and females regarding Global Warming and Climate Change.

Methodology

Design of the Study

Survey method was used to carry out the study and data were collected from the Senior College students of Aurangabad. The study is delimited to 300 Students (150 male and 150 Female) were randomly selected as a subjects. The age of the Students in between 18 to 28.

Tools Used

Self made questionnaire on Global Warming and Climate Change Concept was used to collect the data.

Scoring

One mark is allotted for every correct response and zero marks are allotted for the wrong response. The students acquiring more than or equal to Mean+1 Standard Deviation are classified as high, those acquiring less than Mean 1Standard deviation as low and the scores falling in between them as average.

Procedure

The test was administered and the responses made by the students were scored, tabulated and analyzed using appropriate statistical techniques.

Statistical Analysis

The data was analyzed statistically. ANOVA and Scheffe's test were performed to determine the effect of faculty and gender on the concept of Global Warming and Climate Change. The C.R./t ratio was used to determine the gender differences among the students belonging to different faculties.

Result and Discussion

It was found that 223 students i.e. (74.33%) students have an average concept while 37 students (12.33%) have a poor concept about the problem. Only 40 students (13.33%) students have a well-developed concept of Global Warming and Climate Change. The result is in accordance with the results obtained by Rye *et al.* 1997^[4] and Kilinc *et al.* 2008^[3].

In the light of the result obtained hypothesis 1 i.e. the students have a poorly developed concept of the phenomenon of Global Warming and Climate Change is not accepted.

Table 1: Comparison of males and females belonging to Different faculties regarding the concept of Global Warming and Climate Change

Faculty	Gender	N	Mean	S.D.	t Value
Arts	Male	15	27.74	3.98	0.56*
	Female	28	28.61	6.56	
Mathematics	Male	55	35.98	5.83	1.34*
	Female	38	37.98	5.12	
Biology	Male	28	41.88	4.70	0.88*
	Female	34	40.67	4.76	
Commerce	Male	52	29.67	8.06	0.49*
	Female	50	33.57	7.33	

It is clear from the Table No. 1 that there is no statistically significant between the males and females regarding the concept of Global Warming and Climate Change, since the obtained values of c.r./t ratio are statistically insignificant at $p > 0.05$ level. This may be due to the fact that students taken in the sample belong to urban schools and are open to the same environment and also due to the fact that Global Warming and climate Change have been included in their curriculum which necessitates them to learn about the same.

So hypothesis 3 i.e. there is no difference in the concept of males and females regarding Global Warming and Climate Change is accepted. No previous findings regarding gender difference with regard to Global Warming and Climate Change have been found but the results of the present study clearly indicates that there is no gender difference regarding the concept of Global Warming and Climate Change.

Table 2: Summary table to showing the effect of faculty and gender on the concept of global Warming and Climate Change

Source	Sum of Squares	DF	Mean Square	F	SIG
Faculty	4622.977	3	1540.992	40.764	0.000
Gender	24.853	1	24.853	0.657	0.418
Faculty Gender	11.188	3	3.729	0.099	0.961
Error	11038.367	292	37.803		
Total	385207.000	300			

It is evident from Table.2 that the F value for marks is 40.764 which is significant at 0.01 level with $df=3/292$. It shows that the mean scores for concept of Global Warming and Climate Change differ significantly. Similarly the F value for gender is 0.675 which are not significant at 0.01 level with $df=1/292$. It shows that there is no difference in the concept of Global Warming and Climate Change in males and females. But statistically significant difference is found to exist between the students belonging to different faculties. So hypothesis 2 i.e. there is significant difference in the concept of Global Warming and Climate Change among the students belonging to different faculties is accepted. Difference exists between the Arts and Mathematics faculties and Arts and Biology faculties, while no statistically significant difference is seen between the Arts and Commerce Faculties.

Conclusion

In the current study it is found that:

1. The majority of students have an average concept about the Global Warming and Climate Change [Table. 1]. Very few students are aware of this global problem and the measures they can take up in their day to day activities to reduce their carbon foot print and contribute to reduction of emission of green house gases in the atmosphere.
2. It was also found that there is no difference in gender regarding the concept about Global Warming and Climate Change [Table. 2].
3. There is a difference in the concept of Global Warming and climate Change among the students belonging difference exists between Arts and Mathematics faculties and Arts and Biology Faculties, while no statistically significant difference is seen between the Arts and Commerce Faculties.

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