RESPONDING TO THE CHALLENGE OF CLIMATE CHANGE: A STUDY ON THE AWARENESS LEVEL OF THE UNDER GRADUATE STUDENTS OF SOME COLLEGES OF HOWRAH DISTRICT

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Abstract

India is aware that global climate change will have an adverse impact on the country's ecosystems, agriculture, forests, disease vectors, and marine resources. The Ministry of Environment and Forests promotes environmental awareness and education through the Centre for Environment Education (CEE), and an annual National Environment Awareness Campaign (NEAC) on select environmental issues. The Ministry of Human Resource Development supports initiatives for environmental education undertaken by civil-society organizations. In this study, students are examined as a bridge between environmental education and the eco-friendly citizens of future. There is a positive correlation between students' awareness of climate change and their society. The result of the findings shows a low level of awareness about climate change among the students of rural boys & semi urban girls than the rural girls and semi urban boys. The low level of knowledge and awareness about the concept of climate change and its associated problems has considerable implication on efforts aimed at adaptation and mitigation in the area under study. Climate change awareness is a necessary ingredient for successful implementation of climate change policy in the state in particular and the country in general.

Keywords: Climate change, environmental education, global warming, greenhouse effect, environment awareness

Introduction

"Climate change is vast, complex and urgent issue.....What's clear beyond doubt is that the decisions leaders make today will have a profound effect on their countries' ability to find real and lasting solutions to adapt to this global crisis. Climate change is not solely an environmental issue. It is an issue that needs to be taken into account in order to ensure that human development is sustainable over the long term."

Public awareness about global warming & green house effect as a problem is a recent phenomenon tracing its origins to the Earth Summit (held in Rio de Janeiro in 1992) where the

United Nations called for a time-bound stabilization of greenhouse gases (GHG) to address climate change. The Inter-governmental Panel on Climate Change[1] has been instrumental in establishing the fact that anthropogenic GHG emissions will lead to many changes in global climate such as melting ice-caps, rising sea-levels, changing agricultural patterns, expansion of deserts, warmer summers, and colder winters.[2] Although global warming is merely one of the consequences of climate change, the term global warming is being used widely in public and media discourse to refer to all impacts of climate change.

India is aware that global climate change will have an adverse impact on the country's ecosystems, agriculture, forests, disease vectors, and marine resources. The Prime Minister's Council on Climate Change oversees the integration of climate change concerns into the national development planning through a "relatively GHG benign sustainable growth path" which includes diffusion of renewable energy, energy efficiency, forest and water resources management, and environmental education (National Environment Policy, 2006). India is also implementing sector-specific GHG reduction programs in partnership with multi-lateral organizations and under bilateral programs with developed countries. Global warming needs a multi-pronged approach which involves changes in technology, energy prices, business practices, consumer behaviour, and other activities affecting people's daily lives. Since a low level of awareness about climate change in developing countries is one of the impediments to global warming mitigation, it is necessary to promote and facilitate education, training, and awareness programs in such countries.[3]

India is making efforts to enhance environmental protection in general, although these initiatives are not specifically focused on global warming in particular. The Ministry of Environment and Forests (MOEF) promotes environmental awareness and education through the Centre for Environment Education (CEE), and an annual National Environment Awareness Campaign (NEAC) on select environmental issues (MOEF, 2007). The Ministry of Human Resource Development supports initiatives for environmental education undertaken by civil-society organizations (CEE, 2007). Think tanks like the Tata Energy Research Institute (TERI) are undertaking sector-specific GHG mitigation studies some on request of developed countries and multilateral organizations. Climate Change Centre under the aegis of the NGO, Development Alternatives, carries out research on climate change and provides consultancy to the corporate sector on climate change mitigation projects.[4] The World Wildlife Fund (WWF)'s "India Climate Witness Program" raises public awareness about climate change through a website about causes and impacts of Climate change in two regions, the Sunderbans in East India and Ladakh in North East India (WWF, 2008).

Although India has a free press, media coverage of environmental issues is neither adequate nor comprehensive. Environmental curriculum is gradually being introduced in schools. Some universities offer academic courses on environmental issues, although there are no academic and research programs specific to climate-change or global warming.[5] While there are several non-governmental organizations (NGOs) working towards environmental conservation, not many are known to focus exclusively on global warming awareness.

In this study, students are examined as a bridge between environmental education and the eco-friendly citizens of future. There is a positive correlation between students' awareness of climate

change and society. The more students' awareness of climate change, the more the society is sustainable.[6] In West Bengal, science and social science education curricula includes content closely related with the climate change issues. That is why students from these two content areas were chosen to take part in this study. Climate change awareness of those students from different locations of Howrah District is surveyed in this research.

Relevance of the Project

Climate change issue is a burning problem near all of us. The best way to eradicate this problem is only the general awareness from root to mass. Basically the student awareness is the one of the major way to aware all of us regarding this burning problem. The relevance of this project is-

- The study will help to understand the awareness level of the semi urban & rural students regarding the climate change.
- The study will help in future to compare the awareness level of the Arts & Science Section students regarding the climate change. awareness level
- The study will help to understand that good awareness level between the male & female students regarding the climate change
- The study will help to understand & compare the awareness level regarding the climate change between the 1st year & 3rd year student which are too much relevant with modern period.

Objectives of this Study

The main objectives of this project work are-

1. To study and compare the awareness level of students in climate change with respect to different location of college.
2. To study and compare the awareness level of students in climate change with respect to different section of the students.
3. To study and compare the awareness level of students in climate change with respect to the gender of the students.
4. To study and compare the awareness level of students in climate change with respect to the different academic year of the student.

Methodology

Sample

For this convenience of data collection the researcher has chosen under graduate students of both the semi urban & rural colleges (only 1st year & 3rd year student of arts and science section). They have been selected purposively.

The following categories are the indicators that were used to during data collection.

- College Location-Semi urban / Rural
- Section-Arts/ Science
- Gender-Male/Female

- Academic year-1st year/ 3rd year

Delimitation of the Study

- The study was delimited only to the Uluberia Sub Division of Howrah district.
- The study was delimited to both the Semi urban & Rural Colleges of Uluberia Sub Division
- This study was delimited to both the Arts & Science Sections of the Semi urban & Rural Colleges of Uluberia Sub Division.
- This study was delimited to both the 1st year & 3rd year students of the under graduate section.

Tools

- A self Constructed awareness scale regarding climate change is developed by the researcher. It contains 20 items. Each and every item is closely related to the objective of the study. The item is close ended in nature.
- The researcher tries to maintain simplicity in language to communicate effectively with the respondents. The item are such as-"The primary Green House Gas is" , "The burning of fossils is the main reason for global warming and green house effect-an alternative for this should be used" , "The best way for the awareness of people about Global Warming and Green House Effect is" etc.
- The self constructed awareness scale of the climate change consists of two parts A & B, where part A contains the general information of the students, like their college name, gender, section, academic year etc. Part B contains 20 items, each item has 'five options' the students select only one option and the marking system is 1 to 5 where 1 is for the lowest mark and 5 is for the highest mark.

For this study the researcher collected a total of 100 data

Table No. 1 : College Location

College Location	Number of Student
Semi Urban	60
Rural	40
Total number of Student	100

Table No. 2 : Different Sections

Section	*Number of Student*

Arts	*50*
Science	*50*
Total Number of Student	*100*

Table No. 3 : Gender

Gender	*Number of Students*
Male	*55*
Female	*45*
Total number of Student	*100*

Table No. 4 : Academic Year

Academic Year	*Number of Student*
1st Year	*40*
3rd Year	*60*
Total Number of Student	*100*

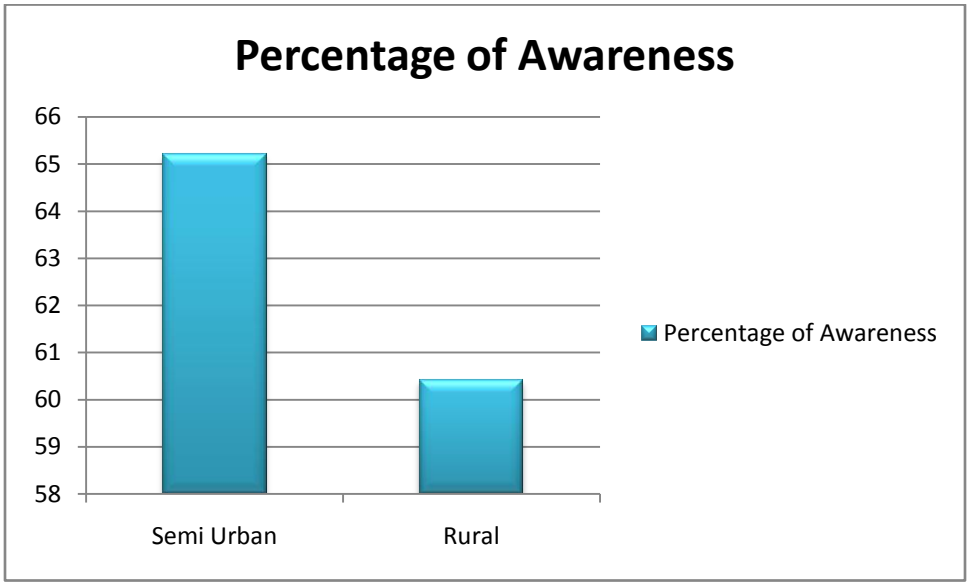
Technique

Data Analysis & Interpretation

Table No. 5 : Awareness level among the Male students of semi urban & rural colleges

Location of the college students(Male)	Percentage of awareness (%)
Semi Urban	65.2
Rural	60.4

Fig: Awareness level among the semi urban & rural college students (Male)

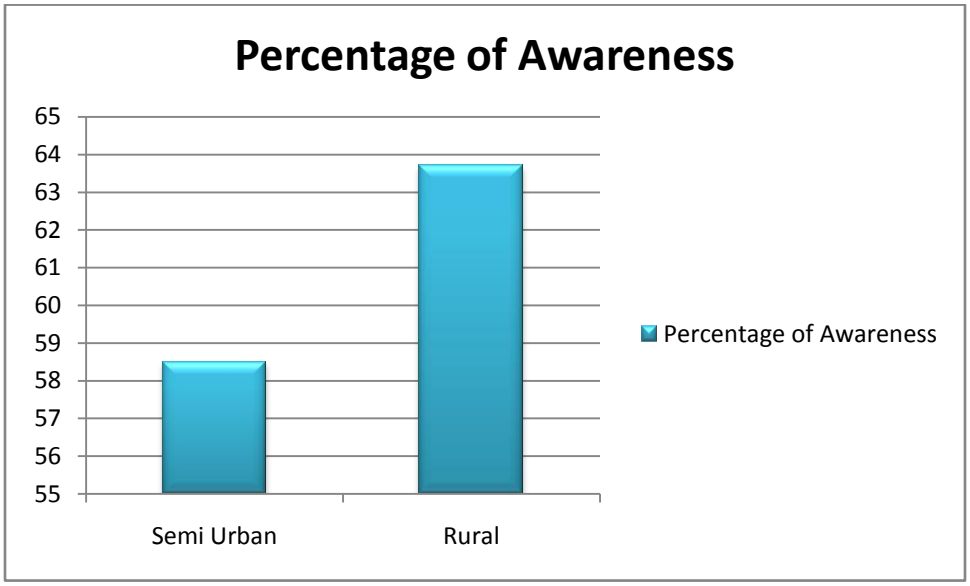


While estimating the Percentage value of the awareness regarding college location of the student from the data collected from the different location of college students (boys), it was found in table-5, that 65.2% semi urban college students (boys) are respondent towards the awareness in climate change & 60.4% rural college students (boys) are respondent towards the awareness in climate change. So, it can be clearly said that the semi urban college students (boys) of Howrah district possess a more positive attitude regarding climate change.

Table No. 6 : Awareness level among the Female students of semi urban & rural colleges

Location of the college students(girls)	Percentage of awareness
Semi Urban	58.5
Rural	63.7

Fig : Awareness level among the semi urban & rural college students (Females)

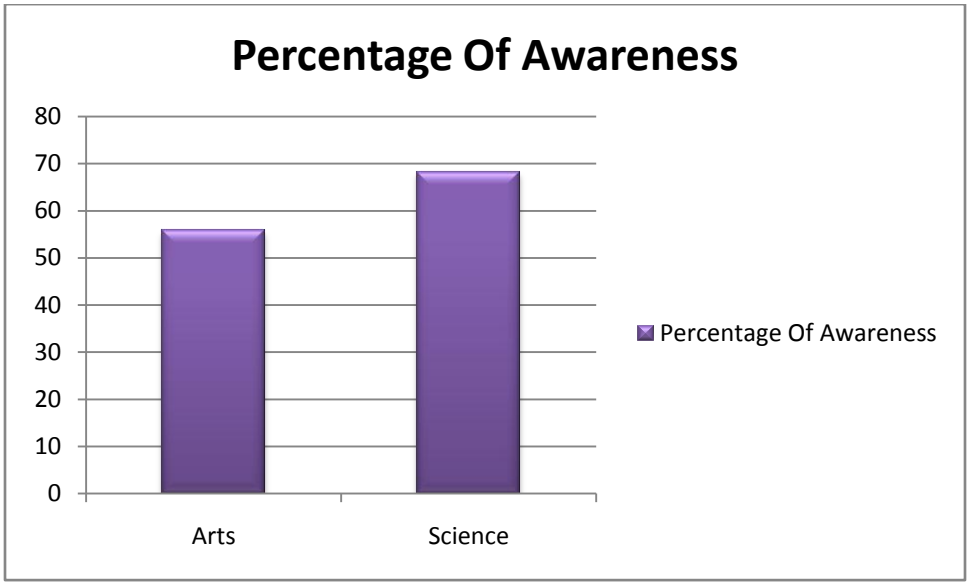


While estimating the Percentage value of the awareness regarding college location of the student from the data collected from the different location of college students (girls), it was found in table-6, that 58.5% semi urban college students (girls) are respondent towards the awareness in climate change & 63.7% rural college students (girls) are respondent towards the awareness in climate change. So, it can be clearly said that the rural college students (girls) of Howrah district possess a more positive attitude regarding climate change.

Table No. 7 : Awareness level among the Male students of different sections of college

Section of the students (Males)	Percentage of awareness
Arts	55.8
Science	68.2

Fig : Awareness level among the different sections of college students (boys)

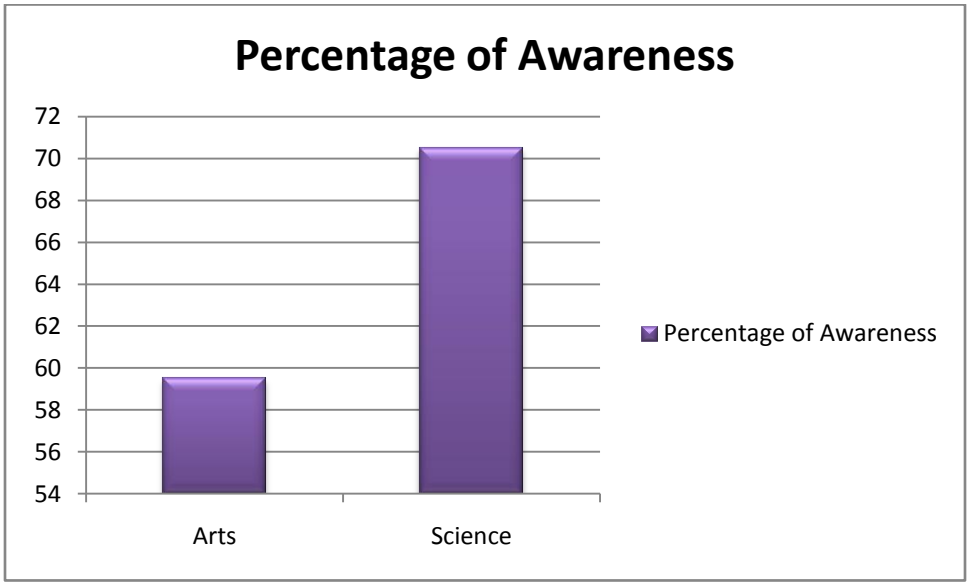


While estimating the Percentage of awareness regarding different sections of the student from the data collected from the different section of college students (boys), it was found in table-7, that 55.8% arts section college students (boys) are respondent towards the awareness in climate change & 68.2% science section college students (boys) are respondent towards the awareness in climate change. So, it can be clearly said that the science section college students (boys) of Howrah district possess a more positive attitude regarding climate change.

Table No. 8 : Awareness level among the girls students of different sections of college

Section of the students (girls)	Percentage of awareness
Arts	59.2
Science	70.5

Fig : Awareness level among the different sections of college students (girls)

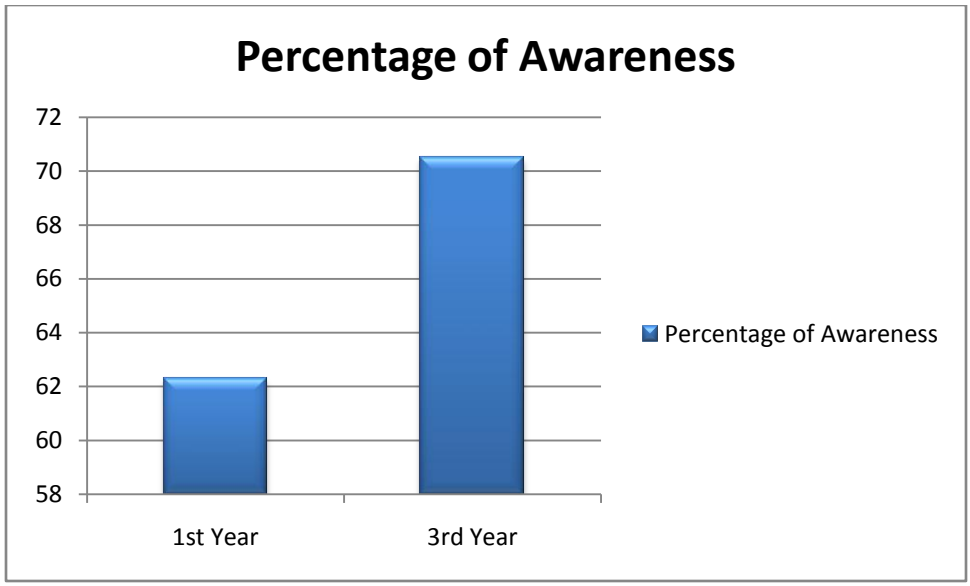


While estimating the Percentage of the awareness regarding different sections of students from the data collected from the different sections of college students (girls), it was found in table-8, that 59.2% arts section college students (girls) are respondent towards the awareness in climate change & 70.5% science section college students (girls) are respondent towards the awareness in climate change. So, it can be clearly said that the science section college students (girls) of Howrah district possess a more positive attitude regarding climate change.

Table No 9 : Awareness level of students (boys) of different academic years of college

Academic year of the student (Semi urban)	**Percentage of Awareness**
1st year	62.3
3rd year	70.5

Fig : Awareness level between the different academic years of semi urban college students (boys)

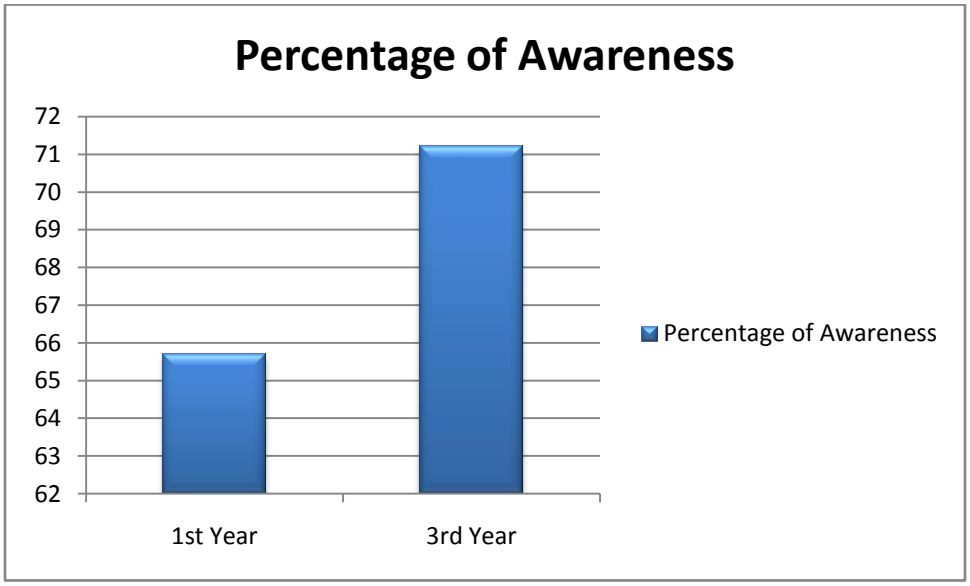


While estimating the Percentage of the awareness regarding different academic years of the semi urban students from the data collected from the different college students (boys), it was found in table-9, that 62.3 % 1st year semi urban college students (boys) are respondent towards the awareness in climate change & 70.5% 3rd year semi urban college students (boys) are respondent towards the awareness in climate change. So, it can be clearly said that the 3rd year semi urban college students (boys) of Howrah district possess a more positive attitude regarding climate change.

Table No 10 : Awareness level of students (girls) of different academic years of college

Academic year of students (Semi urban)	**Percentage of Awareness**
1st year	65.7
3rd year	71.2

Fig: Awareness level between the different academic years of semi urban college students (girls)

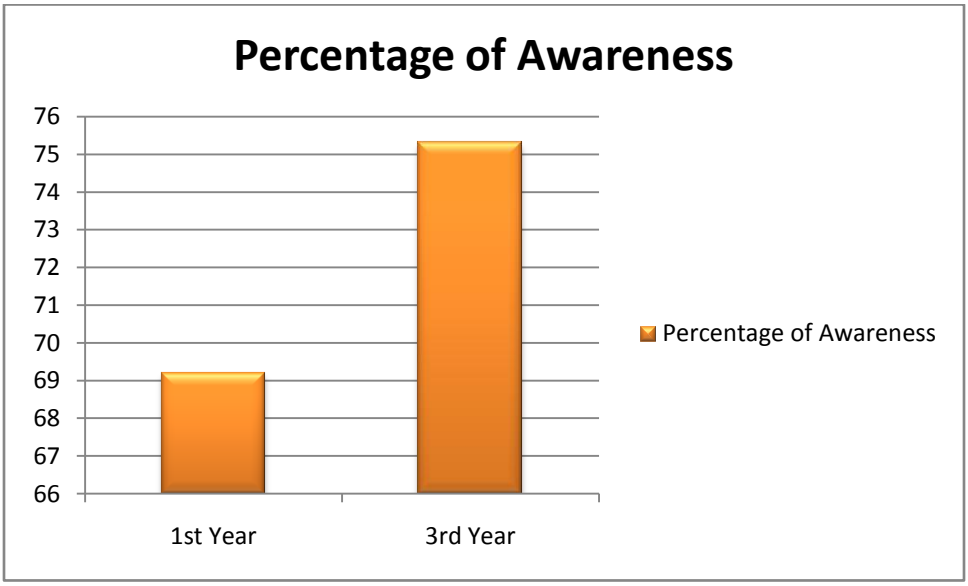


While estimating the Percentage of the awareness regarding different academic year of the semi urban students from the data collected from the different college students (girls), it was found in table-10, that 65.7 % 1st year semi urban college students (girls) are respondent towards the awareness in climate change & 71.2% 3rd year semi urban college students (girls) are respondent towards the awareness in climate change. So, it can be clearly said that the 3rd year semi urban college students (girls) of Howrah district possess a more positive attitude regarding climate change.

Table No. 11: Awareness level of students (boys) of different academic years of college

Academic year of the student (rural)	**Percentage of Awareness**
1st year	69.2
3rd year	75.3

Fig : Awareness level among the different academic year of rural college students (boys)

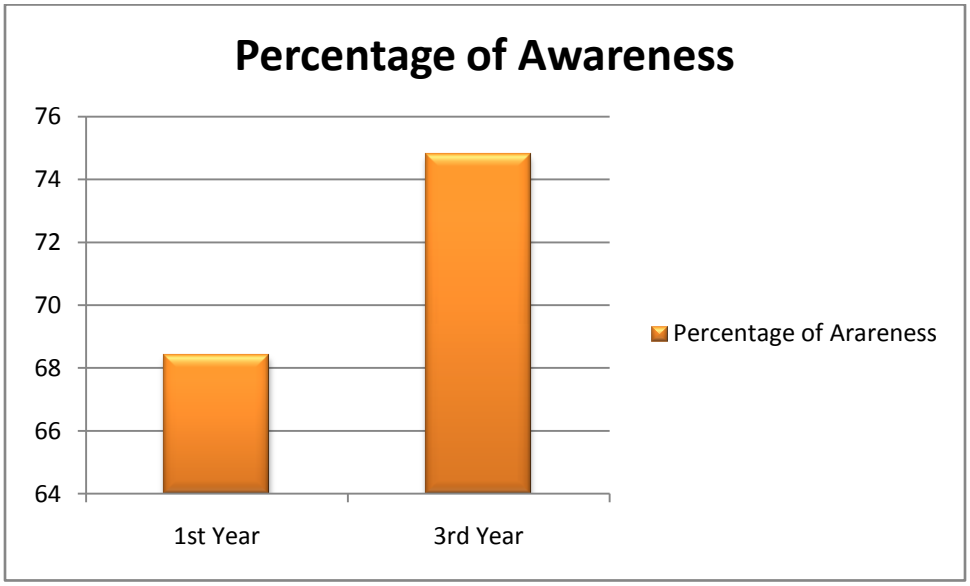


While estimating the Percentage of the awareness regarding different academic year of the urban students from the data collected from the different college students (boys), it was found in table-11, that 69.2 % 1st year rural college students (boys) are respondent towards the awareness in climate change & 75.3% 3rd year rural college students (boys) are respondent towards the awareness in climate change. So, it can be clearly said that the 3rd year rural college students (boys) of Howrah district possess a more positive attitude regarding climate change.

Table No. 12 : Awareness level of students (girls) of different academic years of college

Academic year of the student (rural)	**Percentage of Awareness**
1st year	68.4
3rd year	74.8

Fig : Awareness level between the different academic years of rural college students (girls)



While estimating the Percentage value of the awareness regarding different academic year of the rural students from the data collected from the different college students (girls), it was found in table-12, that 68.4.2 % 1st year rural college students (girls) are respondent towards the awareness in climate change & 74.8% 3rd year rural college students (girls) are respondent towards the awareness in climate change. So, it can be clearly said that the 3rd year rural college students (girls) of Howrah district possess a more positive attitude regarding climate change.

Discussion

Climate change awareness is a synthesis of people's conceptions, interpretations and perceptions of climate change related issues which affect their behaviour, and the quality of responses and reactions to the problems.[7] The result of the findings shows a low level of awareness about climate change among the students of rural boys & semi urban girls than the rural girls and semi urban boys. The low level of knowledge and awareness about the concept of climate change and its associated problems has a lot of implication on efforts aimed at adaptation and mitigation in the study area. Climate change awareness is a necessary ingredient for a successful implementation of climate change policy in the state and country in general.[8] High level of awareness of both boys & girls in the science section of the semi urban & rural areas is observed than the arts section.

On the other hand in the case of academic year both the semi urban college students & rural college students of 3rd year are more aware than the 1st year students. In my study area all the colleges are affiliated under University of Calcutta & according to the university guidelines the compulsory subject Environmental Studies is taught in the 3rd year. As a result of this students of the 3rd year are more aware and sensitive than the 1st year students regarding climate change.

Students' understanding and awareness on environmental issues, such as climate change, are vital for the development of an understanding on a larger scale, especially when younger generations are in question. Therefore, educational opportunities focusing on students' knowledge, understanding and awareness have value, and their impact should be studied for the development of better learning opportunities.[9] To this end, this study was focussed on under graduate students' awareness on climate change.

In addition to generating climate information, awareness must be raised of the existence of this information and its relevance to decision makers. Once climate change awareness and capacity start to grow, climate change can then start to be fully integrated into national, sectoral and local development plans, both to ensure that development is climate proofed, and adaptive capacity is maximized across sectors and scales. This should set the stage for the integration of climate change concerns at sectoral and local levels; given that ideally all sub-national development planning should tie in with national development priorities.[10]

Conclusion

This study was undertaken to examine the impact of climate change and its perceived awareness on the young undergraduate students of some semi urban & rural colleges of Uluberia sub division of Howrah district. This study also explores how young minds in Uluberia Sub division felt about the climate change and perceived its intensity in physical and psychological aspects. The outcome of this research will assist the policy makers to understand the overall perceived awareness of climate change by the younger citizens in Uluberia Sub division. The researcher believes that these handful ideas will assist them to introduce new initiatives to mitigate the impact of climate change. The researcher strongly feels that the best way to adjust to climate change is to involve all individuals in the society.

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