

# A Study on College Students' Cognition and Attitude towards Global Warming

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**Abstract.** Global warming, a bone of contention in environment research, has aroused wide concern of the government and all walks of life. College students, a special group cultivated by the state, play an indispensable role in the sustainable development of the environment. In order to explore college students' cognition and attitude towards this serious environmental issue, a questionnaire was conducted in a university. The study shows that only a small proportion of students effectively grasp the relative information of global warming, though most respondents have realized the problem. Two major reasons are found out to account for the gap: the influence brought by global warming is regional and sporadic is one of the external factors; respondents' weak consciousness and insufficient knowledge is another. Recommendations are presented to enhance respondents' environmental awareness and capacity.

## 1. Introduction

Global warming is a phenomenon mainly caused by human activities and closely bound up with social development. In recent years, due to the increase of carbon dioxide, global temperature continues to rise each year. According to *China Climate Change Blue Book (2019)* released by China meteorological administration, Asian land surface average temperature is 0.58 °C higher than that of all the year round in 2018. It is the fifth warmest year since 1901 [1]. Also, China's extreme weather and climate events are becoming more and more intense, and the level of climate risk is on the rise [2]. As can be clearly seen by the above data, global warming has posed a severe challenge to human survival. Therefore, effective measures should be taken before things get worse. Among the solutions proposed by environmentalists and government workers, how to improve people's cognition and attitude towards this issue remains top priority. College students, a minority in society, can come into play as long as they are guided into the right path appropriately. On the one hand, undergraduates are important members of family and school. Deepening their understanding of this problem is conducive to encouraging the people around them to cultivate such a good ideology. On the other hand, they are a special group of the society and the frontier forces of new techniques and ideas. They do infuse new vitality and original ideas into the process of seeking effective means to mitigate global warming.

Global warming, as a scientific issue, has been studied for almost 200 years [3]. Various researches and essays on the subject are annually increasing in contemporary society, while few studies view college students as the main body to explore people's cognition and attitude towards global warming. Hence, a study is conducted to enhance college students' environmental consciousness and capacity as well as inspire them to learn current affairs concerning the environment spontaneously.

## 2. Investigation

### 2.1. Participants and Methods

In February, 2019, three hundred normative questionnaires were randomly distributed to students at

a university in Zhejiang Province. 182 valid ones (60.67%) were back from freshmen to senior postgraduates. Among the respondents, there are 54 male students and 128 female students; liberal arts students and science students account for 50% each. Some foreign students were also surveyed on this topic. The main contents of the interviews are their awareness, suggestions and willingness of participation towards the issue.

## **2.2. Procedure**

Questionnaires are composed of 10 multiple-choice questions and one open-ended question. According to different purposes, these questions can be divided into four parts:

Q1 to Q3 estimate students' cognitive level of global warming. Q1 tends to learn their knowledge of climate change. Q2 is to investigate their most interested point on the basis of four primary modules concerning the phenomenon-- its definition, causes, influence and solutions. In order to explore students' personal feelings and crisis awareness of temperature change, Q3 will focus on their sensitivity to the harm caused by the rise of global temperature. Q4 is designed for inquiring the most popular approach for these respondents to receive environmental information.

Q5 to Q9 reflect various attitudes from these young people. Q5 offers people a chance to clarify their stand on the controversy that governments or educational institutions, who is more indispensable for the publicity of climate change. Q6 and Q7 look into their willingness and involvement while all the people are striving together to slow down warming trend. Q8 and Q9 attempt to collect their estimate of Earth's bearing capacity in next few years. The evaluation will be presented in the form of specific numbers and two special background. As for Q10 and Q11, the functions are to enable students reflect public's cognitive defects, and accordingly, come up with some creative ideas to remedy.

## **2.3. Results**

Table 1 reveals the differences between the respondents' consciousness and attitudes in regard to the rising of temperature. Although most people have made clear that how to this problem is their most concerned aspect(Q2) and expressed their willingness to change their traditional lifestyle to prevent the matter from deteriorating, only some can be sensitive enough to the hazards brought by global warming and actively perform real deeds. The factors that contribute to these gaps are shown in Table 3. In this form, the most obvious reason is that the adverse consequences of climate change tend to be localized. This regional event, more often than not, fail to spark huge attention all over the world. Also, the inappropriate way of mass media propaganda should claim part of responsibility for the worsening situation.

The findings of Q8 and Q9 in Table 2 specially exhibit college students' cognitive level. When it comes to the maximum rise of the temperature, more people (50%) chose a conservative range compared with the optimists' choices (18.68%), from 0.5°C to 1.5°C. However, when the respondents turn to the acceptable rise of sea level, 44.51% of them select a more optimistic range, from 30 centimeters to 100 centimeters in contrast to the conservatives' answers. According to the latest research, human beings can only survive on the condition that the temperature rise is controlled within 1.5°C. And a sea level rise of more than 9 centimeters will flood 2% of Tuvalu, a country in the south Pacific. The above data indirectly indicate that the respondents neither reserve adequate knowledge nor own subtle insight into global climate change.

**Table 1.** Respondents' Sense and Attitude Towards Global Warming

	Positive Number/Percentage	Negative Number/Percentage	Neutral Number/Percentage
Awareness of global warming issue (Q1)	125/ 68.68%	57 / 31.32%	
Sensitivity to the harm caused by the issue(Q3)	73/ 40.11%	20/ 10.99%	89/48.90%
Willingness of participation in slowing warming trend(Q6)	124/ 68.13%	11/ 6.04%	47/ 25.83%
Involvement in efforts to slow warming (Q7)	67/ 36.82%	30/ 16.48%	85/ 46.70%

**Table 2.** Estimates of the Earth's Carrying Capacity

Prediction	Optimists' Number/Percentage	Conservatives' Number/Percentage	Neutral (Dim) Number/Percentage
Prediction of the maximum temperature rise the earth can withstand (Q8)	34/ 18.68%	91/ 50%	57/31.32%
Prediction of the maximum sea level rise the earth can withstand(Q9)	81/ 44.51%	38/20.88%	63/34.61%

**Table 3.** Factors That Limit People's Attention and Action(Q10)

Factors	Number/Percentage
The network, newspapers, classroom teaching and other communication channels are subjective and general.	51/ 28.02%
The harm brought by global warming is regional and decentralized.	88/ 48.35%
Limitations of science and technology, talents.	41/ 22.53%
Other factors.	2/ 1.10%

In the interview with foreign students, all of them have realized the seriousness of the issue and 80% of them deem that both governments and educational institutions are responsible for propagandizing relative information of global warming(Q5). What's more, they hold a positive attitude with respect to changing bad living habits and come up with their suggestions. One of the interviewees said,

People only put themselves into the problem when they also have problem with it, so my suggestion is that try to cut the production and announce the main reason is global warming.

### 3. Recommendations

Investigation results demonstrate that among all the tips put forward to strengthen students' awareness and capacity of environmental protection, "propaganda" was mentioned most frequently though education was noticed by some respondents. The survey also show that television, broadcast, Internet and other mass media are the main approaches (74.73%) for students to acquire information. Based on the feedback above, what should institutions and governments do to enhance propaganda come into its own.

Firstly, for educational institutions, especially for universities and graduate schools, they'd better increase the types and content of lectures on environmental science, such as setting up courses specialized in environmental pollution and assigning assignments to prompt students to learn creatively. Moreover, teachers can lead students to carry out field survey so as to increase the interest and effectiveness of the subject. It is while students are patiently toiling at the little tasks of one field that the meaning and shape of great whole of this field dawn on them [4].

For the government, incentive and educational policies are supposed to be issued according to different areas of society. Given that in addition to schools, communities and television industry are the two fields that students are mostly exposed to, tips of these two fields will be principally discussed. To begin with, civil affairs departments can encourage communities to hold more knowledge speeches on environmental protection. To the winners, they are able to obtain some appropriate rewards. To those who are reluctant to take part in environmental activities or damage the environment, community workers should persuade or warn. Through the efforts, not only are the residents' living habits improved invisibly, but does the community environment beautify. Secondly, comes the suggestions for the film and television industry. The government need to hearten film and TV drama producers to produce more dramas related to the ecological environment in that romantic dramas actually accounted for a larger proportion, while films and TV plays with realistic themes take up a smaller one. For example, undaunted producers can make a documentary that reflects the life of polar animals or inhabitants of neighboring polar regions. Admittedly, making such a successful and popular documentary is required of years of persistence, technical and personnel support. Nonetheless, the accrued returns will both profit the environment and ensure a better life for all human beings.

#### **4. Summary**

To sum up, it remains to be seen whether or not global warming deterioration can be controlled at an acceptable level, the current prospects are far from encouraging [5], the personal ability of college students is also limited. People around the world must act immediately to prevent the situation from deteriorating even further.

#### **5. References**

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