CLIMATE CHANGE: AN EDUCATION STUDENT'S PERSPECTIVE

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Abstract

Climate change has become one of the major global challenges of the 21st century. It has been observed that the developing countries of the world (Philippines inclusive) will suffer most from the impacts of climate change. One of the easiest ways of intervention is through education. A well-informed person is likely to act positively towards managing the impact of climate change. A well-informed teacher (or teacher-to-be) will magnify this effect as they can influence their students towards climate change. In this study, a total of 76 education students' perspectives about climate change were determined. One-way ANOVA, t-test, Pearson r were used to analyze responses. Data revealed that respondents have high perception and attitude on climate change and everyone shares the same no matter what is their age, gender or course. It also has confirmed that perception about climate change results into an attitude towards helping reduce factors causing climate change.

Keywords: perception and response, attitude, practices, youth response, awareness

I. INTRODUCTION

Climate change has appeared as one of the most devastating environmental hazards that makes it as the most important environmental issue facing the world today. According to Ban Ki Moon(2013), Secretary-General of United Nations, "climate change is the major, overriding environmental issue of our time and the single greatest challenge facing decision makers at many levels." Moreover, Costelo et al.(2009) stressed that climate change is one of the most threatening global environmental changes of the century. Evidence of climate change are global warming, increase in the sea levels, increase in temperature and acidity of oceans, melting of ice caps, spread of climate- related diseases such as malaria, higher incidence of hurricane and forest fires and destruction of crops.

The Philippines is a country that is most vulnerable to the effects of climate change. (AFP, 2008). It is one of the countries that suffer the most from extreme weather events, with a very high death toll and economic losses caused by the effects of climate change. Analyzing data from 1991 to 2010, Germanwatch, a climate and development organization, said that the Philippines ranked tenth among countries when it comes to exposure ad responding to severe weather caused by climate change. Days before the Super Typhoon Haiyan (Yolanda) the government excreted all effort

to inform everyone along the path to take precaution, but many have ignored the call which has caused so many deaths in Leyte (Lagmay, 2014). Climate change specialists have repeatedly pointed out that a solution to climate change problem will require climate change awareness and its proper understanding (Ekpho & Ekpho, 2011) and educational institutions play a critical role in ensuring that the youth are aware of the causes and effects of climate change.

To develop a positive attitude towards the environment, one should acquire sufficient knowledge on environmental issues. Oskamp and Schultz (2005), Patchen (2006) and Musad Akhtar, Afroz, Al-Amin, and Kari (2013) stressed that knowledge and attitudes of the people are the core element to get a better quality of the environment. Attitude is very important that replicates how an individual views concerns surrounding environmental issues. Positive attitude towards environment will drive an individual to play a significant role to preserve the environment. The notion of awareness and understanding are two interrelated terms. Perception is pre-requisite for understanding. One could have an awareness of certain things, but it does not mean he/ she understood the fact. Understanding derives from knowledge of certain issues. Leiserowitz (2007) focused the public perception of climate change and stressed the significance of realizing public perception as it can create further impact towards the future development of policies relating to the environment. Schmidt (2007) analyzed the correlation between the concern for the environment and how it translates into a form of action towards preserving the environment.

Aside from creating awareness and ultimately an advocacy on environment stewardship, schools through research also tried to study and understand the perception, attitudes and conceptual knowledge of students as regards climate change. The study of Aguja, Cano, Prudente and Vilanculos (2009) which investigated college students regarding their existing conceptions and attitudes on climate change reported the need for the concept of climate change to be given attention in the science curriculum.

These researches have encouraged the author to investigate the perspective of education students on climate change particularly their perception and attitude on climate change. The author has chosen education students to be the particular sample in this research because they will become the future teachers and administrators in the academe who will be facing the vast challenges of climate change in the future. Hence, this study.

Specifically, this study was conducted in order to determine the profile of the respondents in terms of age, sex, and course; the perception of the respondents on climate change; the attitude of the respondents on climate change; the significant difference in the students' perception of climate change when grouped according to age, sex, and course; the significant difference on the students attitude on climate change when grouped according to age, sex, and course; and the relationship between the students' perception and attitude on climate change.

II. METHODOLOGY

2.1 Research Design

The study used the descriptive-correlational type of research. This design was used to determine the perception and attitude of the respondents on climate change, and their significant relationship was determined.

2.2 Participants

The respondents of the study were 76 students (41 BEED students and 35 BSE students) from Institute of Teacher

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Education of Isabela State University, Cauayan Campus.

2.3 Instrumentation

Questionnaires were used to gather the data on the profile of the respondents as well as their perception and attitude on climate change. The questionnaire was based on the standardized climate change attitude inventory of Dr. Maricar Prudente. The questionnaire has three parts: Part A – Profile of the respondents, Part B – Perception on climate change and Part C – Attitude inventory.

The questionnaire was designed to consider three dimensions of perception: awareness on the occurrence of global warming, belief in human causes and the perception of negative consequences. On the other hand, the attitude questionnaire involved the following dimensions: concern, optimism, sense of responsibility and commitment. Each statement was rated using the four point scale from which the respondents indicate their agreement and disagreement.

2.4 Statistical Tools

All data were processed through the aid of the SPSS V24. Frequency count, percentage , mean were used in describing the respondents and their responses. One-way ANOVA was used to determine if there is a significant difference in the respondents' perception and attitude towards climate change when grouped according to age, t-test was used to determine if there a significant difference in the respondents' perception and attitude towards climate change when grouped according to sex and course and Pearson -r was used to analyze the relationship between the perception and attitude of the respondents on climate change.

III. RESULTS AND DISCUSSIONS

3.1 Profile of the Respondents

Regarding age, 25(32.9%) of the respondents are aged 16, and 3(3.9%) are aged 15. It can be inferred that a significant number of the respondents were freshmen students who are closely followed by 19(25%) at age 17 and 11(14.5%) at age 18 which comprises the second year and third year students of the Institute while 8(10.5%) of the respondents are at age 19, 7(9.2%) are at age 20 which comprises the fourth year students. Only 1(1.3%) and 2(2.6%) of the respondents were at the age of 22 and 26 respectively. These were the irregular students and those who stopped schooling before going to college.

Regarding sex, the female dominate the male respondents with 52 (68.4%) against 24 (31.6%). This implies that there are more female than male students of Institute of Teacher Education in Isabela State University- Cauayan Campus. Concerning course, 41 (53.9%) are BEED followed by 35 (46.1%) who are in BSE. It only means that there are more students taking up elementary education than secondary education.

3.2 Perception of the Respondents on Climate Change

As shown in Table 1, respondents disagree that climate change is a natural phenomenon and agree that its human that has caused it. There is a strong belief among the respondents that climate change will result in negative consequences such as deaths, loss of properties to name a few. However, there is some respondents who sees a good thing in climate change, and some even believe that there is more good than bad in climate change.

Table 1. Perception of the Respondents on Climate Change

Perception on Climate Change	Mean	QD
Awareness of Occurrence of Climate change		
1. Global warming is already occurring in our country	3.67	Strongly Agree
2. I have already noticed some signs of global warming	3.54	Strongly Agree
3. It seems to me that the temperature is warmer now than in years before	3.46	Agree
4. It seems to me that weather patterns had changed compared to when I was a child	3.50	Strongly Agree
Grand Mean	3.54	Strongly Agree
Belief in Human cause		
5. Global Warming is mainly due to natural causes, not human activity	2.89	Agree
6. The main causes of global warming are human activities	3.62	Strongly Agree
7. Global warming is merely a natural fluctuation, not caused by human activity	1.97	Disagree
8. I am quite sure that human activities are to be blamed for global warming	3.37	Agree
Grand Mean	2.97	Agree
Perception of Negative Consequences		
9. Global warming has some good effects on the environment	3.37	Agree
10.Global warming will be harmful to the environment	3.74	Strongly Agree
11.Global warming will bring about some serious negative consequences.	3.63	Strongly Agree
12.The consequences of global warming will be more positive than negative overall	3.01	Agree
Grand Mean	3.44	Agree
Overall Mean Perception	3.32	Agree

It is also important to note that the respondents seem uncertain on the cause of climate change for they perceived on item 6 and 7 that the cause of climate change is human activities but in item 5 they agreed that climate change is mainly due to natural causes, not human activity.

3.3 Attitude of the Respondents on Climate Change

Table 2 indicates that in general, the respondents have a positive attitude towards climate as they agreed with most of the indicators. Respondents strongly agreed that climate change is considered a serious problem that we are facing now, and they are worried about the effects of global warming in the country. However, they perceived that nature could heal itself and they should not worry about climate change. They are not sure of the lack of response of some individuals, and that scientist will discover solutions thus they also perceived that global warming is not a cause for alarm. But in general, they agreed show concern on the effects of global warming.

Respondents have optimism for some solutions to mitigate the problems associated with climate change, but they doubt if it will make any difference as reflected in item 12. They strongly agreed that immediate actions are necessary to slow down global warming that if we do not take any action to prevent it, the effects will continue to escalate and that all must participate to reduce the effects of climate change. The, however, agree that the politicians who have control over government funds have a greater role to take. They also agree that experts about climate change and how to mitigate it should take charge in combating climate change.

The education students have shown a sense of commitment as they strongly agreed that they would like to work with

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Table 2. Attitude of the Respondents on Climate Change

Attitude on Climate Change	Mean	Qualitative Description
Concern on Climate change		
1. I'm worried about the effects of global warming in the Philippines	3.86	Strongly Agree
2. Global warming is not a cause for alarm	2.96	Agree
3. The lack of response of some individuals toward the problem of climate change bothers me.	3.33	Agree
4. The scientist will discover solutions to global warming, so we need not overly concern ourselves with it.	2.95	Agree
5. "Nature has a capacity to heal itself" so I don't worry about global warming	3.50	Strongly Agree
6. Global warming is a serious problem we are facing now.	3.74	Strongly Agree
Grand Mean	3.39	Agree
Optimism on Climate Change		
7. If we take collective action, we will be able to reduce the effects of climate change.	3.50	Strongly Agree
8. I believe we will be able to solve environmental problems associated with global warming.	3.28	Agree
9. Whatever we do, we cannot slow down the warming of the earth due to greenhouse gasses.	2.26	Disagree
10. Man's activities do not change the climate. No amount of effort can be done to change it.	2.97	Agree
11. There are simple things I can do that will contribute to slowing down global warming and lessen its impacts.	3.41	Agree
12. Even if I try to do something about global warming, I doubt if it will make any difference.	2.54	Agree
Grand Mean	3.00	Agree
Sense of Responsibility		
13. Developed countries should take more responsibility to reduce greenhouse gas emission than developing countries.	1.87	Disagree
14. Immediate action is necessary to slow down global warming	3.50	Strongly Agree
15. All sectors of society must be involved in finding means to lessen the impacts of climate change.	3.61	Strongly Agree
16. Big companies should be the ones to take responsibility in preventing global warming	1.97	Disagree
17. The effects of global warming will continue to escalate if we don't take any action to prevent it.	3.74	Strongly Agree
18. We should just leave the solution to the problem to scientist and politicians.	3.32	Agree
Grand Mean	3.00	Agree
Commitment on Climate Change		
19. I plan to take some actions to stop global warming	3.41	Agree
20. I would like to work with others to help slow down global warming	3.54	Strongly Agree
21. I don't know enough about global warming so more research and information campaign must be undertaken before I will take action.	2.46	Disagree
22. I am willing to sacrifice my conveniences to help reduce greenhouse gas emissions.	3.32	Agree
23. My activities have no significant contribution to global warming, so I do not intend to take actions to change them.	3.21	Agree
24." Nature will heal itself" so there is no need for me to take action to stop global warming	3.36	Agree
Grand Mean	3.21	Agree
OVERALL MEAN ATTITUDE	3.15	Agree

others to help slow down global warming. They believe that their actions will help to mitigate climate change. Some also believe that nature will heal itself and whatever they do will not stop it. This view of the earth healing itself is shared by some scientists who opposes to the idea of human-induced climate change (Climate Depot, 2010).

The above finding only implies that the respondents' positive attitude toward climate change means that they are willing to do an action to reduce the effects of climate change and they are hopeful that their actions can help in the mitigation of climate change.

3.4 Perception of the Respondents on Climate Change when Grouped According to Age

Table 3 shows that older respondents have higher perception score specifically regarding the awareness of climate change (r=0.87) and the negative consequences (r=0.61). There is, however, slight relationship (r=0.32) for respondents belief on human causes. On over-all, the relationship between age and responses is also high at r = 0.85. However, the F-values reveal that there is no significant difference in the awareness, belief in human cause and perception of negative consequences of the respondents when grouped according to age as revealed by the values 2.36, 0.72 and 1.12 respectively at 5% level of significance.

This can be attributed to the fact that older students are matured enough and are more aware on the on the things that were going on in their environment because they

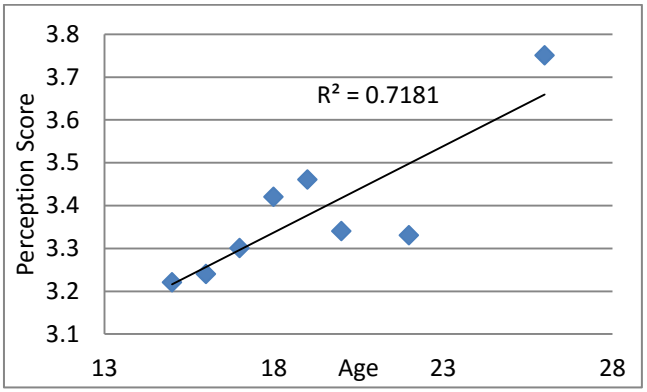

Figure 1. relationship between age and perception

Table 3. Perception of Respondents on Climate Change when Grouped According to Age

Age	Perception on Climate Change							
	Awareness of Occurrence of Climate Change		Belief in Human Cause		Perception of Negative Consequences		Overall Perception	
	Mean	QD	Mean	QD	Mean	QD	Mean	QD
15	3.50	SA	3.08	A	3.08	A	3.22	A
16	3.34	A	2.99	A	3.40	A	3.24	A
17	3.53	SA	2.93	A	3.45	A	3.30	A
18	3.64	SA	3.07	A	3.55	SA	3.42	A
19	3.88	SA	3.00	A	3.50	SA	3.46	A
20	3.75	SA	2.71	A	3.57	SA	3.34	A
22	4.00	SA	3.00	A	3.10	A	3.33	A
26	4.00	SA	3.25	A	4.00	SA	3.75	SA
Grand Mean	3.71	SA	3.00	A	3.46	A	3.38	A
F-value	2.36^{ns}		0.72^{ns}		1.12^{ns}		1.24^{ns}	

Legend: SA – Strongly Agree A- Agree D- Disagree SD- Strongly Disagree
ns- not significant s –significant

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Have more experiences than the younger students. However, the F-value of 1.24 shows that there is no significant difference in the perception of the respondents when grouped according to age. This only means that the perception of the respondents is similar even at different ages. This finding negates the findings of Lyons et al. (1994) that older students were more active and aware of biological and environmental facts.

3.5 Perception of the Respondents on Climate Change when Grouped According to Sex

Table 4 shows the perception on climate change when grouped according to gender. As presented in the table, the male and female respondents have the same degree of perception regarding awareness of the occurrence of climate change as well as in their perception of negative consequences. However, they are slightly different from their belief in the human cause with female respondents are more certain of their beliefs than the male respondents.

There were no significant differences in the respondents' awareness of climate change and negative consequences. This only implies that regardless of sex, the respondents have the same perception on their awareness on climate change and negative consequences brought about by climate change. However, there exists a significant difference between the respondents' belief in a human cause as revealed by the t-value of 0.02. This only implies that female students are more certain that human cause or activities are the

Table 4. Perception of the Respondents on Climate Change when Grouped According to Sex

Sex	Perception on Climate Change							
	Awareness of Occurrence of Climate Change		Belief in Human Cause		Perception of Negative Consequences		Overall Perception	
	Mean	QD	Mean	QD	Mean	QD	Mean	QD
Male	3.61	SA	2.96	A	3.40	A	3.32	A
Female	3.51	SA	3.51	SA	3.46	A	3.31	A
Grand Mean	3.56	SA	3.24	A	3.43	A	3.41	A
t-value	0.98^{ns}		0.02^{s}		0.26^{ns}		0.17^{ns}	

Legend: SA – Strongly Agree; A- Agree; D- Disagree; SD- Strongly Disagree
ns – not significant; s –significant

Table 5. Perception of the Respondents on Climate Change when Grouped According to Course

Course	Perception on Climate Change							
	Awareness of Occurrence of Climate Change		Belief in Human Cause		Perception of Negative Consequences		Overall Perception	
	Mean	QD	Mean	QD	Mean	QD	Mean	QD
BEED	3.51	SA	3.00	A	3.52	SA	3.34	A
BSE	3.59	SA	2.93	A	3.34	A	3.29	A
Grand Mean	3.55	SA	2.97	A	3.43	A	3.32	A
t-value	0.65^{ns}		0.74^{ns}		2.52^{ns}		0.60^{ns}	

Legend: SA – Strongly Agree; A- Agree; D- Disagree; SD- Strongly Disagree
ns – not significant; s –significant

main reason for climate change. This can be attributed to the fact that female are more matured than males.

In the overall mean perception, male have slightly higher mean perception than female. This deference is not significant. This only means that male and female students have the same perception of climate change. This finding negates the finding of Eisler and Yoshida (2013) those regarding gender, the results showed that males have higher environmental knowledge than females.

3.6 Perception of the Respondents on Climate Change when Grouped According to Course

Table 5 presents the perception on climate change when grouped according to course. As shown in the table, the BEED and BSE respondents have the same degree of perception regarding awareness of the occurrence of climate change as well as in their belief in human cause They also have the same perception of negative consequences.

The table further reveals that at 5% level of significance, there is no significant difference in the respondents' awareness on climate change, belief in human cause and perception on negative consequences. This only implies that regardless, of course, the respondents have the same perception of climate change.

Furthermore, in the overall mean perception, BEED students have a slightly higher mean of 3.34 than the BSE students with the mean of 3.29. This finding only implies that BEED students have a slightly higher perception on climate change than BSE students. This can be attributed to the fact that all BEED students have science subjects discussing our environment while in the BSE, only the Physical Science majors have the science subjects discussing our environment. However, the t-value of 0.60 shows that there is no significant difference in the perception of the respondents when grouped according to course. This only means that the perception of BSE and BEED students is similar.

Table 6. Attitude of Respondents on Climate Change when Grouped According to Age

Age	Attitude on Climate Change									
	Concern on Climate Change		Optimism on Climate Change		Sense of Responsibility		Commitment on Climate Change		Overall Attitude	
	Mean	QD	Mean	QD	Mean	QD	Mean	QD	Mean	QD
15	3.22	A	2.72	A	2.94	A	3.39	A	3.07	P
16	3.40	A	2.95	A	2.97	A	3.19	A	3.13	P
17	3.44	A	3.00	A	3.02	A	3.17	A	3.15	P
18	3.47	A	3.15	A	3.08	A	3.27	A	3.24	P
19	3.40	A	2.83	A	2.96	A	3.29	A	3.11	P
20	3.19	A	3.12	A	3.10	A	3.19	A	3.15	P
22	3.33	A	3.00	A	2.96	A	3.17	A	3.08	P
26	3.67	SA	4.00	SA	3.17	A	3.67	SA	3.62	HP
Grand Mean	3.39	A	3.10	A	3.02	A	3.29	A	3.19	P
t-value	1.02^{ns}		1.50^{ns}		0.19^{ns}		2.05^{ns}		0.76^{ns}	

Legend: SA – Strongly Agree; A- Agree; D- Disagree; SD- Strongly Disagree; HP-Highly Positive; P-Positive; N-Negative; HN-Highly Negative; ns- not significant; s -significant

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3.7 Attitude of the Respondents Towards Climate Change When Grouped According to Age

Table 6 shows the attitude of the respondents on climate change when grouped according to age. Regarding their concern about climate change, respondents' of age 26 have the highest mean attitude, and that of age 20 have the lowest mean attitude on climate change. This only means that older students show more concern on climate change than the younger ones.

Regarding their optimism on climate change, ages 26 have the highest mean attitude of 4.0 and ages 15 have the lowest mean attitude of 2.72. This only means that older respondents are a more positive thinker or optimistic that their action can help reduce the effects of climate change than the younger students. Regarding their sense of responsibility, ages 26 have the highest and while respondent with ages 15 has the lowest mean attitude. This finding implies that older respondents are more responsible in taking action to mitigate climate change than the younger respondents.

Regarding their commitment to climate change, ages 26 have the highest mean attitude, and ages 22 have the lowest mean attitude. This finding implies that older students are more committed to doing an action to reduce the effects of climate change than the younger respondents.

But in general, the F-values reveal that there is no significant difference in the attitude of the respondents when grouped according to age as revealed by the F values, 1.02, 1.50, 0.19 and 2.05 respectively at 5% level of significance. This only means that the attitude of the respondents on climate change is similar even at different ages. The table further reveals that in the overall attitude, respondents of age 26 have a highly positive attitude as revealed by the overall mean of 3.62 while those all other ages (ages 15 – 22) have a positive attitude on climate change. However, the F-value of 0.76 shows that there is no significant difference in the attitude of the respondents when grouped according to age. This only means that the attitude of the respondents is similar even at different ages.

This finding contradict with the findings of Dunlap et al.(1980) that in line with the age, younger people tend to be more concerned about environmental issues than older people and according to Jiangang (1993), older individual have more social and life experiences, therefore, express more concern about environment hazards, in turn, provided higher ratings to levels of threat from the risk items.

3.8 Attitude of the Respondents Towards Climate Change When Grouped According to Sex

Table 7 shows the attitude of the respondents on climate change when grouped according to sex. As presented in the table, the male and female respondents have the same attitude regarding their concern about climate change with weighted means of 3.25 and 3.45 respectively as well as in their optimism on climate change with weighted means of 2.96 and 3.01 respectively. The respondents also have the same attitude regarding their sense of responsibility with weighted means of 2.93 and 3.03 respectively as well as in their commitment to climate change with weighted means of 3.19 and 3.23 respectively.

The table further reveals that at 5% level of significance, there is no significant difference in the respondents' attitude on climate change as indicated by the t- values of 5.43, 0.29, 1.37 and 0.12 respectively. This only implies that regardless of sex, the respondents have the same concern, optimism, commitment and sense of responsibility on climate change.

Furthermore, in the overall mean attitude, female have slightly higher mean perception of 3.18 than the male with a mean perception of 3.08. However, the t-value of 1.84 shows that there is no significant difference in the perception of the respondents when grouped according to sex. This only means that female and male students have the same attitude on climate change and both sexes are eager to do an action to reduce the effects of climate change.

The finding conforms with the study of Uyeki & Holland (2000)who have determined gender to not be significantly associated with environmental concern.

On the other hand, the finding contradicts with research findings of Mac Donald & Hara(1994) and Shen & Saijo(2007) that males are more environmentally concerned than are females. It also negates the findings of Chu, Lee, Ko, Shin, Lee, Min &Kang(2007), Huang & Yore(2004), Flynn, Slovic, & Mertz (1994), Riechard & Peterson(1998), Tikka, Kuitunen & Tynys (2000), Worsly & Skrzypiec(1998) and Zelezny, Chua, & Aldrich(2000), Bord and O'Connor(1997) and Carlsson-Kanyama(1998) that females are more environmentally concerned than are males ad that biologically, women have a caring nature.

3.9 Attitude of the Respondents Towards Climate Change When Grouped According to Course

Table 8 shows the attitude of the respondents on climate change when grouped according to course. As presented in the table, the BEED and BSE respondents have the same attitude regarding their concern about climate change with weighted means of 3.43 and 3.34 respectively as well as in their optimism on climate change with weighted means of 3.05 and 2.93 respectively. The respondents also have the same attitude regarding their sense of responsibility with weighted means of 2.98 and 3.02 respectively as well as in their commitment to climate change with weighted means of 3.28 and 3.13 respectively.

The table further reveals that at 5% level of significance, there is no significant difference in the respondents' concern, optimism, sense of responsibility and commitment to climate change as revealed by the t- values of 0.32, 0.22, 0.67 and 0.16 respectively. This only implies that regardless, of course, the respondents have the same concern, optimism, commitment and sense of responsibility on climate change.

In the overall attitude, the BEED and BSE have the same positive attitude on climate change as revealed by the overall mean of 3.19 and 3.11 respectively and the t-value of 1.32 means that there is no significant difference in the perception of the respondents when grouped according to course. This only means that the BSE and BEED students have the same attitude and both groups are willing to do some action to mitigate the effects of climate change.

3.10 Correlation between Perception and Attitude of Respondents on Climate Change

Table 9 below presents the relationship between the perception and attitude of the respondents on climate change. As gleaned in the table, the Pearson-r value of 0.57 shows that there is a moderate positive correlation between the p erception and attitude of the respondents on climate change. At 5% level of significance, there is a significant relationship between the perception and attitude of the respondents on climate change which means that their attitude as regards climate change is linked with how they perceive climate change. This only implies that the higher the perception and awareness of the respondents on climate change, the more

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Table 7. Attitude of Respondents on Climate Change when Grouped According to Sex

Sex	Attitude on Climate Change									
	Concern on Climate Change		Optimism on Climate Change		Sense of Responsibility		Commitment on Climate Change		Overall Attitude	
	Mean	QD	Mean	QD	Mean	QD	Mean	QD	Mean	QD
Male	3.25	A	2.96	A	2.93	A	3.19	A	3.08	P
Female	3.45	A	3.01	A	3.03	A	3.23	A	3.18	P
Grand Mean	3.35	A	2.99	A	2.98	A	3.21	A	3.13	P
t-value	5.43^{ns}		0.29^{ns}		1.37^{ns}		0.12^{ns}		1.84^{ns}	

Legend: SA – Strongly Agree; A- Agree; D- Disagree; SD- Strongly Disagree; HP-Highly Positive; P-Positive; N-Negative; HN-Highly Negative; ns- not significant; s -significant

Table 8. Attitude of Respondents on Climate Change when Grouped According to Course

Course	Attitude on Climate Change									
	Concern on Climate Change		Optimism on Climate Change		Sense of Responsibility		Commitment on Climate Change		Overall Attitude	
	Mean	QD	Mean	QD	Mean	QD	Mean	QD	Mean	QD
BEED	3.43	A	3.05	A	2.98	A	3.28	A	3.19	P
BSE	3.34	A	2.93	A	3.02	A	3.13	A	3.11	P
Grand Mean	3.39	A	2.99	A	3.00	A	3.21	A	3.15	P
t-value	0.32^{ns}		0.22^{ns}		0.67^{ns}		0.16^{ns}		1.32^{ns}	

Legend: SA – Strongly Agree; A- Agree; D- Disagree; SD- Strongly Disagree; HP-Highly Positive; P-Positive; N-Negative; HN-Highly Negative; ns- not significant; s -significant

positive their attitude on climate change will be. The table further reveals that the explained variance or r^2 means that only 32% of the total variation can be explained by the relationship.

Table 9. Relationship Between Perception and Attitude of the Respondents on Climate Change

	Pearson-r	r^2	p-value
Perception vs. Attitude	0.57	0.32	0.000

This finding strengthens the findings of Tikka, Kuitunen, and Tynys(2000) and Schultz Nolan, Cialdini, Goldstein and Griskevicius(2007) that attitudes were independent of knowledge, awareness and concerns about environmental issues and problems.

The findings answered the objectives of this study, but generalizations were limited only to this particular study sample.

IV. CONCLUSIONS

The respondents perceived that climate change is already with us and give negative consequences and the main reason of this are human- activity towards the earth. The respondents have a positive attitude towards climate change, meaning they are willing to do an action to reduce the effects of climate change. Perceptions among the students no matter what is the age, gender or course are not significant suggesting that

they are similarly aware. They exist a significant relationship between the perceptions of the respondents and their attitude on climate change. Suggesting that the more aware the student is the more positive their response towards climate change.

Further study should be conducted to determine the students' perception and attitude on climate change to include other independent variables that may also be related such as subject preference, religious affiliation, etc. A replication of the present study in other colleges or campuses of the university or other TEI's or HEI's may be undertaken to confirm the findings of the present study.

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