TEACHING ETHICS AND GENDER AS DETERMINANTS OF TEACHERS' ATTITUDE TOWARDS TEACHING OF CLIMATE CHANGE

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Abstract
The attitude of teachers towards teaching climate change issues especially in Colleges of Education is very important for enhancing future teachers' learning experiences and satisfaction in the knowledge of climate change and the various issues that come with it. This study investigated teaching ethics and gender as determinants of teachers' attitude towards teaching of climate change issues in Colleges of Education in South-South Region of Nigeria. The aim was to determine the nexus between teaching ethics, gender and teachers' attitude towards teaching concepts of climate change embedded in the curricula of their respective courses. Two hypotheses were formulated to guide the study. A total of 300 (three hundred) teachers (lecturers) of were selected using multi-stage sampling technique for this study. The instrument used for data collection was a questionnaire titled: Teaching ethics, Gender and teachers' attitude towards teaching of climate change issues questionnaire (TEGTATTCCIQ). Data obtained were analyzed using the multiple regression analysis tested at 0.05 level of significance. Findings showed that that only teaching ethics with the regression coefficient (b) of 0.516 and a beta weight of 0.592 was significantly responsible for teachers' attitude towards teaching climate change while gender was not significant in predicting teachers' attitude towards teaching climate change. Professionalism of teaching and adequate supervision are among the recommendations made to improve ethical responsibility of teachers.

Keywords: Teaching ethics, Gender, teachers (lecturers), teachers' attitude and Climate change.

Introduction

Climate Change CC appears to be a new phrase but a challenging phenomenon to the sustainability of life on earth. NASA's definition of climate change cited in Youmatter (2020), *says it is "a broad range of global phenomena created predominantly by burning fossil fuels, which add heat-trapping gases to Earth's atmosphere. Simply put for easy understanding by May (2017),* Climate change is a change in the usual weather found in a place. This could be a change in how much rain a place usually gets in a year. Or it could be a change in a place's usual temperature for a month or season.

Climate change according to Olufemi and Samson (2012) is a pattern of change affecting

global or regional climate as measured by such things as average temperature and rainfall, or an alteration in frequency of weather conditions. This variation may be caused by both natural processes and human activities. Also, Olusola (2012) pinpoints that climate change refers to the change in the state of climate that can be identified by changes in mean or variability of its properties and that persists for extended periods, typically decades or longer. It occurs when amount of energy stored by climate system is varied. According to Topping (2020), **Climate change** refers to both human and naturally-produced warming, and the effects it has on our planet. It is a long-term change in the average weather patterns that have come to define Earth's local, regional and global climates. Climate change encompasses not only rising average temperatures but also extreme weather events, shifting wildlife populations and habitats, rising seas, and a range of other impacts (Nunez 2019).

The **effects of climate change** span the physical environment, ecosystems and human societies. It also includes the economic and social changes which threaten human existence on the planet earth. The effects of anthropogenic – human-caused – climate change range from more frequent and severe droughts to snowstorms and extreme winter weather in temperate regions as a result of warming Arctic weather fronts. *It also encompass changes such as sea-level rise; ice mass loss in Greenland, Antarctica, the Arctic and mountain glaciers worldwide; shifts in flower/plant blooming; and extreme weather events and even loss of bio-diversity.*

All forms of life are equally affected as warming ocean temperatures are increasing the frequency of coral reef bleaching with its attendant effect on fish and other marine population. Warmer, drier weather means that forests in some regions are no longer recovering from wildfires and wildlife habitats around the world are becoming less hospitable to animals. This portends danger and man must fight it to survive.

One of the strategies to contending with Climate Change is a general awareness of the causes, effects and solutions which can be obtained through education. According to United Nations Institute for Training and Research (UNITAR) (2013), by raising awareness and promoting knowledge and skills-development, education is an essential component and a catalyst for responding to global climate change. Its importance has been increasingly highlighted at the international level. As Stevenson, Nicholls and Whitehouse (2017) observe, mainstreaming climate change education throughout formal education systems can be one of the most important and effective means of developing capacities for addressing the climate crisis. This is due to multiplier effects, where families and communities benefit when individuals share what they have learned (Mochizuki and Bryan 2015), especially in relation to adaptation and mitigation. This has resulted in the introduction of aspects of Climate Change into the Science Curriculum, Social Sciences Curriculum and the Curriculum of Environmental Studies as well as General Studies.

Teachers are required to drive the Climate Change Curriculum in schools and they must acquire the requisite knowledge and competence to drive this very important curricular aspect. This is because Seroussi, Rothschild, Kurzbaum, Yaffe, and Hemo, (2019) posit that yet the specificity of the climate change issue, unlike other socio-scientific issues like air pollution for instance, is that it deals with a danger which is not yet completely visible, and

Teaching ethics is an important concept in the teaching profession. Ethics on its own touches all human endeavours. Gulcan (2015) averred that "in our present age, ethics has an important place in all areas of life. The ethics of the teaching profession are the moral beliefs and rules about right and wrongs that influence teachers behaviour, attitude and ideals (Durosaro 2012). Ayeni (2018) defines teachers' professional ethics as the prescribed norms, values, principles, rules, regulations and standards governing teachers' professional conduct. The quality of education and students' performance depends on teachers' instructional tasks performance which is guided by ethics of the teaching profession. The output of the teacher can therefore be intricately related to adherence to ethics of the profession. The Code of Ethics published by the Teacher's Registration Council of Nigeria specifies among other things that Teaching should be professionalized and teachers must have undertaken some approved courses appropriate for teacher preparation before being employed. This professional training can be continuous such that teachers continue to improve upon his/her academic abilities in attaining set goals. The teacher must know what to teach, how to teach, and whom to teach. The purpose is to deliver the curriculum effectively and efficiently, so as to achieve the set goals and standards in schools (Ayeni, 2011). Equally, Ayeni (2018) notes that Teacher's instructional task performance is facilitated by the ability of the teacher to demonstrate sound professional attributes like scholarship through continuous research and it is pivotal to successful teaching, students' learning outcomes and attainment of quality education in secondary schools. Teachers' professional ethics are manifested in their knowledge of the subject–matter, pedagogical skills and competences in the teaching-learning process, which leads to the accomplishment of the stated educational goals. Bangbade (2004) found that teachers' professional ethics have significant relationship with students' academic performance; such professional ethics according to Bangbade (2004) include teachers' knowledge of the subject matter, communication skill, emotional stability, good human relations and interest in the job. In a study on **teachers' professional ethics and instructional performance as correlates of students' academic performance in secondary schools in Owo Local Government, Ondo State, Nigeria, Ayeni (2018) observed that that there is a significant relationship between teachers' professional ethics and instructional performance [r (88) = 0.694, p<0.05)**

Gender can therefore be defined as a social construction that differentiates the male identity from the female identity. Thus Nzewi (2017:1) averred that gender "is the social construction of female and male identity which is more than biological differences between men and women. It includes the way in which those differences have been valued, used and relied upon to classify women and men and to assign roles and expectations to them". According to Aydon (2015), gender is "the social phenomenon of distinguishing males and females based on a set of identity traits, it as a social, not physiological or biological construction". In other words, a female biologically can be a male through social construction. The society ascribes gender to human beings and animals depending on their dispositions. Furthermore, Okeke (2002) refers to gender as "many socially and culturally constructed characteristics, qualities, behaviours and roles which different societies ascribe to females and males".

With continuous oil exploitation in the South South geopolitical zone of Nigeria, the citizens need much knowledge of their contributions to reduce the impact of generation of the green house gases that accumulate in the atmosphere to cause Climate Change. The attendant effect of desertification in Northern Nigeria due to Climate Change has resulted in herdsmen struggling for pasture land with farmers thereby exacerbating security challenges and conflicts between Northern herders and Southern farmers. This trend can be reduced if teachers intensify efforts in educating the learners about Climate Change. The foundation for this is set and at the preparatory stage of the teacher which is the College of Education. This study concentrated on teaching ethics and gender as determinants of teachers' attitude towards teaching of climate change in Colleges of Education in the South-South Nigeria.

Hypotheses

The following tentative statements (hypotheses) guided the study:

(1) There is no significant composite effect of teaching ethics and gender on teachers' attitude towards teaching of climate change issues.

(2) There is no significant effect of teaching ethics and gender on teachers' attitude towards teaching of climate change issues.

Methodology

Research Design

A descriptive survey was used for the study. This is because the researcher wanted to depict the participants (teachers in Colleges of Education) in an accurate way.

Lecturers drawn from the departments in Colleges of Education which Climate Change forms an aspect of their curriculum were drawn for the study. These included Social Studies, Geography, Biology, Agricultural Science and Citizenship Education (General Studies). A sample size of 300 (150 male and 150 female) lecturers was drawn from 10 of the 14 Colleges of Education in the South South Geo-political Zone of Nigeria (both Federal and State) using multi-stage sampling technique.

A questionnaire titled 'Teaching Ethics, Gender and Teachers' Attitude Towards Teaching of Climate Change Issues Questionnaire' (TEGTATTCCIQ) was used in collecting data from the respondents. The questionnaire was made up of three (3) sections A, B and C. Section A was made up of the bio-data of the numerous respondents while sections B and C were made up of 15 questions each. Section B had questions on teaching ethics while section C had questions on gender. The 4-likert scale of Strongly Agree, Agree, Disagree and Strongly Disagree with Acronyms SA, A, D, and SD respectively. Two experts validated the instrument. Furthermore, test retest was used to test for internal consistency of the questionnaire.

The researcher engaged one research assistants in each of the 10 Colleges of Education selected who formed part of the sample of the study. Three hundred questionnaires were released for administration which were carefully responded to and returned. Data obtained were analyzed using Multiple regression statistical technique.

Results

Hypothesis 1:

There is no significant composite effect of teaching ethics and gender on teachers' attitude towards teaching climate change.

Table 1

Descriptive statistics and correlation matrix for the relationship between the predictor variable and criterion variable.

Variables	N	Mean	Std deviation	Teachers attitudes towards teaching climate change	Teaching ethics	Gender
Teachers attitude towards teaching climate change	300	29.7466	4.44684	2.000	598	-152
Teaching ethics	300	29.2134	5.10242	598	2.000	-102
Gender	300	2.9	0.998	-152	-102	2.000

The respondents value for teachers' attitude was 29.7466 for mean, 4.44684 for standard deviation, Teaching ethics was 29.2134 for mean, 5.10242 for standard deviation, and for Gender, 2.9 for mean and .998 for standard deviation. Note: the matrix correlation between teaching ethics and gender and the criterion variable which is teachers' attitude towards teaching climate change showed that teachers' attitude towards teaching climate change positively correlates with teaching ethics, it was low. Also, gender was not realized to be a determinant of teachers' attitude towards teaching climate change and the teaching ethics.

Hypothesis 2

There is no relative significant effect of teaching ethics and gender on teachers' attitude towards teaching climate change.

Table 2

Coefficient and t-value of the regression of the predictor to teachers' attitude towards teaching climate change.

Variables	Unstandardized coefficients		Standardized coefficient	T	Sig.
	B	Std error	Reta		
Constant	23	2.316		19.856	0
Teaching ethics	0.516	0.138	0.592	7.518	0
Gender	-0.54	0.702	-0.122	-1.542	0.884

The dependent variable is teachers' attitude towards teaching climate change.
The regressional analysis of the result shows that only Teaching ethics with the regressional coefficient (b) of 0.516 and a beta weight of 0.592 significantly contributed to teachers' attitude towards teaching climate change, while the contribution of gender was found out not to be significant in the prediction of teachers' attitude towards teaching climate change. The prediction was calculated thus:
Teachers' attitude towards teaching climate change = 23+0.516 (TE) -0.54G
Finally, the researcher deduced/concluded that the null hypothesis which proposed a no significant contribution of the single variable to the prediction of teachers' attitude towards teaching climate change was accepted for gender and rejected for teaching ethics.

Table 3:
A summary of multiple regression analysis between the predictor variable and criterion variable in a tabular form.

Multiple R (adjusted) = 0.61 [a], multiple R^2 (ADJUSTED) = 0.186, adjusted R^2 = 0.162, Std. error of the estimate = 4.26386					
Model	Sum of square	DF	Mean square	F	Sig.
Regression Residual Total	136.922 1,336.264 1,473.186	4 294 298	86.462 9.09	15.062	0.736

(a) The dependent variable is teachers' attitude towards teaching of climate change.
(b) Predictors (The constant), Gender and teaching ethics from table 3, the independent variables gave a coefficient of multiple regression (R) of 0.61, multiple R^2 (0.186) and adjusted $R^2 = 0.162$.

The indication is that 93% of the two variables were responsible for teachers' attitude towards teaching of climate change. Also, the independent variables were not responsible entirely to teachers' attitude towards teaching of climate change. Furthermore, from the analysis of variance, F-ratio 15.062 which was found insignificant at 0.05 levels.

Discussion of Findings
The brief discussions on the findings of hypothesis 1 and 2 have been done immediately after the table 1 and 2 respectively. To reiterate, hypothesis one shows that gender was not a determinant of both teachers attitude towards teaching climate change and teaching ethics.
For hypothesis 2, the results of the regression analysis showed that only teaching ethics with the regression coefficient (b) of 0.516 and a beta weight of 0.592 significantly is responsible for teachers' attitude towards teaching climate change while gender was not significant in predicting teachers' attitude towards teaching climate change. In support of this study,

Roman. Cuestas and Fenollar (2008) in their study revealed that self-esteem has the strongest impact on learning and that improving self-esteem is important. The findings supports that of **Ayeni (2018) that that there is a significant relationship between teachers' professional ethics and instructional performance.**

Conclusion

The relationship between teaching ethics, gender and teachers' attitude towards teaching climate change has been exposed through this study. Teachers' professional ethics has been found to positively and significantly impact their attitude to teaching concepts of CC while gender of the teacher is not a determinant of his/her attitude in teaching CC. With constant and improved standard of teaching and teacher-friendly teaching ethics for teachers, their attitude towards teaching of climate change will be tremendously improved and students will learn effectively.

Recommendations

Based on the results of this study, the following recommendations are important;
First, Professionalism of teaching should be intensified with the teachers treated as professional who are provided with adequate incentives to ensure adherence to ethical procedures.
Secondly, adequate supervision of teachers by highly ethical supervisors should be put in place so as to make the teachers sustain their ethical and moral values.
It is imperative that the teaching environment/climate in Colleges of Education should be made conducive and encouraging for teachers to put in their best in teaching climate change.
Furthermore, teachers (lecturers) – students (undergraduates) relationship level should be improved through awareness seminars for both lecturers and students.

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