CLIMATE CHANGE AWARENESS AND INSTITUTIONAL MANAGEMENT STRATEGIES BY PRINCIPALS OF SECONDARY SCHOOLS IN ANAMBRA STATE

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ABSTRACT: *One of the basic issues of the present century is Climate change. In the light of this, the study investigated the extent to which secondary school principals in Anambra state consider climate change and its effects in the selection of their institutional management strategy as well as in the preparation of their school time table and curriculum. Two research questions as well as two hypotheses were raised and formulated respectively to guide the study. Questionnaire was used as the instrument for data collection while one sample t-test was adopted for the data analysis. The study revealed that secondary school principals in Anambra state are aware of the existence of climate change in Nigeria. However, they perceived it as a national issue which relatively have no significant relationship with school management and therefore do not significantly consider it in the selection of their institutional management strategy and in the preparation of their school timetable and curriculum. To this end, the study recommended among others the urgent need for climate change awareness programmes to be organized for school principals by Government to sensitize them on the dangers of climate change and its effects if neglected and not duly considered in their various schools in addition to sanctioning school principals who fail to take cognizance of climate change or introduce strategies for curbing its effects in their respective schools.*

KEYWORDS: Climate change, Awareness, Education and Management strategy

INTRODUCTION

One of the fundamental issues facing the world today is climate change. This is informed by the impact of the ever growing complexities in the world's technological advancement witnessed as centuries passes by. According to Ekpoh (2009), Climate change is any long-term change in the patterns of average weather of a specific region or the earth as a whole. It is often seen to be natural or human- induced. This phenomenon has been observed to have serious deleterious consequences for the earth in the form of significant variations in regional climates, recurrent droughts, excessive heat waves, windstorms, killer floods, and so on. More so, National Research Council (NRC, 2011a) pointed out that a strong possible consequence of climate change is to negatively shape many aspects of life in the foreseeable future. Climate change is one of the greatest public policy issues of our time. In Nigeria for instance, noticeable consequences of climate change could be seen in areas such as intense thunderstorms, widespread floods and incessant droughts among others. Odey (2009) pointed out that climate change impacts pose great dangers with consequences such as desertification, sea level rise, flooding, water salination, among others. These impacts could manifest in food security challenges, damage to infrastructure and social dislocation. Additional impacts include threat

to health as rising temperature could bring about diseases such as chronic heat rashes, Cerebra-Spinal Meningitis (CSM), stroke, malaria and other related diseases. Climate change will affect every citizen, every part of our environment and our natural resources, and thus practically every aspect of our lives, our economy, our urban and sub-urban development patterns (Ekpoh 2009). Global concern regarding the devastating impact of climate change has emphasized the need for creating awareness and building community capacity for adaptation strategies to mitigate the effects of climate change. As pointed out by Naclimuthu and Vijayakumari (1993), the need of the hour is to make people sensitive towards nature through a strong programme of climate change awareness. Many research have been conducted concerning the understanding of climate change and global environmental problems. This is evidenced by the spate of conferences, campaigns, reports and researches by Climate change specialists and researchers who have repeatedly pointed out that the solution to climate change problem is climate change awareness, which requires education on climate change in order to enhance its proper understanding.

Climate change education deal teaching people about the causes, effects and challenges of climate change. This requires that principals and teachers of institutions have a good understanding of the complex interactions between climate and people (Hansen, 2010; Wise, 2010). Abundant recommendations have been made from the perspectives of learning strategies for principals of schools in implementing their institutional management strategy. These recommendations were made as a means enhancing students learning skills in the face of the climate change challenges. Some of them include: Project based learning, authentic scientific inquiry (ASI), Place-based learning, and Action-oriented education. The concept of project-based learning (PBL) emerged more than half a century ago as a pedagogy, which proclaims that students could learn much better through solving real-world problems (Thomas, 2000; Barron, 2003). PBL improves their problem-solving and collaboration skills and increases students' motivation to learn as well. As a result, PBL helps students achieve better performance even with traditional academic tests (Strobel & Van Barneveld, 2009; Walker & Leary, 2009). The core of PBL is the integration of real-world experience into school learning environments and, thus, is closely related to the concept of authentic scientific inquiry (ASI). ASI promotes engaging students in a full range of scientific practices as scientists in the real world do. ASI helps students understand how knowledge develops, and gives them an appreciation of the wide range of approaches that are used to investigate, model, and explain the world (Westerlund, Garcia & Koke, 2002; NRC, 2012b). Moreover, project-based scientific inquiries could be made more effective if they were conducted or implemented within existing power structures or social contexts (Wiener & Rivera, 2010). The consideration of place-based approaches into project-based or inquiry-based instructons can improve students' achievement (Carleton-Hug & Hug, 2010; Wyner & Desalle, 2010; Gautreau & Binns, 2012).

Education is seen as a tool of socio-economic development and the drive of change in different spheres of life. Given the world's limited natural resources, rising population, and the looming challenge of climate change, sustainable development cannot be attained without education that equips learners with the skills needed to live healthy, safe, and productive lives while also safeguarding the ability of future generations to meet their own needs. This has necessitated the need for focus to be drawn on the challenges of climate change on Education which must be made climate compatible and linked to sustainable development in order to meet the needs of the 21st century and beyond. Education has a key role to play in promoting, understanding and assisting individuals, the society and the government to make informed choices in relation

to activities they take up. The classroom is said to be the most important unit of the educational system, as it is in it that all the policies of education are finally implemented (Emeh, 1990). Achieving quality education for all remains a pivotal goal for global development. Therefore there is every need to manage the classroom properly as this has serious consequences for the achievement of the school's set goals as well as the global development goal.

There has being so many studies on climate change and climate change awareness, some of which include (Debarbieux, 1996; Janosz, Georges, & Parent, 1998, Benbenisty & Astor, 2005; Cohen, McCabe, Michelli, & Pickeral, 2009; Del Rey, Ortega, & Feria, 2009, Ekpoh & Ekpo, 2011, Nwankwo & Unachukwu, 2012, Nwona, 2013). However, they mostly focused on school climate in addition to providing details on how school climate is associated with and/or promotes safety, healthy relationships, engaged learning and teaching, and school improvement efforts. Therefore, this study makes its contribution by assessing the extent to which secondary school principals consider climate change and its effects in the selection of their institutional management strategy as well as in the preparation of their school time table and curriculum.

The study was guided by the following research questions and hypotheses.

1.   To what extent do secondary school principals consider climate change in selecting their institutional management strategies?

2.   To what extent do secondary school principals consider the effects of climate change in the preparation of their school time table curriculum?

The following null hypotheses were formulated for the study:

1.   Secondary school principals do not significantly consider climate change in selecting their institutional management strategies.

2.   Secondary school principals do not significantly consider the effects of climate change in the preparation of their school time table and curriculum.

METHODOLOGY

The study adopted the use of descriptive survey method. This method is best suited for the study because the number of subjects is relatively high. In addition, survey method design provides a quantitative or numeric description of trends, attitudes, or opinions of population by studying a sample of that population" (Creswell, 2003).

Sample: The subject of this study comprises of 256 principals of public secondary schools in Anambra State Nigeria. Since it was difficult to consider all the principals, 100 of them were randomly selected for the study.

Instruments and data collection procedure: The questionnaire used in this study was structured using a five point *likertscale* format with the following options: Strongly Agree (SA); Agree (A); Indifferent (ID); Disagree (D); Strongly Disagree (SD) and associated weights of 5, 4, 3, 2 and 1 respectively. The questionnaire was divided into two sections: Sections A and B. Section A required information on bio-data; while, Section B was designed

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to elicit information on the opinion of the respondents on the subject of study. The questionnaire was validated by two experts each in Educational Management and Policy and Measurement and Evaluation respectively in Nnamdi Azikiwe University Awka, Anambra State. Their suggestions helped the researchers in the final draft of the instrument. 100 copies of this questionnaire were issued out to the respondents while 85copies of them were duly completed and returned.

Data Analysis and Discussion of findings: The data analysis and interpretation was carried out using descriptive statistics. Accordingly, the data gathered through questionnaire was tabulated and analyzed using frequency, percentage, and mean in addition to one sample t-test which was used to test the null hypotheses.

Table 1: Descriptive Statistics of principals' response on Climate change consideration in selecting their institutional management strategies.			
	N	Mean	Std. Deviation
I am well informed about the existence of climate change in Nigeria	85	4.4471	.64561
Climate change is only a national issue with no individual or localized consequences	85	4.0118	1.06340
Climate change has no significant relationship with school management	85	2.8941	1.22497
It is not a significant issue to consider in selecting school management strategies	85	2.8000	1.36102
I consider climate change as factor that determines the school management strategy to adopt	85	3.1412	1.31975
Valid N (listwise)	85		

Source: Field survey (2015)

Table 2: Descriptive Statistics of principals' response on the consideration of the effects of climate change in the preparation of their school time table and curriculum.			
	N	Mean	Std. Deviation
I am aware of the effects of climate change in the society	85	4.4471	.64561
The school is worse hit by the effects of climate change in the society	85	3.1412	1.31975
Climate change do not significantly affect school time table and curriculum	85	2.8941	1.22497
I consider climate change as a significant factor in the preparation of my school time table and curriculum.	85	2.8000	1.36102
Valid N (listwise)	85		

Source: Field survey (2015)

Test of Hypotheses

Hypothesis One

H0:   Secondary school principals do not significantly consider climate change in selecting their institutional management strategies.

Table 1.1: One-Sample Statistics (Hypothesis 1)				
	N	Mean	Std. Deviation	Std. Error Mean
Hypothesis1	85	3.4750	1.14269	.12394

Source: SPSS Ver. 22

Table 1.2: One-Sample Test (Hypothesis 1)						
	Test Value = 3.5					
	T	Df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference	
					Lower	Upper
Hypothesis1	-.202	84	.841	-.02500	-.3517	.3017

Source: SPSS Ver. 22

Decision Rule: t-computed (-.202) < t-table value (2.756) with p-value > .05, we accept the null hypothesis, "Secondary school principals do not significantly consider climate change in selecting their institutional management strategies."

Table 1 showed that secondary school principals are aware of the existence of climate change in Nigeria. However, they perceived it as a national issue which relatively have no significant relationship with school management and therefore do not significantly consider it in selecting their institutional management strategy. These are reflected by their mean scores as shown in the table.

Hypothesis Two

H0:   Secondary school principals do not significantly consider the effects of climate change in the preparation of their school time table and curriculum.

Table 2.1: One-Sample Statistics (Hypothesis 2)				
	N	Mean	Std. Deviation	Std. Error Mean
Hypothesis2	85	3.1867	1.26206	.14573

Source: SPSS Ver. 22

Table 4.4.2: One-Sample Test (Hypothesis 1)						
	Test Value = 3.5					
	T	Df	Sig. (2-tailed)	Mean Difference	99% Confidence Interval of the Difference	
					Lower	Upper
Hypothesis2	-2.150	84	.035	-.31333	-.6986	.0720

Source: SPSS Ver. 22

Decision Rule: If t-calculated > t-table value – Reject the null hypothesis, otherwise accept. Since t-calculated (-2.150) < t-table value (2.756) with p-value < .05, we accept the null hypothesis, "Secondary school principals do not significantly consider the effects of climate change in the preparation of their school time table and curriculum".

Table 2 revealed that secondary school principals are aware of the effects of climate change in the society. However, they believe that schools are not the worse hit by the effects of climate change. As a result of this, they perceived climate change as not significantly affecting the preparation of their school timetable and curriculum. These are also reflected by their mean scores as shown in the table.

CONCLUSION

The findings of this study showed that secondary school principals are aware of the existence of climate change in Nigeria. However, they perceived it as a national issue which relatively has no significant relationship with school management and therefore does not significantly consider it in selecting their institutional management strategies and in the preparation of their school timetable and curriculum.

Climate change has been seen to have real deleterious effects on the society. It is a phenomena that affects every aspects of our lives, our economy, our urban and sub-urban development patterns, natural areas and our life style. There is every need therefore for principals of schools to make climate change a significant factor in the selection of their institutional management strategy as well as in the preparation of their school time table and curriculum, as this will go a long way in reducing the exposure of students, teachers and their entire staff to the dangers of the effects of climate change.

RECOMMENDATIONS

The following recommendations were made by the study:

1. There is an urgent need for climate change awareness programmes to be organized for school principals by Government to sensitize them on the dangers of climate change and its effects if neglected and not duly considered in their various schools.

2. Government should start working by rendering help to school principals in providing infrastructural facilities that would enable them meet the demands and challenges of this era of climate change.

3. Disciplinary measures should be taken by Government upon any school principal who fail to take cognizance of climate change or introduce strategies for curbing its effects in their respective schools.

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APPENDIX

Principals' Response to Questionnaire on climate change and institutional management strategy

S/No	Question Description	SA	A	ID	D	SD
1	I am well informed about the existence of climate change in Nigeria	45	33	7	0	0
2	Climate change is only a national issue with no individual or localized consequences	30	40	5	6	4
3	Climate change has no significant relationship with school management	10	15	30	16	14
4	It is not a significant issue to consider in selecting school management strategies	14	11	22	20	18
5	I consider climate change as factor that determines the school management strategy to adopt	15	23	18	17	12

Source: Field Survey, 2015.

Principals' Response to Questionnaire on climate change and school time table and curriculum preparation

S/No	Question Description	SA	A	ID	D	SD
1	I am aware of the effects of climate change in the society	50	20	5	0	0
2	The school is worse hit by the effects of climate change in the society	11	9	13	24	18
3	Climate change do not significantly affect school time table and curriculum	15	10	15	13	22
4	I consider climate change as a significant factor in the preparation of my school time table and curriculum	12	13	17	15	18

Source: Field Survey, 2015.