



## ABSTRACT

Effect of climate change on the economy, human health, socio cultural activities, etc. has become a consistent global matter.

Geography being an environmental discipline that encompasses the study of the earth as natural habitation of man; we seek to know how this department when established in Anambra State Polytechnic (ANSPOLY) will contribute to climate change knowledge and

# ESTABLISHMENT OF GEOGRAPHY AND ENVIRONMENTAL MANAGEMENT DEPARTMENT IN ANSPOLY, A SUSTAINABLE ADVANCEMENT TO CLIMATE CHANGE LITERACY: LIMITATIONS AND PROSPECTS

<sup>1</sup>BENEME CHUKWUDI FRANCIS & <sup>2</sup>OTUKA  
CHIMA EDMUND

<sup>1</sup>General Studies Unit, Anambra State Polytechnic  
Mgbakwu, Anambra State. <sup>2</sup>Dept. of Urban and Regional  
Planning, Federal Polytechnic Oke, Anambra State

DOI: <https://doi.org/10.70382/tijasdr.v07i2.032>

## Introduction

Greater awareness of climate change can be acquired by enhancing the teaching of geography in schools and integrating climate change issues into courses, subjects or programs in the universities or educational institutes (Pascale, 2023). According to the International Charter on Geographical Education, “Geography is concerned with human–environment interactions in the context of specific places and locations and with issues that have a strong geographical dimension like natural hazards, climate change, energy supplies, migration, land use, urbanization, poverty and identity. Geography is a bridge between natural and social sciences and encourages the ‘holistic’ study of such issues” (Union, 2016).

Geography teachers play an important role in promoting climate change literacy in schools, but not much is known



sustainability among students, and by extension, the local community and society at large. Using explanatory approach, we attempt to identify the need to introduce this multifaceted discipline in this young institution. Attention is placed on both the positive expectations and potential challenges envisaged in the course of this study.

**Key words:** geography, knowledge, sustainability, environment, climate change.

about which of their characteristics significantly influence students' climate change literacy (Oladapo 2020). The results of a qualitative study using a sample of 80 secondary school students and 18 teachers conducted by Winter et al. in Austria indicated that both groups do not feel adequately prepared in their possible role as “agents of change”, both at the systemic and programmatic levels, hence necessary to strengthen training on these global challenges (Winter, Kranz, & Möller, 2022).

Despite the high climate risk, the perception and awareness of it are still not significantly high (Francesco De Pascale 2023). The result of a study carried out at Boyolali District, Indonesia, showed that students who attend school in the urban area have a higher understanding of global warming than those who attend school in rural area. Ninety-six percent of students believe that global warming is happening, and 35% of students understand that global warming is caused mostly by anthropic activities (Dewi & Khoirunisa, 2018).

A study on the perception of climate change with a sample of the population of Calabria (southern Italy), indicates that the perception varies in relation to contextual factors, including media communication, socio-demographic characteristics of the interviewees, knowledge and education, economic and institutional factors, personal values and, finally, psychological factors and experience (Antronico, Coscarelli, De Pascale, & Di Matteo, 2020). Attention to younger people on climate literacy has been justified, because not only in the future will they be able to witness the most evident (and dangerous) consequences of climate change, but are more exposed to the public and media



debate on environmental issues with respect to previous generations, even during their training courses (Gubler, Brügger, & Eyer, 2019).

Climate change literacy encompasses being aware of both climate change and its anthropogenic cause, and thus underpins informed mitigation and adaptation responses. Strong positive predictors of climate change literacy are education and mobility, but poverty decreases climate change literacy, and country-level climate change literacy rates are, on average, 12.8% lower for women than men (Nicholas P. Simpson et al. 2021).

Teachers become a guide or “resource” for students’, in sharing their understandings and helping learners gain insight into subject matter. As a result, teachers have a major influence over learners’ conceptualisations of a topic (Oladapo 2020).

Advocating for an education in sustainability among young people would be appropriate to understand the importance of the interactions between human beings and the environment, between physical and anthropogenic factors, essential for conserving the planet (De Pascale, F and Sabato, G. 2021). One of the universal responses to tackling global climate change is teaching climate change concepts at all levels of formal education and this requires teachers who are fully literate about climate change science (Raymond Anyanwu et al 2015).

Climate change is one of the most pressing problems facing humanity globally, and hence, the way in which education will respond to addressing this problem is crucial (Raymond Anyanwu et al 2015).

### **Background of the study**

Anambra State Polytechnic Mgbakwu, Anambra State is a young polytechnic that was established in 2017 by the regime of Governor W. M. Obiano. One of the primary aim of the state government in establishing the institution is to empower the youths in the state and beyond with skills and modern technology in various areas of study. Though there are notable schools presently functioning in the institution but some academic department are yet to be fully accredited by the responsible federal agency as a result of absence of some requirements; and none is dedicated to environmental studies. It is believed that this, over time has affected the numerical size of students and applicants into the institution. It is against the foregoing and other factors that the authors are trying via this work to decipher the relevance and timeliness of introducing this department to the



institution, to further explore the nitty-gritty of establishing geography department without ignoring the prospect it holds for prospective students and the national economy.

### **PROBLEM STATEMENT/JUSTIFICATION**

As a geographer we understand that problem occur as a result of imbalance or gap between actual requirement and actual condition, gaps between theory and practice, or between plans and implementation. In this case, the absence of Geography department in a state polytechnic signals a gap calling for immediate attention at a time global warming is terrifying the world.

Lack of Geography department in ANSPOLY is abatement to climate change literacy. This directly or indirectly has deprived and is still depriving thousands of intending young undergraduates in Nigeria accessing one of the globally sourced knowledge. This situation has further deteriorated as a result of dissolution of the governing board of the institution for over one year since the end of the previous regime at the time of this research (source author).

### **The objective of the study**

The objective of the study is to determine the need for Geography and Environmental management department in ANSPOLY after six years of inception, the challenges and benefits it upholds.

### **The Context of the Study**

The Anambra State Polytechnic, where this study was conducted, is situated in Mgbakwu in the northern part of Anambra State, Nigeria. Anambra is the eighth-most populated state in the Federal Republic of Nigeria and the second-most densely populated state in Nigeria after Lagos State. Boundaries are formed by Delta State and Edo State to the west for about 97 km across the River Niger, Imo State and Rivers State (for four km) to the south, Enugu State to the east for 139 km, and Kogi State to the north for about 40 km. By land area, Awka North is 347.5 km<sup>2</sup>. Population Density is 460.2/km<sup>2</sup> (2022). The land size of Mgbakwu is approximately 265,031m<sup>2</sup> (Source: National Population Commission of Nigeria, National Bureau of Statistics). Towns that make up Awka North local government area (LGA) are Awba Ofemili, Ugbenu, Ugbene, [Ebenebe](#), [Achalla](#) (the capital), [Urum](#), Amansea, Amanuke, Isu Aniocha, Mgbakwu.



## RESEARCH DESIGN

The research design for this study is a descriptive survey design involving the analysis of data from a representative sample of 30 Geography teachers/lecturers from secondary schools and higher institutions in Anambra State.

### The Sample

The subject comprises 30 geography educators randomly selected from three sister institutions and eight community/private secondary schools in Awka LGA. Primary data collection was adopted via direct personal interview and electronic questionnaire. Certain precautionary steps were taken to ensure that the questions were free of social intolerable words, respondents were guaranteed of anonymity, use of perceivable terms free of any complexity and politely phrased.

### Data Collection & Analyses

Tabular presentation of data in percentages was adopted.

### The Questionnaire

The methodology made use of two combined tools: an open-ended electronic questionnaire, proposed to geography staffs of selected schools and direct interaction with staff of related discipline in October and November 2024. The three objectives of the research were to identify the perception of the staffs interviewed about:

- (i) the relevance of climate change knowledge;
- (ii) training of sound Geography teachers and students as possible solutions;
- (iii) need for establishing Geography and Environmental management department in institutions?

Three questions were asked as follows:

- (1) Do you think climate change literacy is a necessary tool to combat impact of climate change?
- (2) Is training of sound Geography teachers and students sufficient to reduce climate change?
- (3) Do you see establishment of Geography department and programs in ANSPOLY as a mitigation and adaptation options for climate change issues?



## RESULTS AND DISCUSSION

Research Question 1.) Do you think climate change literacy is a necessary tool to combat impact of climate change?

Table 1

Analysis showing climate change literacy as a necessary tool to combat impact of climate change

S/N	Response	Items				
		SA	A	D	SD	x
1	Knowledge of climate change is important	F %	13 43.33	17 56.67	- -	- -
2	Content knowledge of climate change has helped me in averting climate change induced environmental hazards	F %	11 36.67	13 43.3	5 16.67	1 3.33
3	Students are unaware of climate change impact on environment	F %	6 20	17 56.67	5 16.67	2 6.67
4	Awareness of climate change knowledge can minimize negative impact on the society	F %	6 20	17 56.67	5 16.67	2 6.67
5	People are unaware of proper action against climate change effect.	F %	7 23.33	17 56.67	4 13.33	2 6.67

Key: SA- Strongly Agree, A- Agree, D-Disagree, SD- Strong Disagree Source: Field Work, 2024.

Table 1 showed climate change literacy as a necessary tool to combat impact of climate change in and around the neighborhood of Mgbakwu community. The result showed that 100% of the teachers agree that knowledge of climate change is important without any opposition to the statement. Similarly, 79.9% of the teachers has averted occasion of environmental hazards by implementing content knowledge of climate change while about 20% couldn't due to lack of knowledge. 76.6% agreed that students have no prior knowledge of climate change impact on environment while 23.4% rejected the assertion. Likewise, 76.6% of the respondents agreed that awareness of climate change knowledge can minimize





negative impact on the society while 23.3% disagreed with the statement. We may surmise that the knowledge of climate change is important and can help in averting climate change induced environmental hazards, hence a necessary mitigating tool.

Research Question 2.) Is training of sound Geography teachers and students sufficient to reduce climate change?

Table 2

Analysis showing training of sound Geography teachers and students to reduce climate change

S/N	Response	Items					x
		SA	A	D	SD		
6	I don't really need more training on issues of climate change	F %	1 3.33	2 6.67	9 30	18 60	
7	I am willing to take sponsored short courses on climate change	F %	7 23.33	16 53.33	5 16.67	2 6.67	
8	Retraining of Geography teachers on issues of climate change phenomenon is a humongous task	F %	6 20	7 23.33	7 23.33	10 33.33	
9	Training of teachers and students in the long run will contribute in mitigating climate change impact in the global environment	F %	9 30	18 60	2 6.67	1 3.33	
10	Students display enthusiasm when receiving lessons on climate change	F %	8 26.67	12 40	6 20	4 13.33	

Key: SA- Strongly Agree, A- Agree, D-Disagree, SD- Strong Disagree Source: Field Work, 2024.

The analysis on Table 2 showed that while 10% of the respondents don't really need more training on issues of climate change 90% indicated interest. Also, 76.6% of the teachers agreed that they are willing to take sponsored short courses on climate change while 24.3% disagreed. Similarly, 43.3% of the teachers agreed that retraining of Geography teachers on issues of climate change phenomenon is a humongous task while 56.7% disagreed with the statement. Furthermore, 90%



agreed that training of teachers and students in the long run will contribute in mitigating climate change impact in the global environment while 10% disagreed with the statement. From the findings it is inferred that training of sound Geography teachers and students to reduce climate change may not be sufficient but will contribute in minimizing its effect.

Research Question 3.) Do you see establishment of Geography department and programs in ANSPOLY as a mitigation and adaptation options for climate change issues?

Table 3

Analysis showing establishment of Geography department and programs in ANSPOLY as a mitigation and adaptation options for climate change issues

S/N	Response.....	Items					x
		SA	A	D	SD		
11	Establishment of Geography programs in ANSPOLY is a welcomed development on mitigating climate change impact	F %	11 36.67	18 60	1 3.33	-	
12	A standard geography department in a polytechnic will produce environmental conscious graduates	F %	11 36.67	17 56.67	1 3.33	1 3.33	
13	A new geography department will face poor patronage because present day students are not research oriented	F %	2 6.67	16 53.33	10 33.33	2 6.67	
14	Geography department is the best platform to study environmental related issues like climate change phenomenon	F %	4 13.33	14 46.67	10 33.33	2 6.67	
15	A new geography department will not have immediate mitigation and adaptation impact on the local environment	F %	3 10	14 46.67	12 40	3 10	

Key: SA- Strongly Agree, A- Agree, D-Disagree, SD- Strong Disagree Source: Field Work, 2024.





As indicated in Table 3, 96.7% of the teachers agreed that Establishment of Geography programs in ANSPOLY is a welcomed development on mitigating climate change impact, while 3.3% disagreed. The result further revealed that 93.3% agreed that a standard geography department in a polytechnic will produce environmental conscious graduates while 6.7% disagreed with the statement. Similarly, 60% of the respondents agreed that new geography department will face poor patronage because present day students are not research oriented while 40% disagreed with the statement. It also indicated that 60% of the teachers agreed that Geography department is the best platform to study environmental related issues like climate change phenomenon while 40% disagreed with the statement. It is therefore inferred that standard geography department in a polytechnic will produce environmental conscious graduates, and also the best platform to study environmental related issues like climate change phenomenon, hence serves a profound mitigation option in the long run.

## CONCLUSION

Because of its focus on environment and society, location or position, spatial processes and distribution, geography under environmental studies, offers the best chance in perceiving climate change attributes. It provides the right tools and technique in addressing climate change phenomenon at both macro and micro level.

Standard geography department in Anambra State Polytechnic (ANSPOLY) will produce environmental conscious graduates, and also the best platform to study environmental related issues like climate change phenomenon. Contents on climate change should be superimposed in all the environmentally related disciplines in polytechnic curriculum, while teachers should be subjected to periodic training to be at par with innovative trends.

Climate change perceptions amongst facilitators of the proposed program in ANSPOLY should be adequately addressed to enhance effective result in their operation.

## Recommendation

Based on the findings of this study, we advise Anambra State policymakers on education to consider establishing a standard geography program pragmatically



designed to enhance deeper empirical knowledge and understanding of climate change science in their only existing State Polytechnic and beyond.

It needs to be stated here that establishing of such universally standard academic program in a polytechnic is not instant nor limited to mere executive pronouncement nor provision of infrastructure and qualified staffs but entails several stages of bureaucratic accreditation processes given the emerging nature of the field. Hence we are calling on all stakeholders in the state on education matters to follow through this project when approved with the necessary governmental assistance which usually includes but not restricted to adequate funding, adequate infrastructural facilities and working amenities for both classroom work and field course, promotion of effective staff development programs for Geography lecturers, other appropriate incentives including retirement benefits for the retirees, etc.

### Acknowledgments

We humbly acknowledge the financial pillar behind the success of this work, Tertiary Education Trust Fund (TETFUND) Nigeria, who sponsored the entire project 100%.

### Ethical Statements

There was no clash of interest in course of the research work.

### References

- Antronico, L., Coscarelli, R., De Pascale, F., & Di Matteo, D. (2020). Climate Change and Social Perception: A Case Study in Southern Italy. *Sustainability*.
- Anyanwu, R., Grange, L. L., & Beets, P. (2015). Climate change science: the literacy of geography teachers in the Western Cape Province, South Africa. *South African Journal of Education*.
- De Pascale, F., & Sabato, G. (2021). Educating for sustainability. Perceptions and representations of climate change in secondary schools: Comparing the cases of Palermo and Catanzaro. *QTimes. J. Educ. Technol. Soc. Stud*, pp. 252–266.
- Dewi, R., & Khoirunisa, N. (2018). Middle school student's perception of climate change at Boyolali District. Indones. *Earth Environ. Sci.* (p. 200). IOP Conf. Ser.
- Gubler, M., Brügger, A., & Eyer, M. (2019). Adolescents' Perceptions of the Psychological Distance to Climate Change, Its Relevance for Building Concern About It, and the Potential for Education. *Climate Change and the Role of Education*, 29–147. .
- Nicholas P. Simpson, T. M. (2021). Climate change literacy in Africa. *Nature Climate Change*, 937-944.
- Oladapo, S. O. (2020). Appraisal of Geography Teachers' Knowledge on the Relevance of Secondary School Geography Curriculum Relating to Climate Change in Nigeria. 33-38.
- Pascale, F. D. (2023). Geographical Education and Climate Change Perception in Secondary School: A Case Study in Southern Italy. *Integrated Geographies of Risk, Natural Hazards and Sustainability*.
- Union, I. G. (2016). *International Charter on Geographical Education*. Beijing China: Commission on Geographical Education.
- Winter, V., Kranz, J., & Möller, A. (2022). Challenges from Two Different Perspectives of Change Agents: Perceptions of School Students and Pre-Service Teachers. *Climate Change Education*.