Journal of Theoretical and Empirical Studies in Education
Vol. 10 Issue 2 May, 2025

ASSESSMENT OF SOCIAL STUDIES CURRICULUM IN CREATING AWARENESS ON THE EFFECTS OF GLOBAL CLIMATE CHANGE AMONG STUDENTS IN COLLEGES OF EDUCATION, NIGERIA

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Abstract
The study is titled "Assessment of Social Studies Curriculum in Creating Awareness on the Effects of Global Climate Change among Students in Colleges of Education, Nigeria. The design of the study is survey research method. The population of this study comprises of all NCEII Social studies students numbering 3195. The sample size for this study was 343 determined through Research Advisors (2006) table for sample size determination. The data collection instrument was the structured questionnaire entitled "Social Studies Curriculum and Global Climate Change Questionnaire" (SOSCAGLOCC-Q). The instrument was duly validated by Supervisors and other experts and was pilot tested using 34 NCE II Social Studies from Niger State College of Education, Minna. The instrument was administered once and tested using Cronbach alpha. Consequently, the reliability coefficient of 0.906 was realised. The research question was analysed using arithmetic mean and standard deviation. One sample t-test was used to test the null hypothesis at 0.05 level of significance. In the light of the foregoing, the study found that Social Studies instructional resources significantly contribute to students' awareness of the effect of global climate change among students in Colleges of Education, Nigeria. The study recommends that to maximize this impact, it is recommended that Colleges of Education invest in adequate and varied instructional materials (e.g., textbooks, multimedia, and online resources) to facilitate deeper engagement with climate change topics. Instructors should also be trained in utilizing these resources effectively to create interactive and immersive learning experiences;
Keywords: Awareness, Curriculum Contents, Effects, Global Climate Change, Social Studies

Introduction

Climate change remains one of the most urgent and multidimensional environmental and socio-economic challenges confronting humanity in the 21st century. Its far-reaching impacts transcend national borders and institutional frameworks, posing serious threats to ecological balance, sustainable

development, and human well-being worldwide. Predominantly driven by the accumulation of greenhouse gases (GHGs)—emanating from anthropogenic activities such as fossil fuel combustion, deforestation, industrial emissions, and unsustainable agricultural practices—climate change has significantly disrupted ecosystems, increased the frequency and intensity of extreme weather events, and exacerbated social and economic vulnerabilities, especially in developing nations like Nigeria (IPCC, 2023; Ajibade & Okpara, 2022).

According to the United Nations Framework Convention on Climate Change (UNFCCC, 2020), climate change refers to changes in the global climate that are directly or indirectly attributed to human activities, altering the composition of the global atmosphere in addition to natural climatic variability observed over comparable time periods. The complex nature of climate change presents a twofold challenge: first, addressing the scientific intricacies, and second, fostering broad-based societal awareness and behavioral transformation. These challenges are further complicated by persistent misinformation and wide disparities in public understanding (Hajer & Versteeg, 2022).

Tertiary educational institutions, particularly colleges of education, are strategically positioned to contribute to climate change mitigation and adaptation efforts. These institutions not only reduce their own environmental footprint through sustainable campus operations but also serve as catalysts for community resilience through education, research, and advocacy (Akintoye, 2021; Albert & Eze, 2022). By embedding climate change education into academic programs, colleges of education can enhance students' climate literacy, reshape perceptions, and instill values that promote environmental stewardship. This is crucial in preparing pre-service teachers to become transformative agents in their communities.

The Social Studies curriculum, in particular, offers a vital platform for integrating climate change and sustainable development discourse. As a discipline grounded in civic education, human-environment interaction, and

ethical responsibility, Social Studies fosters critical understanding of global challenges and cultivates values necessary for participatory citizenship and environmental consciousness (Eze & Ndubisi, 2023). It equips learners with the analytical tools to examine the root causes and consequences of climate change while advocating for proactive mitigation and adaptation strategies. Nigeria's geographical and socio-economic context renders it highly susceptible to the adverse effects of climate change. Rising average temperatures, erratic rainfall patterns, increased desertification, and recurrent extreme weather events are already threatening the country's agricultural productivity, water security, biodiversity, and public health systems (Nwafor *et al*., 2021; Odjugo, 2019). Empirical data indicate a consistent rise in mean annual temperatures and unpredictable rainfall, with dire implications for national food systems and infrastructure. Without timely and robust intervention, projections suggest that Nigeria could witness temperature increases of up to 4.5°C by 2100—potentially causing irreversible harm to ecosystems and human systems (IPCC, 2023).

Despite these escalating risks, public awareness and understanding of climate change in Nigeria remain fragmented and uneven. Comparative studies reveal stark differences in climate literacy between populations in the Global North and South, with education playing a pivotal role in shaping perceptions and attitudes (Lee *et al*., 2022; Ogunbode *et al*., 2023). In Nigeria, personal experiences of climate-related phenomena—such as floods, droughts, and crop failures—often inform climate perceptions, yet limited access to scientific information and formal education inhibits comprehensive understanding. As Biel and Nilsson (2019) emphasize, informed citizens are more likely to support policy interventions and adopt sustainable behaviors, whereas misinformation or superficial awareness may hinder effective climate action.

Attitudes toward climate change are shaped by a complex interplay of factors, including socio-economic background, educational level, cultural beliefs, and access to credible information. People's motivations may range from self-

interest—concern for health or property—to altruistic and biospheric considerations, such as care for future generations and the planet (Steg *et al*., 2021). Moreover, daily behaviors—ranging from energy consumption to food choices and waste management—collectively influence carbon emissions. This underscores the need for integrative education strategies that encourage long-term behavioral change rooted in local cultural contexts.

Nigeria's diverse ethno-linguistic and cultural landscape presents both opportunities and challenges in climate communication. Cultural narratives, language barriers, and regional disparities in environmental engagement affect how climate information is perceived and acted upon. This complexity highlights the urgency of evaluating the effectiveness of existing educational frameworks—particularly within the Social Studies curriculum—in promoting environmental literacy and responsible behaviour among pre-service teachers in Nigerian colleges of education. This study, therefore, seeks to assess the role of the Social Studies curriculum in enhancing awareness of the causes and consequences of global climate change among students in Nigerian colleges of education.

Objective of the Study

The study seeks to:

- Find out the extent to which Social Studies instructional resources create awareness on the effect of global climate change among students in Colleges of Education, Nigeria;

Research Question

1. To what extent do Social Studies instructional resources create awareness on the effect of global climate change among students in Colleges of Education, Nigeria?

Null Hypothesis

$H0_1$: There is no significant difference on the extent to which Social Studies instructional resources create awareness on the effect of global climate change among students in Colleges of Education, Nigeria;

Method

The study adopted a descriptive survey research design, ideal for systematically gathering and analyzing data from a representative sample of a larger population (Salihu & Adamu, 2016). The target population consisted of 3,195 NCE II Social Studies students (1,915 males and 1,280 females) from 15 Colleges of Education in the North-West geopolitical zone of Nigeria as of January 2025.

A sample size of 343 students was determined using the Research Advisors (2006) sample size table. Purposive sampling was used to select only public Colleges of Education offering Social Studies at the NCE level. Proportionate sampling ensured representation relative to institutional population sizes, while simple random sampling was used to select students from each subgroup.

Data were collected using a structured questionnaire titled *Social Studies Curriculum and Global Climate Change Questionnaire (SOSCAGLOCC-Q)*. The instrument was validated by academic experts and pilot-tested on 34 NCE II students at Niger State College of Education, Minna, to ensure reliability and applicability. The reliability coefficient, determined using Cronbach's alpha, was 0.828, indicating strong internal consistency. For analysis, descriptive statistics (means and standard deviations) were used to address the research questions, while inferential statistics (one-sample t-test at 0.05 significance level) were employed to test the hypothesis. Weighted scores from 4 to 1 were used for interpreting responses.

Results

Research Question One: To what extent do Social Studies instructional resources create awareness on the effect of global climate change among students in Colleges of Education, Nigeria?

Table 1: Descriptive Statistics on Extent to Which Social Studies Instructional Resources Create Awareness on the Effect of Global Climate Change among Students in Colleges of Education, Nigeria

S/N	Item	SA	A	D	SD	Mean	SDev
1	Social Studies curriculum resources create awareness that climate change are likely to be catastrophic to the globe	130	113	52	24	3.09	0.93
2	Social Studies curriculum resources create awareness that global climate change lengthens the transmission of important vector borne diseases to the world	140	103	48	28	3.11	0.96
3	Social Studies curriculum resources create awareness that climate change impacts food safety, production, storage and distribution	135	108	50	26	3.10	0.95
4	Social Studies curriculum resources creates awareness that the global climate change leads to proliferation of slums in urban areas	138	102	53	26	3.10	0.96
5	Social Studies curriculum resources create awareness that climate change leads to destruction of the natural environment	128	109	55	27	3.06	0.95
6	Social Studies curriculum resources create awareness that climate change leads to decline in economic power	125	110	50	34	3.02	0.99
7	Social Studies curriculum resources create awareness that climate change leads to spread of epidemics across the globe	130	105	55	29	3.05	0.97
8	Social Studies curriculum resources create awareness that climate change leads to air and water contamination	132	108	52	27	3.08	0.95
9	Social Studies curriculum resources create awareness that climate change lead to escalation of poverty among world population	138	102	50	29	3.09	0.97
10	Social Studies curriculum resources create awareness that climate change has resulted in decreasing agricultural production	137	107	53	22	3.13	0.93
11	Social Studies curriculum resources create awareness that climate change leads to water shortage in the world	140	103	48	28	3.11	0.96
12	Social Studies curriculum resources create awareness that climate change has resulted in rising temperatures	135	108	50	26	3.10	0.95
13	Social Studies curriculum resources create awareness that climate change has resulted in rising sea levels	138	102	53	26	3.10	0.96
14	Social Studies curriculum resources create awareness that climate change has resulted in precipitation patterns	128	109	55	27	3.06	0.95
15	Social Studies curriculum resources create awareness that climate change has resulted in more extreme weather events	125	110	50	34	3.02	0.99
	Mean Aggregate					**3.08**	

Decision Mean: ≥ 2.50 Agreed; < 2.50 Disagreed

Table 1 highlights students' perceptions of the effectiveness of Social Studies instructional resources in raising awareness about global climate change in Nigerian Colleges of Education. All mean scores are above the benchmark of

2.50, indicating overall agreement on the effectiveness of these resources. Mean scores range from 3.02 to 3.13 with low standard deviations (0.93–0.99), showing consistent responses. The highest-rated item (mean = 3.13) reflects awareness of climate change's impact on agricultural production, emphasizing food security. The lowest-rated item (mean = 3.02) pertains to awareness of economic decline due to climate change, suggesting this area may be underemphasized or less recognized by students. The narrow range in scores indicates that instructional resources address multiple climate change effects—including health, urbanization, environmental, and water issues—fairly evenly. With an overall mean of 3.08, the data affirm that Social Studies instructional resources are effective tools for climate change education in Nigerian teacher training institutions.

$H0_1$: There is no significant difference on the extent to which Social Studies instructional resources create awareness on the effect of global climate change among students in Colleges of Education, Nigeria;

Table 2: One Sample t-test on the **Extent to Which Social Studies Instructional Resources Create Awareness on the Effect of Global Climate Change among Students in Colleges of Education, Nigeria**

Variables	N	Mean	SDev	Df	p-value	Decision
Social Studies instructional in Creating Awareness on Effects of Global Climate Change	319	81.27	11.30	318	0.001	Rejected

The results of the One-Sample t-test presented in Table 2 evaluate whether Social Studies instructional resources significantly influence students' awareness of global climate change in Nigerian Colleges of Education. The mean score of 81.27 suggests a relatively high level of awareness, indicating that Social Studies effectively raises awareness about this critical environmental issue. The standard deviation of 11.30 reflects moderate variability, showing that while most students report high awareness, some variation exists. The p-value of 0.001 is well below

the commonly accepted significance level of 0.05, confirming statistical significance. Thus, there is strong evidence to reject the null hypothesis.

Discussion

Social Studies instructional resources were found to have a significant impact on students' awareness of the effects of global climate change. A high mean score of 81.27 and a p-value of 0.001 suggest that students widely acknowledge the importance of instructional resources in understanding climate change effects. As a discipline, Social Studies educates students about global issues, including environmental challenges such as climate change. Instructional resources in Social Studies encompass a wide range of tools, including textbooks, multimedia presentations, online resources, simulations, maps, and field trips. These tools facilitate a deeper engagement with real-world problems, enabling students to develop a comprehensive understanding of climate change and its consequences.

Research consistently underscores the positive impact of instructional resources on students' awareness of climate change. Nicolai *et al*. (2020) investigated the role of interactive digital resources in teaching environmental issues and found that multimedia-based instruction significantly improved students' retention and understanding of climate-related topics. Similarly, Yusuf and Dada (2022) demonstrated that integrating technology-based learning tools enhanced Nigerian students' ability to recognize and comprehend the effects of climate change. These findings align with the current study's results, reinforcing the importance of instructional resources in climate change education.

In this context, instructional resources enhance learning by making complex and abstract climate change concepts more tangible. Through charts, documentaries, real-time data, and interactive simulations, students can visualize the impact of global warming, rising sea levels, and deforestation. This immersive learning experience fosters a deeper understanding of the subject matter and strengthens students' ability to critically analyze environmental issues.

Additionally, Oluwole (2022) emphasizes that active learning strategies, supported by multimedia instructional resources, encourage students to explore multiple perspectives, analyze data, and connect local and global environmental challenges. Such approaches not only reinforce climate change awareness as an academic subject but also cultivate a sense of responsibility, motivating students to take action. This aligns with the findings of Akinsola and Olaniyan (2021), who argued that statistically significant results reflect the effectiveness of well-structured instructional strategies in facilitating meaningful learning, particularly in complex subjects like climate change.

Further supporting this, Jibril *et al*. (2023) conducted a study in Nigerian secondary schools that analyzed how incorporating diverse instructional resources, such as videos and interactive climate change modules, improved students' understanding of environmental issues. Their findings similarly indicated statistically significant improvements in students' knowledge, suggesting that effective instructional strategies can have lasting educational outcomes.

Moreover, Fawole (2022) found that the use of virtual tools and documentaries in Nigerian schools significantly enhanced students' comprehension of climate-related issues.

Beyond awareness, instructional resources also influence students' environmental attitudes and behaviors. Okeke *et al*. (2024) found that students who actively engaged with climate change materials were more likely to participate in environmental conservation activities, demonstrating a behavioral shift in response to the knowledge acquired. This underscores the transformative potential of effective climate education.

Conclusion

Social Studies instructional resources play a vital role in improving students' awareness of the effects of global climate change. The high mean score of 81.27 and the p-value of 0.001 suggest that students recognize and value the

role of instructional resources in helping them understand the impact of climate change;

Recommendation

Based on the findings, this study, the study recommends that:

- To maximize this impact, it is recommended that Colleges of Education invest in adequate and varied instructional materials (e.g., textbooks, multimedia, and online resources) to facilitate deeper engagement with climate change topics. Instructors should also be trained in utilizing these resources effectively to create interactive and immersive learning experiences;

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