

CLIMATE CHANGE MISINFORMATION & LITERACY: PERCEPTION OF SELECTED UNDERGRADUATE STUDENTS IN A UNIVERSITY OF TECHNOLOGY

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Abstract

The paper presented the findings about the perceptions of selected undergraduate students on climate change misinformation and literacy. Empirical data was collected using an exploratory approach. The perception of 60 selected undergraduates on climate change misinformation and the use of Open Education Resources (OERs) to curb climate misinformation. To reduce biases, students selected for data collection were not in disciplines related to environmental sciences, geography or climate science. The data collected indicated that the students understand that climate change exists, although over half of the respondents were not sure if they had been misinformed about climate change from their most used sources of climate change information. The study concluded that climate change awareness is rapidly gaining ground as the perception about climate change and its consequences is no longer in doubt among the students. The study recommended that librarians in the open access space play a key role by increasing accessibility to diverse high quality OERs that would provide accurate information on climate change. Librarians can also use social media platforms and other digital tools to enhance students' critical thinking and media literacy skills thereby enabling them to discern credible information about climate change from misinformation.

Keywords: Climate Change Misinformation, Climate literacy, Climate Education, Nigeria

Introduction

Climate change is the thirteenth (13th) goal of the Sustainable Development Goals (SDG). It is also one of the SDGs that is integrally connected to all 16 goals of the SDGs (United Nations, 2023).

It is arguably the most pressing, devastating and large-scale crisis in modern history, due to the increased use of fossil fuels, which is heating up the temperature of the earth (Kornfeind, 2022). Ironically, the effects of climate change are felt more strongly in Africa than in the countries that have made the biggest contributions, despite the negligible carbon footprints of the continent.

Target 13.3 of the Sustainable Development Goal 13 is on the improvement of education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

The International Federation of Library Associations and Institutions (IFLA) utilises the SDGs as a basis for guiding initiatives aimed at counteracting climate change; key goals informing librarians' sustainability projects include affordable and clean energy, clean water and sanitation, sustainable communities, climate action to mention but a few (Kornfeind, 2022).

Thus, libraries and librarians as knowledge gatekeepers are saddled with the responsibility of upholding and advancing the sustainable development principles due to their role of knowledge and literacy acquisition and dissemination.

According to Aytac (2022), climate change literacy is the ability to find, understand, and use information and services to make decisions about the environment including climate change. Thus, to achieve the target indicators of SDG 13, it is pertinent for

individuals and communities to be literate about climate change. Interestingly, globally and even in Africa, there are recommendations about the inclusion of climate literacy in education curriculum (Eze et al. 2022, Abdullah, 2023).

Furthermore, the paradigm shift in education and lifelong learning through digital information resources and tools can be leveraged by librarians to achieve climate literacy.

One of these tools are Massive Open Online Courses (MOOCs). MOOCs are Open Education Resources (OERs) which have become ubiquitous due to Information and Communication Technologies.

According to Cvetkovic (2021), MOOCs are free online courses that provides affordable and flexible way to learn new skills for career development, career change, college preparation, supplementary learning, lifelong learning, corporate e-Learning and training.

However, literature has largely focused on leveraging MOOCs for improved access to higher education based on the challenges of access and enrolments in Nigeria higher education system. (Abdullahi et al 2020).

There is a dearth of literature on the use of MOOCs outside higher education for lifelong learning or to curb misinformation and disinformation on contemporary issues such as climate change.

Thus, the researchers explored the perception of selected undergraduates at the Federal University of Technology, Minna Nigeria on their perception of climate change and open education resources to achieve the following objectives:

1. Assess the perception of climate change
2. Assess the perception of the use of Open Education Resources (OER) to curb climate change misinformation

Climate Misinformation in Nigeria

Climate denial and misinformation are challenges in Nigeria. It was evident during the devastating floods in 2022. These challenges are compounded by Africa's low carbon footprint and other factors linked to the effects of climate change including insecurity, poverty and government negligence.

However, the effects of climate change across geographical regions in the country are becoming increasingly devastating, from the desertification in the north to the devastating floods in the middle belt and southern areas, to the haze caused by soot in oil-producing areas.

Nigeria has a low level of climate change education and awareness, with the majority of the population understanding its effects outside of their immediate surroundings (Odjugo, 2013).

However, Nigeria is among the nations' most likely to be negatively impacted by climate change, with concerns including flooding, a lack of water, an increase in illness, and economic decline (Abdulhamid, 2011).

Thus, access to information and communication are essential for raising public knowledge of the problems posed by climate change and strategies for adaptation (Akudo, & Kizito 2023).

Consequently, there has been efforts to improve the literacy level of the populace using education and media. For instance, in Kano, Nigeria, people's awareness of the problem has improved as a result of media coverage and depictions of climate change (Balarabe & Hamza, 2020).

With the information environment polluted by misinformation to deny or delay climate action, there is a need for a robust knowledge commons with free access to climate information to grow the capacity of non-specialist audiences.

In general, while there is some level of awareness and understanding of climate

change in Nigeria, there is a need for more comprehensive education and communication strategies to address climate misinformation and promote climate action.

Methodology

An exploratory approach was used to assess the perception of 60 selected undergraduates on climate change misinformation and the use of OERs in curbing its misinformation.

A quantitative survey was carried out and data was collected from 30 undergraduate

Findings

Perception of Climate Change

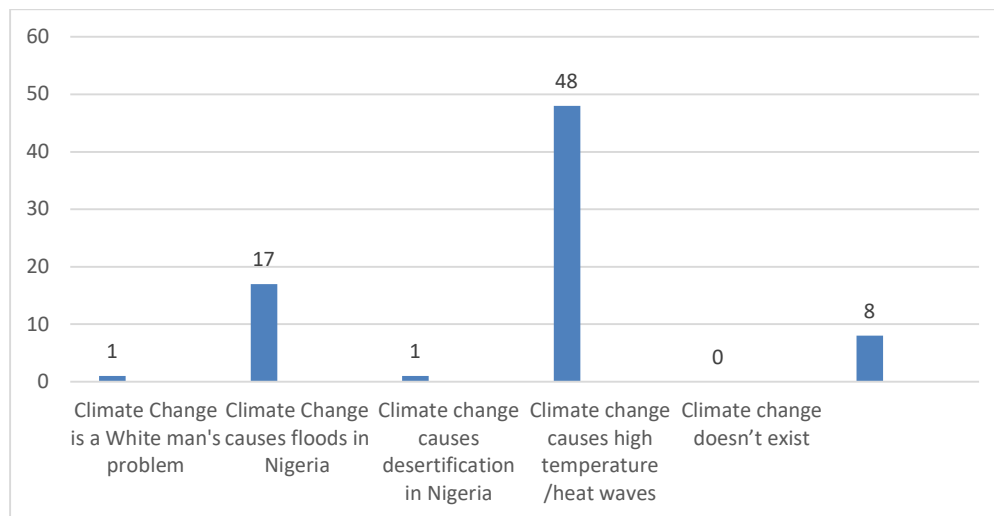


Figure 1: Perception of Climate Change (n=60)

80% of the respondents perceived climate change as a phenomenon that causes high temperature, while 28.3% believes climate

intern students of a research group (Advanced Engineering Innovation Research Group) in Federal University of Technology, Minna.

The remaining 30 questionnaires were distributed to students that visited the library on the 4th of October 2023.

The questionnaire had questions on the perception of undergraduates on climate change misinformation and the use of Open Education Resources (OER) to curb climate change misinformation.

change causes floods. Interestingly, none of the respondents stated that climate change doesn't exist.

CLIMATE CHANGE MISINFORMATION & LITERACY

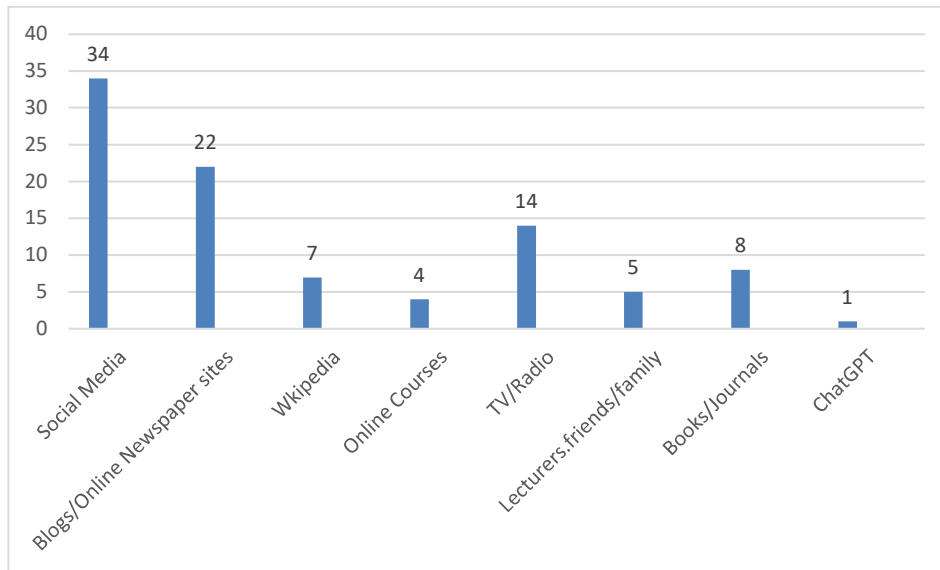


Figure 2: Sources of Climate Change Information (n=60)

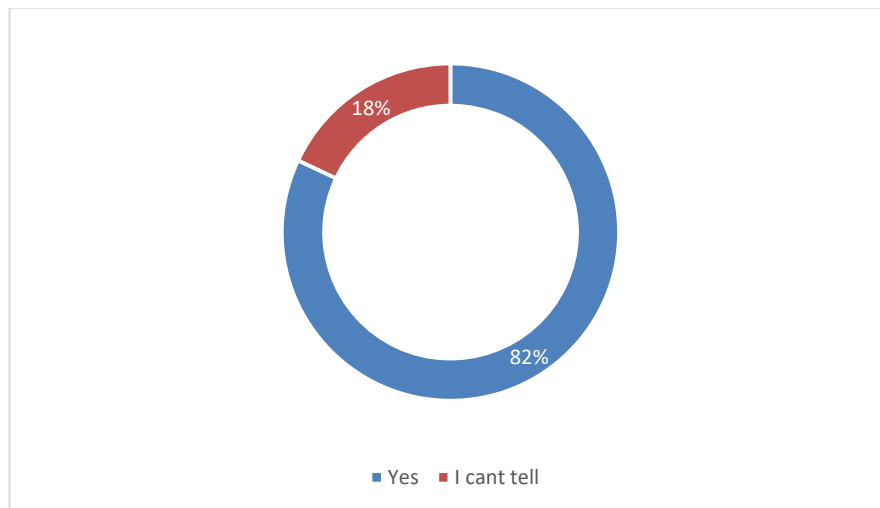


Figure 3: Simple and clear information from sources (n=60)

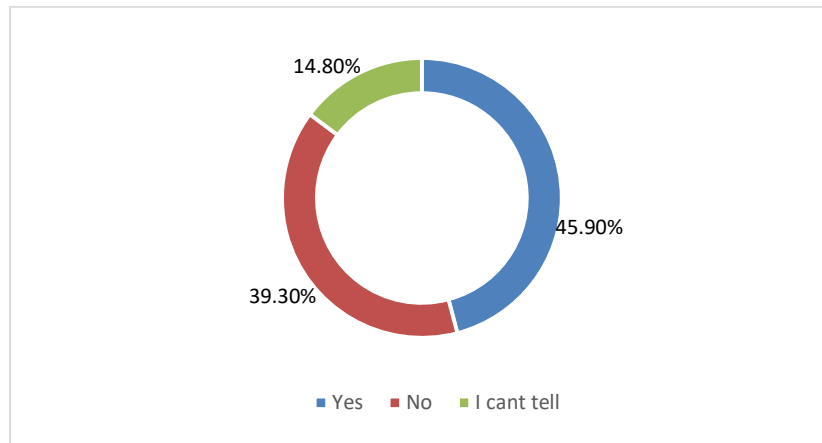


Figure 4: Exposure to climate change misinformation (n=60)

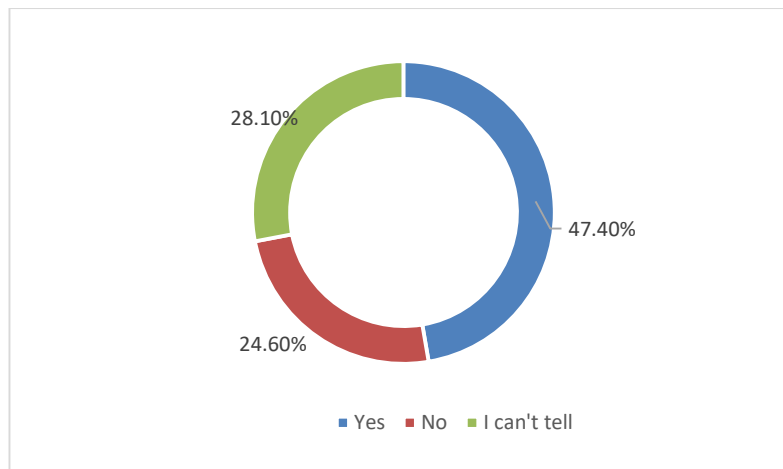


Figure 5: Ability to identify climate change misinformation from sources (n=57)

Over half of the respondents (55.7%) access information on climate change through social media and 36.1% through blogs.

82% find the information simple and clear enough, yet ironically over 59% of the respondents stated that they have either been

exposed to climate change misinformation or can't tell if they have been exposed to climate change misinformation nor can 52.7% of the respondents identify climate change misinformation from the most used sources of climate change information.

CLIMATE CHANGE MISINFORMATION & LITERACY

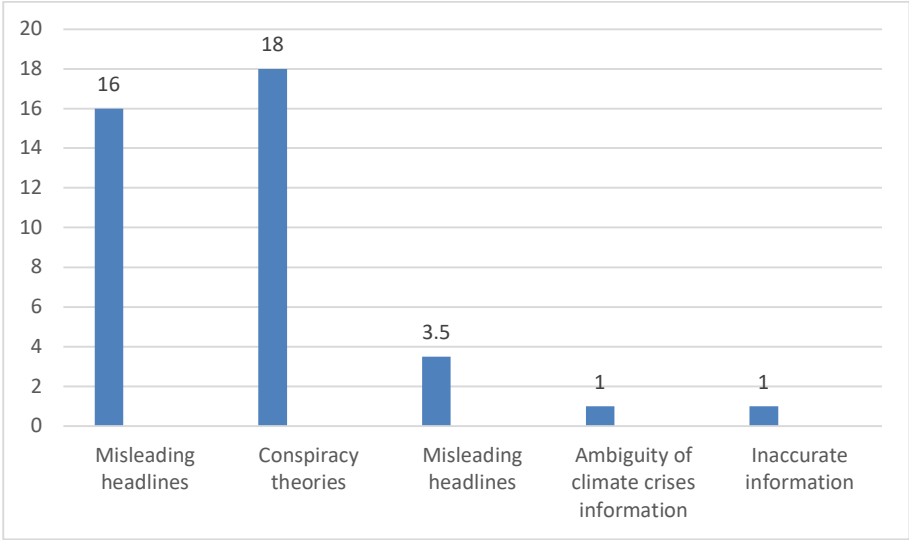


Figure 6: Type of climate change misinformation exposed to (n=32)

56.3% of the respondents have been exposed to conspiracy theories while 50% have been exposed to misleading headlines about climate change which isn't surprising,

since most of the respondents get information about climate change from social media and blogs.

Perception of the use of use of Open Education Resources (OER) to curb climate change misinformation

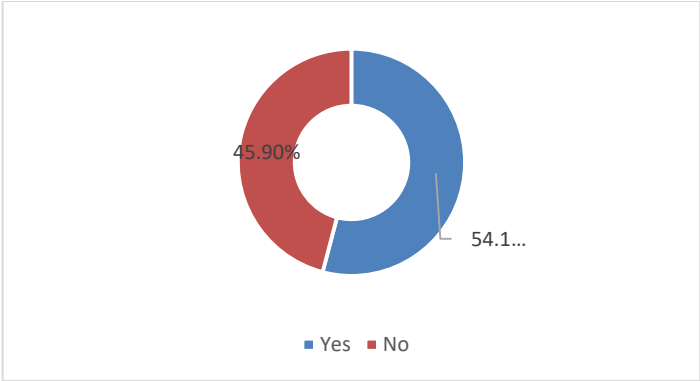


Figure 7: Familiarity with the concept of OER (n=60)

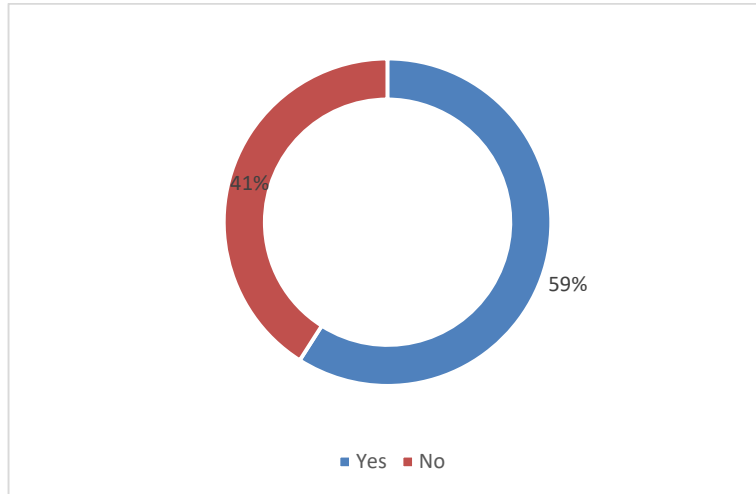


Figure 8: Usage of OERs for any type of learning outside formal studies (n=60)

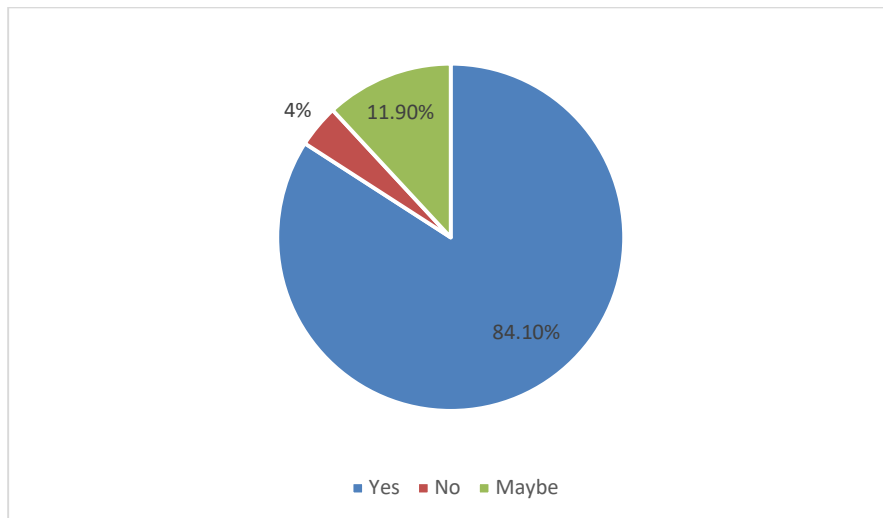


Figure 9: Perception of use of OER as a valuable resource of learning about climate change (n=59)

CLIMATE CHANGE MISINFORMATION & LITERACY

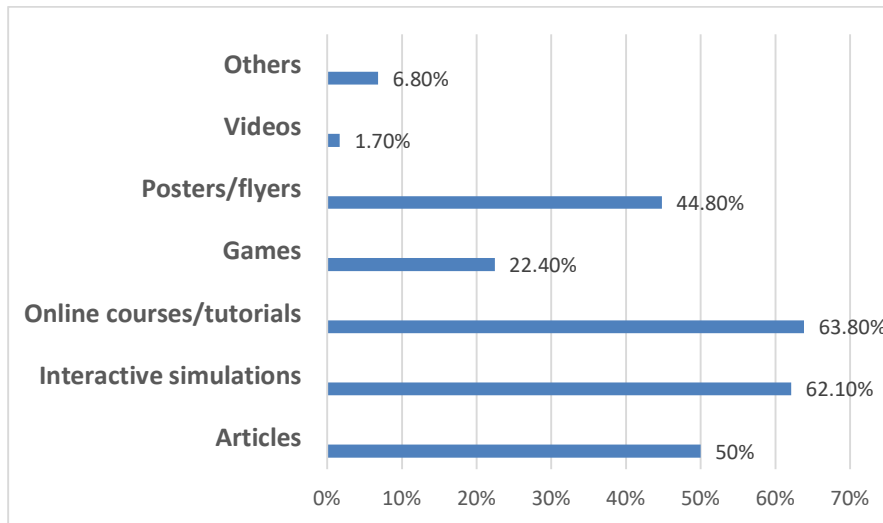


Figure 10: Type of OER effective for Climate Change Literacy (n=58)

54.1% of the respondents stated that they are familiar with the concept of OERs.

81.4% believe these resources are valuable for learning about climate change while 63.8% and 62.1% perceive online tutorials/courses and interactive simulations OERs for educating young people about climate change and countering climate change misinformation.

Discussions

The analysis of data collected from the undergraduate students revealed that there is a general awareness on the existence of climate change and negates the perception that climate change is the 'white man's problem' (Nwasum & Eze, 2020).

A pointer to this is that none (0%) of the respondents agreed that climate change doesn't exist.

Furthermore, majority 80% of the respondents perceived climate change as a phenomenon that causes high temperature, and 28.3% believes climate change causes floods, which have been acknowledged by experts (Echendu, 2023).

This speaks to the fact that people and communities like Nigeria with low carbon footprint are facing the consequences of climate

change. However, it is pertinent to note that factors like poor drainage systems and deforestation are exacerbating these consequences.

The wave of ubiquitous access to information about any subject matter is obvious with the majority of respondents in this study stating social media and online blogs as major sources of information on climate change. Interestingly, the media has been the main source of information on climate change for over a decade.

A study by Filho (2010) illustrates the fact that the media was the predominant source of information about climate change in all surveyed regions around the world.

Despite that, only in Africa were universities perceived as being consulted for information more often than the Internet. In addition, in Africa and Latin America, the family seems to be an important source of information when compared to other regions.

This study negates the additional findings of Filho as neither the university (except for students studying climate science

courses) nor family are major sources of information on climate change in Nigeria.

Another fascinating finding from the data collected in the current study is that respondents think the information gotten from their sources (social media and online blogs) are simple and clear yet, a good number can't tell if they are misinformed about climate change which implies the low literacy about climate change, and corroborated by studies on climate change literacy (Eze, et. al., 2022; Eheazu, 2019).

While social media and blogs have become reputable information sources in some specialist areas and a significant component of the public's media diet that is used to improve people's general learning, they have generally not adopted the essential elements of mainstream media that foster public trust (Borah, 2015; Campbell et al., 2010), particularly when it comes to agenda-setting and misinformation about climate change (Treen et al., 2020).

Similarly, Anderson (2017) agrees that social media offers a platform for activating those with a sceptical perspective of climate change and framing climate change skeptically.

It is important to state here though that most of these takes on blogs and social media are perceptions as Treen et. al. (2020) found very little research on the diffusion of misinformation via social media platforms and called for further research into climate change misinformation on social media and further examination of the relationship between social media use and climate change perceptions (Anderson, 2017).

The use of OERs and its perceived effectiveness for learning by respondents isn't

surprising as the effectiveness of OERs especially online courses (Cheung et. al., 2022) was apparent during the pandemic and has since become ubiquitous among young people.

Another interesting information from the data collected is the perception of interactive simulations as effective resources for learning about climate change. Thankfully, these simulations/videos can be embedded in online tutorials and courses.

Conclusion and Further Research

The study concluded that climate change awareness is rapidly gaining ground as the perception about climate change and its consequences is no longer in doubt among the students.

The study recommended that librarians in the open access space play a key role by increasing accessibility to diverse high quality OERs that would provide accurate information on climate change.

Librarians can also use social media platforms and other digital tools to enhance students' critical thinking and media literacy skills thereby enabling them to discern credible information about climate change from misinformation.

The current study is limited by the use of a small sample size of undergraduate students, and although measures were taken to prevent biases based on the discipline, the participants responded anonymously, thus links on prior formal knowledge about climate change cannot be established.

In addition, future research will benefit from more in-depth engagement in the form of interviews to understand the reasoning behind their perceptions.

CLIMATE CHANGE MISINFORMATION & LITERACY

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