

**LITERACY EDUCATION AND ENVIRONMENTAL AWARENESS TOWARDS
FLOODING IN NIGERIA****¹Chinyere C. NGURUKWEM**

*Department of Adult Education
Federal College of Education, Obudu, Cross River State
Chinwemnyere@gmail.com,
Phone No: 07039372847*

²Emelda Ada ANYANWU-AMUNDE

*Department of Adult Education
Federal College of Education, Obudu, Cross River State
anyanwundeemel@gmail.com
Phone No: 08068360387*

³Fredrick ABUSHEYE

*Department of Adult Education
Federal College of Education, Obudu, Cross River State*

Abstract

This study investigated literacy education and environmental awareness towards flooding in Nigeria. This investigation was carried out among communities affected by flood in Nigeria. Three research questions guided the study. The study adopted the descriptive survey research design. Accidental sampling was employed to sample 600 community members as the desired sample. The instrument for data collection was a 30-item structured questionnaire, structured on 5-point Likert scale of Very High Extent, High Extent, Moderate Extent, Low Extent and Very Low Extent with assigned weight of 5, 4, 3, 2, 1 respectively. The questionnaire was face and content validated. The reliability of the questionnaire was determined using the Cronbach Alpha statistics, the analysis which yielded a coefficient value of 0.78. Data collected for this study was done through the direct delivery approach (DDA), the data was analysed using arithmetic mean and standard deviation. The findings of the study revealed that literacy education and awareness of causes of flooding in communities in Nigeria was rated to a high extent; literacy education and awareness of effect of flooding in communities in Nigeria was rated to a moderate extent; literacy education and strategies for mitigating the effect of flooding in communities in Nigeria was rated to a moderate extent. The study recommended among others that relevant contents of core subjects that contain lots of environmental content such as Geography, Biology, Social Studies, Civic Education, Agriculture Science, Health Education amongst others should be designed and taught in adult literacy education centres.

Keywords: Literacy, Education, Environmental Awareness, Flooding.

Introduction

Adult literacy education must address flooding, a 21st century environmental hazard, to create awareness of the need for sustainable environmental management. Education is recognised as a tool to tap and modify the cognitive, affective and psychomotor talents, potentials and possibilities possessed by man (Umezulike, 2017). In this vein, Bakare (2018) opines that Adult literacy programmes teaches man to engage in activities that will improve the environment. Akpama (2017) defines literacy as the ability to read, write and speak English and to compute and solve problems at levels of proficiency necessary to function on the job and in society. However, the truth is that adult literacy has actually grown beyond mere reading, writing, and arithmetic (Adult basic literacy) to functional literacy. The definitions of adult literacy reflect the philosophy of adult learning and lifelong learning (Metro Toronto Movement for Literacy, 2015) and shape the perceptions of individuals and thus affect both the substance and style of educational programmes (Keefe & Copeland, 2011; Mbalisi & Ndulor, 2019).

Functional literacy is the deliberate application of basic literacy skills in meeting proper functioning needs the occupational or socioeconomic skills required to function properly in an occupation or environment. The functionality of literacy is in terms of the extent to which a literacy programme has empowered the recipients to solve problems of daily living (Kazeem & Aghedo, 2015). It looks at the use to which the literacy skills are put (Agbionu, 2014). In support of this, the United Nations Development Programme in Marango & Ndamba (2011) recognises that functional literacy is an entry point to empowerment, hence it brings together components of literacy skills development. Mabilisi & Ndulor (2019) & UNESCO (2015) identified socioeconomic and environmental challenges as major societal problem which literacy competencies could be applied to resolve. In these wise, different scholars in Mbalisi and Eheazu (2016) further identified different forms of literacies including among others: computer, environmental, technological/digital, financial, and health literacies. The focus of the present study is on literacy education as it relates with environmental awareness toward flooding in Nigeria.

According to the Great Schools Partnership for 21st Century Skills (2016), environmental literacy is critical, especially in the demonstration of knowledge and understanding of the environment and the circumstances and conditions affecting it. Akomolafe (2011a) states that environmental education is a process in which individuals gain awareness of their environment, acquire knowledge,

skills, values and experiences to solve present and future environmental problems. Thus, when the skill acquisition process is infused with the necessary awareness, it becomes easier for recipients to embrace better management of their environment. With the increasing level of environmental disaster, environment literacy should go a step further to create awareness and prepare individuals, groups and communities on how to prevent, prepare for or mitigate effect of environmental disasters such as flooding.

Online Oxford English Dictionary defines flooding as the covering or submerging of normally dry land with a large amount of water. Flooding is said to account for approximately one third of all natural disasters in both developed and developing world (Oyatayo, Songu, Adi, Jiauna & Ndabulu, 2016). According to them, Flooding is also responsible for more than half of all related fatalities and a third of the economic loss from all natural catastrophes. The reason for this as observed by Agusomu (2013) lies in the widespread geographical distribution of river flood plains and low-lying coastlines, together with their long-standing attraction for human settlement. According to Oyatayo Songu, Adi, Jiauna & Ndabulu (2016), factors contributing to the frequency and severity of flooding include: rainfall intensity and duration; antecedent moisture condition; watershed conditions, including steepness of terrain, soil types, amount of vegetation, and density of development among others. In the report by Agbonkhese, Agbonkhese, Aka, Joe-Abaya, Ocholi & Adekunle (2014), the occurrence of flood represents a major risk to riversides populations and floodplains. The flooding of communities and farmlands during raining season, leading to loss of life and property, has become a huge challenge to governments in Nigeria. Based on the level of damage and losses, recovery is usually difficult without external aid from the government and non-governmental agencies. Flooding is one of the most devastating hazards that are likely to increase in many regions of the world partly due to global climate change and poor governance. According to ActionAid in Agbonkhese et al. (2014), four types of flooding can be recognized as localized flooding which occurs many times in a year due to few and blocked drains; small streams in urban areas rising quickly after heavy rains, but often passing through small culverts under roads; major rivers flowing through urban areas; wet season flooding in lowland and coastal cities.

A study by Akomolafe (2011b) on students' awareness and attitude to environmental awareness found a high level of students' environmental awareness in the area of flooding, destruction to forest, oil spillage, and indiscriminate bush and refuse burning. It was concluded that, the high level of awareness and favourable attitude was an indication of the level of preparedness, for parents

of tomorrow. In the same vein, Mbalisi and Ndulor (2019) examined environmental literacy as a tool for achieving sustainable environmental quality in Nigeria, and reported that human actions arise out of human's perception of the environment as a resource for satisfying human needs. Oyatayo, Songu, Adi, Jidauna & Ndabula (2016) assessed awareness and perception of flooding in Donga Town, Taraba State, Nigeria. The study found that 88.4% of the respondents were aware that the area was prone to flooding. Also, about 46.2% perceived that rainfall was the major cause of flooding. The result of correlation analysis conducted was insignificant implying that in Donga town, educational level of respondents did not influence respondent's awareness level of flooding and that people's perception of flooding was influenced by factors other than respondent's literacy level. Hence, it was concluded that rainfall intensity and amount is the main cause of flooding in Donga town. Also, individual response to flooding in the study area was poor. Another study by Agbonkhese, Agbonkhese, Aka, Joe-Abaya, Ocholi & Adekunle (2014) found that flood menace has ravaged several towns in Nigeria for several decades leaving in its wake loss of thousands of lives and billions of naira worth of properties, which calls for holistic urgent actions by individuals and governments. The importance of sensitising communities on the reality of flooding and possible risk reduction strategies is crucial in arresting menace of flood in Nigeria. They recommended the need to educate people living in flood plain on the dangers of flooding.

Previous experience of flooding has been linked to several factors including inappropriate flood management policies and practices and overlook of highly contextualised nature of public perception (Oyatayo, Songu, Adi, Jidauna & Ndabula, 2016). As a consequence, the individuals of different communities may assess their flood risk very differently, because they do not have the same awareness level about their risk status, about flood mitigation measures and their effectiveness, and they perhaps have a different historical background regarding the experience of living in a floodplain and of being flooded. In the face of the very diverse flooding perceptions within the society, a communication process on flooding should be encouraged as a basis for policy. Moreso, if prevailing perceptions and value concepts become transparent and open to public debate, a common perception of communities may evolve and contribute to an increased awareness and acceptance of flood mitigation and management policies for the improvement of the society. This backdrop and increase in flooding informed the present study to examine the literacy education and environmental awareness towards flooding in Nigeria.

The general purpose of this study is to examine adult literacy education and environmental awareness towards flooding in Nigeria. Specifically, this study will examine; Literacy education and awareness of causes of flooding in communities in Nigeria; Literacy education and awareness of the effect of flooding in communities in Nigeria; Literacy education and awareness of strategies for mitigating the effect of flooding in communities in Nigeria.

Research Questions

The following research questions will guide the study:

1. What is the mean rating of community members on the extent of literacy education and awareness of causes of flooding in communities in Nigeria?
2. What is the mean rating of community members on the extent of literacy education and awareness of the effect of flooding in communities in Nigeria?
3. What is the mean rating of community members on literacy education and strategies for mitigating the effect of flooding in communities in Nigeria?

Methodology

The design for this study is the descriptive survey research design. According to Nworgu (2015), the descriptive survey research design aims at collecting data on and describing in a systematic manner the characteristics, features or facts about a given population. The area of this study comprises three flood affected states and communities in Nigeria during the 2022 flooding disaster. This study examined the opinions on the extent of literacy education and awareness of causes of flooding in communities, the extent of literacy education and awareness of the effect of flooding in communities; literacy education and strategies for mitigating the effect of flooding in communities in Nigeria. The population for this study comprised community members drawn from flood affected communities and states in Nigeria (Kogi State, Delta State, Anambra State). Although, no exact population was estimated, the researchers employed the purposeful sampling technique for this investigation, by doing this, only community members which the researchers can reach were included. The desired sample was 600 community members. The instrument for data collection is a 30-item structured Questionnaire on literacy education and environmental awareness towards flooding. The instrument was structured on a 5-point Likert response option of very high extent (VHE) – 4.50-5.00, high extent (HE) – 3.50-4.49, moderate extent (ME) – 2.50- 3.49, low extent (LE) – 1.50 – 2.49 and very low extent (VLE) – 1.00-1.49 with assigned weight of 5, 4, 3, 2, 1 respectively. The questionnaire was subjected to face and content validity by validates in the Department of Adult and Continuing

Education, and the Faculty of Environmental Sciences in Nnamdi Azikiwe University, Awka. The reliability of the questionnaire was determined using the Cronbach Alpha statistics, the analysis yielded a coefficient value of 0.78 and shows that the questionnaire is reliable for data collection. Data collected for this study was done through the direct delivery approach (DDA). The data was analysed using arithmetic mean and standard deviation. The standard deviation score revealed the homogeneity or otherwise of the respondents rating on literacy education and environmental awareness towards flooding in Nigeria.

Results

Research Question 1: What is the mean rating of community members on the extent of literacy education and awareness of causes of flooding in communities in Nigeria?

The arithmetic mean scores were interpreted using the real limit of numbers thus; mean scores within the range 4.50-5.00 is described as Very high extent, 3.50-4.49 is described as High extent, 2.50- 3.49 is described as moderate extent, 1.50 – 2.49 is described as low extent, 1.00- 1.49 is described as Very low extent. The standard deviation shows the variability of the data set. A high standard deviation value indicates that the values are generally far from the mean, while a low standard deviation value indicates the values are clustered close to the mean.

Table 1: Mean and standard deviation on the mean rating of community members on the extent of literacy education and awareness of causes of flooding in communities in Nigeria

Item statement	Mean	SD	Remark
Literacy education leads to understanding of the following:			
1 The nature of flooding	4.50	0.80	VHE
2 Blockage of water channels contributes to flooding	3.96	0.75	HE
3 Reclamation of swamps by sand filling contributes to flooding	3.76	0.73	HE
4 Flooding is an act of God	2.11	0.74	LE
5 Dumping of solid waste on water ways contribute to flooding	3.83	0.94	HE
6 Non dredging of water beds contributes to flooding	3.70	.73	HE
7 Prolonged heavy rainfall on saturated land causes flooding	3.94	.69	HE
8 Release of excess water from dams causes flooding	3.74	.63	HE
9 Building of houses on water ways causes flooding	3.89	.70	HE
10 Global warming increases the likelihood of flooding	3.83	.52	HE
Mean of Means	3.72		High extent

Data presented in Table 1 reports mean and standard deviation on the mean rating of community members on the extent of literacy education and awareness of causes of flooding in communities in Nigeria. The respondents rated item 1 as very high extent, items 2-10 as high extent. The mean of

mean score 3.72 shows that the community members rated literacy education and awareness of causes of flooding in communities in Nigeria to a high extent. The standard deviation results reported a homogeneity in the rating .52-.94.

RQ2: What is the mean rating of community members on the extent of literacy education and awareness of the effect of flooding in communities in Nigeria?

The arithmetic mean scores were interpreted using the real limit of numbers thus; mean scores within the range 4.50-5.00 is described as Very high extent, 3.50-4.49 is described as High extent, 2.50- 3.49 is described as moderate extent, 1.50 – 2.49 is described as low extent, 1.00- 1.49 is described as Very low extent. The standard deviation shows the variability of the data set. A high standard deviation value indicates that the values are generally far from the mean, while a low standard deviation value indicates the values are clustered close to the mean.

Table 2: Mean and standard deviation on the mean rating of community members on the extent of literacy education and awareness of the effect of flooding in communities in Nigeria

	Item statement	Mean	SD	Remark
11	Literacy education creates awareness that: Flooding causes water-borne diseases	2.61	0.59	ME
12	Flooding leads to loss of lives and properties	3.57	0.62	HE
13	Flooding has effect on the inhabitations of community members	3.88	0.55	HE
14	Flooding affects farm lands and life-stocks negatively	3.11	0.49	ME
15	Flooding leads to loss of revenue earnings	2.20	0.56	LE
16	Flooding increases food scarcity	3.72	0.68	HE
17	Flooding elicits government attention to community development	1.78	0.49	LE
18	Flooding affects community health	3.65	0.56	HE
19	Flooding leads to high level of erosion in communities	2.64	0.72	ME
20	Flooding displaces community members	3.58	0.62	HE
	Mean of Means	3.07		ME

Data reported in Table 2 shows mean and standard deviation on the mean rating of community members on the extent of literacy education and awareness of effects of flooding in communities in Nigeria. The respondents rated item 11, 14, 19 as moderate extent, items 12, 13, 16, 18 and 20 as high extent, while they rated item 15 and 17 to a low extent. The mean of mean score 3.07 shows that the community members rated literacy education and awareness of causes of flooding in

communities in Nigeria to a moderate extent. The standard deviation results reported a homogeneity in the rating .49-.72.

Research question 3: What is the mean rating of community members on literacy education and strategies for mitigating the effect of flooding in communities in Nigeria?

The arithmetic mean scores were interpreted using the real limit of numbers thus; mean scores within the range 4.50-5.00 is described as Very high extent, 3.50-4.49 is described as High extent, 2.50- 3.49 is described as moderate extent, 1.50 – 2.49 is described as low extent, 1.00- 1.49 is described as Very low extent. The standard deviation shows the variability of the data set. A high standard deviation value indicates that the values are generally far from the mean, while a low standard deviation value indicates the values are clustered close to the mean.

Table 3: Mean and standard deviation on the mean rating of community members on literacy education and the strategies for mitigating flooding in communities in Nigeria

Item statement	Mean	SD	Remark
21 Literacy education mitigates effect of flooding	3.62	0.63	HE
22 Literacy education for protection of water ways	4.32	0.57	HE
23 Literacy education for environmental protection	3.12	0.46	ME
24 Literacy education for house building above flood level	3.61	0.49	HE
25 Literacy education for tackling climate change	2.12	0.72	LE
26 Literacy education for proper disposal of waste	3.03	0.59	ME
27 Literacy education for proper management of river basins	1.51	0.51	LE
28 Literacy education for early flooding	4.51	0.51	VHE
29 Literacy education for safety during flooding	3.81	0.69	HE
30 Literacy education for proper planning of reclamation	2.53	0.74	ME
Mean of Means	3.21		ME

The results presented in Table 3 shows mean and standard deviation on the mean rating of community members on literacy education and strategies for mitigating the effect of flooding in communities in Nigeria. The respondents rated item 21, 22, 24 and 29 to a high extent, items 23, 26 and 30 as moderate extent, items 25, 27 to a low extent, while they rated item 28 to a very high extent. The mean of mean score 3.21 shows that the community members rated literacy education and strategies for mitigating the effect of flooding in communities in Nigeria to a moderate extent. The standard deviation results reported a homogeneity in the rating .49-.74.

Discussion of Findings

The results presented in Table 1 reveals that community members rated literacy education and awareness of causes of flooding in communities in Nigeria to a high extent. This could be due relevance of functional literacy which is perceived as the deliberate application of basic literacy skills in meeting proper functioning needs the occupational or socioeconomic skills required to function properly in an environment including individual communities. This finding is in agreement with the findings of Akomolafe (2011) who found that the high level of environmental awareness knowledge and favourable environmental attitude revealed in her study, was an indication of the level of preparedness, for parents of tomorrow who could have a better understanding of the environment, develop culture of environmental maintenance, and transfer same to younger generation. Through this, community member within and outside the communities will be enlightened on the effect of flooding.

The result in Table 2 reports that community members rated literacy education and awareness of causes of flooding in communities in Nigeria to a moderate extent. This could be due to the knowledge level of these community members. They rated the items in the questionnaire to a moderate extent, this goes to show that the issue of flooding in Nigeria has daunting effect on communities. This result agrees with the findings of Oyatayo, Songu, Adi, Jidauna and Ndabula (2016) as they found that the result of the findings showed that 95% of the respondents were male, 88.4% of the respondents were aware that the area was prone to flooding. Also, about 46.2% perceived that rainfall was the major cause of flooding in the study area. A correlation analysis conducted revealed was insignificant which implies that in Donga town, educational level of respondents did not influence their awareness level of flooding and that people's perception of flooding was influenced by factors other than respondent's literacy level. Hence, it was concluded that rainfall intensity and amount is the main cause of flooding in Donga town and also individual's response to flooding in the study area is poor. This means that certain natural occurrence and actions by members of the community lead to gross environmental and flooding cause. This in turn affects the lifestyle of community members.

Result in Table 3 shows that community members rated literacy education and strategies for mitigating the effect of flooding in communities in Nigeria to a moderate extent. In view of the dearth of flooding observed overtime, the strategies outlined in this study could help ameliorate the dearth of flooding in communities. Furthermore, community members will see the need for extensive literacy

education on environmental issues including flooding, which is the focus of this study. This conforms with Mbalisi and Ndulor (2019) who reported that human actions arise out of human perception of the environment as a resource for satisfying human needs. This goes to imply that environmental problems are behaviour problems. They recommended that environmental education should be perceived as a tool for making Nigerian citizens environmental literate which would engender action and activities that will lead to environmental sustainability in Nigeria. In the same vein, Agbonkhese, Agbonkhese, Aka, Joe-Abaya, Ocholi and Adekunle (2014) supports this study as they found that flood menace has ravaged several towns in Nigeria for several decades leaving in its wake loss of thousands of lives and tens of billions of naira worth of properties damaged which calls for holistic urgent action on our part as individuals and that of the government. The importance of sensitizing government at all levels on the reality of climate change and on possible risk reduction strategies is crucial in preventing flood menace in Nigeria. The need for an effective community based early warning system for flood prevention and control for Nigeria cannot be over-emphasised. Government at all. They recommended the need to educate the people living in the flood plain on the dangers of continuous occupation of the area.

Conclusion

Based on the analysis conducted, it was concluded that literacy education and awareness of causes of flooding in communities in Nigeria to a high extent; literacy education and awareness of causes of flooding in communities in Nigeria to a moderate extent; literacy education and strategies for mitigating the effect of flooding in communities in Nigeria to a moderate extent.

Recommendation

This investigation recommends that;

1. Billboards should be positioned at designated areas in order to help intimate community members on the dangers of flooding.
2. Workshops, sensitisation and town hall meetings should be organized for community members, with focus on how to control and minimise erosion issues.
3. Non-governmental organisation and government agencies should show more will in fostering or increasing environmental awareness in communities in the country through the introduction of different strategies.

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