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ASSESSMENT OF ENVIRONMENT AND SANITATION IN PUBLIC PRIMARY SCHOOLS IN KONTAGORA TOWN: EXPLORING SUSTAINABLE DEVELOPMENT GOALS

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Abstract

This study assessed the environment and sanitation of Universal Basic Education (UBE) primary schools in Kontagora town. A cluster sampling was used to select 50 participants. Three research questions and two hypotheses were addressed in the study. The techniques employed are the administration of questionnaire, interviews and non-participant observations. The instruments were validated and their reliability indices for the questionnaire and interview are 0.77and 0.68 while the observation's inter-rater yielded 0.72. The data obtained were analyzed using percentage and chi-square. The research findings show that government's commitment and the will to embrace school environment and sanitation services delivery was very slow; the school facility and environment was under poor safety condition, protection and maintenance; there was poor environment and school sanitation in almost all the schools sampled; government participation in renovating the school environment was rather slow; funding of the school facilities remained inadequate and often

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delayed; the schools also lacked adequate chairs and tables in their classrooms; the environment did not promote learning by the pupils and the pupils learning depended on good sanitation. These findings call for the need for sensitization and awareness at community level, school level and government level on the insufficient facilities infrastructure and sanitation matter. More and reliable funding and supervision of the various schools should be enforced to aid effective service delivery in the schools.

Introduction

Environmental sanitation is an instrumental concept defined as the control of all those factors in the physical environment which may exercise a harmful effect on human beings' physical development, health and survival. This broad conceptualization of environment and health requires an expansion of the water, sanitation and hygiene space to include vector control, solid waste and animal excreta management and drainage. This definition also involves recognizing related layers of distal environmental health factors (including the natural and built environment, industrial waste and pollution, food safety and air quality) that are increasingly relevant considering population growth, resource use intensification, migration and climate change (Budge, Ambelu, Bartram, Brown, Hutchings, 2022).

The Sustainable Development Goals (SDGs) are global road maps which aim to effectively tackle the challenges faced by the world as a whole, in order to attain a more sustainable future for all. The SDGs 6 and 4 focused on the provision of basic sanitation services in schools However, targets 6.2 emphasized the need to achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations by the year 2030. Also, target 4a affirmed the necessity to build and upgrade education facilities that are child, disability and gender sensitive and provide safe, nonviolent, inclusive and effective learning environments for all by the year 2030 (World Health Organization/United Nations International Children's Education Fund [WHO/UNICEF], 2018).

Accessibility of students to basic sanitation services at school is prerequisite for safe sanitation practice. It also plays an integral role in safeguarding the health of the public by ensuring these institutions do not become hotspots for breeding disease vectors (Adams, Bartram ,Chartier and Sims, 2009). The absence of basic sanitation services in schools has been reported to result into absenteeism, distraction and decreased enrolment, toilet avoidance and reduced school participation and performance of students (Sommer, 2010 and WHO, 2016).

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Access to water, sanitation, and hygiene (WaSH) in schools is important for human health and well-being. Some of these benefits have yet to be fully achieved in low- and middle-income countries, due to low WaSH coverage. Proposed targets and indicators for the Sustainable Development Goals (SDGs) seek universal access to WaSH in non-household settings, such as schools and health care facilities (Bartram, Cronk , Montgomery, Gordon, Neira, Kelley, and Velleman, 2015).

Statement of the Problems

Water supply to most urban areas remains a challenge to successive governments in Niger state because investments and collaboration in the sector, hitherto, is low and continuity in projects which were initiated especially between 1999 and 2007, were abandoned by succeeding governments between 2007 and 2015. This created a huge vacuum. Access to safe and clean water and sanitation facilities is however a basic right of all people, including people with disabilities the denial of which can have serious implications on their well-being. For example, inaccessible toilet and water facilities are major contributing factors for school dropout among children with disabilities, especially girls. Water supply to major cities of Minna, Bida, Kontagora, Suleja, New Bussa and a host of other semi urban centres have posed a lot of challenges to the present government (Blueprint, 2020). According to Asishana (2018), research of International Centre for Investigative Report (ICIR) in Kontagora, Niger North Senatorial District, 30 out of the 53 primary schools in the local government council are in dire need of urgent rehabilitation. Eleven of the schools have classroom buildings but no desks and chairs while 37 lack adequate seats and desks. Three of the schools have no building at all and pupils have to sit under the sun each day to take their classes but with gaps in some areas on school environment and sanitation. It is against this backdrop that this research will assess the environment and sanitation of the Universal Basic Education (UBE) schools in kontagora town.

Research Questions

The research seeks to ask the following questions

i. What are the environmental and sanitation conditions of the UBE primary schools?
ii. What are the problems of environment and sanitation of the UBE primary schools?
iii. What are the recent developments in the UBE primary schools?

Research Hypotheses

The null hypotheses seek to test the following:

1. **H_0:** The school environment does not promote good learning for the pupils

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2. H_0: Pupils learning in Universal Basic Education (UBE) primary schools does not depend on school sanitation

Materials and Methods

This section explains the materials and methods used on the field. It is a cross sectional survey conducted in Kontagora town from December, 2022 to February, 2023. The study comprises sixteen (16) Universal Basic Education Schools in Kontagora town, and the population constituted the primary school teachers with a total of five hundred (500).

Table 1: List of schools, population of teachers and sample size

S/NO	Name of Schools	Population of Teachers	Approximated Sample Size
1	Maidubu Primary School	24	2.4
2	Army Barrack Children Primary School	22	2.2
3	Central Primary Schools	53	5.3
4	Government Model Kwangora	17	1.7
5	Majidadi UBE Primary School	19	1.9
6	Nagwamatse	54	5.4
7	Phase II GRA UBE	15	1.5
8	Rimaye	71	7.1
9	Saidu Namaska	19	1.9
10	Samaru Primary School	28	2.8
11	Tukura UBE Primary School	20	2.0
12	Ubandoma	35	3.5
13	UBE Model	45	4.3
14	Usubu UBE	15	1.5
15	Zango Primary School	40	4.0
16	Bayanwaya UBE	25	2.5
	Total	**500**	**50**

A cluster sampling technique was employed to select the sample for the study because the schools were geographically situated in different areas. This is followed by purposeful sampling which allowed the researchers to select the participants of the research who were head teachers and teachers. The sample size of fifty (50) teachers was determined using Nwana (1981) proposal which is about ten percent (10%) of sample population. This research was carried out in 16 Universal Basic Education Primary Schools in Kontagora

town. Site inspection of environment and sanitation facilities in the government schools was conducted.

The data was collected using a semi-structured questionnaire. Semi-structured questionnaires were constructed in accordance with the objectives of the studies. The questionnaires were only administered to the teachers alone via interview where necessary for clarification. Observation method was employed to take a checklist of the school facilities available and those seen physically with the permission of the school authority.

The data were presented and analyzed to answer the research questions using descriptive statistics of frequency tables and percentage. Chi-square (X^2) was used to test the hypotheses with confidence interval level of 95 percent.

Results

As shown in table 2, majority of the schools were single storied buildings 11 (68.75%), 3 (18.75%) schools had double buildings and 2 (12.50%) schools had both double and single buildings. The schools with fence are 11 (68.75%) while 5 (31.25%) schools had no fence. The source of water available in the school showed that 8 (50%) had their source of water from bore hole, 5 (31.25%) from tap water, 1 (6.25%) from well water and 2 (12.50%) had no provision of waters. Among the schools 6 (37.5%) had plastic cans available for storage of water, water tanks were available for storage in 5 (31.25%) school, 2 (12.50%) had no storage for water. Ventilation was observed to be adequate in 10 (62.50%) schools and inadequate in 6 (37.5%) schools overcrowding was observed to be present in 6 (37.5%) schools and absent in 10 (62.5%) schools. Lightening in this study is artificial by electricity 6 (37.5%) had sufficient light while 10 (62.50%) has insufficient light.

11(69.75%) schools had toilet facility for both boys and girls 2(12.50%) had toilet facility for only the staff while 3(18.75%) had no toilet facility for both staff and pupils of the school. It is also observed that majority of the school toilet were not properly kept and so the children do not make use of them, instead make alternative by going home or littering the school environment with their feaces.

Table 2: Proportion of schools with specific facilities

Attribute	Number of schools	Percentage (%)
Building		
Double	3	18.75
Single	11	68.75
Both double and single	2	12.50
School fence		
Yes	11	68.75

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No	5	31.25
Source of water		
Bore hole	8	50
Tape	5	31.25
Well	1	6.25
Provision of water Storage of water	**2**	**12.50**
Plastic can	6	37.5
Steel can	-	
Tank	5	31.25
Water coolers	-	
No storage	2	12.50
Schools ventilation		
Adequate	10	62.50
Inadequate	6	37.5
Overcrowding in class-room		
Present	6	37.5
Absent	10	62.50
Lightening in classroom		
Sufficient	6	37.5
In-sufficient	10	62.50
Provision of toilet		
Boys/girls	11	68.75
Staff	2	12.50
None	3	18.75

Author's Calculation, 2023

It is also observed that majority of the school lack washing re-agent and the toilets are washed by mostly the pupils which are not acceptable.

The Problems Identified in School Environment

As seen in table 3, it was found that 5(31.25%) had collapsed building, 10(62.50%) had leaking roofs in classrooms, 6(37.5%) had damaged roofs 6(37.5%) had no fence around the school, 2(12.50%) had damaged floor. In 3(18.75%) schools their source of water is polluted. Damaged doors and windows was observed in half 8(50%), vandalized classrooms were 11(68.75%). Human fences littered about is a problem in 4(25%) schools, animal fences littered in 8(50%) and solid waste littered around 4(25%) schools. The problem of community members moving about indiscriminately is recognized in 7(43.75%) schools.

Table 3: Problems Identified in the School Environment

(Problems)	Number of School	Percentage (%)
Collapsed building	5	31.25
Leaking roofs in class-rooms	10	62.50
Damaged roofs	6	37.5
No fence around the school	6	37.5
Damaged floor	2	12.50
Damaged taps	6	37.5
Polluted source of water	3	18.75
Damaged doors and windows	8	50
Vandalization of classroom	11	68.75
Human fences littered about	4	25
Animal fences littered about	8	50
Solid waste littered about	4	25
Community members move about indiscriminately	7	43.75

Author's Calculation, 2023

In table 4, problems identified in school sanitation revealed 7(43.75%) schools with poor source of drinking water, 10(62.50%) had no tank for storing water and 10(62.50%) had no container for storing water. In 5(31.25%) schools, those with no refuse dumping ground 5(31.25%) school no soap for wasting, 10 (62.58%) 13(81.25%) had no sanitizers and 15(93.75%) had no toilet rolls. In 14(87.75) schools there was no provision for facemask for pupils, 8(50%) schools had no provision of bucket, brooms and mop stick and no provision of first aid for pupils in 3(18.75%) schools.

Table 4: Problems identified in the school sanitation

Problems	Number of School	Percentage (%)
Poor source of drinking water	7	43.75
No tank of water storage	10	63.50
No container for water storage	10	62.50
No refuse dumping ground	5	31.25
No soap for washing	10	62.50
No sanitizers	13	81.25
No toilet rolls	15	93.75
No facemask for pupils and staff	14	87.5

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No bucket, broom and mop stick	8	50
No first aid for pupils	3	18.75

Author's Calculation, 2023

As demonstrated in table 5, 4(25%) of schools had started building new classes, and 2(12.50%) had commenced the building of toilets. There is provision of food for the pupils in 9(56.25%) schools, construction of borehole in 8(50%) schools and there is 6(.25%) gave provision of tank for storing water 1(6.25%) school began the repair of their classrooms and provision of drinking water container for storing water in 1(6.25%) school provision of cleaning agents in 1(6.25%) school and provision of cleaning agents in 3(18.75) schools.

Table 5: Recent Development in School

Attributes	Number of School	Percentage (%)
Building new classes	4	25
Building of toilets	2	12.50
Provision of food for pupils	9	56.25
Construction of borehole	8	50
Provision of tank for storing water	1	6.25
Repair of classroom	1	6.25
Provision of drinking water container for storing water	1	6.55
Provision of cleaning agents	3	18.75

Author's Calculation, 2023

Hypothesis One

H_{O1}: The school environment does not promote good learning for the pupils

Table 6: X^2 of School Environment and Pupils' Learning

Response	O_f	E_f	df	X^2cal	X^2table	Remark
Yes	10	6	1	1.000	3.841	NS
No	8	8				

Author's Calculation, 2023

Table 6 shows that X^2 calculated was 1.000; it is less than X^2 critical value of 3.841 at 0.05 level of significance with a degree of freedom at 1. We have no good reason to reject the null hypothesis therefore we uphold the Ho1.

From our decision rule, we conclude that the school environment actually have a lot of effect on the learning of the pupils. It does not promote good learning for the pupils.

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Hypotheses Two

H_{O2}: Pupils leaning in UBE primary schools does not depend on school sanitation.

Table 7: X^2 of Pupils' Learning and School Sanitation

Response	O_f	E_f	df	X^2cal	X^2table	Remark
Yes	13	3	1	6.25	3.841	NS
No	8	8				

Author's Calculation, 2023

Table 7 shows that the X^2 calculated value is 6.25 while the table value is 3.841 at 0.05 level of significance and I degree of freedom. Since the calculated value is greater than the table value the Ho2 is rejected, showing the alternative hypothesis is upheld. There is therefore the rational to believe that pupils learning depended on school sanitation.
Therefore it can be concluded that the pupils learning has an association with school sanitation. Poor sanitation will therefore affect the pupils learning and vice versa. It indicated that adequate environment sanitation practices cannot be ensured where basic amenities and poor sanitation habits with improper hygiene practices were inadequate as reported.

Discussions

Promotion of environmental health requires good sanitary conditions. According to Olukanni (2013), every child has the right to a quality education which includes access to drinking water, sanitation and hygiene (WaSH) services while at school. The inclusion of WASH in schools in the sustainable development goals (targets 4.a, 6.1, 6.2) represents as key component of a safe non-violent, inclusive and effective learning environment and as part of "universal" WaSH access, which emphasis the need for WASH outside of the home. Majority of the schools were single storied building 11(68.5%), all the schools had pay grounds, play grounds are places specifically developed to offer opportunities for children to play and be physically active this facilitating healthy development from the study of showed that the schools have net up to the requirement of the government in terms of play ground. As observed concerning safecracking and adequate water in the school 8(50%) schools had bore hole as their source of water, well as the source of drinking water in 1(6.25%) but 2(12.50%) of the schools have no source of water, this reveals school children exposure to inadequate water and sanitation facilities. Conclusively, it could lead to high rate of infections and gastro intestinal neuro-cognitive and psychological illness (Jasper, and Bartram, 2012). It was found out that 6(37.5%) of the school have plastic cans, water tanks were available for 5(31.25%) schools, disease spread quickly in cramped spaces with limited ventilation (upadhyay, Mathai and Reed, 2008). In

this study, even though ventilation was observed to be adequate in majority of the school, overcrowding was also observed in few schools but majority of the schools lacked electricity for light.

Concerning the problem identified in the school environment, majority of the schools had leaking roofs in the class-rooms and many of the schools had vandalized classrooms as a result of the community members moving indiscriminately. This problems connote the absence of security agents, it is also important to note that half 8(50%) of the schools surveyed have damaged doors and windows, it was also observed that 1(6.25%) of the school building was collapsing which is a threat to the lives of the pupils.

The sanitation problem of the schools is quite alarming there is no provision for washing re-agent in majority of the schools. Toilet facilities are poorly maintained because in most cases the pupils are asked to wash them. It is important to still not that there is need to prevent COVID-19 in this 21st century but preventive measures are not taken both pupils and staff do not have facemask for prevention. By observation there is poor hygiene in all the schools, the premises for water storage tank is very dirty, even the toilet discourages the pupils from usage. Information gathered from the staff showed that these children leave the school for home in other to use the toilet in essence most of these children abscond from school activities using it as an excuse.

The recent development in schools shows that 9(56.25%) provide food for their pupils from primary three (3) downward with the observation in all the schools the poor hygiene observed could lead to food borne illnesses in majority of the primary schools such as typhoid-fever, diarrhea, dysentery, cholera and so on and allergies associated with dirty water.

In conclusion, while a good number of primary school pupils have access to class-rooms the environment of the schools do not favor their learning because of lack of chairs, tables and the overall the toilet and the school premises.

Conclusion

It can be deduced that the environment and sanitation in all the schools are not satisfactory due to inadequate provision of portable water supply, sanitation and hygiene education. The study revealed inadequate water sources and water storage while a good number of schools have access to toilet facilities others do not. Those that have access to toilet facilities do not enjoy the proper and daily cleanliness of these toilets as they are not washed regularly. Many schools do not also have working toilets there by making the pupils to abscond from school to use sanitary in their various homes. Though the site of the school environment are well situated with classrooms, play ground and other basic facilities but it is observed that most of the buildings are dilapidated with some classrooms lacking tables and chairs, damaged roofs, floors and vandalized doors and windows.

Recommendations

From the research conducted the following are the recommendation:

1. As stated from all the schools, the stake holders Niger State Universal Basic Education Board (NSUBEB), School Based Management Committee (SBMC) and Parent, Teachers, Association (PTA) should have a standing committee for school sanitation and school environment which should be monitored weekly in other to combat the problems that are observed in this research.
2. Environmental sanitation education should be inculcated in the school curriculum this will promote personal hygiene and maintenance of environmental quality.
3. On the part of the government, they should provide employment of qualified teachers, non-teaching staff such as administrators, cleaners, and security agents. The employment of school security personnel is very important to fight theft cases such as vandalizing of classrooms.
4. Finally, Reinforcement in education cannot be neglected especially in terms of cleanliness. If schools organize special days like Environmental Sanitation Days where inspection is done to assess the best schools and rewards are given to winners, this exercise will encourage schools to pay more attention on environment and sanitation.

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