

An exploration of the effectiveness of the Water, Sanitation, and Hygiene programme in the provision of facilities in public basic schools in the Krachi Nchumurun District

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Abstract: This study explored the effectiveness of the Water, Sanitation, and Hygiene (WASH) programme in the provision of facilities in public basic schools in the Krachi Nchumurun District and identified ways of improving the mobilization of facilities to enhance the health of teachers and learners in the district. It was qualitative research underpinned by a case study research design. The semi-structured interview guide was employed to collect data for the study and the purposive homogenous sampling technique was used to select six (6) teachers from each of the six (6) Circuits in the Krachi Nchumurun District for the study. The qualitative data collected was analyzed thematically. The study showed that, facilities provided under the WASH programme in basic schools in the district were woefully inadequate, hence, many of the schools in the district still practice open defecation. However, with the intervention of the provision of tippy tap handwashing facilities, which are predominantly used in all schools due to the outbreak of the coronavirus pandemic in 2019, the study revealed that the outbreak of diseases such as diarrhoea, cholera and typhoid have reduced mainly due to the availability of the tippy taps, which teachers and learners are encouraged to wash their hands regularly under close supervision from GES with enforcement of an award and punishment system for that purpose. Also, the study ascertained that available facilities such as boreholes and latrines were not disability friendly especially for persons with mobility challenges. In addition, the few latrines available are not user-friendly to adolescent female children in school for ensuring privacy and hygienic conditions during their menstrual periods, thereby, contributing to high school absenteeism, and poor academic performance of these learners including children with disability. The study therefore, recommended that, GES at the Regional level must swiftly intervene to solicit for more facilities to schools in the district and empower the newly created District Education Office (DEOC) in the Krachi Nchumuru District with human, material and financial resources to enable the DEOC to support schools to play their roles more meaningfully in the provision of accessible facilities to all teachers and learners to enhance sanitation issues and improve school attendance and academic performance in the schools.

Keywords: Effectiveness, Water and Sanitation Health programme (WASH), public basic schools, Krachi Nchumurun District.

1.0 Background to the Study

Considering the huge task of government to oversee the welfare of all sectors of the economy, it is generally believed that, the full attention needed at the education sector including the provision of resources to ensure the effective running of the sector are woefully inadequate, thereby contributing to poor academic outputs of students especially at the basic school level. Although, many educational policies such as the school capitation grant, school feeding programme, Free Compulsory Universal Basic Education commonly known as FCUBE have been implemented by the government but not much have been achieved to improve education delivery in the country. Unfortunately, many schools, in the rural areas record high rate of student absenteeism mainly due to illnesses for the lack of many educational facilities including portable drinking water, and proper latrines thereby causing low instructional contact hours and subsequent poor student academic performance in basic schools in the Krachi Nchumurun District. The Ghana Education Service therefore, in partnership with USAID implemented the Water, Sanitation, and Hygiene (WASH) programme to provide facilities and health education to improve hygienic practices and student academic performance. The USAID Ghana (GWASH) program is implemented under a 4-year, \$13.2M cooperative agreement between the United States Agency for International Development (USAID) and Relief International (RI) that began in mid-December 2009. RI partnered with the Adventist Development and Relief Agency (ADRA) Ghana for latrine construction, and with Winrock International (WI), for the community organization and behavior change component, to implement GWASH (Shirley et al., 2013). According to Shirley et al. (2013) the objectives of the WASH programme were to support improve access to safe, adequate, water supply and basic sanitation facilities (latrines) for homes, schools, clinics and markets while promoting complementary hygiene practices (Shirley et al., 2013). Brett and Heather (2011) stated that, an estimated 884 million people use unimproved drinking water sources, over one-third of whom are in sub-Saharan Africa, and one-fourth are in Southern Asia. According to Lozano et al. (2010) it is estimated that between 666000 and 801000 children die each year from diarrhoea diseases, 11% of the total child deaths and 89 million disability adjusted life years. While the majority of the deaths are in children aged [less than] 5 years, the burden of disease in school-aged children should not be ignored (Freeman et al., 2014). The World Bank estimates that, out of 115 million children worldwide who are not in school, 30 – 40% are children with disabilities (UNESCO, 2009). This study therefore, evaluates the impact of the WASH programme on academic performance of children with disability in public basic schools in the Krachi Nchumurun District.

1.1. Statement of the problem

Statistics from the Krachi Nchumuru GES shows that, in the year 2017, out of 1263 candidates presented for the exams, only fifty-three (53) obtained grades between 16 to 30. The performance, however, insignificantly improved in the year 2018, where out of 1194 candidates presented, only one hundred and twenty-seven (127) obtained grades between 16 and 30. However, the WASH programme implemented ten (10) years ago was meant to improve school facilities and sanitary conditions in basic schools to reduce absenteeism and improve student academic performance. One would have thought, there would be better sanitary practices and improved student academic performance as part of the objectives of the WASH programme, but that is not the case. This study therefore, explores the impact of the WASH programme on student academic performance including students with disability, which Marni (2010) and Marielle et al. (2005) failed to address.

1.2. Purpose of the research

The purpose of the study was to explore the effectiveness of the WASH programme in the provision of facilities to facilitate inclusive teaching and learning in public basic schools in the Krachi Nchumurun district in order to identify challenges that confronted the programme and identify ways of improving the mobilization of facilities to enhance the health of teachers and learners to improve teaching and learning in the district.

1.3. Objectives of the research

The main research objectives of the study included the following:

- i. To find out the effectiveness of the facilities provided in public basic schools under the WASH programme in the Krachi Nchumurun District
- ii. To identify the impact of the WASH programme on the academic performance of both learners with and without disability in the district.

1.4. Research questions

The following research questions guided the study:

1. How effective were facilities provided in public basic schools under the WASH programme in the Krachi Nchumurun District?
2. In which ways have the WASH programme contributed to academic performance of both learners with and without disability in the district?

2.0. LITERATURE REVIEW

This section presents the theoretical underpinnings and literature on the conceptual framework of the study.

2.1. Theoretical underpinning of the study

The study is underpinned by Marielle and Shordt (2005) clusters of hygiene, sanitation and water in schools. Marielle et al. (2005) clustered five perspectives essential to better school hygienic practices. They include the health perspective, learning perspective, gender perspective, change agent perspective, future impact perspective and the disability perspective added by the researcher.

2.1.1. Health Perspective

Sanitation is a basic human right. Dirty facilities can make children sick, [therefore,] improved hygiene and sanitation at school is critical to the health of school children (Marielle et al., 2005).

2.1.2. Learning perspective

According to Marielle et al. (2005) education and health are co-dependent: stunting, nutritional deficiencies, diarrhoea and helminth infections affect school participation and learning. If school sanitation and hygiene facilities are absent, or are poorly maintained and used, schools become a health hazard.

2.1.3. Gender perspective

School drop out rates and low literacy levels, especially among adolescent girls, can be attributed in part to inadequate sanitation and health conditions in schools (Marielle et al. 2005).

2.1.4. Change agent's perspective

According to Marielle et al. (2005) children can be change agents for their own family and community. Marielle et. al noted that, students are targeted both as direct beneficiaries and as agents of behavioral and attitudinal change within their families and their communities.

2.1.5. Future impact perspective

According to Marielle and Shordt (2005) schools provide an excellent opportunity to create lifelong changes in hygiene behavior. In this case, how long will children retain the knowledge, attitudes and skills relating to hygiene that they learnt in school? (Marielle and Shordt, 2005).

2.1.6. Inclusive perspective

Persons with disability including the physically challenged, visually impaired, and the hearing impaired should have access to all school and community facilities and materials in an inclusive education system. In this vein, Convention on the Rights of Persons with Disabilities (CRPD), the Persons with Disability (PWD) Act, 2006 Act 715, and the Salamanca Framework for Action (1994) emphasized on creating access to PWDs in areas including: curriculum, buildings, school organization, pedagogy, assessment, staffing, school ethos and extracurricular activities.

2.2. Provision of WASH facilities in public basic schools

According to Luff (2004) water supplies must be both safe and acceptable to users, although quantity may take precedence over quality (Luff, 2004) in terms of delivering a wide range of health benefits, including those that are primarily linked to hygiene (Brown, Cavill, Cumming and Jeandron, 2012). Gleick noted that, "humanity's profound dependence on freshwater makes basic water security a necessary condition for improving living conditions, securing food production to eradicate hunger, and providing employment and income to eliminate poverty (Brett and Heather, 2011). According to Ekane, Nina, Björn, Nordqvist and Stacey (2016) it is the duty of the Environmental Health Promotion to focus on accelerating access to water supply and to sanitation facilities, as well as hygiene information. In the same way, Jackson et al. (2001) stated that, the growing demands on freshwater resources create an urgent need to link research with improved water management and that, better monitoring, assessment, and forecasting of water resources will help to allocate water more efficiently among competing needs. The Shirley et al (2013) report identified that, rainwater harvesting systems for hand washing have been installed in five schools but none of these facilities were functioning at the time of the evaluation, which took place at the end of the dry season (Shirley et al., 2013) where GWASH staff reported that the program had ceased supporting rainwater catchment tanks...as reliable sources of water for hand washing at schools and

clinics. Similarly, hand dug wells have not provided a dependable source of water year-round, therefore, GWASH's plan to discontinue hand-dug wells is appropriate.

According to Shirley et al. (2013) GWASH-constructed household and institutional latrines. Shirley et al. identified that, most of the WASH latrines visited were not properly sealed around the roof to create the ventilation that characterizes the KVIP latrine to help prevent fly infestation, therefore, the VIP and KVIP latrines have not been constructed according to specifications for ventilation and so, the Latrine Artisans need re-training on this feature. On the other hand, Marielle and Shordt (2005) noted that, among hygiene behaviors, hand washing in particular provides a great health advantage, which can block the transmission of pathogens (germs and faecal matter) that cause diarrhoea. [Therefore,] in school programmes, handwashing is very important. Marielle and Shordt (2005) stated that, even if latrines are well maintained, if hand washing is not consistent, then the health benefits will not be maximized.

2.4. Impact of the WASH programme on learner academic performance

This section reviews literature on the impact of WASH on effective provision of facilities, hygienic behaviors of learners, enrolments, absenteeism, academic performance and early school dropout.

2.4.1. Access and participation of learners in the use of WASH programme facilities

According to GIMPA report (2015) despite the provision of water many facilities, they were still inadequate to meet the water needs of a number of communities. As a result, women who are the primary users of these water facilities indicated that they have to queue for between 15 and 30 minutes to fetch water (mostly at the peak of dry season). In terms of accessibility to latrines, according to the Performance Indicator Tracking Table (PITT) in GIMPA's (2015) mid-term evaluation report, 842 people from Burkina Faso, 14,430 from Niger and 3,294 from Ghana have gained access to improved latrines as a result of USAID WA-WASH interventions as of September 2014. Overall, a total of 18,566 people in the program intervention areas have gained access to improved latrines as against the targeted 18,956 people, representing 98 percent of LOP target achieved. Consequently, 435 household latrines funded entirely by the beneficiaries were constructed in Ghana and 1,307 household latrines were constructed in Niger including 296 subsidized by the Program. As a result, 11 communities were certified-Open Defecation Free (ODF) in Niger and ten additional communities are in the process of being certified-ODF in Ghana.

2.4.2. Impact of the WASH programme on learner's hygienic behaviors

According to Marielle and Shordt (2005) human excreta is [very] dangerous. Studies show that, 1 g of excreta can contain: 10 000 000 viruses, 1 000 000 bacteria, 10 000 000 viruses, 1 000 parasite cysts and 100 parasite eggs and more than 40 percent of the cases of diarrhoea in schoolchildren were attributed to transmission at school rather than transmission at home (Marielle and Shordt, 2005). It is estimated that, many children die each year from diarrhoea diseases...(Lozano et al., 2010). This can be attributed to lack of safe and hygienic toilet facilities and lack of proper sewerage systems, which in turn leads to exposure to human waste (Kimani-Murage and Milka, 2020). Hermann (2005) stated that, pathogenic organisms that may be present in the water are very numerous and varied. According to Hermann, the faecal-oral infections can be transmitted by either waterborne or water-washed mechanisms. The author noted that, truly, water-borne transmission occurs when the pathogen is in water which is drunk by a person or animal that may become infected. But all water-borne diseases can also be transmitted by any other route which permits faecal material to pass into the mouth (for example via contaminated food).

On this note, Marielle and Shordt (2005) noted that, hygiene promotion has more impact on public health than water supply provision. Therefore, the provision of improved sanitation in...schools is not in itself an end but rather means of improving the health of all students as well as promoting good hygiene practices among both the students and the broader community as a whole (Dlangamandla, 1988). According to Marni (2010) schools throughout low-income countries continue to lack the basic water and sanitation-related facilities essential for adolescent girls who, on a monthly basis, must manage their personal menstrual hygiene needs in school environments that frequently lack adequate latrines (or any latrines), a sufficient supply of easily accessible and clean water, and a mechanism for disposing of used sanitary materials in a private and culturally appropriate way (Marni, 2010). Dlangamandla (1988) stated that, sanitation in schools is beneficial to the children who learn good health and hygiene practices and pass their knowledge on to their older relatives at home. In this case, under the USAID WA-WASH program, hygiene comprises hand washing and treatment of water sources by communities and the program has installed 3,774 hand washing stations in the three countries as of September 2014, resulting in 28 percent of hand washing station usage as against the target of 24 percent (GIMPA report, 2015). Also, the low-cost tippy-taps for hand washing has been well accepted by all the communities (GIMPA, 2015).

2.4.3. Impact of the WASH programme on learner's absenteeism behaviors

According to Marielle and Shordt, (2005) children with worm infections tend to be absent from school more often. A study from the same Jamaica shows that children who have greater levels of infection (in this case from whipworm) tend to be absent from school up to one-third more often. Relatively, Personal Hygiene and Sanitation Education (PHASE), is a handwashing programme developed alongside children and their teachers for implementation in schools in developing countries (Coates, Ricketts, Vale and Hitchcock, 2010). In Bangladesh PHASE is implemented within a school health and nutrition programme and success is reported against school attendance, health and sanitation provision, changes in health/hygiene practices, improved health due to behavior change and reduction in diarrhoea rates (Save the Children, 2009). In terms of the girlchild school attendance, Marni (2010) stated that, it is important to note that, many girls participate and attend school successfully during monthly menses. However, the continued existence of girl-unfriendly school environments is reported to hinder attendance and class participation in numerous low-income countries, and is overdue for greater attention and investment. There is also growing attention to the role of providing affordable sanitary pads to girls in low-income countries, given the potential challenges of managing menses for long school days with only tissues, toilet paper, or poor-quality cloths as an alternative option (Marni, 2010), which the former government of the Republic of Ghana, under former President John Dramani Mahama tried to distribute sanitary materials to female adolescent school children but failed in its successful implementation largely due to opposition from some sectors of the population.

2.4.4. Impact of the WASH programme on early school dropout

According to Marielle and Shordt (2005) girls are discouraged from attending school if there is a lack of private sanitary facilities and about 1 in 10 school-age African girls do not attend school during menstruation or they drop out altogether at puberty because of a lack of clean and private facilities. Hence, the low level of literacy among women, as a result of girls leaving education, aggravates prejudices about the roles in life of men and women. The Millennium Promise (2010) cited in Marni (2010) indicated that, a range of reports and newsletter articles have highlighted the ways in which a 'girl unfriendly' school environment (specifically refer ring to girls' menstrual hygiene-related needs) hinders girls' successful school-going abilities. Sidibe and Curtis (2007) said that, efforts to identify, promote, and institutionalize vibrant student participation through health clubs or additional child-centred activities may strengthen participation. On this note, educational campaigns around WASH behaviors are more successful when pupils are

engaged in a structured and specific manner (Onyango-Ouma et al., 2005; Bowen et al., 2007). While the participation and engagement have to happen at the school level, institutional and policy changes may be needed to make vibrant health clubs the norm (Saboori et al., 2011) in order to make schools more attractive to increase enrolment and reduce early school dropout.

2.4.5. Impact of the WASH programme on learner academic performance

A study from Mali demonstrates that the intensity of schistosomiasis infection (as measured by the number of eggs per 10 ml of urine) is inversely related to academic performance. Although the study sample of 580 children in two primary schools is small, there is little reason to believe that the results would differ in other affected countries (Marielle and Shordt, 2005). In this case, a study in Jamaica shows that children treated for whip worm performed better in cognitive tests than children who were not treated. The use of the 'placebo' implies that every participant thought they were being treated (Marielle and Shordt, 2005). Just as teachers and classrooms are essential ingredients for academic success, so too are school environments that are non-gender discriminatory in their structural physical design, allowing both girls and boys to fulfil their academic potentials (Marni, 2010).

3.0. METHODOLOGY

Literature in social sciences highlight many research paradigms, which include positivist, interpretivist and pragmatist paradigms. The positivist researchers argue that social reality has external existence and is independent of the researcher. According to Kusi (2012) the realist believe that social reality is existing 'out there' and, therefore, can be accessed through scientific approaches, which are objective in nature and it is linked to quantitative research. The nominalist school of thought which is linked to the interpretivist, argue that, social reality has no external existence such that it can be objectively and dispassionately accessed (Burrell and Morgan, 1979; cited in Kusi, 2012) and this relates to qualitative research. This study was underpinned by the interpretivist paradigm to evaluate the contextual experiences of the impact of the WASH programme on academic performance in the Krachi Nchumurun District. The research approach adopted for the study was qualitative research approach to evaluate participants' real feelings and experiences of the impact of the WASH programme. The research design adopted for the study was case study. The case study was employed to enable the researcher collect data from schools specifically selected to benefit from the WASH programme. Many studies have shown that, case study is ideal for studies embarking on deeper description of participants experiences of an event in their own context. According

to Yin (2003) a case study is a research strategy that helps to understand phenomena in real-life situations.

The population of the study was thirty-one (31) Public Junior High Schools (PJHSs) in the Krachi Nchumurun District stratified into six (6) circuits. The sample size was six (6) teachers selected from each of the six (6) Circuits in the district. The purposive sampling strategy, specifically, the homogenous sampling technique was employed to select teacher who are information-rich for the study. Interview sessions with participants and observation was adopted for the collection of data for the study through the use a semi-structured interview guide.

To seek access to the setting of the study, an introduction letter from the Head of Department was sent to the District Education Office, the selected schools and teachers for a formal introduction. According to Ary et al. (2014) approaches to qualitative data varies slightly...but they can be described in three stages: familiarizing and organizing; coding and reducing; and interpreting and representing. The data collected was organized, coded, transcribed, interpreted and represented. According to Kusi (2012) ethics in educational research are those issues that are related to how the educational researchers conduct themselves or their practices and the consequences of these on the people who participate in their research [hence,] addressing ethical issues is very relevant in any effort to acquire new knowledge. The ethical issues observed in this study were access, informed consent, confidentiality and anonymity. To ensure access to participants of the study, an introductory letter was obtained from the head of department to heads of institutions where the study was conducted for introduction. Informed consent of participants was sought by explaining the project to them to make their own decisions whether to participate in the study or not. Also, participants were assured that, information provided was for educational purpose only and under no circumstances will the information provided be made public to any unauthorized persons or groups without prior permission from the University authority and to protect participants' rights to privacy, the instruments designed for data collection were constructed with codes instead of the names and addresses of participants. Hence, the identity (names) of participants were not disclosed on the semi-structured interview guide to ensure a high level of anonymity.

According to Guba (1992), trustworthiness criteria is employed to judge the quality of a study located in an interpretivist qualitative framework. The elements of trustworthiness criteria include credibility, transferability and confirmability (Guba, 1992). Credibility deals with the focus of the research which refers to the confidence in how well data and processes of analysis address the intended focus and the ability to really capture the multiple realities of those we study (Polit and Beck, 2012). Therefore, selection of the most appropriate method of data collection is essential for ensuring the credibility of content analysis (Graneheim and Lundman, 2004). The

credibility of the study was determined by using qualitative method to gather data for the study. Semi-structured interview schedule was employed to collect qualitative data in the context of the participants. Transferability refers to the potential for extrapolation. It relies on the reasoning that findings can be generalized or transferred to other settings or groups (Lincoln and Guba, 1985; Polit and Beck, 2012). The study was conducted on a small-scale and findings was generalized to Public Junior

High School in the Krachi Nchumuru District. Confirmability refers to the objectivity, that is, the potential for congruence between two or more independent people about the data's accuracy, relevance, or meaning (Lincoln and Guba, 1985; Polit and Beck, 2012). It refers to neutrality of the data rather than neutrality of the researcher. If the research is confirmable, it should be able to find conclusions grounded in data. Even though, the researcher has his own convictions, to avoid bias in the study, ethical considerations were strictly be adhered to and the meaning of the research findings was not changed. According to Kumar (2005) 'bias is a deliberate attempt either to hide what [one] have found in [the] study, or highlight something disproportionately to its true existence'. The researcher is a native of the district within which the research was undertaken. Despite this familiarity, the researcher maintained high ethical values including access, anonymity, and confidentiality against data collected. Therefore, the findings of the study were not influenced.

4.0. Data presentation, interpretation and findings

The qualitative data is presented under four (4) themes in accordance with the research questions raised for the study. These include: Provision and installation of WASH facilities in public basic schools and Impact of the WASH programme on student academic performance in basic schools.

4.1. Provision and installation of WASH facilities in public basic schools

To answer research question 1, the study gathered data on facilities provision effectiveness in the following areas: harvesting rainwater; hand-dug wells; storing drinking water; provision of latrines; provision of boreholes; and the provision of handwashing materials.

4.1.1. Harvesting rainwater

In terms of harvesting of rainwater, four (4) out of the six (6) participants confirmed that, the rainwater harvesting system was installed for the schools through the WASH programme, but the remaining two (2) indicated that, they do not have. It is observed that, the two (2) schools without the rainwater harvesting system were schools built with thatch roofing. A respondent said that:

Our classroom structures are made up with thatch and mud, the community members helped us built it. And so, we do not have rainwater harvesting system in the school. Hmmm!!! It is serious. We need a lot of support. (T-CF-6).

It was further discovered that, those who have the rainwater harvesting system, drunk and use the water to fill “tippy tap” gallons but however, not a reliable source of water. A respondent said that: Water harvested serves as drinking water to most children who do not come to school with money. The water harvested is also used to fill tippy tap gallons and basins for effective hand washing and washing of bowls but we cannot use it in dry season (T-CD-4). Also, a GWASH staff confirmed that, the program had ceased supporting rainwater catchment tanks...as reliable sources of water for hand washing at schools (Shirley et al., 2013).

4.1.2. Hand-dug wells in community

The responses of all six (6) participants on hand-dug wells showed that, the wells were dug in the communities and not the schools under the implementation of the WASH programme. Participants said that, the wells were a good source of drinking water but become less effective in dry season.

A participant commented as follows: The WASH programme mainly supported community members to dig wells in their communities for portable water. As it is now, those wells lack water in the dry season and so they rely on the Dam in the village which also partly dry up in the dry season. Animals also drink from the Community Dam. (T-CE-5).

Similarly, Shirley et al. (2013) noted that, hand dug wells have not provided a dependable source of water year-round, therefore, GWASH's plan to discontinue hand dug wells is appropriate.

4.1.3. Treating and serving drinking water

Responses gathered under water treatment for drinking showed that, a majority of four (4) respondents drink borehole and rainwater without any treatment in the school, whereas the remaining two relied on Dam water, which is usually boiled before use as stated in this comment:

Over here, the cost of buying pure water is expensive for children, so we treat the dam water by boiling it for drinking in the community. Some people also put “alorm” in it to settle down the mud in the dam water so that it can be used for washing. (T-CE-5). According to Ekane et al. (2016) it is the duty of the Environmental Health Promotion to focus on accelerating access to a water supply and to sanitation facilities, as well as hygiene information.

4.1.4. Provision of latrines in schools

With regards to availability of accessible latrines

in the schools, four (4) respondents confirmed having latrines under the WASH programme. They however, indicated that, most of these latrines are in deplorable shapes (T-CA-1) needing quick attention as revealed in these comments;

The KVIPs for both boys and girls help learners not go far from the school before getting access to toilet. It helped stopped learners from free ranging around the school. Parents now feel safe for their children who do not return home or go to unsafe bushes around the school to defecate (T-CD-4).

Another participant commented that: We have one latrine that was built by NGO intervention, that is Afram Planes Development Organization but not the WASH programme. Even now, the children are many so we need more latrines” (APDO) (T-CF-6).

According to Kimani-Murage et al. (2020) lack of safe and hygienic toilet facilities and lack of proper sewerage systems...leads to exposure to human waste.

4.1.5. Provision of boreholes

Three (3) participants confirmed having boreholes in the schools but the remaining three (3) did not have. Participants therefore, pleaded for more boreholes since the ones available are inadequate. Those having confirmed that, boreholes have helped reduced a number of diseases in the school and community. A respondent narrated this in the comment below: Under the WASH programme we now have one borehole. We also have pipe-borne water but it is not used because of the bill and we are not going to use it because, the borehole is available. We need money for other things like buying soap and tissue. (T-CB-2).

In line with this, Luff (2004) noted that, water supplies must be both safe and acceptable to users. On the other hand, a respondent said that: The school needs at least one borehole. We did not benefit from the water project of WASH. I am afraid, the dam water the children are drinking will cause more water-borne diseases in the school. (T-CD-4).

According to Hermann (2005) faecal-oral infections can be transmitted by either waterborne or water-washed mechanisms [such as dam water].

4.1.6. Provision of hand washing materials

The responses under this section reveals that, the “tippy tap” hand washing system developed by the WASH programme is one of the best affordable initiatives that is helping the school and community to reduce communicable diseases like diarrhoea and cholera from the society. It is uncovered that; GES closely monitors and supervises the use of this system through a team called School Health Education Programme (SHEP) under the district education and health coordinators. There are also award and punishment systems put in place under this system to help every individual comply

with the covid 19 pandemic protocols. This comment shows the excitement of participants about the hand washing programme: The school has tippy tap hand washing tools and Veronica buckets which are situated at vantage locations so that learners and teachers can accessibly and easily wash their hands (T-CD-4). Whilst T-CE-5 added that, “we are safe from a lot of diseases because of the good hand washing system now. In the past, children used to fall sick because they do not wash their hands after doing open-defecation”.

Also, GIMPA (2015) noted that, the low-cost tippy-taps for hand washing has been well accepted by all the communities.

4.2. Impact of the WASH programme on student academic performance

To answer research question 3, the impact of the WASH programme highlighted in the data related to: access to facilities; hygienic behaviors; enrolment rates; student absenteeism; academic performance and early school dropout.

4.2.1. Access and participation in the use of facilities

With regards to the availability and accessibility of WASH facilities to participants, out of the six (6) respondents, four (4) indicated that, WASH facilities are established at a close distance accessible for use in the school. This was shown in the comment of one respondent that, “school children easily access and use latrine without facing any difficulties” (T-CB-2). The other two (2) participants indicated that, their schools did not benefit from some of the WASH facilities including boreholes and latrines and that makes them trek long distances to access these important social amenities. One of them said that, “because, we lack pipe-borne water and boreholes, we depend on the community well and borehole for drinking water” (T-CF-6).

4.2.2. Hygienic behaviors of learners

With respect to hygienic behaviors of learners, all the six participants acknowledged the positive impact of the WASH programme in the daily healthy life of the school and community. They indicated that, even though, there are still cases of typhoid infections in the community, the timely intervention of the WASH programme has significantly reduced the rate of these communicable diseases to the barest minimum among teachers, learners and the whole community.

On the other hand, all the six (6) respondents indicated that, the WASH facilities including the boreholes and latrines are not friendly for use to adolescent females in their menstrual periods and persons with disability, especially those with mobility challenges. A respondent said that, “menstruating students (female students) now have the confidence to handle and manage their menstrual periods in the school because of the availability

of WASH facilities” (T-CC-3). On the contrary, the other one lamented that, “the school attendance of female schoolchildren during their menstrual periods become poor” (T-CB-2). According to Marni (2010) schools throughout low-income countries continue to lack the basic water and sanitation-related facilities essential for adolescent girls who, on a monthly basis, must manage their personal menstrual hygiene needs (Marni, 2010).

Similarly, another respondent explained that, “the latrines cannot be accessed by children with disability of the leg because, it is a drop hole that demands squatting” (T-CD-4). However, the Salamanca Framework for Action (1994) states that, inclusive school facilities should be accessible to all pupils both in urban and rural areas including those with disability. A respondent commented on inaccessible facilities as follows:

We appealed to government to build accessible toilets for school children with disability to participate in school, since a majority of them are at home without attending school (T-CE-5).

In the same way, Shirley et al. (2013) admitted that, the VIP and KVIP latrines have not been constructed according to WASH specifications.

4.2.3. Enrolment rates

Responses from all the six (6) participants show that, the WASH programme has impacted positively on enrolment of children in the basic schools. A participant said that, “hygienic behavior of learners has increased due to easy access to water and soap. More children have come to school because parents are sure it is safe due to regular hand washing” (T-CD-4). Respondents also narrated that; children were attracted by the “tippy taps” handwashing system as noted below:

The tippy tap project constructed by WASH is very good. Many children who are out of school often hear of it from their colleagues who are in school. As a result, they end up coming to the school to see it and in the process, they get enrolled. This has helped increased enrolment in the district. (T-CA-1).

Marielle and Shordt (2005) noted that, students are targeted both as direct beneficiaries and as agents of behavioral and attitudinal change within their families and their communities.

However, three (3) respondents lamented on how inaccessible facilities to persons with disability contributed to the decrease in their enrolment. One respondent stated it in this comment: I think to ensure that, persons who are disabled participate in school, the school toilet facilities must be reconstructed to suit their needs. It is sad, that, because our toilet facility constructed by WASH was not accessible to some three (3) mobility challenged learners, they stopped schooling to avoid the shame they go through to access toilet facility in the school. (T-CF-6).

4.2.4. Student absenteeism

Responses gathered from four (4) participants out of the six (6) respondents indicates that, the WASH programme has contributed to reducing children absenteeism in school. A participant said that, "it is now normal for females to attend school even in their period [and] those who have problem are attended to by the girl-child teacher" (T-CD-4). Similarly, another respondent said: School children do not seek permission so often again like the way they used to do before the implementation of the WASH programme. This is because if there is water in the school to drink or wash down, there will not be any need to go home to drink water (T-CC-3). More so, in Bangladesh, school health and nutrition programme reported success against school attendance...due to behavior change and reduction in diarrhoea rates (Save the Children, 2009).

4.2.5. Academic performance

With regards to student academic performance, a majority of four (4) respondents out of the six participants indicated that, the WASH programme has impacted positively on the academic performance of students. The respondents attributed this to the low absenteeism recorded in schools as a result of the WASH programme. The respondents stated that: "the WASH programme has helped school children to assimilate concepts and topics during instructional hours due to the sound minds" (T-CB-2) and the other one said that, there is a strong positive correlation between the WASH programme and school enrollment figures [because] pupils actively participate in classroom during instructional hours (T-CC-3). In conformity, a study in Jamaica [also] shows that children treated for whip worm performed better in cognitive tests than children who were not treated (Marielle and Shordt, 2005).

4.2.6. Early school dropout

Responses from all six (6) participants indicate that, learners scarcely drop out of school after the implementation of the WASH programme. Comments from the respondents shows that, the school environment has become more attractive to admit and retain students in the school as commented: The general school environmental conditions have improved in terms of sanitation. Littering of the school environment has stopped. As the general school environment has become conducive, neat, and hygienic, pupils now get attracted to the school. (T-CC-3). In this vein, a respondent noted that, "there have been zero recording of school dropout by the school (T-CB-2). Similarly, "early school dropout rate has seen a decline as compared to the time when the WASH programme was not implemented" (T-CC-3). On the other hand, the study identified in another response presented under the disability friendliness of facilities to students that, some three (3) disables dropout of school as a result

of their inability to access some school facilities. [Meanwhile,] just as teachers and classrooms are essential ingredients for academic success, so too are school environments that are non-gender discriminatory in their structural physical design, allowing both girls and boys to fulfil their academic potentials (Marni, 2010).

5.0. CONCLUSION

In all, many of the facilities designed to be provided under the WASH programme including boreholes, and latrines were effectively implemented. However, the study identified that, these structures are woefully inadequate and not disability and girl-child friendly to enable them handle their sanitary issues in school.

Furthermore, the study identified that, the WASH programme has a direct positive impact on the academic performance of learners to the extent that, learners will have sound mind to study when they are free from diseases. Based on these findings, the theory is supported and so, donor help is needed to construct girl-child and disability friendly facilities in all basic schools to enhance health, enrolment and academic performance learners in basic schools in the district.

6.0. RECOMMENDATIONS

Based on the findings of the study, it is recommended that:

1. Due to population growth and WASH programme positive impact on enrolment, there should be a second major project initiative to construct more accessible facilities.
2. Policy makers must involve stakeholders from girl-child and PWDs in decision-making.
3. Considering the direct relation between health and student academic performance, GES must invest more into the health sector of education provision at the basic school level.
4. Future studies should also be considered on drawing a national plan for sustaining educational resources to be enforced regardless of which government is elected.

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