UNIVERSITY OF EDUCATION, WINNEBA

EVALUATION OF WATER, SANITATION AND HYGIENE (WASH) PROGRAMME IN JUNIOR HIGH SCHOOLS IN THE NINGO-PRAMPRAM DISTRICT, GREATER ACCRA REGION

ESTHER PEPRAH NSIAH

MASTER OF PHILOSOPHY

2020

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**A thesis in the Department of Social Studies,
Faculty of Educational Studies, Submitted to the School of
Graduate Studies in partial fulfillment
of the requirements for the award of the degree of
Master of Philosophy
(Social Studies)
in the University of Education, Winneba**

SEPTEMBER, 2020

DECLARATION

Student's Declaration

I, Esther Peprah Nsiah**,** declare that this Thesis with the exception of quotations and references contained in published works which have all been identified and duly acknowledged is entirely my own original work and it has not been submitted either in part or whole for any other degree elsewhere.

Signature……..…...

Date…….……

Supervisor's Declaration

I hereby declare that the preparation and presentation of this research was supervised by me in accordance with the guidelines for the supervision of thesis as laid down by the University of Education, Winneba.

Name of Supervisor: Dr. Esther Yeboah Danso-Wiredu

Signature……..…...

Date…….……

DEDICATION

This work is dedicated to my entire family, friends and all those who have played a role in my life.

ACKNOWLEDGEMENTS

During the period in which this work was done, I received invaluable assistance and encouragement from various people whom I wish to acknowledge. First among them is my supervisor, Dr Mrs Esther Yeboah Danso-Wiredu for her guidance and useful suggestions. It is through her effort and wonderful contributions that I was able to accomplish this work.

A special thanks goes to all lecturers of the Department of Social Studies who in one way or the other imparted knowledge to me for the two years which has given me the enlightenment in this academic work. I wish to register my profound gratitude to my colleagues of the Department who in diverse ways helped for the successful completion of this thesis. I am deeply grateful for their support and encouragement especially from Mr Yaw Boakye Djan.

Let me specially acknowledge with profound gratitude to the educational directorate, headteachers, teachers and pupils in the Ningo-Prampram educational area for providing me the necessarily information and conducive environment within which I have been able to collect data, reflect and write this thesis.

Furthermore, I express my appreciation to my entire family especially my husband who has been supportive right from when this programme began through to when this research began and its successful completion. The formidable role and contributions from him is highly appreciated and I ask for God‟s blessing for him and the entire family.

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ABSTRACT

The primary intent of the study was to evaluate the status of Water, Sanitation and Hygiene (WASH) programme in Junior High Schools of the Ningo-Prampram District, Greater Accra Region. The main objective of the study was to find out the causes of the inefficient WASH programme in Junior High Schools in the Ningo-Prampram District. In line with this, four research questions were developed. Descriptive survey design was used. Purposive, stratified, and simple random sampling methods were used to select the schools and respondents; and a sample size of 404 respondents was selected comprising of 154 teachers including headteachers and 250 pupils. The selection of the headteacher and teacher participants for interviews was done by using purposive sampling technique. Eighteen (18) schools were selected out of the fifty-four (54) schools in the District for the study. Structured questionnaire and semi-structured interview guides were used. Frequencies and percentages were used to analyse the questionnaire data while themes were drawn from the interview responses to support findings from the questionnaire. It was gathered that generally all schools did not operate fully under the expectations of the WASH programme. For most schools, there were no toilet facilities, while those who had toilet facilities were almost in bad state to be used by pupils. This situation did not augur well for pupils especially the females as some contracted diseases such as candidiasis and other related diseases. The respondents agreed that one of the major challenges confronting the effective implementation of the WASH programme was lack of funding to procure the necessary items, as well as inadequate supervision and monitoring of the WASH programme. It was concluded that an effective (WASH) programme in Junior High Schools will heavily rely on proper and regular funding as well as supervision and monitoring. It was recommended that GES should improve school supervision and monitoring of WASH programme through engaging personnel who will regularly visit schools to assess the state of water, sanitation and hygiene in the school.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Better sanitation and hygiene are expected to improve the livelihood and well-being of human beings (Atuahene, 2010). Improved water supply and sanitation ultimately contribute towards nation building and prosperity by enhancing the health status of the common mass (population) and thus, their economic productivity (Atuahene, 2010). However, lack of sustained, effective and safe services is a common experience for many developing countries around the world as compared to developed countries (United Nations International Children"s Emergency Fund (UNICEF), 2012). This has resulted into a high prevalence of water and sanitation related diseases, causing many people in developing countries, to fall ill or even die (UNICEF, 2012). In many countries there exists a high prevalence of water and sanitation related diseases, causing many people, children in particular, to fall ill or even die. Improved hygiene practices are essential if transmission routes of water and sanitation related diseases are to be cut.

In the establishment of schools, children have the right to basic facilities such as toilets, safe drinking water, clean surroundings and basic information on hygiene (UNICEF, 2006). The provision of safe water, sanitation and hygiene in schools has therefore been established to improve health, boost educational achievement, and promote gender equity which consequently has a positive impact on the society (Olukanni, 2013). However, about 2.6 billion homes (people) in Africa and Asia, lack access to proper basic Water, Sanitation and Hygiene (WASH) facilities (UNICEF,

2011). Schools WASH have not been given prominence in most African countries (Olukanni, 2013).

In Ghana, WASH facilities are absent in most schools (Tetteh, 2016; Atuahene, 2010). Efforts have been made by Non-Governmental Organisations (NGOs) and institutions of government to increase schools access to safe water supply and sustainable sanitation by supporting the provision of improved water sources and sanitation facilities in schools (Tetteh, 2016; Atuahene, 2010). Improved hygiene practices are essential if transmission routes of the water and sanitation related diseases are to be avoided (Arthur, 2014). The prevalent rates of diseases such as diarrhoea, dysentery, cholera, parasitic worm infections, skin diseases and others can be reduced. To Olukanni, such diseases can be reduced if school children are exposed to improved water and sanitation facilities (Olukanni, 2013).

An ideal learning environment should have adequate water, sanitation and hygiene (WASH) facilities with functional and reliable water system sufficient for all the school‟s needs, more especially for drinking and hand washing (UNICEF, 2011). It should also have a clean surrounding and sufficient number of toilet facilities for students and teachers that are private, safe, clean and above all, gender segregated. Whereas appropriate hygiene education can bring about the intention to change hygiene behaviour, for most hygiene behaviours appropriate water and sanitation facilities are needed to allow people to transform intention to change into real change. The provision of safe water, sanitation and hygiene in schools has been established to improve health, boosts educational achievement, and promote gender equity which consequently has a positive impact on the society. School sanitation and hygiene education have been given prominence in the Total Sanitation Campaign, which

recognizes the role of children in absorbing and popularizing new ideas and concepts (Majra & Gur, 2010). This is globally recognized as a key intervention to promote student‟s right to health and clean environment which would influence a change in health promotion, behaviour and attitudes. However, lack of sustained, effective and safe services is a common experience for many developing countries around the world which has resulted into a high prevalence of water and sanitation related diseases, causing many people, children in particular, to fall ill or even die (UNICEF, 1998).

If WASH facilities are absent, or are badly used and maintained, schools become risky places where diseases are transmitted. Schools can also pollute the natural environment in such a way that it causes health hazards for the community at large. Water, sanitation and hygiene are also associated with school attendance and performance especially for girls (UNICEF, 1998 & 2006; WHO and UNICEF, 2010). It is therefore important that schools have proper facilities. Advancing WASH programme in public secondary schools could lead to the attainment of other MDGs in terms of health, education and economic development (WHO, 2010; Adam et al., 2009; UN, 2011). When knowledge is supported by enabling and reinforcing factors, desirable changes would occur in the school setting and subsequently transferred to the community. A school child educated about the benefits of sanitation and good hygiene behaviour is a conduit for carrying those messages far beyond the school walls, bringing lasting improvement to community hygienic practices. This stresses the importance of involving schools in WASH programme. Schools play an important role in children's health and well- being. They can be a place to develop useful life skills on health and hygiene. It is important that schools have proper facilities. If school sanitation and hygiene facilities are absent or are badly maintained and used, schools can become risky places where diseases are transmitted. The mere provision

of facilities does not make them sustainable or ensure the desired impact. It is the use of the facilities – the related behaviours of all people that provide health benefits. The focus should therefore be on both effective education and effective facilities. Children are future parents and the hygiene behaviours learnt and practiced at a young age are likely to be applied in the rest of their lives (UNICEF, 1998). UNICEF (2011) argues that in over 1,300 Ghanaian schools, about one million pupils use water from contaminated sources or walk long distances to fetch clean water from safe sources as water facilities either do not function, have poor yields or are not there. It is therefore important having this background to examine the factors affecting the implementation of School WASH in order to ascertain the progress of the programme.

This therefore calls for urgent action as poor sanitation does not only put people in poor environments but also increases their risk of infections.

1.2 Statement of the Problem

Good standards of WASH are important in schools as they contribute to achieving the objectives of schooling. However, observation of schools in the Ningo- Prampram District suggests that WASH facilities are inadequate and the few ones available are in poor conditions. This is evident as most pupils urinate around the toilet facilities and others queue to visit toilet and urinal facilities. Also, there is hardly any hand washing facility available for pupils.

Arthur (2014) argues that, recently, accelerated enrolment has not been matched by corresponding acceleration of water supply, sanitation and hygiene facilities in schools in Ghana. As such, the development of school buildings has focused on classrooms and has not adequately considered the WASH facilities in the schools (Anderson, 2011; Arthur 2014; Tetteh, 2016). Thus, toilets to pupil‟s ratio are lower

in schools in Ghana and most of the existing facilities have deteriorated without repair and maintenance (Arthur, 2014).

According to UNICEF (2012), this situation creates unsanitary conditions in the school environment which leads to increase poor health of students and also affects school activities such as attendance and learning outcomes. Equally, sanitation coverage is still low with many children lacking proper toilet facilities hence the sewage is untreated and contaminates the environments (Mbilima, 2008). To NWASCO (2012), the responsibility for school WASH in Ghana is fragmented with a lot of organizations and government organs having different parts to play in the implementation process without clear roles. Since good WASH will help reduce health problems and also contribute to achieving the objectives of learning, it is an important issue that deserves attention. Also, in Ghana, there appears to be little research that assesses the state of WASH in schools. Thus, it remains unknown the state of WASH in most schools in Ghana. This study therefore sought to investigate the status of the WASH programme or policy in Junior High Schools in the Ningo-Prampram District.

1.3 Purpose of the study

The purpose of this study is to evaluate the status of Water, Sanitation and Hygiene (WASH) programme in Junior High Schools in the Ningo- Prampram District.

1.4 Research Objectives

The following objectives were considered in this study:

a) Describe the WASH situation in Junior High Schools in the Ningo- Prampram District.

b) Assess the causes of the inefficient WASH programme in Junior High Schools in the Ningo- Prampram District.

c) Examine the effects of the inefficient WASH programme in Junior High Schools in the Ningo- Prampram District.

d) Recommend appropriate interventions to improve the WASH situation in Junior High Schools in the Ningo-Prampram District.

1.5 Research Questions

To carry out this study, the following research questions were put forward and addressed:

a) What is the WASH situation in Junior High Schools in Ningo -Prampram District?

b) What are the causes of the inefficient WASH programme in Junior High Schools in Ningo- Prampram District?

c) What are the effects of the inefficient WASH programme in Junior High Schools in Ningo-Prampram District?

d) What are the appropriate interventions to improve the WASH situation in Junior High Schools in Ningo - Prampram District?

1.6 Justification for the Study

The issue of Water, Sanitation and Hygiene (WASH) is one of the most pressing concerns in the country. Ghana has been a place of filth and is in a very serious environmental health crisis. Poor WASH poses serious threat to the health of pupils as well as the communities in which they live. It is clear that sustainable WASH in school programmes lags far behind other programmes. It is in response to this compelling situation that this study is being undertaken. The results of the proposed study will be useful in providing information as there is relatively little empirical research on the implementation of the WASH programme. Guidelines on the implementation of the programme are also critically important in schools. Although existing policy statements focus on School Health and Nutrition (SHN) as well as School Health and Education Programme (SHEP), it is ineffective as it isolates issues to do with water supply and has very little bearing on sanitation.

Again, results obtained from this study would assist government and development partners to develop a planning process and management model to address important issues pertaining to WASH. It would also provide information on guidelines for decision makers, education providers and public health officers as they plan, implement and champion their advocacy on water, sanitation and hygiene in schools of Ningo-Prampram District. More data would be added to the existing body of knowledge since this study may be a basis for future researches geared at improving and enhancing School WASH programme.

1.7 Significance of the Study

The study will be used as a basis for government to review its regulatory instruments as well as school sensitization strategies on WASH is concerned. The country‟s

ministry of education and the management board should set policies and guidelines on accreditation of schools to include effective WASH programme and provision of adequate facilities.

This study would enable policies and programmes to be developed at both national and community level to ensure children are attending schools with acceptable facilities where they are able to learn and practice the hygiene behaviours that they will use throughout their lives.

Again, the study will provide information on guidelines for decision makers in education as they plan, implement and champion their advocacy on WASH in schools. Here, the study will provide information for schools to introduce orientation programmes at the beginning of every term which will remind the students on the need to managing well the available facilities. In addition, adequate number of well-designed and gender segregated toilet facilities will be provided for students and will be well maintained.

Lastly, the study will further provide a useful academic material for referencing. Students and researchers who want to undertake research into sanitation can use this study as reference.

1.8 Delimitation of the Study

The Ningo- Prampram District has a total of fifty-four (54) Junior High schools. All these schools fall under six circuits of the Educational Directorate and the study will use three out of the six circuits which will also comprise of one third of the schools in the district. Some schools in these circuits include the Abia D/ A Junior High School, Prampram D/ A Basic School, Prampram Presby Junior High School, Anglican Basic

School, Lakpleku Basic School, SDA Basic, Afienya Methodist Basic School among others. This study would be carried out among pupils and teachers of only the selected Junior High Schools. The issues to be investigated in the school would be solely limited to the state of Water, Sanitation and Hygiene (WASH). With the need to evaluate the implementation of water, sanitation and hygiene in schools, the study focused on water sources, water availability, toilets or latrines, hygiene sensitization, waste management and hygiene advocacy in the selected school.

1.9 Organisation of the Study

The study has been put into five chapters. Chapter One, the introduction consist of the background to the study, statement of the problem, purpose, research objectives and questions, justification for the study as well as significance, delimitation and organization of the study. Chapter Two talks about the literature review while the chapter three is centred on research methodology. Chapter Four focuses on the results, discussion and analysis of data collected whilst the final chapter, looks at the findings, conclusions and recommendations for the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Under this chapter related literature on the status of water, sanitation and hygiene in schools would be reviewed. The literature would be reviewed on the following themes: Definition of the concept WASH, Causes of inefficient WASH situations in schools and Effects of inappropriate WASH situations in schools, Appropriate interventions to improve WASH situation in schools as well as the theoretical and conceptual framework.

2.2 The Concept of Water, Sanitation and Hygiene (WASH)

An estimated 1.9 billion school days could be gained if the Millennium Development Goals (MDGs) related to safe water supply and sanitation are achieved and the incidence of diarrhoeal illness is reduced. One way of achieving this is by providing schools with safe drinking water, improved sanitation facilities and hygiene education that encourages the development of healthy behaviours for life (WHO, 2004c). This strategic approach is known as Water, Sanitation and Hygiene Education **(**WASH) in Schools. Water, Sanitation and Hygiene (WASH) in Schools is a combination of technical (hardware) and human development (software) components that are necessary to produce a healthy school environment and to develop or support appropriate health and hygiene behaviours (Mooijma, Snel, Ganguly & Shordt, 2010). The technical components include drinking water, hand washing and toilet facilities in and around the school. The human development components are activities that promote conditions within the school and practices of children that help to prevent water and sanitation related diseases and worm infestation (Government of the

Republic of Zambia (GRZ), 2009). GRZ (2009) further opines that school sanitation and hygiene education depend on a process of capacity enhancement of teachers, education administrators, community members, village or ward water and sanitation committees, public health, Non-Governmental Organisations (NGOs) and Community Based Organisations (CBOs). It seeks to use water, sanitation and hygiene as a bridge linking children, their families and communities. The strategy helps fulfill children"s rights to health, education and participation, and has been widely recognized for its significant contributions to achieving the MDGs – particularly those related to providing access to primary education, reducing child mortality, improving water and sanitation, and promoting gender equality.

Mooijman et al. (2010) believes that WASH in Schools is based on the belief that children are far more receptive to new ideas because they are at an age when they can be influenced to cultivate the habits of good personal hygiene. The promotion of personal hygiene and environmental sanitation within schools can help children to adopt good habits during the formative years of their childhood. They further argued that WASH in Schools aims to make a visible impact on the health and hygiene of children through improvement in their health and hygiene practices, and those of their families and the communities. It also aims to improve the curriculum and teaching methods while promoting hygiene practices and community ownership of water and sanitation facilities within schools. On August 3, 2010, Ghana was among the 122 countries that entered into a resolution adopted by the United Nations General Assembly pledging to make water and sanitation as human rights for their citizens (WHO/UNICEF, 2010). The acknowledgment by the UN General Assembly, in 2010, of water and sanitation as a human right provides additional political thrust towards the ultimate goal of providing everyone with access to these vital services. As part of

the agenda, coupled with the Millennium Development Goal (MDG) target, it was pledged to half by 2015, the proportion of people who had no access to water supply and basic sanitation. In spite of this pledge, presently 2.6 billion people do not have access to improved sanitation in the world, while 1.1 billion people still practice open defecation (UNICEF, 2007; UNESCO, 2009; WHO/UNICEF, 2010; UNICEF/WHO, 2012).

According to AusAID (2012), WASH in Schools campaign in the world was formally launched in 2010. This initiative involving UNICEF and its partners call on governments to increase investments and on practitioners and other concerned stakeholders to improve collaboration on programming effectiveness. The ultimate goal is to expand WASH programme in schools with the view to improve health, foster learning and enable children to participate as agents of change within their homes and communities. The programme is structured around six action points designed to strategically focus efforts and resources into key areas (UNICEF, 2010). These include increased investment; policy engagement, stakeholder involvement, and demonstration of quality WASH in school projects, monitoring and contribution of evidence. It is widely argued that investment towards school WASH programme has been increasing. However, if investment is growing globally, there is still a long way to go. Despite that the proportion of schools that have water and sanitation facilities for boys and girls is increasing, it is not at a satisfactory rate. In UNICEF priority countries (Ghana included) which are generally poorer countries with higher child mortality rates and weaker WASH and education progress rates, the record is poorer in that in 2008 it was 46%, in 2009 (47%) and in 2010 it was 51%, (UNICEF, 2010). This slow progress, challenges and limited information on WASH in Schools

raise questions on the programme implementation process. It is in this context that implementation process of the programme needs to be understood.

2.3 Causes of Inefficient WASH Programme in Schools

In many countries there exists a high prevalence of water and sanitation related diseases, causing many people, children in particular, to fall ill or even die. Improved hygiene practices are essential if transmission routes of water and sanitation related diseases are to be cut. Whereas appropriate hygiene education can bring about the intention to change hygiene behaviour, for most hygiene behaviours appropriate water and sanitation facilities are needed to allow people to transform intention to change into real change. The provision of safe water, sanitation and hygiene in schools has been established to improve health, boost educational achievement, and promote gender equity which consequently has a positive impact on the society. Burgers (2000) opines that hygiene education in schools aim that promoting practices that will help prevent water and sanitation related diseases as well as promoting healthy behaviour in the future generation of adults.

Government‟s inability to provide adequate funds has led to most educational institutions predominately the basic levels lack basic facilities to promote teaching and learning and these can be seen as most schools lack decent classroom blocks, lack toilet facilities among others. Most schools do not have toilet facilities as a result of lack of funds from government, and student are left to find their own means when the need arises. Some students run to nearby bushes when nature calls as others urinate indiscriminately which does not promote good sanitation and hygiene situation. The high incidence of diarrhoeal diseases and other communicable diseases among school children may be due to poor knowledge and practice of personal and environmental

hygiene (Koopman, 1978; Oduntan, 1974; Hoque, 2003). Poor knowledge and practice of, and attitudes to personal hygiene, such as hand washing, has negative consequences for a child‟s long term overall development (GHWD 1, 2008). The success of school WASH programme is dependent on the financial support from donors, government and NGO‟s. According to AMCOW (2010), donor allocations account for 90% of the WASH sector spending with government and NGOs each accounting for 5%. In order to reach the national targets for water, 109 million dollars is required every year with 76 million dollars yearly estimated to be expected from public funds. Despite these amounts, Government of the Republic of Zambia for instance reports that there has been unsatisfactory budget performance and failure to meet planned programmes (GRZ, 2006a). This has therefore led to the stepping in by the donors to fill the gap caused by under funding from the government. With the fragmentation of the water supply and sanitation responsibility existing across various government ministries, tracing sector-wide financing is difficult (National Water and Sanitation Council (NWASCO, 2012). The gap in financing highlights that rural water supply and urban sanitation as subsectors are suffering the greatest deficits. Since the current level of financing is negligible, the attainment of the MDGs for water, sanitation and hygiene will be difficult.

Despite setting the above funds for school WASH programme, the government does not have a separate school WASH unit or department responsible for the programme instead it is part of the Ministry of Education, Science and Vocational Training and Early Education (MESVTEE) Infrastructure Unit which is responsible for the general infrastructure development in schools. The school WASH activities thus are not costed separately but within the general national infrastructure development for schools (GRZ, 2009). The infrastructure unit is responsible for the erection and

maintenance of school infrastructure which include classrooms and new schools. As such, in 2009 the government planned to construct 275 new basic schools where 814 classrooms were to be made available upon completion. In order to achieve this target, Zambian 4 billion kwacha (4 million kwacha rebased) was allocated for sanitation facilities for new schools constructed (UNICEF, 2010). Nonetheless this has not addressed the school water and sanitation needs and still has left a huge pool of old schools without adequate sanitation facilities. Since everything has been bundled in the construction of new schools, it is difficult to establish the actual amount towards school WASH programme.

In Zambia, United States Aid for International Development(USAID,2010) affirm that more than 25% of basic schools do not have access to safe water supply (borehole-piped, borehole-pump, piped water and protected well), and of the 9,564 sanitary facilities (flush toilets and latrines) in schools, 87.5% consist of pit latrines and the rest are flush toilets. Pit latrines range from high quality to makeshift latrines consisting of stick and mud floors over pits of uncertain depth with flimsy enclosures made of sticks and grass and brick enclosures in most of the rural schools. These are reinforced with concrete slabs over the pits but lack ventilation and deep foundations to the bottom. There is almost equal number of sanitary facilities for both boys and girls. The ratio of pupils per toilet is generally high, reaching 90 pupils per toilet in some of the schools which is way beyond the MESVTEE standards of 1:40 for boys and 1:25 for girls (USAID, 2012). Hand washing facilities are also few even in schools that have been built recently (USAID, 2010). MESVTEE construction plans had no sanitary facilities rendering that the Ministry would have to revisit the same schools to add this component. The general water and sanitation situation in schools does not meet the Public Health Regulations and Requirements for School toilets.

This is also supported by UNICEF (2010) which affirms that there is an imbalance between the number of pupils and water and sanitation facilities in schools. It is indicative of the reduced spending on infrastructure over time, a lack of maintenance of existing structures and the bias in infrastructure development towards classroom construction over water and sanitation facilities in response to huge numbers of learners still out of school. This is coupled with the unclear policy and institutional arrangements in the provision of water particularly in rural schools. As such UNICEF concluded in 2010 that only 37% of schools have permanent latrines and seven (7%) have none at all. While only 20% of schools meet the accepted pupil- latrine ratio of 1 to 40 boys and 9% for the required 1 to 25 for girls. Recently, the accelerated enrollment in our schools has not been matched by corresponding acceleration of water, sanitation and hygiene in the schools. The development of school buildings focuses much on classrooms and has not adequate consideration on issues of water supply, sanitation and hygiene facilities in schools. On this note, UNICEF (2009) is of the view that toilets to pupils‟ ratio are lower than the national standard and most of the existing facilities in schools have deteriorated without clear and meaningful repair and maintenance. Sanitation coverage is still low with many children lacking proper toilet hence the sewage is untreated and contaminates the environment.

As evidenced in Colombia, it is difficult to get WASH in Schools high on the agenda of policy makers. This is because of skepticism about its importance relative to other problems such as poor enrollment and the bad condition of classrooms (Carriger, 2007). Combining WASH in Schools with the improvement of ventilation and light and the rehabilitation of the classrooms has for a long time increased the interest of the many policy makers around the world. As such most of the regulations as can be seen under the Zambia‟s Ministry of Education Science and Vocational Training and

Early Education 2009 Infrastructure Operational Plan, allocation of funds and regulations are mostly related to the number of buildings to be constructed and their construction specifications (GRZ, 2009). The challenge is that policies are more technically oriented and do not relate to codes or regulations on the use of the facilities by students, their maintenance and most importantly, conduct and behaviours that uphold satisfactory standards of hygiene. WASH in schools sanitation considerations also appear to become recognised, for example, as part of education reforms, such as free access to primary school education. According to Kaulule (2006), these types of reforms, although positive, put pressure on the existing school infrastructure. Schools thus accommodate larger numbers of children than they were designed for. Because of this, educational policies have been putting so much emphasis on investments in school infrastructure and neglected the need of a healthy school environment.

The existence of a gap between knowledge and practices on water, sanitation and hygiene (WASH) despite intervention programmes being in place has also been associated with socio- cultural factors which are seldom taken into account when intervention programmes are introduced. Many of such interventions have also gone ahead to target schools and provide WASH services with the aim of influencing household adoption through children as proxies with mixed outcome. This was being found to be due to complex behavioural considerations influenced by social beliefs and culture which impede attitude change despite availability of information or presence of knowledge. An impact evaluation study in the year 1995 by BRACWASH programme in Bangladesh after five-year intervention revealed that lack of awareness, knowledge, and hygiene practices were barriers to safe water use

and improved sanitation due to a gap in knowledge and practices as a result of attitude and lack of motivation.

The majority of poor people rely on unhygienic on-site sanitation systems with inadequate faecal sludge management systems. Poor sanitation also has a negative impact on the economy as illness reduces productivity. Globally, 40% of the world‟s population does not have access to basic sanitation, and one in five persons practices open defecation (WHO/UNICEF Joint Monitoring Programme (JMP, 2017). Only 15 % of the population of over 27 million people in Ghana have access to safe and improved basic sanitation. This lack of access to improved sanitation has resulted in the rather high rates of open defecation and poor sanitation in the country, especially among the poor. This has been a major concern to key stakeholders who are working towards the achievement of the Sustainable Development Goal (SDG) 6, which mandates 100% attainment of basic sanitation come 2030; it therefore means that there is the need to critically work on identifying the poor to provide them with basic WASH services, especially in schools in view of achieving SDG Goal 6 (Ghana Statistical Service, 2011).

In Ghana, the National Community on Water and Sanitation Programme has among its mandate to increase the number of school children, aged 6-15 years, who wash their hands with soap, especially after using the toilet (GPPPHW Ghana, 2009). Tieko (2012) comments that the introduction of the WASH programme by the government has a great plan of improving sanitations and health as well as learning of students in schools in the country by absorbing cost in the provision of basic resources and materials but this initiative by the government in recent times is suffering several setbacks which includes late receipt of financial support to schools. Marfo (2015)

noted that as the programme was introduced nationwide and with increasing enrollment rate of students in schools and heavy cost in the education sector, it has been very difficult by the government to provide finances to fully support the programme. As enrollment in the schools rise with the introduction of the programme an expected increase in the financial support and was also expected to match the increase but that has not been seen. Adam (2015) who noted most government policies are not sustained because of low or inadequate funding. In his study, Adam (2015) enumerated a number of government educational policies which has not been effective for some years and managed by the stakeholders. Ralenala"s (2006) study, cited in Mokgaetsi (2009, p. 45), thousands of schools still have poor physical infrastructure and many are dilapidated, dangerous, and unfit for human habitation. There is often no water at school site and poor sanitation thus, such conditions restrict the teaching and learning activities of the school as well as threaten the health of pupils and teachers. Based on this, he was noted that there is therefore, a relationship between the use of physical infrastructure and educational delivery. Several schools do not have enough toilet facilities spaces which has resulted in poor health of students (Mokgaetsi, 2009). Implicitly, teachers have to spend extra time in helping students who leave the school to some facilities elsewhere to understand lessons that could have been easily understood if infrastructure were available for use in their school. As it is identified that structural problems and lack of facilities confront the teaching and learning process, this does not fit into the goal of WASH programme and educational delivery.

The School Health and Education Programme (SHEP) in Ghana is to provide a comprehensive health education and services, as well as ensure availability and use of water and sanitation facilities in schools to facilitate the practice of hand washing

(SHEP, 2008). Tunga Community Islamic Basic School and Zamarama Line Basic School are among the numerous schools located in the Ablekuma South Sub-metropolis of the Accra metropolis in the Greater Accra Region of Ghana. Tunga Community Islamic Basic School has a population of about 350 pupils housed in six class rooms i.e. from basic 1 to 6. The school has no access to water and toilet facilities. Pupils brought water in gallons from their homes and poured into bowls that are mounted on wooden stands in front of the classrooms from which all wash their hands without using soap. Zamarama Line Basic School also has a population of about 412 pupils housed in six class rooms i.e. from basic 1 to 6. The school also has no access to water and toilet facilities. Pupils walk about 150 meters to fetch water into bowls that are mounted on metal stands in front of the classes with an amount of liquid soap poured into it from which all wash their hands (GPPPHW Ghana, 2009). Centres for Disease Control (2007) and Scott et al., (2007) avers that a hand washing facility, even with soap, on a communal basis, where the same water is used by more than one person, does not constitute an adequate hand washing facility. The question that arises is what is the quality of water in the hand washing bowls available to the school children? Although interventions such as the SHEP exist in schools (Tay, 2005; SHEP, 2008), studies have not been conducted to assess the impact of these interventions on school children‟s health in the Ablekuma South Sub-metropolis of Accra, Ghana.

Andam (2014) assessed the state of sanitation conditions in selected based schools in Ga West Municipality of the Greater Accra Region. It was similarly identified that majority of the schools were encountering confronting situations with sanitation and hygiene conditions which were health threatening. It was seen that toilets and urinals were either not present or were in very bad state for use by students. In the view of

Asare (2015) the primary intent of a programme such as the Water Sanitation and Hygiene programme is to maintain a serene school environment where students learn under conducive learning environment; they learn with healthy body and minds. This would in many ways would contribute positively to the achievement of the purpose of education. However, there seems to be mixed reactions and reports on the state of water, sanitation and hygiene situations in basic schools across the country. Addai (2016) however shared that due to the plethora of challenges the WASH programme suffers in the country, it is not fully implemented in basic schools as is expected. It was similarly identified by Mensah (2016) that absence of well-structured refuse dumps and its poor maintenance was one of the major concerns in most schools adherence to sanitation and hygiene standards as is cited in the WASH programme. Mensah (2016) opined that majority of the schools that were captured in his study area had serious challenges with waste disposal sites and its proper management.

In a study conducted by Amoah (2017) in selected public basic schools in the Assin North Municipality in the Central Region, it was found that most public basic schools were not fully implementing the contents of the WASH programme. In the situation where they strived to achieve some aspects of it, the duration which the programme lapse was short lived. In most schools, toilet and urinals were in a very bad state and not worth for use by students; there were no soaps or water to wash hands when students wanted to.

2.4 Effects of Inefficient Water, Sanitation and Hygiene Situations in Schools

Poor sanitation, water scarcity, inferior water quality and inappropriate hygiene behaviour are disastrous for infants and young children and are a major cause of mortality for children under five. Those conditions are also detrimental to the health

of school-aged children, who spend long hours in schools. The physical environment and cleanliness of a school facility can significantly affect the health and well-being of children. Disease spreads quickly in cramped spaces with limited ventilation, where hand-washing facilities or soap are not available, and where toilets are in disrepair. Too often, schools are places where children become ill. Unsanitary conditions are the main cause of ill health and premature death in poor societies. WHO (2004) reports show that out of the 5.3 billion people (83% of the world population); 1.1 billion people were without access to clean water. The situation is particularly critical in Sub-Saharan Africa, Eastern and Southern Asia. On improved toilet facilities, only 59 percent of the world‟s population had access to a hygienic toilet and Sub-Saharan Africa and Eastern Asia had the highest populations without basic sanitation. Learning, hygiene and health are interlinked (WHO, 2004). Schools are where children spend most of their time. In bad hygienic conditions, children are exposed to diseases and risk infection. There is a direct link between diarrhoea and hygiene in schools. Children can carry infectious agents from childcare settings and schools into the home, causing other household members to become infected.

WASH in Schools focuses generally on diarrhoeal and worm infections. These are the two main diseases that affect school aged children and can be drastically reduced through improved water, sanitation and hygiene in schools (UNICEF, 2012). The causes of diarrhoea include a wide array of viruses, bacteria and parasites. Diarrhoeal disease affects far more individuals than any other illness. Eighty-eight per cent of diarrhoeal disease is caused by unsafe water supply, inadequate sanitation and hygiene (UNICEF, 2009). Diarrhoea is a significant reason why children are absent from school. A recent campaign promoting hand washing with soap in 30 primary schools in Egypt reduced diarrhoea-related absenteeism by 30 per cent. Similar results

have been found in China and Colombia. Each of these studies also demonstrated a significant reduction in absenteeism related to respiratory-illness as a result of improved hand hygiene. Diarrhoea is also behind chronic under nutrition and growth retardation. Diarrhoeal episodes exacerbate the relationship between malnutrition and infection, as children tend to eat less and can absorb fewer nutrients. Each episode contributes to malnutrition, reduced resistance to infections and, when prolonged, to impaired growth and development. A study in Brazil followed 73 Brazilian children to assess their school performance. This study showed a relationship between the effects of early childhood diarrhoea on later school readiness and school performance, revealing the potential long-term human and economic costs of early childhood diarrhoea. Intestinal worm infections including hookworm, whipworm, roundworm and schistosomiasis affect roughly one in four people around the world. Worm infections are spread through unhygienic environments in soil or water and unhygienic behaviour via food or hands. School-aged children have the highest infection prevalence of any group; an estimated 47 per cent of children ages 5–9 in the developing world suffer from a worm infection. Such diseases are thought to be entirely attributable to inadequate sanitation and hygiene (UNICEF, 2012).

Fink, Gunther and Hill (2011) have argued that investment in safe water and sanitation comes with immense benefit for children; for example, reduction in water borne diseases, and better health outcomes. Phaswana- Mafuya & Shukla (2005) are also of the view that „regular water supply, provision of sanitation facilities, stakeholder participation and improvement of consumer sanitation knowledge are factors which can motivate people to adopt safe hygienic practices. Therefore, lack of adherence to hygiene standards in school has the danger of putting pupils‟ lives at risk of preventable diseases. According to a UNICEF report, involving children

themselves as active participants in promoting hand washing with soap in schools creates in the children, a sense of ownership that makes new behaviours more likely to be adhered to (UNICEF, 2008). Therefore, key hygiene habits such as good hand washing practice that are likely to be taken further into adulthood can be adopted by encouraging millions of school children to engage in these good repetitive, non-reflective behaviours. These habits can also contribute to the achievement of two of the Millennium Development Goals (2 and 4), which support Education and Health. Bennell (2002) argues that since school children in developing countries account for up to half of the population, promotion of these good hygiene and hand washing practice is not only necessary but also very relevant (Bennell, 2002).

Banda (2007) concludes that introduction of hand washing facilities in schools at early age could lead to „long term behavioural change „and prevention of water borne or related diseases. UNICEF organized highly successful Children's Water Forum programmes in Tajikistan, involving more than 500 children and young people in an effort to support youth participation in WASH education. The Youth advocacy and outreach to promote safe water, sanitation and hygiene made a significant impact on the overall health and development of a growing nation. There was no shortage of energy or ideas. For instance, student journalists, after publishing a widely-read newsletter, have requested support to produce a weekly state-wide television broadcast on the seven components. Youth participation was inherently linked to individual and collective capabilities, opportunities and access to information. Such an empowered society is developing itself and depend less on outside assistance.

The above arguments point to important policy and practice implications for wash service delivery. It follows that facilities such as separate and adequate latrines for girls and boys, installation of water facilities, washrooms and counseling rooms are critical for pupils especially girls to keep in school.

Schools with poor water, sanitation and hygiene conditions and high level of person to person contact, are prone to serious environmental health hazards for children and staff. Children‟s ability to learn may be affected by certain helminths infection which can also lead to impairing children‟s physical development and reducing their cognitive development. Long exposure to chemical contaminants in water (e.g. arsenic and lead), diarrhoea diseases and malaria infections can force many school-age children to be absent from school. Students with disabilities are also likely to suffer or be affected in different ways by inadequate water, sanitation and hygiene conditions in schools and this may contribute to unequal learning opportunities (UNICEF, 1998). The challenge of inaccessible toilets forces the disabled child from eating and drinking as much as he/ she want so as to avoid needing the toilet, leading to health problems which eventually cause the child dropping out of school. The availability of girls- appropriate toilets and water suppliers is essential if adolescent girls (and female teachers) attend school during their menstruation because it helps them to comfortably change and dispose sanitary pads and at times wash themselves privately. Motivated by religious and cultural beliefs that staying home during menstruation is normal, the absence of these facilities mean that many girls will preferably stay home during menstruation. At home, they do not need to worry much about sanitary protection, or about having adequate concealing clothing. This might add up to 30 to 40 school days missed each year which has a profound impact on girl‟s potential success in school. The issue of dignity and empowerment becomes

clear when better sanitation is at the heart of better lives for children and women. WASH in school can play a significant role in achieving universal access to primary education, reducing child mortality and increasing gender equality. According to one of the reports of World Bank, if a girl misses her school four days in every four weeks, she will lose 10 to 20% of her school days. Women, children and infants suffer the most due to lack of proper WASH facilities which can have huge impact on one‟s health especially on those children eventually reducing the risk illness related to diarrhoea and other infectious diseases (UNICEF, 2006) .

Poor health of children affects their ability to learn and therefore influence their prospects in their life. Protos (2005) for example had a study which shows that children with worm infections have higher absenteeism than non- infected children. This implies that children with worm infections spend less time and are disadvantaged in the learning process. Waterkayn (2000) opines that good sanitation in school meant that every student should have ready access to a convenient and well maintained facility for the safe disposal of human waste, suitable anal cleansing materials, most important the means to effectively wash hand with soap after defecation, must be provided and used. According to WHO (2008), pit latrines are mostly commonly used facilities for disposing waste in developing countries. It has been observed that in situations where sanitation facilities are absent or inadequate, hand washing is very crucial in terms of interrupting faecal oral disease transmission routes (UNICEF, 2005). The causes of diarrhoea include a wide array of viruses, bacteria and parasites. Diarrhoeal disease affects far more individuals than any other illness. Eighty-eight per cent of diarrhoeal disease is caused by unsafe water supply, inadequate sanitation and hygiene. Diarrhoea is a significant reason why children are absent from school. A recent campaign promoting hand washing with soap in 30 primary schools in Egypt

reduced diarrhoea-related absenteeism by 30 per cent. Similar results have been found in China and Colombia. Each of these studies also demonstrated a significant reduction in absenteeism related to respiratory-illness as a result of improved hand hygiene (UNICEF, 2012). Diarrhoea is also behind chronic under nutrition and growth retardation. Diarrhoeal episodes exacerbate the relationship between malnutrition and infection, as children tend to eat less and can absorb fewer nutrients. Each episode contributes to malnutrition, reduced resistance to infections and, when prolonged, to impaired growth and development.

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Worms are easily spread among groups of children because they play together, touch each other, visit the toilet and often do not wash hands with soap afterwards. Worms are one of the most important causes of physical and intellectual growth retardation.

The impact of worm reduction programmes in schools has been remarkable. In Kenya, for example, treatment reduced absenteeism by one quarter, with the largest gains for the youngest children who suffered the most ill health. Improving sanitation facilities has also been associated with a reduction in gastrointestinal illness. Research found a reduction of 34 per cent across 12 studies in developing countries. Washing hands with soap is another important barrier to transmission and has been cited as one of the most cost-effective public health interventions. Hand washing with soap can reduce the incidence of diarrhoeal disease by 42 to 48 per cent. Interventions to improve water quality at the source, along with treatment and safe storage systems at the point of use, reduce diarrhoea incidence by as much as 17 per cent (UNICEF, 2012).

The above statistics demonstrate the importance of promoting hand washing with soap among children and their caregivers, balancing technical solutions on water and sanitation provision, and promoting appropriate hygiene behaviour.

Many children arrive late to school because they must walk long distances in order to fetch water. The responsibility of fetching water often falls to girls. When teachers send children for water, girls are often selected for the task, depending on the country and cultural setting. When family members become sick, often due to water- and sanitation-related diseases, girls are more likely to be kept from school to help.

In Kenya, an evaluation of WASH in Schools reports that only 5 out of 100 schools had soap available for children. Less than 2 per cent of children (only 21 out of 951) were observed to wash their hands with soap. Another evaluation conducted in India shows that hand washing before eating in school was far more frequent in districts with UNICEF-supported WASH in School programmes than in control districts.

However, soap was seldom used when washing hands (2 per cent or less of the children), which seriously compromised the effectiveness of hand washing. A six-country evaluation of WASH in Schools pilot programmes in Burkina Faso, Colombia, Nepal, Nicaragua, Vietnam and Zambia found the availability of soap to be a major problem in most schools. “This jeopardizes the educational effort promoting the use of soap and results in a low proportion of students washing hands with soap (UNICEF, 2012). Soap is not available for various reasons such as for fear of it getting stolen or because it is too expensive for the school to buy. Impaired cognitive learning and learning performance are long term outcomes of the negative effects of infections such as diarrhoea, worm infections and dehydration which are largely attributed to poor water, sanitation and hygiene conditions.

Whereas Ghana has achieved the Millennium Development Goal for water supply, it is seriously lagging behind in sanitation. The latest data of the Joint Monitoring Programme for Water Supply and Sanitation (by UNICEF/WHO), state access to safe drinking water in Ghana at 86% while total access to sanitation is just 13% (or 15% according to MICS). For the rural population, safe sanitation coverage is as low as 8% (WHO/UNICEF, 2010). This is mainly because of the wide-spread (app. 59% of the population) use community/shared toilets.

So far, WASH in Schools (WinS) in Ghana has been delivered as part of traditional water, sanitation and hygiene promotion projects in communities. In 2010, 56% of schools (Creche/Nursery, Kindergarten, Primary Schools and Junior High Schools) had toilet facilities and 49% had access to water onsite. The figures do not indicate the condition and use of the facilities and since 2010, many more school WASH facilities have been constructed. Therefore, no accurate data on functional school toilets and

water systems are available (Education Management Information System School Year Report 2011/2012). The Ghana Education Service (GES) of the Ministry of Education (MoE), under whose responsibility WinS falls, has had some challenges in coordinating and harmonising WinS interventions mainly due to this project based approach which often had little recourse to the GES for direction.

Ghana ranks lowest in sanitation levels among all lower middle-income countries, although richer than a lot. The country has however made progress providing access to improved water sources to 89% of the population and eliminating Guinea worm from the country (JMP, 2016). However, despite these successes, about 3,559 Ghanaian children die each year from diarrhoea, and about 23% of Ghanaian children suffer from stunting (chronic malnutrition linked to poor water and sanitation). Five million Ghanaians still use water from unsafe sources (WHO, 2015). Approximately 19,000 Ghanaians, including 3,559 children under 5 years, die each year from diarrhoea – nearly 90% of which is directly attributed to poor water, sanitation and hygiene (WASH). In addition, poor sanitation is a contributing factor – through its impact on malnutrition rates – to other leading causes of child mortality including malaria, Acute Lower Respiratory Infection (ALRI) and measles (WSP, 2012). According to WHO, 88% of diarrhoea cases are attributable to poor environmental factors, essentially originating from poor excreta management (Pruss-Ustun, Bartram, Clasen, Colford Jr (2014).

Learning, hygiene and health are strongly inter-linked as children miss school or perform poorly when they are suffering from WASH-borne illnesses. Schools are also places where children get sick. Illnesses can spread very fast in schools where many children are together in class rooms for many hours a day in poor hygienic conditions.

Recently it has been estimated that infections which children contract in schools will lead to infections in up to half of their household members (Aiello, Larson, Sedlak 2008). 88% of diarrhoeal diseases are caused by unsafe WASH conditions (WHO, 2008). The use of improved sanitary facilities reduces the incidence of diarrhoea by 34%. Washing hands with soap after toilet use and before eating has been cited as one of the most cost effective public health interventions because it can reduce the incidence of diarrhoea by almost 40%.

A study comparing results from different countries found that hand washing can cut the risk of respiratory infections by 16%. Although the impact is clear, more research is needed on the expected rate of reduction. All cases of roundworm, whipworm and hookworm infestation are attributable to inadequate sanitation and hygiene. An estimated 47% of children (ages 5-9) in the developing world suffer from worm infestations. It is common for a child living in a developing country to be chronically infected with all three types of worms. Such children suffer from malnutrition, intellectual retardation, as well as cognitive and educational deficits. Tests have shown that a child‟s memory, executive function, language and problem solving skills as well as attention span respond positively to periodic deworming. Interestingly, girls display greater improvements through deworming than boys (UNICEF, 2009).

Studies focusing on absenteeism caused by gastrointestinal and respiratory-related illnesses in industrialised countries (show that as the result of improved hand hygiene in schools the number of days lost can drop between 25 and 50 %.). Absenteeism can also occur when primary school-age children are involved in tasks such as the collection of water from distant sources that are from their homes (these are called “opportunity costs” for attending school). i.e. collection of water from sources that are

distant from their homes. A study in Ghana shows a significant relationship between water-hauling time and girls‟ school attendance. A 15-minute reduction in collection time increases the proportion of girls attending school by 8 to 12 per cent (UNICEF, 2012). Information regarding absenteeism from many countries has shown that poor academic and social development, high dropout rates and reduced learning performance are attributed to school absence in children. Attendance is a strong predictive factor of academic success for school pupils.

Mensah-Bonsu (2014) identified that the commonest result of poor sanitation and hygiene in schools and communities is sicknesses and diseases of which some could be death-threatening. It was also identified by Gyamfi (2015) that some of the commonest sicknesses that were associated with poor sanitation and hygiene conditions are cholera, dysentery, syphilis, candidiasis as well as others which are only diagnosed in major hospitals and laboratories. Protos (2005) for example had a study which shows that children with worm infections have higher absenteeism than non- infected children. This implies that children with worm infections spend less time and are disadvantaged in the learning process. Children‟s ability to learn may be affected by certain helminths infection which can also lead to impairing children‟s physical development and reducing their cognitive development. Some of these infections tend to interfere with the physical and mental development of the children since such children consistently fall sick and at times find it difficult and stressful in comprehending the learning process.

2.5 Appropriate Interventions to improve WASH Situations in Schools

Good education about hygiene is as important as good sanitary facilities. Life skills-based hygiene education allows children to learn about water and sanitation related

behaviours and the reasons why these lead to good health or bad health. The idea is that when children understand and think together about their situations and practices, they can plan and act to prevent diseases, now and in the future. Effective hygiene education for children is not just teaching facts about health risks and bad hygiene practices. The life skills approach focuses on changing children‟s hygiene behaviour and the hygiene behaviour of their families and wider community with a view to improving their quality of life. To ensure that all aspects of appropriate hygiene behaviours are addressed, hygiene education focuses on the development of knowledge and understanding of practical and theoretical information on hygiene. For example, all children know that illnesses like diarrhoea and worm infections result from poor hygiene practices such as not washing hands with soap after visiting a toilet. WASH in Schools aims to improve the health and learning performance of school-aged children – and, by extension, that of their families – by reducing the incidence of water and sanitation related diseases. Every child friendly school requires appropriate WASH initiatives that keep the school environment clean and free of smells and inhibit the transmission of harmful bacteria, viruses and parasites (UNICEF, 1998).

WASH in Schools also focuses on the development of life skills and the mobilization and involvement of parents, communities, governments and institutions to work together to improve hygiene, water and sanitation conditions. WASH in Schools not only promotes hygiene and increases access to quality education but also supports national and local interventions to establish equitable, sustainable access to safe water and basic sanitation services in schools (UNICEF, 2012).

Any WASH in Schools intervention ultimately aims for government policies, community support and school action to sustain the initiative. The keys to sustainability are the development of political interest and commitment, cooperation between ministries, a national education policy on WASH in Schools, national policies in related sectors and the allocation of sufficient financial and human resources. The policy is to improve children‟s education and health by creating an environment conducive to implementing, operating and maintaining WASH in Schools programmes. Sustainable WASH in Schools programmes needs to have the involvement and political leadership of ministries of education as well as related ministries such as health, public works, finance, local governance and water authorities. Without the political commitment evidenced in policies, standards and budgets, WASH programmes in Schools are likely to remain externally subsidized. Such small-scale interventions cannot move beyond the pilot stage. To become catalysts for building alliances for WASH in Schools, UNICEF and other partners have focused on gathering evidence, creating all-stakeholders‟ consultation venues and facilitating a coordinated, nationwide approach (UNICEF, 2006).

If faith-based and private schools do not fall under national policies, mechanisms must be found to promote WASH in those schools as well. In the past, these were considered schools for the privileged and did not generally require development interventions. However, the reality of the twenty-first century is that 11 per cent of primary and 24 per cent of secondary school children in developing countries attend non-state schools, with wide variations per country. In Bangladesh, for example, almost 40 per cent of primary and 96 per cent of secondary school enrollments are in non-state schools. Many of the buildings and facilities in those schools suffer similar

conditions as state-run schools and would benefit from the same WASH interventions (UNICEF,2012).

In 2013, the world celebrated the first global toilet campaign on 19 November. Many countries have taken further steps in terms of policy formulation and advocacy. For instance, Angola‟s national plans include WASH facilities in schools. In 2008, national school standards in China, Gambia, Pakistan and Thailand incorporated safe water supply and gender-segregated toilets. In the same year, national education curricula in China, the Democratic Republic of Congo, Nicaragua and Sudan incorporated hygiene education (Nagpal, 2010). The standards for WASH in Schools have now been codified in the 2009 WHO/UNICEF guideline: Water, Sanitation and Hygiene Standards for Schools in Low-cost Settings. However, some countries have their own national standards, while other countries are in the process of updating their standards based on the WHO/UNICEF guideline. With this view, Zambia has its own guidelines based on the 1995 Public Health regulations under the drainage and latrines section.

Moreover, WASH in schools is widely recognised as an important element in the achievement of water, sanitation and hygiene for all and the Millennium Development Goals (MDGs). There are particularly two goals that reflect the recognition of WASH in schools in many ways. According to Mooijman et al. (2010), MDG 2 focuses on achieving universal primary education. The target seeks to see a situation where all boys and girls are to complete their primary education by the year 2015. MDG 3 focuses on gender issues with indicators on schooling. As earlier noted by WHO (2004), issues of water, sanitation and hygiene in school, are very important for the smooth progression of the learner. The MDGs have therefore given hope both to the

schools and learners as WASH issues in schools are intended to be holistically looked at by central governments and the international community. A lot of developing countries have made strides towards formulation and enactment of national policies related to School WASH programme. According to Tobin & Koppen (2005), the National Policy regarding public hygiene and the development of basic hygiene education was established in Burkina Faso in 2002-2003 and adopted by the Government in 2004. Hygiene promotion in schools is a major component of this policy. A National Strategy Framework on school water, sanitation and hygiene education has been developed and adopted.

Similarly, since the introduction of free primary education in 2003 in Kenya, national primary school enrollment has risen. Tobin & Koppen (2005) reports that the Ministry of Health developed an environmental health and hygiene policy in 2007 that included a school health programme component to address health issues in schools.

Additionally, in Uganda the Rural Water and Sanitation Strategy and Investment Plan 2000-2015 and the Operation Plan 2002-2007 are a direct result of the Sector Wide Approach (SWAp), applied as the main framework for managing water and sanitation. In the 2004-2015 Education Sector Strategic Plan, school sanitation is mentioned as a strategy for Uganda‟s development goals (GU, 2012).

WASH facilities should encourage hygienic behaviour. Hygienic behaviour, such as using a toilet, washing hands and collecting water, comprises several small steps and necessary preparations. If the activity is difficult, complex or time-consuming, children will skip some necessary actions, creating potential health risks. Therefore, facilities must be close to the schools, have sufficient capacity, with enough toilets

and sinks for the number of students, be sized appropriately and simple to use, and have water and soap available at all times for hand washing as well as anal cleansing.

Facilities should stimulate children‟s learning and development and be age appropriate. Younger children do not possess the same ability to learn complex concepts as older children. Acknowledging these different learning styles is not only important for the development of hygiene education materials, but also for the design of facilities. Interactive learning and playful engagement encourages children to put their new habits into practice (UNICEF, 2012).

Ensuring children are healthy and able to learn is an essential part of child-friendly schools. It is therefore the duty of the school to focus on teaching children how to prevent diarrhoeal diseases and other waterborne and sanitation related illnesses. The widespread adoption of safe hygiene practices through an interactive, child-centred, participatory approach builds life skills and empowers school children to make good choices. It begins with, and is built upon, what local people know, want and do.

Good education about hygiene is as important as good sanitary facilities. Life skills-based hygiene education allows children to learn about water and sanitation related behaviours and the reasons why these lead to good health or bad health. The idea is that when children understand and think together about their situations and practices, they can plan and act to prevent diseases, now and in the future. Effective hygiene education for children is not just teaching facts about health risks and bad hygiene practices. The life skills approach focuses on changing children‟s hygiene behaviour and the hygiene behaviour of their families and wider community with a view to improving their quality of life (UNICEF, 2012). After the family, schools are most important places of learning for students who have a central place in the community.

If WASH facilities are absent, or are badly used and maintained, schools become risky places where diseases are transmitted (UNICEF, 1998). Schools can also pollute the natural environment in such a way that it causes health hazards for the community at large. Water, sanitation and hygiene are also associated with school attendance and performance especially for girls (UNICEF, 2006; WHO and UNICEF, 2010). It is therefore important that schools have proper facilities. However, improved facilities in themselves are not sufficient, behavioural changes are also needed, leading to proper use of the facilities. More importantly, advancing WASH programme in public secondary schools could lead to the attainment of other MDGs in terms of health, education and economic development (WHO, 2010; Adam et al., 2009; UN, 2011). When knowledge is supported by enabling and reinforcing factors, desirable changes would occur in the school setting and subsequently transferred to the community. A school child educated about the benefits of sanitation and good hygiene behaviour is a conduit for carrying those messages far beyond the school walls, bringing lasting improvement to community hygienic practices. This stresses the importance of involving schools in WASH programme.

The Ministry of Health in Zimbabwe has been training its Environmental Health Technicians (EHTs) to work with school teachers and students in the field of hygiene education and the construction or upgrading of school sanitation facilities (UNICEF,2012). For WASH in Schools programmes to be sustainable and successful, it requires the involvement and buy-in of teachers and school managers. Most schools have some type of health or hygiene education as part of their regular curriculum and teachers have been trained in those programmes. Developments should build upon the knowledge that exists. An important focus of teacher training should be attitude change towards WASH in Schools. This can be done by explaining that the

programme is not another subject in school but a life skill used by children at school, at home and in the community to improve their overall health and hygienic living conditions and also understanding that children do not only receive information but also actively promote good health and hygiene (UNICEF, 2006). Currently, most WASH in Schools interventions are established as a programme approach, with teachers trained by NGOs or agencies, often in coordination with ministries of education. Teaching materials are made available by the programme. Some larger-scale initiatives use a training-of-trainers approach, training one or two teachers per school who are expected to pass this information to their colleagues. This approach may not be sustainable, however, as trained teachers can leave the school or simply not have time or motivation to train other teachers. Hence, it is important for WASH to become a subject in teacher training colleges and in school curricula.

In many countries, national engagement of WASH in Schools has led to specific hygiene education subjects in national teacher training institutes. As WASH in Schools becomes integral in national curricula, large-scale, in-service teacher training will be required. Teacher education and training must focus on both the content and the method for presenting WASH in Schools (UNICEF, 2012).

Involving families and communities in WASH in Schools interventions promotes a sense of ownership, which is a necessary prerequisite for sustainability. Involvement can take the shape of school management committees, parent-teacher associations or committees specifically set up for WASH in Schools. These groups are particularly important if health and education departments or local authorities are not prepared to provide such services. Community mobilization and motivation will extend the impact of life skills development beyond schools to the whole community. If parents

and the community understand the importance of appropriate hygienic behaviour, long-term effects will result. Parents and community members can have important roles in keeping the school clean, safe and healthy, and encouraging children to adopt improved hygienic behaviour (UNICEF, 2010). Parents and community members often provide unskilled labour and local construction materials to build school facilities. Involving them in planning can lead to a sense of ownership among the parents and community members. The community can make decisions and arrangements, for example, on community use of the school water tank or toilets if facilities are not available at the household level. To obtain commitment and consensus from the entire community, the local committee should report their findings and decisions to the community as a whole. The committee should equally represent men and women, ethnic groups and social classes to ensure a balanced view (UNICEF, 2009).

If parental contribution is required for maintenance, cleaning staff, and supplies of soap and cleaning material, the parents can oversee the funds through the parent-teacher association to overcome any distrust when they must give payments to the school. Contributions may be provided as goods, such as one bar of soap or bottle of cleaning liquid brought annually by each child to the school. In most communities, boards are responsible for the operation and management of water systems and sometimes of communal toilets. Involving them from the start can help them incorporate the school facilities into their overall work. Parental and community involvement ensures that what is learned in school is applied at home, particularly for younger children who are not in a position to change hygienic behaviour in their homes without their parents‟ commitment. Therefore, it is imperative to educate all family members on the adoption of appropriate hygiene skills and get the surrounding

community involved in programmes for hygiene, sanitation and water in schools. To avoid confusion, the initiative should involve parents in the content of the hygiene education for their young children and urge them to reinforce the learned behaviours at home (UNICEF, 2012). This is especially important so the content matches the community ethos and avoids cultural taboos.

Despite School WASH being popularized worldwide, the lack of reliable data on WASH in Schools is one barrier to securing the rights of children and also it policies are technically oriented (advanced practical use of facilities, methods, etc.) which may be difficult to be understood, their maintenance and behaviour that uphold satisfactory standards of hygiene at the grassroots (by schools and students). Improved water supply and sanitation can reduce deaths. Hand-washing can reduce diarrhoea and pneumonia by up to 50%, yet less than 15% of Ghanaian households have hand-washing facilities. Improved sanitation can reduce diarrhoea rates by 36%, but only 15% of Ghanaians have access to improved sanitation, well short of the 2015 MDG target of 54%. A significant proportion of diarrhoeal diseases can be prevented through safe drinking-water and adequate sanitation and hygiene (WHO, 2017). Improved sanitation in developing countries yields an average of about US$9 for every one dollar spent. Increases in female literacy (due to increased school attendance where proper sanitation facilities exist) contribute to economic growth. Improved sanitation also leads to savings in time and effort due to decrease in distant or adequate sanitation facilities, increased income from tourism (due to low risk of contamination and disease) and decreased resilience to withstand extreme weather conditions. Improved sanitation also leads to the reduction of incidence rates and mortality rates in diarrhoea (Hutton and Haller, 2004). Other health benefits include averted cases of helminths and malnutrition-related diseases (Hutton et al., 2008).

The prevention of sanitation and water related diseases could save some $7billion per year in health system costs and an additional $3.6billion per year savings in averted deaths based on discounted future earnings (Hutton et. al., 2007). Figures from Ghana and Pakistan also suggest that general improvement in environmental conditions could save 8% – 9% of GDP annually (WHO, 2008). The Disease Control Priorities Projects has found sanitation as the second most cost effective health intervention in the world at $11.15 per DALY (Disability Adjusted Life Year) loss averted, coming behind hygiene promotion which is at $3.35 per DALY averted (Cairncross et al., 2006). Improved sanitation and sanitation practices brings about economic development on national scale through all the averted deaths, avoided DALY losses and money saved in disease treatment that can be used efficiently in other areas of the economy. At the household and community level, the household has more productive time from the ones saved from attending to the sick, which indirectly translates to better income generation for the family or community and therefore a better living standard.

In Ghana, the National Community on Water and Sanitation Programme has among its mandate to increase the number of school children, aged 6-15 years, who wash their hands with soap, especially after using the toilet (GPPPHW Ghana, 2005). In addition, the School Health and Education Programme (SHEP) Unit of the Ghana Education Service (GES) was established in 1992 with the active collaboration of other key stakeholders like the Community Water and Sanitation Agency (CWSA), Environmental Health and Sanitation Directorate (EHSD), Ghana Health Service (GHS), National and International NGOs, Development Partners to mention a few. The programme has a vision to “develop well informed health conscious school populations who have full potentials to act as change agents in their homes and

communities and to contribute effectively and efficiently to national development". The SHEP Unit since its establishment has spearheaded the implementation of the health education programmes at the pre-tertiary level. Mensah (2015) identified that most schools did not effectively implement the WASH programme because almost no proper dissemination of information and education is on the WASH programme. To this effect, students as well as teachers lived their normal school life while little attention was directed at observing sanitation and hygiene practices and of this reason, there is the need for proper dissemination of information to help promote effective WASH programme. Similarly, Adjei (2016) found that education and sensitization should be at the heart of the implementation of the WASH programme in public basic schools while their health is of paramount concern to the school and the nation at large. Since there is little progress of WASH in Schools in Ghana, it remains a matter of urgency that more research and publication of findings on the programme implementation be conducted although interventions such as the SHEP exist in schools.

2.6 Theoretical and Conceptual Framework: Social Learning Theory

Different theoretical frameworks have been used to explain the interaction between human behaviour and WASH. These include the Health Belief Model (HBM), Self-Efficacy Theory (SET), and Stages of Change Model (SCM) among others. The Health Belief Model was developed in the 1950"s by social psychologists at the U.S. Public Health Service and remains one of the best known and most widely used theory in health behaviour research (Janz & Becker, 1984). The HBM is a social psychological health behaviour change model developed to explain and predict health-related behaviours, particularly in regard to the uptake of health service. This model suggests that people"s belief about health problems, perceived benefits of

action and barriers to action, and self-efficacy explain engagement or lack of engagement in health promoting behaviour. A stimulus, or cue to action must also be present in order to trigger the health promoting behaviour (Janz & Becker, 1984). Self- efficacy refers to an individual‟s belief in his or her capacity to execute behaviours necessary to produce specific performance attainments (Bandura, 1977, 1986, 1997). This theory reflects confidence in the ability to exert control over one‟s own motivation, behaviour, and social environment. Expectations of self-efficacy determine whether an individual will be able to exhibit coping behaviour and how long effort will be sustained in the face of obstacles (Stajkovic & Luthans, 1998). Kathy Kolbe (2009) opines that belief in innate abilities means valuing one‟s particular set of cognitive strengths. It also involves determination and perseverance to overcome obstacles that would interfere with utilizing those innate abilities to achieve goals. By determining the beliefs, a person holds regarding their power to affect situations, it strongly influences both the power a person actually has to face challenges competently and the choices a person is mostly to make.

These effects are particularly apparent, and compelling, with regard to behaviours affecting health (Luszczynska & Schwarzer, 2005). The Stages of Change Model was originally developed in the late 1970‟s and early 1980‟s by James Prochaska and Carlo Di Clemente at the University of Rhode Island when they were studying how smokers were able to give up their habits or addiction. The idea behind the SCM is that behaviour change does not happen in one step. Rather, people tend to progress through different stages on their way to successful change. For each stage of change, different change processes and relational stances produce optimal progress. In each of the stages, a person has to grapple with a different set of issues and tasks that relate to changing behaviour. The stages of change involve six levels and they are the;

Precontemplation Stage, Contemplation Stage, Preparation/Determination Stage, Action/Willpower Stage, Maintenance Stage and Relapse Stage.

Social (or Observational) Learning Theory stipulates that people can learn new behaviours by observing others. This refers to the reciprocal relationship between social characteristics of the environment, how they are perceived by others, and how motivated and able a person is to reproduce behaviours they see happening around them. According to Nabavi (2014), this theory is based on the idea that we learn from their interactions with others in a social context. Separately, by observing the behaviours of others, people develop similar behaviours. After observing the behaviour of others, people assimilate and imitate that behaviour, especially if their observational experiences are positive ones or include rewards related to the observed behavior (Nabavi, 2014).

Bandura (1977) in McLeod (2011) stated that behaviour is learned from the environment through the process of observational learning. Social Learning Theory originated from Albert Bandura, who believed that behaviourism alone could not explain all there is about learning. He believed that behaviour and the environment affected each other. The changes Bandura observed in a child‟s behaviour after watching an adult show aggression triggered Bandura in developing his social learning theory. Bandura believed people could control our own behaviour through self-regulation. Self-regulation requires a person to self-observe, make judgments about the environment and human behaviour, and self-response. People both influence and are influenced by the world around them. Social learning theory also known as observational learning, occurs when an observer‟s behaviour changes after viewing the behaviour of a model. An observer‟s behaviour can be affected by the positive or

negative display of behaviour seen. Learning is defined as "a persisting change in human performance or performance potential as a result of the learner"s interaction with the environment (Driscoll, 1994). Shuell (1986) clarified learning as "An enduring change in behaviour, or in the capacity to behave in a given fashion, which results from practice or other forms of experience". Learning theories see the environment as the major force in development. (Hoffman, 1993). Social learning theory is increasingly cited as an essential component of sustainable natural resource management and the promotion of desirable behavioural change (Muro & Jeffrey 2008). According to Bandura, imitation involves the actual reproduction of observed motor activities (Bandura 1977).

To Bandura in the social learning system, new patterns of behaviour can be acquired through direct experience or by observing the behaviour of others. The more rudimentary form of learning, rooted in direct experience, is largely governed by the rewarding and punishing consequences that follow any given action. People are repeatedly confronted with situations with which they must deal in one way or another. Some of the responses that they try prove unsuccessful, while others produce more favourable effects. Through this process of differential reinforcement successful modes of behaviour are eventually selected from exploratory activities, while ineffectual ones are discarded (Bandura, 1971). It is commonly believed that responses are automatically and unconsciously strengthened by their immediate consequences. Simple performances can be altered to some degree through reinforcement without awareness of the relationship between one"s actions and their outcomes. However, human cognitive skills enable him to profit more extensively from experience than if he/she were an unthinking organism. Within the framework of

social learning theory, reinforcement primarily serves informative and incentive functions, although it also has response strengthening capabilities (Bandura, 1997).

Social learning theory is increasingly cited as an essential component of sustainable natural resource management and the promotion of desirable behavioural change (Muro & Jeffrey 2008). SLT has become perhaps the most influential theory of learning and development. It is rooted in many of the basic concepts of traditional learning theory. This theory has often been called a bridge between behaviourist learning theories and cognitive learning theories because it encompasses attention, memory, and motivation (Muro & Jeffrey 2008). However, on this regard, Bandura believes that direct reinforcement could not account for all types of learning. For that reason, in his theory he added a social element, arguing that people can learn new information and behaviours by watching other people. According to the elements of this theory there are three general principles for learning from each other. The principles of social learning are assumed to operate in the same way throughout life. Observational learning may take place at any age. Insofar as exposure to new influential, powerful models who control resources may occur at life stage, new learning through the modelling process is always possible. SLT posits that people learn from one another, via:

1. Observation;
2. Imitation; and
3. Modelling

Based on these general principles, learning can occur without a change in behaviour. In other words, behaviourists say that learning has to be represented by a permanent change in behaviour; while in contrast social learning theorists say that because

people can learn through observation alone, their learning may not necessarily be shown in their performance (Bandura, 1965). Learning may or may not result in a behaviour change (Bandura, 2006b).

Bandura demonstrated that cognition plays a role in learning and over the last 30 years social learning theory has become increasingly cognitive in its interpretation of human learning. The people who are being observed are called models and the process of learning is called modelling. This point supported by (Newman & Newman, 2007). Bandura‟s stated second and third stages of social learning, imitation and behaviour modelling, will occur if a person observes positive, desired outcomes in the first stage. If, for example, an instructor attends and observes a course in-world and is entertained, informed, and approves of the way students act, they are more likely to want to teach a course in-world themselves. They can then use the behaviour they experienced to imitate and model other instructors‟ teaching styles in-world (Bandura, 1986).

Previous studies confirmed that at least partly of much behaviour can be learned through modelling. Some examples that can be cited in this regard is, students can watch parents read, students can watch the demonstrations of mathematics problems, or seen someone acting bravely and a fearful situation (Bandura, 2006a). Based on this point, aggression can also be learned through models. Much research indicates that children become more aggressive when they observed aggressive or violent models. From this view, moral thinking and moral behaviour are influenced by observation and modelling. In consequence, learning includes moral judgments regarding right and wrong which can in part, develop through modelling. There are three concepts in SLT; firstly, people can learn through observation which is known

as observational learning. Secondly, mental states are important factor for learning it is also named as intrinsic reinforcement and finally, it refers to this point that learning does not necessarily lead to a change in behaviour and it follows by modelling process.

In 1961 Bandura conducted his famous experiment known as the Bobo doll experiment, to study patterns of behaviour, at least in part, by social learning theory, and that similar behaviours were learned by individuals shaping their own behaviour after the actions of models. Bandura's results from the Bobo Doll Experiment changed the course of modern psychology, and were widely credited for helping shift the focus in academic psychology from pure behaviourism to cognitive. The study was significant because it departed from behaviourism‟s insistence that all behaviour is directed by reinforcement or rewards. The children received no encouragement or incentives to beat up the doll; they were simply imitating the behaviour they had observed. Bandura termed this phenomenon observational learning and characterized the elements of effective observational learning as attention, retention, reciprocation and motivation. He demonstrated that children learn and imitate behaviours which they have observed in other people. On this process, he identified three basic models of observational learning:

1. A live model, which involves an actual individual demonstrating or acting out a behaviour.
2. A verbal instructional model, which involves descriptions and explanations of a behaviour.
3. A symbolic model, which involves real or fictional characters displaying behaviours in books, films, television programs, or online media.

One of the other formats of learning is described as a form of internal reward, such as pride, satisfaction, and a sense of accomplishment. Based on some researchers such as Muro and Jeffrey (2008) which supported Bandura‟s SLT concepts this kind of learning also emphasis on internal thoughts and cognitions and it can help connect learning theories to cognitive developmental theories. On this regard, Bandura (1986), criticized this process and believed that external, environmental reinforcement is not the only factor to influence learning and behaviour.

Bandura mentions four necessary conditions which are needed in modelling process. By considering these steps, an individual can successfully make the behaviour model of someone else. These conditions are: Attention (the person must first pay attention to the model. The more striking or different something is the more likely it is to gain our attention. Likewise, if something is seen as prestigious, attractive or like ourselves, we will take more notice. (example Colour). Retention (the observer must be able to remember the behaviour that has been observed. One way of increasing this is using the technique of rehearsal). Reproduction (the third condition is the ability to replicate the behaviour that the model has just demonstrated. This means that the observer has to be able to replicate the action, which could be a problem with a learner who is not ready developmentally to replicate the action). Motivation (the final necessary ingredient for modelling to occur is motivation,) learners must want to demonstrate what they have learned. Remember that since these four conditions vary among individuals, different people will reproduce the same behaviour differently. Reinforcement and punishment play an important role in motivation.

2.7 Conceptual Framework: WASH and Social learning theory

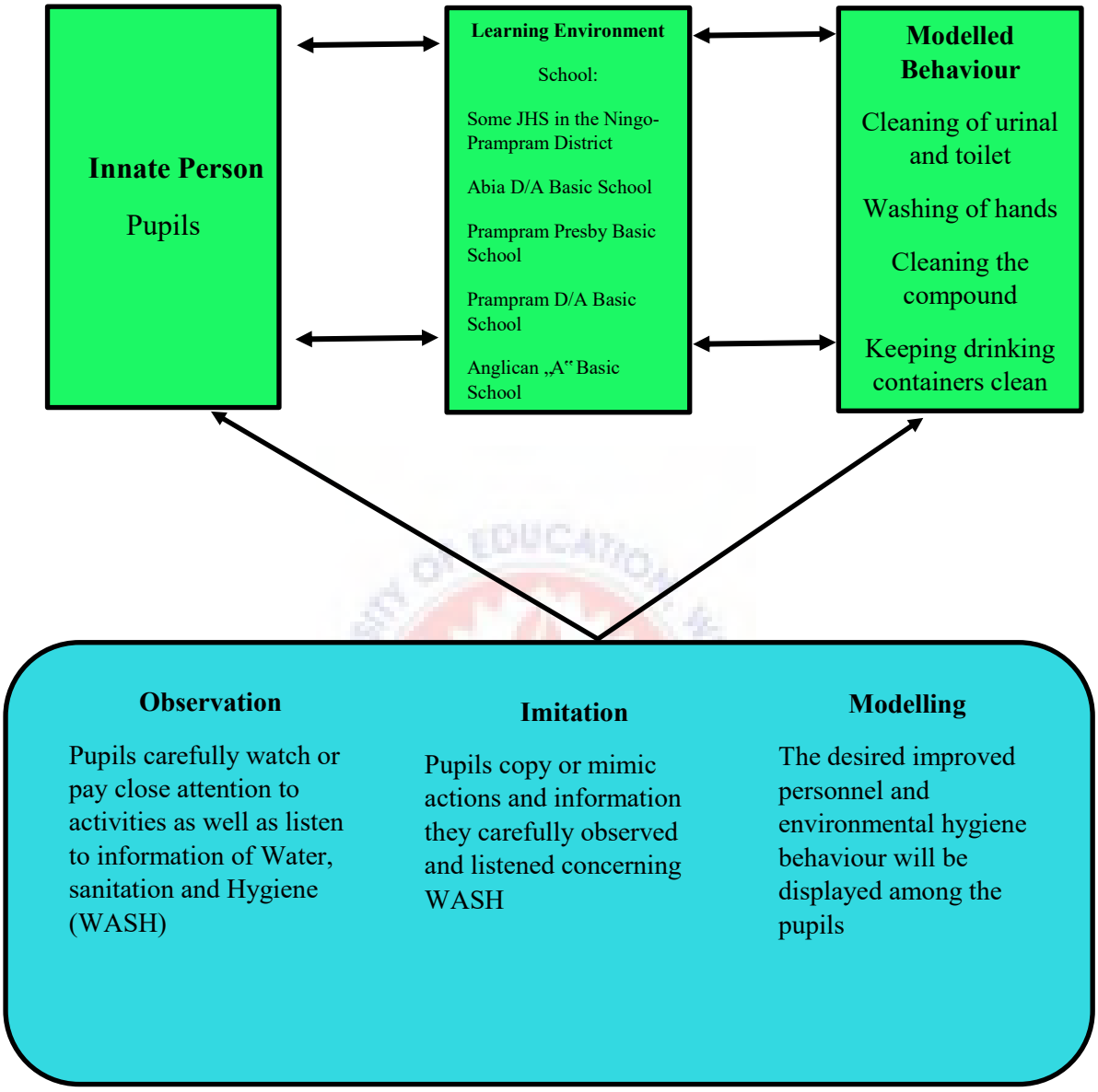

Fig 2.1 Adapted from Albert Bandura's Social Learning Theory Model

The social learning theory is a theory whose model has been used in several studies and writings across the globe. Among them are some examples like Social Learning and Deviant Behaviour in 1979 by Ronald L. Akers et al, Human Aggression in 2002 by Craig A. Anderson and Brad J. Bushman, Social Learning and European Identity Change in 1999 by Jeffery Checkel among others. With regards to Water, Sanitation and Hygiene (WASH), social learning theory has also been used in some of its

researches or projects. Various school-based interventional studies have shown improvement in enhancing personal hygiene among school children. School-based interventions to promote personal and environmental hygiene among children in Pakistan: Protocol for a mixed methods study by Nousheen Akber Pradhan, Waliyah Mughis, Tazeen Saeed Ali1 & Rozina Karmaliani is one of such study. The scope of this research is to determine the effectiveness of school-based intervention programme; encompassing behaviour change communication (BCC) strategies and bringing improvement in the school settings through streamlining improved drinking water facility and adequate garbage disposal (as per need), while addressing holistic aspect of hygiene.

To the best of knowledge of the researchers, there is paucity of studies in Pakistan on school-based interventions to promote personal and environmental hygiene among school children (Ahmad & Danish, 2013). Towards designing school-based interventions, involvement of parents and teachers must be considered as they are important stakeholders for school going age children. In addition, they further have detrimental effects in shaping children‟s overall health and hygiene behaviour. Comprehensive assessment about personal and environmental hygiene factors among primary school children by involving teachers and parents has remained a gap in the local context, which this study attempts to address whilst testing a school-based hygiene intervention model (UNESCO, 2010). The study participants were primary school children in classes one to five grade. The entire intervention phase has been conceptualized by utilizing the Albert Bandura‟s Social Learning Theory.

There have been several researches or studies done in Ghana concerning issues like school hygiene, hand washing among school children, practicing of good hygiene among school children and others, therefore the researcher added the sanitation aspect of WASH into the study since a little can be said about studies pertaining to water, sanitation and hygiene (WASH). The few researches on WASH also hardly make mention of any theory applied in the studies. The researcher believes in the social learning theory as an underlining theory to evaluate the status of WASH in schools and the participants were pupils in the basic school.

Although interventions such as the SHEP exist in schools (Tay, 2005; SHEP, 2008), fewer studies have been conducted to assess, evaluate and document the impact of these interventions and programmes on school children‟s knowledge, attitudes and practices. This present study was therefore designed to evaluate the WASH programme in some junior high schools in the Ningo - Prampram District in the Greater Accra Region. The study further examined and assessed the causes as well as the effects of inefficient WASH programme and also appropriate interventions to improve WASH situation in the research area. With the adaption of the social learning theory model for the study by the researcher, it is believed that when the innate person that is the pupil is placed in the learning environment (school environment) with the necessary and adequate WASH facilities such as toilet and urinal places, hand washing stands, potable water sources, tissue papers among others it is likely to lead to a modelled behaviour which will promote WASH programme in the schools. Here when the pupils are in the learning environment and have the WASH facilities as well as good role models such as teachers, prefects, mates among others, they will be listening to information and observing the behavoiurs of such models on WASH and therefore mimic the actions and information they have carefully observed and

listened. This will lead to the pupils portraying the desired improved personnel and environmental hygiene behavior which will promote effective WASH programme in schools. The social learning theory model used in this research did not have these changes but the researcher did those changes to suit the conditions of the research area. As pupils learning environment have the needed WASH facilities, they turn to learn good and hygienic practices**.**

2.8 Summary of the Chapter

Overall, this chapter has provided a review of literature related to the study. The relevant literature on the concept of Water, Sanitation and Hygiene (WASH), the causes of inefficient WASH programmes situation in schools, effects of inappropriate WASH in schools, appropriate interventions to improve WASH situations in schools and also the theoretical and conceptual framework. In reviewing each section, global as well as national perspectives on each theme was discussed. Here the concept of WASH, the causes of inefficient WASH programmes in school, the effects of inefficient WASH in schools and appropriate interventions to improve WASH situations in schools was looked at globally and then brought down to nation Ghana.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The primary intent of the study was to evaluate the Water, Sanitation and Hygiene (WASH) policy or programme in schools in the Ningo-Prampram District. Specifically, public basic schools in the Ningo-Prampram District were selected. As already established in the previous chapters, sanitation and hygiene are important factors influencing the health of both teachers and students in schools.

As it is characteristic of every research endeavour, it was imperative for the researcher to provide a clear description of the methods used in collecting data for the study. The methods explain the systematic means through which substantive inquiry is achieved and it describes a number of issues, including; the research approach design, population, sample size, sampling procedures, instruments for data collection, validity and reliability, data collection procedures, data analysis and ethical considerations.

3.2 Research Design and Approach

The research design used was the descriptive survey. Descriptive survey research design specifies the nature of a given phenomenon. It describes and reports the way things occur in their natural state, for example, the way Water, Sanitation and Hygiene policy is implemented in public basic schools, especially in the Ningo-Prampram District. According to Gay (1992), cited in Amedahe (2006), a descriptive research design involves collection of data in order to test hypothesis or find answers to research questions concerning the current status of a subject of the study. It may be

either quantitative, qualitative, or both. It may involve hypothesis formulation and testing of questions and seeking answers to them. In this study, answers were sought on issues involving Water, Sanitation and Hygiene in public basic schools in the Ningo-Prampram District with due reference to research questions and not hypothesis.

In addition, a descriptive survey design is appropriate when a researcher attempts to describe some aspects of a population by selecting unbiased samples of individuals who are asked to complete questionnaire or give answers to interview or observation schedules. The aspect of population described in this study was pupils, teachers and head teachers. Ary, Cheser, and Asghar (1990) added another dimension to data collection which hinges on the survey design method and thus, considers it as one which elicits responses from predetermined questions. The intention of the researcher was to generalize the findings to the total population from which the sample was taken. It is in the light of the above features of the descriptive design that, the researcher has adopted it for the study.

The descriptive survey design has an advantage that allows for a wide range of data collection strategies spanning from face-to-face, mail, telephone, and interview to web, and a combination of methods providing a quicker rate of responses and these strategies provide cost effective means of collecting data and handling them (Cohen, Manion & Morrison, 2000; Druckman, 2005). Survey design has also an additional advantage that describes, explains, and explores the research purpose (Pickard, 2006) and makes conclusion from the research data at close range (Gay, 1987; Pollit & Hungler, 1993). For example, the research purpose described in this study was to evaluate the WASH policy in public basic schools in the Ningo-Prampram District.

However, a disadvantage of the descriptive survey design is that, since it produces a number of responses from numerous people at a time, if enough care is not taken, the responses may contradict one another which may affect the reliability of the final findings gathered. In order to contain this situation, the researcher ran a reliability test to ascertain the reliability of the questionnaire. A higher reliability coefficient was obtained which gave the assurance that findings gathered were valid and not contradicted.

The mixed method approach was employed in collecting and analysing the data. That is, both quantitative and qualitative approaches were used so that each approach will complement the other as suggested by Nau (1995). Questionnaires were used to solicit quantitative data from respondents while interviews and field observation were employed to gather qualitative data for the study.

3.3 Population

Population to Kankam and Weiler (2010) refers the people, events or places the research focuses on. The population for the study consisted of all teachers and pupils of Junior High Schools in the Ningo-Prampram District. The Ningo-Prampram District comprised six circuits, namely; Prampram, Ningo, Dawhenya, Nyigbenya, Ayetepa, and Afienya circuits. The six circuits under the Educational Directorate of the Ningo-Prampram District have a number of fifty-four Junior High Schools. The study was made up of two hundred and fifty pupils as well as one hundred and fifty-four teachers from three selected circuits. In all a total number of four hundred and four respondents were involved.

The teachers and headteachers were selected to be part of the study because they were directly involved in monitoring and implementing the WASH programme in basic

schools in Ningo-Prampram District. Also, the pupils were selected as they were the direct beneficiaries of the WASH programme.

3.4 Sample Size

Sample is the segment of the population selected for investigation (Bryman & Teevan, 2005), or a subset of the population (Bryman & Teevan, 2005; Schutt, 2009). Out of the fifty- four (54) Junior High Schools in all the six circuits of the Ningo-Prampram District, 18 schools were selected from three circuits which represent one-third of the total number of JHS in the district. The study was made up of two hundred and fifty pupils as well as one hundred and fifty-four teachers from three circuits. In all a total number of four hundred and four respondents were involved.

This number forms about 20% of the total study population in the district. This number was considered adequate for this study because according to Creswell (2003), a sample size between 15 to 20% of a population is considered appropriate for research.

3.5 Sampling Procedures

According to Creswell (2005) sampling refers to the statistical process of selecting and studying the characteristics of a relatively small number of items from a relatively large population of such items to draw statistically valid inferences about the characteristics about the entire population. Both probability and non-probability sampling techniques were used in the selection of respondents for the study. Probability sampling method gives each element an equal chance of inclusion in the sample with the intent to select a reasonable number of cases that represent the target population (Dawson, 2002). With non-probability sampling, the possibility of an element being included in the sample is unknown (Schutt, 2009). This method was

used because a combination of sampling techniques such as stratified random sampling, simple random sampling, and purposive sampling techniques were employed.

Firstly, all the six circuits were included in a list and the simple random sampling technique was used to randomly select three circuits. With this, the schools in each circuit were selected employing the stratified random technique, here the schools were put in different strata that are schools in mission units and schools which are not in mission units and out of these, schools in each stratum were randomly sampled and out of that six schools were selected making the total of 18 participating schools out of the fifty-four in the district.

After the total number of schools was arrived at, a sample size of 14 pupils were randomly selected each from the 18 schools in the study area. Hence, the arrival 252 pupils were based on selecting 14 pupils each from 18 schools (14 multiplied by 18). Subsequently, the selection of teachers was based on this same method. Based on this, nine teachers were selected from each school which yielded 162 teachers. Hence, the arrival 162 teachers were based on selecting 9 teachers each from 18 schools (9 multiplied by 18).

To get the sample size for the pupils and teachers, simple random sampling technique using a table of random numbers generated by Microsoft Excel was used. Through this method, the list of all pupils and teachers in the schools were obtained from the head teachers of the selected schools. This technique was used because it provided a sample which was representative of the population, prevented the researcher from bringing in some biases in the selection process, and ensured that each member of the population had equal chance of being selected for in the sample (Oyetunji, 2006).

The selection of the headteacher, pupils, and teacher participants for interviews was done by using purposive sampling technique which consisted of individuals with special qualifications or who were deemed representative on the basis of prior evidence and knowledge they had on implementation of WASH policy in basic schools in Ningo-Prampram District.

3.6 Research Instruments

The data collection instruments for this study were questionnaire, interview schedule, and observation schedule. The questionnaire and interview schedule was used to collect data from the headteachers, teachers as well as pupils, but only a handful took part in the interview. The observation schedule was also used, but in a non-participant way to observe certain sites and conditions in the school.

3.6.1 Questionnaire

The justification for the use of questionnaire is given as follows: questionnaire is relatively quick and easy to create (Walonick, 2000); with questionnaire, interpretation and analysis of data is easy as data entry and tabulation for nearly all surveys can be easily done with many computer software packages (Sociology Central, 2003). Again, questionnaire is familiar to many people, nearly everyone has had some experience completing one and they do not make people apprehensive (Walonick, 2000). Above all, questionnaire is easy to standardize thus, reducing the amount of bias in the results as there is uniform question presentation. The researcher's opinions will not influence the respondents to answer questions in a certain manner as there are no verbal or visual clues to influence the respondents (Walonick, 2000). Since the subjects considered for the study were literate, this helped in administering the questionnaire to them. For this reason, giving them

questionnaire to complete made it easier as they could read, understand, and answer the questionnaire with little guidance.

The questionnaire used was of the structured type. The structured type of questionnaire was used because it enabled the researcher to collect standardized information in respect of the same variables for everyone in the sample selected (Parfitt, 1997; Zahari, 2007). This makes the questionnaire an indispensable tool in gathering primary data about people, their behaviours, attitudes, opinions, and awareness of specific issues. As regards the questionnaire, closed-ended items were used. All the teachers who the questionnaire was administered to were made to respond to predetermined answers. All the sections (A, B, C, D and E) of the questionnaire were of closed-ended items. Three points likert-scale type was developed in this case for section B to E. The closed-ended items were used in the questionnaire because it was easy to process data (Bryman, 2008). It was also because respondents could only tick a predetermined answer which is easy to code and analyse.

The questionnaire as an instrument, however, has some limitations. It does not give the researcher the opportunity to delve deeper into the respondents‟ opinions and feelings (Nachmias & Nachmias, 1996). The given answer is final and there is no clarification. This was however, overcome in this study by the inclusion of a few open-ended questions. Another limitation of the questionnaire is the possibility of inclusion of ambiguous items. That is, if a questionnaire is not properly constructed, it may have unclear items and respondents might not understand them. This was overcome by asking experts in the field of sanitation and hygiene to review the items and by carrying out a pilot study. Additionally, the weakness of the questionnaire in

terms of providing in-depth responses was overcome by the use of the interview and observation schedules.

Section A comprised issues that dwelt on demographic information of respondents. These comprised variables such as gender, age, years of teaching experience, academic qualifications, and ranks in the Ghana Education Service. The second section, B to E was constructed based on the research objectives that guided the study. Key issues captured were the WASH situation in Junior High Schools in the Ningo-Prampram District, causes of inefficient WASH programme in Junior High Schools in the Ningo- Prampram District, effects of the inefficient of the WASH programme in Junior High Schools in the Ningo- Prampram District and solutions to the WASH situation in Junior High Schools in the Ningo-Prampram District.

3.6.2 Interview schedule

On the use of the interview schedule, Kvale (1996) noted that, it is an essential component for conducting research. Kvale explained that an interview schedule is the list of questions, topics, and issues that the researcher wants to cover during an interview. Kvale further regarded it as an interchange of views between two or more people on a topic of mutual interest, the centrality of human interaction for knowledge production, and the social situations of research data (p. 14). Interviewing is a tool to collect data as well as to gain oral information (knowledge) from individuals. It is also a tool for participants (head teachers, teachers and pupils in this research) to get involved and talk about their views. In addition, the interviewees are able to discuss their perceptions and interpretations in regards to a given situation. In this research, the heads, teachers and pupils were to give their perceptions on the WASH policy. It was their expressions from their point of view.

David and Sutton (2004, p.38), on likened the interview schedule to a structured type, gave the strengths of interview schedule as that the researcher has control over the topics and the format of the interview. Besides, there is a common format which makes it easier to analyse, code, and compare data (p.160). In addition, a detailed interview schedule can permit inexperienced researchers to do a structured interview. Above all, promptings can be included in the course of questioning and if responses are inappropriate, further explanations can be sought from the interviewees (David & Sutton, 2004).

As Gall, Gall, and Borg (2007, p. 228) also stated, the advantage of interview schedule is its adaptability; skilled interviewers can make an effort to build trust and rapport with participants thus, making it possible to obtain information that the participants probably would not reveal by any other data collection method and can follow up participants‟ answers to obtain more information and clarify vague situations. Questions that were asked were well worded to deal with meaningful information that was required for this study. The researcher achieved and maintained rapport with the interviewees to ensure that the interview was taken seriously. The researcher paid visits twice to the schools and interacted with the teachers. In this situation, the actual interview process provided the opportunity for reciprocity, that is, a mutual exchange of knowledge that helped to build a sense of trust.

While interviews are a good source of qualitative data, there are several difficulties associated with their use. In the face-to-face interview situation, there is usually pressure on the respondents to give socially acceptable responses, particularly those which the respondents think will please the interviewer, than in the case with an anonymous response to a questionnaire. To reduce or eliminate this potential problem,

the researcher asked questions which were framed in a way that did not allow the respondents to identify or infer a possible stance being taken by the interviewer. The researcher also resisted any temptation to express a view during the interview discussion. Also, at a point in time the researcher avoided non-verbal communications that identified pleasure or displeasure in relation to the respondents" answers.

Cohen *et al*., (2000, p. 267) stated that, interview is not simply concerned with collecting data about life; it is part of life itself, and its human embeddedness is inescapable. This way, the researcher was able to get the information needed for the study. The process consisted of a one-to-one interview with heads and some teachers. The data from the interview was generated as a result of the interviewer taking a phenomenological approach to the research. In qualitative interview, the researcher asks open-ended questions without response options. The researcher rather listens to and records the comments of the interviewees (Creswell, 2005). The questions, prompts, and probes used during the interviews and deliberations covered the areas of:

a) Describe the WASH situation in Junior High Schools in the Ningo- Prampram District.
b) Assess the causes of the inefficient WASH programme in Junior High Schools in the Ningo- Prampram District.
c) Examine the effects of the inefficient of the WASH programme in Junior High Schools in the Ningo- Prampram District.
d) Recommend appropriate interventions to improve WASH situation in Junior High Schools in the Ningo-Prampram District.

Semi-structured interview schedule was used. The justification for the use of semi-structured interview schedule according to Wragg (2002), allows the interviewer to ask initial questions, followed by probes meant to seek clarification of issues raised. Probes are either pre-stated or posed in the course of the interview, making the interview process flexible and interactive. In view of this, the semi-structured interview with open-ended questions was used as the major instrument for interview data collection.

Semi-structured interviews which normally take place in school were used because they are flexible, interactive, and allow for deeper understanding of issues, and a greater exploration of these issues. They are dynamic and responsive to the language and concepts of individuals. The interview was carried out because there was the need to seek clarification from the heads, teachers and pupils on responses provided by the respondents in the questionnaire.

3.6.3 Observation checklist

An observation was done before classes began and during classes time. The observation was done in a non-participatory way. Here, the researcher did not observe teachers and pupils in a way where they would notice what was happening. An observation checklist was designed to collect data that helped to answer the research questions. The observation checklist focused on the following areas:

1. Inspection of toilets and urinals;
2. Inspection of classroom before instructional session begins and end for a school day;
3. Inspection of eating place;
4. Inspection of source of water for various uses in the school;

5. Inspection of refuse dumps.

As it was described by Gall *et al*., (2007), the advantage of observation schedule in qualitative research is that, it helps to obtain the real data directly from the social and physical environment of the informants being studied. If used properly, it provides reliable data; however, it is time-consuming. Selected observations in a researcher‟s report provide a more complete description of the phenomena than would be possible by just referring to interview statements or questionnaire. Equally important, observation provides an additional source of data for verifying the information obtained by other methods (Gall *et al*., 2007). This is consistent with the views of Grossvenor and Roso (2001) that if observation is combined with other data collection methods such as interview and questionnaire, scrutiny can be useful part of the researcher‟s battery of techniques. According to Gall *et al.,* (2007), observation also has an advantage of the researcher not worrying about the limitation of self-reporting bias, social desirability, and the information is not limited to what can be recorded as it occurs naturally.

However, one disadvantage of the observation schedule is that, there is a high risk of imposing a potentially inappropriate or irrelevant framework on the setting being observed (Bryman, 2008). Bryman explained that the risk is even higher when the researcher knows little about the setting where the study is being conducted. To overcome this problem, the researcher preceded the actual observation with an unstructured observation in order to identify inappropriate variables. Similarly, the researcher was not new to the communities as she has worked in the district for over 11 years. In another vein, the observation checklist was well discussed with the thesis supervisor.

3.7 Validity and Reliability

Fraenkel and Wallen (2000), and Tindan (2012), see validity as the appropriateness, meaningfulness, and usefulness of the specific inferences made based on the data obtained, and that validity is the process of gathering evidence to support such conclusions (p. 94). Validity therefore means ascertaining the accuracy of the instruments by establishing whether the instruments focus on the information intended to collect. Three aspects of validity were considered in this study. These were face, content, and internal validity. Face validity refers to the extent to which an instrument appears to measure what it is supposed to measure. The face validity of the questionnaire was achieved by showing the questionnaire to fellow colleagues to express their views on items in the questionnaire. Their suggestions were noted and those that were relevant were included in the questionnaire.

Content validity refers to the appropriateness of the content and format of an instrument. As regards the content validity of the instruments, both the questionnaire and the interview schedule were shown to the researcher‟s supervisors for vetting. Some of the items were deleted as well as added. All corrections were inputted in the final instruments prepared. Internal validity refers to establishing results that are credible from participants‟ perspective (Bryman, 2004 & Trochim, 2006). This was ensured in the study through triangulation. With this, the researcher used three methods as sources of data collection to collect data from two categories of respondents (head teachers and teachers). This enabled the writer offset the limitations associated with using one method to collect data from a single group of respondents (Creswell, 2003; Punch, 2005), and to determine the veracity of information gathered.

Punch (2003) postulated that reliability of a research instrument is based on whether respondents can steadily and sincerely answer the questions using scales and options given and the attitude of the respondents while answering the questions. Implicitly, the reliability of an instrument may not be absolute even when responses from participants can be predicted any time the instrument is administered. Reliability of the questionnaire was achieved by pre-testing and analyzing it. Reliability of the questionnaire was estimated by using the Cronbach Coefficient Alpha estimate. The reliability coefficient was 0.73 which in accordance with Bryman (2008), the instrument is reliable and can be used for data collection.

Concerning the interview schedule, reliability in this study was thus ensured by asking clear questions, reducing bias and subjectivity during data collection, and triangulating the data. The instrument was also given to the fellow researchers (course-mates) and the supervisor to examine the items in order to ensure that the responses were relevant for the study.

3.7.1 Pre-testing of research instruments

In order to ensure reliability of responses from the instruments, they were pre-tested in some selected Junior High Schools in one circuit of the District. The circuit chosen for the pre-test exercise was Nyigbenya Circuit. Forty participants were used for the pre-test process. These participants were made up of twenty-five pupils, ten teachers as well as five heads.

The instruments were pre-tested based on what Tuckman (1992, p.199) intimated that, it is usually highly desirable to run a pre-test on instruments to be used for the study and to revise them based on the results of the test. Again, Tuckman stated that a pre-test, which uses a group of participants who are part of the intended test population,

but will not be part of the sample attempts to determine whether the items of the instruments, especially the questionnaire items possess the desired qualities of measurement (Tuckman, 1992). It was in the light of what Tuckman postulated that, this pre-testing was carried out within part of the study area with representative samples who had similar characteristics as those in the main study. A period of two weeks was used for the administration and collection of the pre-test instruments. The pre-study helped to ascertain the reliability of the research instruments, specifically the questionnaire through the use of SPSS.

3.8 Data Collection Procedures

3.8.1 Administering of questionnaire

The questionnaire was administered by the researcher in person. The administration of the questionnaire was facilitated by the issuance of a covering letter by the Department of Social Studies which was used to introduce the researcher first to the District Education Directorate and then the selected schools. This helped to establish an identity and sought co-operation of all participants and respondents.

At the schools, teachers were initially briefed on the intent and objectives of the study. This further led to obtaining support and co-operation needed to conduct the study. The duration of distribution and collection of the answered questionnaire took four weeks due to how the schools were situated in the district. To be able to ensure smooth data collection, two people were employed to assist in the data collection for the main study. The questionnaires were administered within a period of 21 working days.

3.8.2 Interviews

All the interviews were conducted by the researcher in person and this ensured that all the appropriate follow-up questions were asked and clarifications sought. Participants indicated that they would be free during break time, after school, and on weekends. The interview process commenced by assuring participants of confidentiality of any information they would provide. Similarly, they were advised not to identify themselves at any point of the data collection process. The interview process spanned between 25-30 minutes for each participant. The interviews were conducted for a handful of headteachers, teachers and pupils.

The interviews were scheduled on six days and it was agreed on by the participants for the interviews such that it would not conflict with their itinerary for the day. The interviews were recorded with a tape recorder. Participants were made fully aware that their responses would be audio-taped. In conducting the interviews, English language was intertwined with the local language. This was done to make the interview process very lively and also help the participants express their views freely.

3.8.3 Observation schedule

Personal observations were also carried out in this study. Creswell (2008) observed that, qualitative observations are those that the researcher takes field notes relating to the behaviours and activities of individuals at the research site. The observations were done on different occasions in the same school. With permission from the head teachers, the school environment and other conditions were observed. Teachers were not made aware that they were being observed so they could fake their actions. Observation checklist was used as a guide to note observations from the field.

3.9 Data Analysis Procedures

Analysis of data provided the researcher with facts and figures that enabled her interpret results and make statements about the findings of the study. All items of the questionnaire were coded. Items in the form of Likert-scale type were rated between 1-3, with 1 being the highest and 3 being the lowest. Questionnaire was edited to ensure that clear, legible, relevant, and appropriate responses were provided.

The coded items and their corresponding frequencies were fed into the computer using the SPSS software programme (SPSS V. 20). Data was analysed using simple percentages, and frequencies. For all the four research questions, the percentage scores were used to ascertain the average responses. This allowed the researcher to make generalizations about the findings.

As regards the interview schedule, the data collection procedure was qualitative. This data was analysed thematically as advised by researchers such as (Creswell, 2005 & Grbich, 2007). In using this strategy, the researcher organized the data gathered and got immersed in the data while transcribing it. After this was done, themes generated were coded and described. The first stage was preparatory by which the interview data for presentation began with the organization and transcription of the audio-tape recordings. The transcription involved listening to each tape repeatedly by the researcher to familiarize herself with the conversations and carefully writing them down in the words of each interviewee. The interview data was then categorised into themes of responses for effective management and comparisons.

The next stage involved intensive and repeated reading of the data by the researcher with the aim of immersing herself in it and to determine analytical categories or themes (Schmidt, 2004 & Creswell, 2005) using her professional judgment

(Denscombe, 2003). The development of the themes was guided by the research questions and the literature review. The coding process began after determining the themes. The participants were coded to avoid identification problems. For the coding process, HT- was used for head teachers while T- was used for teachers and P- for pupils. Contributions, responses, and comments made were not attached to names but to the codes. Brief quotations from the data were used to add realism to the description (Creswell, 2005). Since the data was collected from different categories of participants, it was analysed from their perspectives with the research questions in mind (Creswell, 2005).

Data from the observation records was also coded and themes which were similar to that of the observation made alongside the interview analysis. There was a verbatim expression of some responses. Qualitative analysis in this case generated a rich and accurate description (Creswell, 2005).

3.10 Ethical Considerations

The researcher executed the ethical procedures practised by researchers in conducting research including the following:

Avoided plagiarism: Works of people which were used to buttress analysis and in the researcher‟s literature were duly acknowledged both in-text and in-reference.

Informed consent: In order not to violate the principles of informed consent in the social research, letters of introduction were sent to the school authorities to seek permission before the conduct. In these letters the purpose of the study was clearly stated to both the respondents and the school authorities.

Assured confidentiality: The respondents were assured that their identities would be concealed. In achieving this purpose, respondents were told not to indicate their

names or names of schools on the questionnaire. Individual respondents were assured of voluntary withdrawal from the study if so wishes.

3.11 Summary of the Chapter

Chapter three dealt with the methodology used for the study. The methods explain the systematic means through which substantive inquiry is achieved and it describes a number of issues, including; the research approach design, population, sample size, sampling procedures, instruments for data collection, validity and reliability, data collection procedures, data analysis and ethical considerations.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the analysis of data and discussion of findings emanating from data collected from the study field. Specifically, public basic schools in the Ningo-Prampram District were selected. For the purpose of this study, data was obtained from teachers, head teachers and pupils of public basic schools in Ningo-Prampram District. In line with the research questions stated in the introductory chapter, this chapter elicited data that seeks to answer the following questions:

a) What is the WASH situation in Junior High Schools in Ningo -Prampram District?
b) What are the causes of the inefficient WASH programme in Junior High Schools in Ningo- Prampram District?
c) What are the effects of the inefficient WASH programme in Junior High Schools in Ningo - Prampram District?
d) What are the appropriate interventions to improve WASH situation in Junior High Schools in Ningo - Prampram District?

The results were gathered using questionnaire, interview, and observation. Four hundred and ten (410) questionnaire were administered; out of this number, 404 were retrieved which yielded retrieval rate of 99% and this comprised of 154 retrieved questionnaire for teachers and 250 for pupils. Six (6) head teachers, 6 teachers and 6 pupils were interviewed for the study. The questionnaire contained 42 items.

The chapter first presents the details of the demographic information and further analyses the data from the research questions. Even though, the main study was based on the use of water, sanitation and hygiene, some background demographic information on respondents were also sought since those tended to relate to the study. Such information included; the gender, age ranges, work experience, academic qualification, and ranks.

4.2 Demographic Information

The demographic information commenced with the gender background information of the respondents. The result is shown in Table 4.1.

Table 4.1: Gender of teachers

Gender	Frequency	Percentage (%)
Male	68	44.2
Female	86	55.8
Total	**154**	**100**

Source: (Field Data, May 2019)

Table 4.1 shows that out of the 154 teachers, 68 (44.2%) of them were males and the remaining 86 (55.8 %) were females. The results indicated that there were more female teachers than male teachers teaching in the selected schools in the Ningo-Prampram District. This implies that the schools‟ compound will be kept clean since we have more female teachers and women are noted for their sense of cleanliness. Similar results were confirmed by Mensah (2018) on factors affecting retention and recruitment of teachers in the Ningo-Prampram District. The result conforms to data at the Ningo-Prampram District Educational Directorate which shows there are more female teachers than male teachers in the Ningo-Prampram District. In Owusu-Ansah‟s (2005) estimation, more female teachers are likely to influence sanitation and

hygiene programmes at the basic school level in Ghana. Owusu-Ansah explained that when there are more female teachers, there is the possibility of teaching and instilling the attitude of cleanliness through sanitation and hygiene.

4.2.1 Age of teachers/respondents

The age of teachers was a variable worthy of investigation basically to have a picture of the age category of teachers providing teaching services to pupils in the area. Their ages could somehow show how experienced they are and the skills gathered in teaching and instilling sanitation and hygiene practices among students.

Table 4.2: Age of teachers/respondents

Age	Frequency	Percentage (%)
20-30	93	60.4
31-40	21	13.6
41-50	28	18.2
51-60	12	7.8
Total	**154**	**100**

Source: (Field Data, May 2019)

It can be deduced from the results of table 4.2 that majority of the respondents involved in the provision of teaching services to pupils in the Ningo-Prampram District are in their youthful stages hence, have much energy to effectively impact knowledge, all things being equal. Also it implies that more modern and technological ways will be used to impact knowledge to the pupils. However older teachers would be more experienced and possess much dexterity in the teaching and influencing student‟s attitudes on sanitation and hygiene as compared to younger teachers. In Acuqah‟s (2001) view, older teachers are experienced and would probably make positive influence on students‟ sanitation and hygiene practices.

4.2.2 Number of years in teaching service

Since all the respondents used in this study were involved in providing educational services, it was important the number of years they had served or practised was also known since this could inform how teachers have been introduced to programmes in the water, sanitation and hygiene programmes as well as how experienced they are with influencing students on sanitation and hygiene practices. The results relating to the years of teaching experience of teachers are shown in Table 4.3.

Table 4.3: Number of years in the teaching service

Years	Frequency	Percentage (%)
1-5	40	26
6-10	32	20.8
11-15	68	44.1
16 and above	14	9.1
Total	**154**	**100**

Source: (Field Data, May 2019)

The results from Table 4. 3 indicates that about a quarter of the respondents had spent more than five years in the teaching service and was thus, assumed they were in good position to provide appropriate responses that reflect situation of the WASH programme in public basic schools in the Ningo-Prampram District. Vanco (2003) asserted that teachers‟ years of teaching experience is a major variable that affects teaching quality of a teacher. Vanco (2003) explained that the years of experience may reflect in how the teacher influences certain behaviours and attitudes of students; in this regard, the sanitation and hygiene of students in public basic schools.

4.2.3 Academic Qualification

As teachers attain higher levels in their profession they might as well be introduced to certain programmes of which water, sanitation and hygiene is likely to be a part off. The result regarding academic qualification of teachers is presented in Table 4.4.

Table 4.4: Academic qualifications of teachers

Qualification	Frequency	Percentage (%)
Certificate „A“	7	4.5
Diploma	38	24.7
B.A., Bsc., B.Ed	97	63
M.Ed, MA, Msc	12	7.8
Total	**154**	**100**

Source: (Field Data, May 2019)

The results from Table 4.4 clearly show that majority of the respondents had qualifications ranging from Diploma to Master‟s Degree which meet the present requirement of a teacher at the basic school level. It can also be deduced from the results that majority had degrees in line with their career as teachers in the district. This implied that the teachers in the district were all qualified to train and impact knowledge into the pupils. Professional development through further studies has become very flexible in the Ghanaian educational setting where through various means teachers‟ top-up their qualifications. Asiedu (2012) established that, it is expedient for teachers to take up opportunities through distance, sandwich, and online courses to seek professional upgrading which is expected of every teacher or person in the education service. Through such programmes, especially where they are education-related (teaching), teachers are exposed to programmes on how they can promote health and physical activeness of students through proper sanitation and

hygiene. As teachers get this knowledge they may incorporate it in their delivery of lessons.

4.2.4 Ranks of teachers in the Ghana Education Service

Teachers are promoted to various ranks based on academic qualifications and years of service. In most cases, the Ghana Education Service (GES) promotes its members to higher ranks based on their years of service. Table 4.5 presents results on teachers‟ positions or ranks in the Ghana Education Service.

Table 4.5: Ranks of teachers in the education service

Ranks in the teaching service	Frequency	Percentage (%)
Senior superintendent	65	42.2
Principal superintendent	71	46.1
Assistant director II	11	7.1
Assistant director I	7	4.5
Director	–	–
Total	**154**	**100**

Source: (Field Data, May 2019)

From Table 4.5, the results show that 65 (42.2%) of the respondents had attained the rank of Senior Superintendent. However, none of the teachers had yet attained the rank of Director. In the GES, for a teacher to rise or attain the rank of a Principal Superintendent, he or she must hold a first degree while other ranks are attained through long years of service. Moving through the ranks to be a higher ranked staff member in Ghana Education Service, the number of years one has served as well as the academic qualifications of the member. Since teachers are promoted based on the number of years served in Ghana Education Service, before they are promoted they must have acquired much experience in teaching.

The experience teachers acquire through their years of service and promotion to higher ranks, in the view of Acquah (2001) help them make efficient use of their knowledge. Similarly, according to Owusu-Ansah (2005), variables such as age, gender, years of experience, academic qualifications, and ranks have impact on the influence teachers share on their students with regards to sanitation and hygiene. It implies that such teachers will know how to arrange and plan their lessons for their students in observing proper sanitation and hygiene practices in their school as well as extend this to their various homes.

Table 4.6: Demographic information of pupils

	Frequency	Percentage
Gender of pupils		
Male	118	47.2
Female	132	52.8
Total	250	100
Age of pupils		
10 - 12	41	16.4
13- 14	133	53.2
15 – 16	45	18
Above 16	31	12.4
Total	250	100

Source :(Field Data, May 2019)

The result from Table 4.6 indicates that more than half of the total number of pupils 132 (52.8%) were females while the remaining 118 (47.2%) were males. This result suggests that there are more females than males in most public basic schools in Ningo - Prampram District in the Greater Accra Region. Similarly, Ohene-Adu (2015) found that there were more females in schools in Ga West Municipality of the Greater Accra Region. Acquah (2011) noted females were mostly concerned with their sanitation and hygiene conditions as compared to males.

The results from Table 4.6 it can be deduced from the results that majority of the pupils were between the ages of 13 to 14 years. Acuqah (2011) noted that students at this age of their life are very likely to imbibe in them the knowledge and behavioural changes of maintaining proper sanitation and hygiene conditions in their environment.

4.3 Discussion of Research Questions

This section of the study provides results gathered on each of the research questions that were stated for the study. It provides the results gathered and discusses it in relation to the other empirical studies as well as the conceptual framework that guided the study. The following were used in reporting the interviews: TRS- Teacher Participants, RHT- Headteacher Participants and PRT- Pupil Participants.

4.3.1 WASH situation in Junior High Schools in Ningo-Prampram District

Based on the first research question, the study explored the WASH situation in Junior High Schools in Ningo-Prampram District. In line with this a description of the nature of WASH situation in the schools was collected. The results were presented in two folds where questionnaire data was intertwined with interview data. The results from the questionnaire are presented in Table 4.7 below.

Table 4.7: Nature of WASH Situation in Junior High Schools in the Ningo-Prampram District

	Partici.	Yes F (%)	No F (%)
The school has a source of running water	T	61(39.6)	93(60.4)
	P	15(6)	235(94)
There is a reservoir to store water to be used in times of shortages	T	58(37.7)	96(62.3)
	P	41(16.4)	209(83.6)
The school has functioning toilet/urinal facility	T	111(72.1)	43(27.9)
	P	200(80)	50(20)
The toilet facility is adequate for entire staff and student population	T	32(20.8)	122(79.2)
	P	6(2.4)	244(97.6)
There is running water to wash hand after using the toilets	T	23(14.9)	131(85.1)
	P	15(6)	235(94)
There is soap to wash hand with water using the toilets	T	14(9.1)	140(90.9)
	P	243(97.2)	7(2.8)
Toilets/urinals are cleaned everyday	T	152(98.7)	2(1.3)
	P	247(98.8)	3(1.2)
Food is sold and served in a relatively clean environment to pupils	T	128(83.1)	26(16.9)
	P	170(68)	80(32)
Food vendors are examined by environmental inspectors or school authorities to ensure that they observe sanitation and hygiene standards	T	59(38.3)	95(61.7)
	P	192(76.8)	58(23.2)
There is water available at all times for students to wash their hands anytime they feel to.	T	52(33.8)	102(66.2)
	P	15(6)	235(94)
Pupils clean their classroom and compound everyday	T	150(97.4)	4(2.6)
	P	247(98.8)	3(1.2)
The school have rubbish bins around the school compound	T	87(56.5)	67(43.5)
	P	170(68)	80(32)
The school has rubbish dumping site for rubbish disposal	T	148(96.1)	6(3.9)
	P	222(88.8)	28(11.2)
The school properly manage the rubbish dumping site such that it doesn‟t gives bad odour and flies	T	35(22.7)	119(77.3)
	P	50(20)	200(80)

Source: (Field Data, May 2019) Key= T-Teacher P-Pupils

Based on the results in Table 4.7, it is seen that most of the respondents agreed that there was toilet and urinals in their schools while others too shared opposite view that their schools had no toilet and urinals. It was agreed by 111 (72.1%) of the teachers

and 200 (80%) of the pupils that their school has a functioning toilet/urinal facility. However, it was disagreed by 43 (27.9%) of the teachers and 50 (20%) of the pupils that their school has a functioning toilet/urinal facility. Similarly, in the interview data that was gathered it was admitted that the schools have toilet facilities, however, the condition of these toilet facilities were not very good to support the WASH agenda. In a statement from a teacher, it was mentioned that:

> *The toilet is only labelled toilet but when you get closer to it, it doesn't look like one. Even though students are assigned to clean the place every morning before normal school session begins; but the place stinks badly and can likely affect the health of students as they get consistently exposed to such bad odour. The toilet is old and has to be replaced* [Teacher from Prampram D/A 2019].

In another contribution from a teacher similar concern was raised. It was described by TRS-4 that:

> *Although I came to this school to meet this toilet facility, but the infrastructure looked old even at the time I came here. The toilet facility here is a ventilated pit which needs to be taken care of properly not only by the school authorities but by the district assembly, environmental protection agency and waste management services. However, the situation is very different from what seems to be happening in this school* [Teacher from Mount Zion Basic School, 2019*]*.

A Pupil [PRT-2] commented that:

> *Some female students of this school have had varied problems with their health because they have been using the toilet and urinals here. The sad situation is that, the very presence of these facilities have rather contributed negatively to the health of students. While some students had contracted syphilis from the toilets, others had syphilis through the use of the urinals* [Pupil from Presby B. Basic School, 2019].

The finding confirms that Prampram D/A Basic School and Presby B. Basic School in the Ningo-Prampram District have toilet facilities but they were not in good condition for use by students. However, they were still in use by both pupils and teachers which could pose physical dangers and health risks to its users. The finding is indicative that

the provision of toilet facilities in public basic schools in Ningo-Prampram District is not enough; however, the consistent maintenance of these toilet facilities in good shape would promote the WASH situation as well as the state of health of both pupils and teachers in the schools. The data conforms to Andam (2014) who assessed state of sanitation conditions in selected based schools in Ga West Municipality of the Greater Accra Region. It was similarly identified that majority of the schools were encountering confronting situations with sanitation and hygiene conditions which were health threatening. It was seen that toilets and urinals were either not present or were in very bad state for use by pupils.

On rubbish management in schools, the results from Table 4.7 showed that there were rubbish collection bins around while a significantly higher number of the teachers and pupils disagreed on this count. It was also agreed that their schools have rubbish dumping site for rubbish disposal. However, it was disagreed by some teachers and pupils that the school properly manage the rubbish dumping site such that it doesn‟t gives bad odour and flies. Only a few agreed that school properly manage the rubbish dumping site. Based on waste disposal, it was commented by T-6 that:

> *Our school for example had moved its refuse dumping sites for more than five times since I was posted here. There hasn't been a permanent dumping site and this had been the reason why the site not properly managed. On the school's plan, it has been difficult to permanently apportion a location for this purpose* [Teacher from Afienya R/ C Basic School 2019].

In another comment from PRT-4, it was noted that:

> *There is a waste disposal site but it is not properly managed. At certain times rubbish is spread on the school campus by wind which gives a different work to students. Also, at certain times the place stinks and brings out very offensive smell to both teachers and students at the school [Pupil from Prampram Anglican Basic School 2019].*

It was understood from the results that Afienya R/C Basic and Prampram Anglican Basic School had refuse sites, however, it was agreed that they were not properly managed. It was similarly identified by Mensah (2016) that absence of well-structured refuse dumps and its poor maintenance was one of the major concerns in most school‟s adherence to sanitation and hygiene standards as is cited in the WASH programme. It was found by Mensah (2016) that majority of the schools that were captured in his study area had serious challenges with waste disposal sites and its proper management.

In some pictures that were captured in some schools in the Ningo-Prampram District, it was indicative that most of the schools in the district were encountering varying challenges with their sanitation and hygiene situation. The pictures are displayed in plates below.

Plate 4.1: Urinal used in St Joseph Anglican Basic School

Plate 4.2: A typical toilet facility used in Methodist D/A Basic School

Plate 4.3: Source of water (semi dam) used for multiple purposes in Abia D/A Basic School

Plate 4.4: A typical refuse dump at Prampram D/A Basic School

Based on sampled pictures that were gathered at some schools in Ningo-Prampram District, it was indicative that most of the public basic schools had challenges with source of water for cleaning, poor state of toilets and urinals and not properly sited waste disposal places. In other schools, it was either pupils were made to use make-shift structures for urinals and toilets or they were entirely not present. It was also observed in some instances that pupils had to trek to almost distant places to fetch water for use at school. Because these locations were somehow far from the school, pupils sometimes missed instructional periods which are not good for effective academic work.

4.3.2 The causes of inefficient WASH programme in Junior High Schools in Ningo- Prampram District

In connection with the second research question, the study was poised in examining the causes of the inefficient WASH programme in Junior High Schools in Ningo-Prampram District. The intent of this research question was to understand the actual challenges that have been militating against the effective implementation of WASH programme in Junior High Schools in Ningo- Prampram District. The results from teacher and pupil respondents were merged with interview data. The results are presented below in Table 4.8.

Table 4.8: Causes of the inefficient WASH programme in Junior High Schools in Ningo- Prampram District

Causes	Partici.	Agree F(%)	NS F(%)	Disagree F(%)
Inadequate funding for effective implementation of WASH policy	**T**	154(100)	0(0)	0(0)
	P	235(94)	0(0)	15(6)
Low or absence of community support	**T**	146(94.8)	4(2.6)	4(2.6)
	P	200(80)	0(0)	50(20)
Inadequate supervision and management of WASH policies by school authorities	**T**	154(100)	0(0)	0(0)
	P	247(98.8)	0(0)	3(1.2)
Low or absence of education and sensitization programmes on WASH programme to both teachers and students.	**T**	148(96.1)	0(0)	6(3.9)
	P	248(99.2)	0(0)	2(0.8)
Ignorance on WASH programme	T	144(93.5)	0(0)	10(6.5)
	P	247(98.8)	0(0)	3(1.2)
Absence or inadequate infrastructure (water, sanitation and hygiene facilities)	T	154(100)	0(0)	0(0)
	P	250(100)	0(0)	0(0)
Deliberate attitude of pupils to ignore sanitation and hygiene ethics	T	138(89.6)	0(0)	16(10.4)
	P	243(97.2)	0(0)	7(2.8)

Source: (Field Data, May 2019) T-teachers P-Pupils NS-not sure

Based on the results that were gathered in Table 4.8, it was seen that 154 (100%) of the teachers and 235(94%) of pupils agreed that inadequate funding for effective implementation of WASH policy is one of the major causes of ineffective WASH programmes in schools in Ningo-Prampram District. This implies the funds that are meant to be used to effectively administer and run WASH programme in schools in the study area does not come in as is expected or required. This seems to be a difficult situation because in the absence of these funds it will be challenging to raise funds from elsewhere to implement the WASH programme in public basic schools which are supported by the government. In relation to the inadequate release of funds for effective implementation of WASH programme, the interview responses also gave credence to same fact that the schools have been seriously suffering from this effect. It was commented by RHT-4 that:

> *The funds from which schools must use to purchase items to implement WASH programme is woefully inadequate for effective WASH programme. The pain of this situation is that the government has strongly resisted the school authorities from taking monies from parents whereas the fund itself is not forth coming. Sometimes, the school has to rely on different loan schemes before plans can be effectively executed and this comes with an extra cost which exhaust all the funds received and a little extra cost. This situation is very bad for the school* [Headteacher from Lakpleku D/A Basic School, 2019].

Similarly, is also shared by RHT-2 that:

> *The capitation grants which the school use a portion to support WASH programme is not enough, it does not reach schools on time for which reason the school has to abandon the WASH programme for some time and this has negative repercussions for the school. In the light of the inadequate funds, this has compelled school authorities to look elsewhere for monies to run the school whereas it is sometimes difficult to get because they are aware it would take a very long time for the school to repay borrowed monies. In fact, this is a serious challenge to school authorities under the condition where students are not to pay any monies to the school.* [Headteacher from Presby A Basic School 2019].

In a related problem due to the inadequate funds for effective implementation of the WASH programme, it was indicated that the headteachers of schools who relied on government funds to implement WASH programme in schools in Ningo - Prampram District had to abandon the programme to save the school extra cost which was associated with implementing the WASH programme.

It can be deduced from the results that inadequate and poor funding acted as a factor that militate against the effective implementation of the WASH programme. This is supported by Adam (2015) who noted most government policies are not sustained because of low or inadequate funding. In his study, Adam (2015) enumerated a number of government educational policies which has not been effective for some years and managed by the stakeholders.

The results from Table 4.8 showed that all teachers 154 (100%) agreed that another major challenge confronting the effective implementation of the WASH programme is inadequate supervision and management. In the view of RHT- 1 it was responded that:

> *Although the WASH programme has its own associated challenges, the major challenge is that it is either the WASH programme is poorly managed or poorly supervised by headteachers and teachers. This has been a challenge for the schools such that whereas they cry out that the funds are inadequate, the little which reaches the school is sometimes poorly managed, whereas the programme is poorly monitored for effective implementation. This does not help to achieve the goal for the introduction of the WASH programme* [Headteacher from Mobole D/A Basic, 2019].

Similarly, on other the WASH programme, it was also by RHT-6 shared that:

> *The students are not well supervised to clean their environment as well provide water to support the school's WASH programme. The poor supervision of the students' results in sometimes students not observing the sanitation and hygiene requirements embedded in the WASH*

> *programme which has other effects on them* [Headteacher from Ningo D/A Basic School, 2019].

Similarly, on the issue of inadequate supervision and management of the WASH programme, it was expressed by participants that it was difficult for policies to be put in place to replace and repair some of the items used for the implementation of the WASH programme. This implied that when such items are broken, they were left to rot without any repair works. It was shared by one participant, RHT-3 that:

> *When items such as dustbins, veronica buckets, and holders of veronica buckets get spoilt or faulty, there is another difficulty of repairing or replacing these items as there are not enough funds for the school for this purpose. This seems to be a problem for the WASH programme* [Headteacher from Prampram SDA Basic School 2019].

Table 4. 8 also shows that it was agreed by 154 (100%) of the teachers that one of the major challenges confronting the effective implementation of the WASH programme has been infrastructural inadequacies or problems. For, instance in a comment expressed by one of the interview participants, it was indicated that:

> *As I earlier indicated, there are serious challenges with the state of toilet facility and urinals on this school compound. Each term new students are added to the already high number making the situation look worse where large number of students uses limited toilet facility which is almost in a bad state. This has occasionally led to some students especially females contracting candidiasis in the school* [Teacher from Mobole D/A Basic School, 2019].

The result shows that all respondents affirmed their view on the challenges confronting their schools currently on the introduction of WASH programme on educational delivery as challenges with adequacy of infrastructure of their school. It was understood clearly via the interview responses that there has been consistent increase in enrolment levels in schools beyond the capacity and support of the existing infrastructure of schools such as toilet and urinals.

In Ralenala‟s (2006) study, cited in Mokgaetsi (2009, p. 45), thousands of schools still have poor physical infrastructure and many are dilapidated, dangerous, and unfit for human habitation. There is often no water at school site and poor sanitation thus, such conditions restrict the teaching and learning activities of the school as well as threaten the health of pupils and teachers.

Based on this, it was noted by Mokgaetsi, (2009) that there is therefore, a relationship between the use of physical infrastructure and educational delivery. Several schools do not have enough toilet facilities spaces which has resulted in poor health of students (Mokgaetsi, 2009). Implicitly, teachers have to spend extra time in helping students who leave the school to some facilities elsewhere to understand lessons that could have been easily understood if infrastructure were available for use in their school. As it is identified that structural problems and lack of facilities confront the teaching and learning process, this does not fit into the goal of WASH programme and educational delivery.

Also, it was agreed by majority of teachers and pupils that another major cause for ineffective WASH programme in Junior High Schools in Ningo-Prampram District was low or absence of education and sensitization on WASH programme to both teachers and pupils. It was agreed by 148 (96.1%) of the teachers and 248 (99.2%) of pupils to this cause. In this regard, it implied that there was little or no education and information on the WASH programme to teachers, pupils and the entire school community. Hence, the lack of information and knowledge on the WASH programme influenced some persons to act contrary to the requirements and expectations on the WASH programme. In the comment from a teacher it was mentioned that:

> *In a space of about three years there has been just a single period an NGO came around to this school to educate teachers and pupils on the WASH programme and the need for the school to embrace the programme in relation to how it would improve the state and health of persons. I can recount that the programme was very effective, however, that was the last time I saw any group on this campus to educate and provide information on the WASH programme to the school* [Teacher from Otcherbleku D/A Basic, 2019].

In another submission from a headteacher, it was recounted that:

> *I can say on authority that the WASH programme has not been effective in this school as a result of the lack of education and sensitization of the programme to the school community. In some time past which I can't recall, the school received some officials from the Ghana Education Service where all the pupils were called to an assembly and given a thorough information on the WASH programme. They placed notices and posters at vintage points on the school campus to promote the effectiveness of the WASH programme. The team have since not returned for another session while the posters and notices have faded or torn* [Headteacher from St. Peters Basic School, 2019].

However, statement from a pupil indicated they had received little education on the WASH programme. It was mentioned by PRT-4 that:

> *This interview has entirely exposed me to understanding the WASH programme well. I believe the lack of information students have received so far can be highly attributed to their weak understanding and practise of the WASH programme. In the situation where students are given this little information, they would definitely act in contrast to the dictates and requirements of the WASH programme* [Pupil from Prampram Anglican Basic, 2019].

The finding support Mensah (2015) who similarly identified that most schools did not effectively implement the WASH programme because almost no proper dissemination of information and education is on the WASH programme. To this effect, students as well as teachers lived their normal school life while little attention was directed at observing sanitation and hygiene practices. Similarly, Adjei (2016) found that education and sensitization should be at the heart of the implementation of the WASH

programme in public basic schools while their health is of paramount concern to the school and the nation at large.

4.3.3 The effects of the inefficient WASH programme in Junior High Schools in Ningo - Prampram District

In line with the third research question of the study, the effects of the inefficient WASH programme in Junior High Schools in Ningo - Prampram District were explored. The intent of this research question was to examine the consequences of the inefficient WASH programme in Junior High Schools in Ningo - Prampram District. Based on this questionnaire, data were merged with interview responses. Results from the questionnaire are presented in Table 4 .9 below.

Table 4.9: Effects of the inefficient WASH programme

Effects	Partici.	Agree	Not sure	Disagree
Pupils are exposed to various sicknesses	T	154(100)	0(0)	0(0)
	P	250(100)	0(0)	0(0)
Pupils participation in classroom and learning abilities decline	T	154(100)	0(0)	0(0)
	P	250(100)	0(0)	0(0)
Pupils attendance is reduced when they get sick	T	154 (100	0(0)	0(0)
	P	231(92.4)	19(7.6)	0(0)
Leads to eventual withdrawal of pupils to other schools	T	145(94.1)	0(0)	9(5.8)
	P	200(80)	25(10)	25(10)
Decline in classroom participation and learning abilities	T	154(100)	0(0)	0(0)
	P	240(96)	10(4)	0(0)

Source: (Field Data, May 2019)

The results in Table 4.9 shows that all respondents agreed that inefficient WASH programme in public basic school leads to pupils‟ exposure to various sicknesses. Hence it was agreed by 154 (100%) of teachers and 250 (100%) of pupils that, pupils are exposed to various sicknesses as a result of inefficient WASH programme. In the views presented during the study, it was clarified that these health challenges

associated with inefficient WASH programme was a strong concern. It was commented by a teacher T-4 that:

> *The sanitation and hygiene conditions in this school has resulted in malaria and bacterial infections such as dysentery, typhoid, and cholera are very common among students and even teachers and other persons that are around the school compound. There has been growing concern among authorities about this condition because things get worse especially during the raining season* [Teacher from Mount Zion Basic, 2019].

In another view presented by a head teacher RHT-2, it was expressed that:

> *Commonly, most female students are exposed to variety of infectious diseases such as candidiasis and syphilis, gonorrhoea. For some of these students who were infected, they have had very tough time treating these diseases. Their parents have expressed worry and dissatisfaction at the sanitation and hygiene conditions* [Headteacher from Presby A Basic School, 2019].

Similarly, a pupil PRT-5 noted that:

> *There are lots of diseases and sicknesses students' contract when they get exposed to the school environment. During last term it was almost a common situation where students reported to hospitals about their exposure to certain diseases. Some mentioned that they were diagnosed of candidiasis, malaria, cholera just to mention a few. However, most of this health conditions students were exposed to were as a result of the weakening state of sanitation and hygiene in this school* [Pupil from Mount Zion Basic, 2019].

The results imply that there is a sure possibility that exposing pupils to poor sanitation and hygiene situation in school has health challenges it poses to pupils. In the wake of concerns of this nature, it is imperative that schools get involved in the WASH programme as well as strictly observe its sanitation and hygiene protocols. The results conform to Mensah-Bonsu (2014) who identified that the commonest result of poor sanitation and hygiene in schools and communities is sicknesses and diseases of which some could be death-threatening. It was also identified by Gyamfi (2015) that some of the commonest sicknesses that were associated with poor sanitation and hygiene conditions are cholera, dysentery, syphilis, candidiasis as well as others

which are only diagnosed in major hospitals and laboratories. Hence, it is indicative from the results gathered that inefficient WASH conditions in school had negative health implications on pupils or even persons who used certain places and facilities in the school. In many countries there exist a high prevalence of water and sanitation related diseases, causing many people, children in particular, to fall ill or even die. Improved hygiene practices are essential if transmission routes of water and sanitation related diseases are to be cut.

Plate 4.5: Clogged drain system that breeds insects in Salvation A and B Basic Schools

Table 4.9 shows that 145 (94.1%) of teachers and 200 (80%) of pupils agreed that inefficient WASH programme in schools leads to eventual withdrawal of pupils to other schools. This implies that as sanitation and hygiene condition deteriorated as a result of inefficient hygiene programme, some parents or even the pupils themselves saw the need to relocate to other schools that in relative terms had better sanitation

and hygiene conditions, bringing the enrollment of such schools down. In an interview session, it was commented by T-1 that:

> *It is true, there have been students who had to be moved to other schools because of the state of sanitation and hygiene conditions in this school. Their parents might have other reasons but most of these parents when contacted clarified that their children were often very sick which did not augur well for the safety of the children themselves as well as their family income* [Teacher from Ningo D/A Basic, 2019].

This shows the sanitation and hygiene conditions in a school is a factor that could influence school attendance or attraction to a particular school. In a related finding, it was agreed by respondents that pupil‟s attendance is reduced when they get sick. Hence, it was agreed by 154 (100%) of teachers and 231 (92.4%) of pupils that, pupil‟s attendance is reduced when they get sick. This is indicative that the health condition of pupils is consistently affected as a result of the sanitation and hygiene conditions in schools, pupils were more likely to miss school or classroom sessions which will eventually not be good for quality education. It was commented that during the interview that the state of health of students was reflected in their school attendance. It was mentioned by T-5 that:

> *There have been occasions where students have missed school consistently only to be probed to find out that they were sick of which the sanitation and hygiene conditions in the school were attributed factors. It is common understanding that a sick student cannot make it to class or school and this has been the reason why most students miss or skip school sessions* [Teacher from Wesley Methodist Basic, 2019].

It was agreed by respondents that inefficient WASH programme may lead to students decline in classroom and learning abilities. It was agreed by 154 (100%) of the teachers and 240 (96%) of the pupils that participation in classroom and learning abilities decline as a result of inefficient WASH programme. This implies that poor health of children affects their ability to learn and could possibly influence their

prospects in their life. Protos (2005) for example had a study which shows that children with worm infections have higher absenteeism than non- infected children. This implies that children with worm infections spend less time and are disadvantaged in the learning process. Children‟s ability to learn may be affected by certain helminths infection which can also lead to impairing children‟s physical development and reducing their cognitive development. Long exposure to chemical contaminants in water (e.g. arsenic and lead), diarrhoea diseases and malaria infections can force many school-age children to be absent from school. Students with disabilities are also likely to suffer or be affected in different ways by inadequate water, sanitation and hygiene conditions in schools and this may contribute to unequal learning opportunities. The challenge of inaccessible toilets forces the disabled child from eating and drinking as much as he or she want so as to avoid needing the toilet, leading to health problems which eventually cause the child dropping out of school.

4.3.4 Appropriate Interventions to improve WASH situation in Junior High Schools in Ningo - Prampram District

Sanitation and hygiene in schools and communities is a social problem and has attracted much attention on how to manage the situation. In the light of this, research question four sought from the respondents their views on appropriate interventions to improve WASH situation in Junior High Schools in Ningo - Prampram District. The data from the questionnaire is presented first while the results are intertwined with interview responses to buttress the results. Table 4.10 presents results on appropriate interventions to improve WASH situation in Junior High Schools in Ningo - Prampram District.

Table 4.10: Appropriate Interventions to improve WASH situation in Junior High Schools in Ningo - Prampram District

Appropriate intervention	Participants	Agree	Not sure	Disagree
Regular sensitization programmes on WASH by environmental health experts and school authorities in schools	T	154(100)	0(0)	0(0)
	P	241(96.4)	9(3.6)	0(0)
School authorities should cooperate with community to tackle challenges encountered by WASH policy	T	148(96.1)	6(3.9)	0(0)
	P	229(91.6)	10(4)	11(4.4)
Support from government in providing infrastructure and resources to promote WASH programme	T	154(100)	0(0)	0(0)
	P	239(95.6)	11(4.4)	0(0)
Use of effective supervision mechanisms to check students to maintain WASH programme	T	154(100)	0(0)	0(0)
	P	245(98)	5(2)	0(0)
Use of punishment systems to inculcate right WASH attitude in pupils.	T	117(76)	8(5.2)	29(18.8)
	P	203(81.2)	11(4.4)	36(14.4)
NGOs can be involved in improving sanitation in the school	T	142(92.2)	0(0)	0(0)
	P	231(92.4)	0(0)	19(7.6)
Setting enabling environment and culture to support WASH policy	T	145(94.2)	0(0)	9(5.8)
	P	200(80)	50(20)	0(0)
Provision of adequate and accessible toilet facilities	T	154(100)	0(0)	0(0)
	P	236(94.4)	5(2)	9(3.6)

Source: (Field Data, May 2019)

It is seen from Table 4.10 that all the teachers and 241 (96.4%) of the pupils agreed that organising regular sensitization programmes on WASH by environmental health experts and school authorities in schools will be a good intervention to the WASH situation in Junior High Schools in Ningo - Prampram District. This implies that introducing pupils to consistent knowledge and information on sanitation and hygiene in the school will help them to appreciate the need to be involved in the WASH programme and an eventual improvement in sanitation and hygiene conditions in the school and among the pupils themselves. Similarly, in the views shared by

participants during the interviews, it was confirmed that regular education and sensitization programmes to pupils would be helpful in improving the WASH situation in Junior High Schools in Ningo - Prampram District. It was commented by T-2 that:

> *I strongly believe that the level of education and information given to students on maintaining proper sanitation and hygiene especially at school and home will go a long way to improve the overall objective of introducing the WASH programme. In my little survey I have done over a period of time, I have come to the realisation that consistent education, information and knowledge to students on sanitation and hygiene appeals quicker to the memory as well as affect the behaviour of students* [Teacher from Abia D/A Basic, 2019].

It was also mentioned by RHT-4 that:

> *At the school level if students must be helped to understand what constitute sanitation and hygiene and the benefits it brings to us as humans. I am of a very sound view that incidences of poor sanitation and hygiene in schools will drastically reduce to its barest minimum if students are properly and consistently educated. Personally, I haven't organised any environmental sensitization programmes for my students until I had the opportunity to be involved in an assignment, I think it is effective* [Headteacher from Lakpleku D/A Basic, 2019].

Based on the results, sanitation and hygiene education was affirmed as one of the ways or strategies that can be helpful in improving the challenges of WASH programme in public basic schools in Ningo-Prampram District. This conforms to Ansah (2012) who identified that education and sharing of knowledge through sensitization programmes has been effective in improving the environmental attitude and awareness of students. Shneider, Chang & Finkbeiner (2015) remarked that students are often good at practicing knowledge and information that they are consistently exposed to, hence regular sensitization programmes on sanitation and hygiene will be right in improving the WASH situation in Junior High Schools in Ningo - Prampram District. Sanitation and hygiene education are about developing young people‟s minds and attitude towards their environment‟s cleanliness and

personal hygiene practices in order to improve their environment and health conditions. It is widely accepted that students have the right to environmental and hygiene education. This is because it is a means by which students are helped to protect themselves against certain diseases as well as improve the quality of their physical environment. Sanitation and hygiene education to students is to bring behaviour changes among students to address issues of safe environment and hygiene conditions in their school and even beyond.

Proper education about hygiene is as important as good sanitary facilities. Life skills-based hygiene education allows children to learn about water and sanitation related behaviours and the reasons why these lead to good health or bad health. The idea is that when children understand and think together about their situations and practices, they can plan and act to prevent diseases, now and in the future. Effective hygiene education for children is not just teaching facts about health risks and bad hygiene practices. The life skills approach focuses on changing children‟s hygiene behaviour and the hygiene behaviour of their families and wider community with a view to improving their quality of life.

The results in Table 4.10 also showed that, again all teachers and 239 (95.6%) of the pupils endorsed the idea that support from government in providing infrastructure and resources to promote WASH programme is a sure way to improve the WASH situation in Junior High Schools in Ningo - Prampram District. It can be deduced from the results that participants share the view that the WASH programme require certain basic items such as soaps, disposable tissue papers and infrastructure such as toilet, urinal, running water among others which otherwise may be difficult for the school to independently fund. In this vein, the intervention of the government through

Ghana Education Service (GES) in funding these infrastructure and resources would be in the right direction. It was commented by T-6 that:

> *The provision of infrastructure and resources to support the WASH programme will be the best solution to ending most of the challenges that has rendered the programme almost ineffective in most schools here. If schools are provided with modern toilet facilities, hand washing basins with ever flowing tap water, urinals, waste disposal sites among others, this will help to a larger extent to manage the WASH programme effectively such that it will achieve its purpose and mandate* [Teacher from Afienya R/C Basic, 2019].

It was further noted by RHT-3 that:

> *It will be very helpful if our schools are provided with basic items such as veronica buckets, soaps, detergents, dustbins as well as regular supply of water. Most of the challenges that has affected the implementation of the WASH programme have been because of these items I have mentioned. Once these items are made available to the school, WASH programme will take up a proper shape in implementation* [Headteacher from Prampram SDA Basic, 2019].

A pupil mentioned that:

> *Providing schools with water closet and regular supply of water would help in improving the sanitation and hygiene in this school especially in the hygiene of females. While the water is used in flushing after use of toilet, the water is also used in washing hands which will be helpful to students* [Pupil from Ahwiam D/A Basic, 2019].

It was confirmed by Shneider et al., (2015) that in most countries, governments‟ engagement in WASH programme in Schools has led to specific hygiene education subjects in national teacher training institutes. As WASH in schools becomes integral in national agenda, this will go in the right direction in financing most of the expenses that are associated with the effective implementation of the WASH programme.

It was affirmed by all the teachers and 245 (98%) of the pupils that schools should use effective supervision mechanisms to check pupils to maintain WASH programme. In this regard teachers, headteachers and personnel from the environmental health

agency can be involved in supervising the activities of pupils in maintaining a clean environment and proper personal hygiene. It was mentioned by RHT-5 that:

> *There should be consistent supervision of classrooms and compound by teachers. In this regards, there should be selected teachers who are assigned with the special responsibility of supervising students to keep their compound tidied up, ensure there is water for handwashing purpose so that much strides will be achieved in maintaining sanitation and hygiene in basic schools* [Headteacher from Octherbleku D/A Basic, 2019].

It was also discovered in the study that improving supervision of pupils on maintaining sanitation and hygiene conditions was imperative to helping the course of the WASH programme. Concerned and involvement of teachers in supervision of pupils on implementing the requirements of WASH programme has positive influence on pupils in making sure that their environment is always clean as well as practising personal hygiene. The results support Shneider et al. (2015) who noted that when knowledge is supported by enabling and reinforcing factor such as effective supervision, desirable changes would occur in the school setting and subsequently transferred to the community. As students are supervised in cleaning their environment and maintaining personal hygiene, they extend to their homes and community. The benefits of sanitation and good hygiene behaviour are a conduit for practising proper water, sanitation and hygiene programme.

On other views that were supported by respondents, Table 4.10 shows that all teachers and 200 (80%) of the pupils that it would yield good result in improving the WASH situation in junior high schools in Ningo - Prampram District by setting up proper waste disposal site and methods. This would involve establishing a permanent waste disposal site which is properly maintained. It was commented by T-1 that:

> *In as much as attention is given to sweeping and washing of hands in ensuring sanitation and hygiene, it would be prudent that a proper waste disposal site is created and managed in schools. In managing these refuse dumping site, services of persons can be hired to ensure that no health effects are left on students as sanitation and hygiene standards are strived to be achieved* [Teacher from Ningo D/A Basic, 2019]

Also, it was agreed by 148 (96.1%) of the teachers and 229 (91.6%) of the pupils that school authorities should cooperate with community to tackle challenges encountered by WASH programme as sure way of improving the WASH situation in schools in Ningo - Prampram. This implies that it is important for a feasible collaboration between schools in Ningo - Prampram District and the communities in which they are in making sure the WASH is effectively implemented. In the view presented by RHT-4, it was mentioned that:

> *With a strong cooperation between schools and the wider community in implementing WASH programme, positive results would be achieved. My reason for putting forward this view is that the community can assist in many ways as providing basic items and resources as well as getting involved in regular clean up exercises in schools to help them* [Headteacher from Lakpleku Basic, 2019].

The results emphasise the relevance of involving families and communities in WASH in schools as it promotes a sense of ownership, which is a necessary prerequisite for sustainability. Involvement can take the shape of school management committees, parent-teacher associations or committees specifically set up for WASH in Schools. These groups are particularly important if health and education departments or local authorities are not prepared to provide such services. Community mobilization and motivation will extend the impact of life skills development beyond schools to the whole community. If the community understand the importance of appropriate hygienic behaviour, long-term effects will result. Community members can have important roles in keeping the school clean, safe and healthy, and encouraging

children to adopt improved hygienic behaviour. Community members often provide unskilled labour and local construction materials to build school facilities. Involving them in planning can lead to a sense of ownership among the parents and community members. The community can make decisions and arrangements, for example, on community use of the school water tank or toilets if facilities are not available at the household level. To obtain commitment and consensus from the entire community, the local committee should report their findings and decisions to the community as a whole. The committee should equally represent men and women, ethnic groups and social classes to ensure a balanced view.

If community contribution is required for maintenance, cleaning staff, and supplies of soap and cleaning material, the parents can oversee the funds through the parent-teacher association to overcome any distrust when they must give payments to the school. Contributions may be provided as goods, such as one bar of soap or bottle of cleaning liquid brought annually by each child to the school. In most communities, boards are responsible for the operation and management of water systems and sometimes of communal toilets. Involving them from the start can help them incorporate the school facilities into their overall work. Community involvement ensures that what is learned in school is applied at home, particularly for younger children who are not in a position to change hygienic behaviour in their homes without their parents‟ commitment. Therefore, it is imperative to educate all family members on the adoption of appropriate hygiene skills and get the surrounding community involved in programmes for hygiene, sanitation and water in schools. To avoid confusion, the initiative should involve parents in the content of the hygiene education for their young children and urge them to reinforce the learned behaviours

at home. This is especially important so the content matches the community ethos and avoids cultural taboos.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This is the final chapter which provides a brief overview of the study, highlighting major findings as well as draw conclusions, and suggests the way forward. This chapter is categorized into five sections. The first section demonstrates how the original research questions and objectives set out in chapter one has been answered. The second section presents the summary of key findings, the third section looks at the conclusions that were drawn based on the findings that were gathered and the fourth section focuses on the recommendations based on the findings and conclusions. The fifth section looks at the suggestions for further research.

5.2 Summary of the Study

The primary intent of this study was to evaluate the status of Water, Sanitation and Hygiene (WASH) programme in Junior High Schools of the Ningo- Prampram District. Based on this purpose, four research objectives were set to guide the course of the study. These were:

a) Describe the WASH situation in Junior High Schools in the Ningo- Prampram District.

b) Assess the causes of the inefficient WASH programme in Junior High Schools in the Ningo- Prampram District.

c) Examine the effects of the inefficient of the WASH programme in Junior High Schools in the Ningo- Prampram District.

d) Recommend appropriate interventions to improve WASH situation in Junior High Schools in the Ningo-Prampram District.

The study made use of descriptive survey to achieve its set objectives, the study sought the views of respondents using questionnaire and interview. Similarly, four research questions were developed from the objectives to guide the study. Purposive, stratified, and simple random sampling methods were used to select the schools and respondents; and a sample size of four hundred and four respondents was selected.

5.3 Summary of Key Findings

Based on the first objective which sought to describe the WASH situation in Junior High Schools in the Ningo- Prampram District, it was gathered that generally all the schools understudied did not operate fully under the expectations of the WASH programme. For some of the schools such as Prampram D/A Basic School, did not have toilet facilities, while those who had toilet facilities such as Roman Catholic Basic School and Presby A. Basic School were almost in bad state for use by pupils. This situation did not augur well for pupils especially, the females as some contracted diseases such as candidiasis and other related diseases.

While Methodist D/A Basic School and Prampram D/A Basic School were fortunate to get treated pipe-borne water for the purpose of hand washing and other hygiene related purposes, others like Abia D/A Basic did not have this opportunity and had to collect water from stagnated water bodies and wells. The irony of using this source of water for ensuring hygiene was that they were sometimes not disinfected before their use while students sometimes had no soap to properly wash and kill germs which had repercussions on the health of students.

In the event of circumstances where there were water shortages, there were high possibilities of outbreak of diseases like cholera and typhoid. This situation was a prevailing circumstance because there was almost little or no alternative to the use of water for the purpose of ensuring hygiene among students. For instance, whereas it was thought of that alcohol-based hand sanitizers could be used by pupils, the schools did not have except for the personal ones the teachers had acquired for themselves. It was gathered that generally all the schools understudied had their WASH facilities in bad states which did not operate fully under the expectations of the WASH programme.

Concerning the second objective which focused on assessing the causes of the inefficient WASH programme in Junior High Schools in the Ningo- Prampram District, it was found that respondents agreed that one of the major challenges confronting the effective implementation of the WASH programme was lack of funding to procure the necessary items, as well as inadequate supervision and monitoring of the WASH programme. The responses showed that the funds are poorly managed or poor accounted for by those who come into contact with the funds (for example, heads and accountants). This has been a challenge for the schools such that whereas they cry out that the funds are inadequate, the little which reaches the school is poorly managed or poorly accounted for. This does not help to achieve the goal for the introduction of the WASH programme.

Furthermore, it was seen that, all respondents agreed that untimely release of funds for effective implementation of the WASH programme by funding agencies and partners is one of the major challenges confronting the programme in schools of the District. This seems to be a difficult situation because in the absence of these funds it

will be challenging to raise funds from elsewhere to run public basic schools WASH programme according to the research findings.

The irony of this situation is that Ghana Education Service (GES) has strongly resisted the idea of school authorities taking monies from parents to fund such initiatives in public basic schools whereas the expected funds are not forth coming. Sometimes, according to the findings, the school has to rely on different loan schemes before plans can be effectively executed and this comes with an extra cost.

It was agreed by all respondents that another major challenge confronting the WASH programme has been infrastructural inadequacies or problems. The result shows that almost all respondents affirmed their view on the fact that most of the present facilities does not support the full implementation of the WASH programme in public basic schools.

On the third objective, the study examined the effects of the inefficient of the WASH programme in Junior High Schools in the Ningo- Prampram District. Based on the results that were gathered on effects of inefficient WASH programme, the effects were observed in two. These were in the area of health and personal hygiene of students. On health, it was found out that there were times pupils were exposed to regular sicknesses and diseases as a result of the state of WASH practices in their school. Commonly, some pupils were diagnosed of cholera in hospitals around, a situation one of the headteachers of the schools had confirmed to have led to the death of a pupil last year.

On personal hygiene, it can be conveniently said, based on the research findings that inadequate dustbins at vantage positions in the schools‟ compound, and other sites also increase the littering habits of pupils. This compounds the work of both sanitation and health committee, together with those of the prefects in charge of sanitation in the school. Looking at the gravity of the sanitation problems in the school, the only interim solution is to march pupils out of their classrooms as often as required to pick refuse littered around the main entrance, classroom blocks and other areas noted for heavy littering.

The fourth objective considered appropriate interventions in improving WASH situation in Junior High Schools in the Ningo-Prampram District. On looking out for views on how the WASH situation can be improved in junior high schools in the Ningo-Prampram District, the following were suggested by the respondents that education on environmental sanitation, Provision of dustbins, strict enforcement of regulations on waste disposal, periodic clean-up exercises, and regular supply of water to toilets would be helpful in making the WASH programme effective.

5.4 Conclusions

The study focused on evaluating WASH programme in public basic schools in Ningo-Prampram District. While the background and problem statement of the study were premised on the need for an effective WASH programmes in basic schools, it became apparent that all was not well as far as the WASH was implemented in public basic schools in Ningo-Prampram District. It is seen that not all basic schools in the district have toilet facilities while those who had some were not in their best shape. About a few schools in the district have proper toilet facilities. There is not adequate provision of clean water, adequate toilet facilities, soaps, disinfectants, tissue papers, dustbins

among others which will be helpful in ensuring that pupils are observing the right hygiene practices.

It is indicative from the study that ensuring proper supervision and monitoring of the WASH programme is lacking woefully, a situation which is not helping the WASH programme to achieve its full mandate. While some schools lacked some basic items and resources which would have promoted the course of the WASH programme, the lack of proper supervision and monitoring hindered the exposure of this condition to be known by the right authorities while some were not even observing the directives of the WASH programme.

From the findings of the study, it was gathered that exposing pupils to poor sanitation and hygiene situation in schools has health challenges it poses to pupils. Poor health of children affects their ability to learn and could possibly influence their prospects in life.

Other conclusions drawn from the study is that an effective Water, Sanitation and Hygiene (WASH) programme in Junior High Schools will heavily rely on proper and regular funding as well as supervision and monitoring.

5.5 Implications for Social Studies

The study was conducted to evaluate the state of Water, Sanitation and Hygiene (WASH) programme in Junior High Schools of the Ningo- Prampram District. Based on the relevance and interest of the findings in improving sanitation and hygiene among pupils in public basic schools in the country, it is important that the implications are related to Social Studies Education as well. These implications can

be used to address some of the key issues that emerged from the study. The following implications are reflection from the findings of the study.

The role of social studies teachers in public basic schools in the implementation process of the WASH programme should not be underestimated. There is an ultimate need for social studies teachers to be involved in the education and sensitization of the students and the entire school community to increase the awareness of sanitation and hygiene and its associated dangers as well as the existence of a WASH programme to promote sanitation and hygiene. Conscious efforts should be consistently put in place to make sure that social studies teachers engage students and the entire school community on the WASH programme.

There is strong reason for the school community to have a modern sanitation and hygiene resources with a serene and an inviting environment. Planning the schools‟ sanitation and hygiene programme in such a manner promotes international standards of observing sanitation and hygiene practices.

In as much as sanitation and hygiene is considered an important aspect of basic education, there is equally the need to implement measures that will mitigate the occurrence and effects of outbreak of sicknesses and diseases that are likely to arise as a result of not observing sanitation and hygiene. Exposing students to the awareness and love for sanitation and hygiene should be a concern for social studies teachers in public basic schools.

It has become significantly concern for planning the learning environment of students, living in good health is relevant in helping students in their learning. Social studies teachers should consistently help students in understanding that most causes of

diseases are as a result of poor sanitation and hygiene. With the necessary education and equipment to support WASH programme, positive results will be achieved with the WASH programmes.

5.6 Recommendations

Based on the findings and conclusions drawn from the study, the following recommendations were made:

1. GES should improve school supervision and monitoring of WASH programme through engaging personnel who will regularly visit schools to assess the state of water, sanitation and hygiene in the school.
2. Based on the finding that providing funds for schools in implementing the WASH programme delays, heads can seek for support from PTA‟s, organisation and individuals to pre-finance materials and activities that are needed by schools.
3. In the wake of situations where the government delays in getting schools funds to purchase resources and items for the purpose of the WASH programme, heads should join with their teachers to improvise resources and items which are not readily available. For example, veronica buckets can be made out of ordinary buckets in the case where there aren‟t funds available to acquire one.
4. In the event of circumstances where there is lack or shortage of water for the purpose of ensuring sanitation and hygiene, alcohol-based hand sanitizers can be used to ensure students are still observing the requirements of the WASH programme.

5. Ghana Education Service (GES) should as a matter of urgency provide schools with the needed resources in order to facilitate an effective WASH programme in public basic schools.

5.7 Limitations of the Study

The limitations of this study are essentially those inherent in any research. It was observed that some of the respondents did not want to discuss in-depth the effects that were associated to sanitation and hygiene as it pertains to their schools. Based on this observation, it was difficult to gather the expected responses to answer some of the research questions. The researcher adopted different strategies in asking questions so that the questions lead to other questions where the expected answers were discussed.

Another challenge was with administering and collection of answered questionnaire. It was difficult getting in touch with teacher respondents to complete the questionnaire while it took several days for some of them to return their questionnaire. Due to the nature of their work it was very difficult to get them easily in their staff rooms to complete the questionnaire. They felt some reluctant to complete them because they had lots of work to do. However, upon several appearances at their school and special places they desired they completed and returned the questionnaire. In spite of this challenge, majority of administered questionnaires were retrieved.

Similar challenge was recorded in granting interviews to participants. It was very difficult to get the teacher participants and some pupils to respond to the interview items. The interview session was scheduled several times before there were finally some respondents availing themselves to grant the interview. The researcher made sure the respondents were in a good mood to respond to the interview.

Since the research instruments gathered the views and opinions from respondents, it was realised that some of the participants could potentially be identified. The threat to violating confidentiality and anonymity of information provided by the respondents was pertinent throughout the analysis of the data gathered. The researcher decided to exclude from the data any comments/quotations that could expose the identity of any of the participants. However, it was ensured that a balanced picture of the data from different participants was presented.

5.8 Suggestions for Further Studies

This study evaluated the state of Water, Sanitation and Hygiene (WASH) programme in Junior High Schools in the Ningo- Prampram District. In the course of the study, however, a number of themes have been identified that critically affect the environmental sanitation in schools, but remain under researched. These areas include attitude and perception towards refuse disposal, attitudes towards environmental sanitation, and littering and its impact on the environment. It is therefore, suggested that these areas be critically examined in future research so as to create better understanding of school sanitation, hygiene and related issues which will positively contribute to an improved and sustainable livelihood among students in Ghana.

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APPENDICES

APPENDIX A

Questionnaires for Pupils

This research questionnaire is on evaluation of the Water, Sanitation and Hygiene (WASH) programme or policy in junior high schools of the Ningo-Prampram District. The questionnaire has been structured into five sections. Section A deals with the socio-demographic data of respondents, Section B entails information on WASH situation in schools, Section C focused on the causes of the inefficient WASH programme in schools, Section D is on the effects of the inefficient WASH programme in schools, and Section E is on the appropriate interventions to improve WASH situation in Junior High Schools in Ningo - Prampram District. Confidentiality is assured since data gathered will be used for academic purposes. You are therefore requested to provide information as accurately as possible.

INSTRUCTION: Please tick [√] against the appropriate answer or provide the necessary information where appropriate.

SECTION A: SOCIO- DEMOGRAPHIC DATA

1. Sex: Male [ ]
   Female [ ]
2. Age (in years): 10 - 12 [ ]
   13 - 14 [ ]
   15 - 16 [ ]
   Above 16 [ ]

SECTION B: NATURE OF WASH SITUATION IN JUNIOR HIGH SCHOOLS IN THE NINGO- PRAMPRAM DISTRICT

	Yes	No
Does the school have a source of running water?		
Is there a reservoir to store water to be used in times of shortages?		
The school has functioning toilet/urinal facility		
The toilet facility is adequate for entire staff and student population		
There is running water to wash hand after using the toilets		
There is soap to wash hand with water using the toilets		
Toilets/urinals are cleaned everyday		
Food is sold and served in a clean environment to pupils		
Food vendors are examined by environmental inspectors to ensure that they cook right in clean materials and environment.		
There is water available at all times to students to wash their hands anytime they feel to.		
Are pupils often made clean their classroom and compound everyday		

Does the school have rubbish bins around the school compound		
Does the school have rubbish dumping site to manage rubbish		
Does the school properly manage the rubbish dumping site such that it doesn‟t give bad odor and flies?		

SECTION C: CAUSES OF THE INEFFICIENT WASH PROGRAMME IN JUNIOR HIGH SCHOOLS IN THE NINGO-PRAMPRAM DISTRICT

Causes	**Agree**	**Not sure**	**Disagree**
Inadequate funding from government (GES)			
Untimely release of funds for effective implementation of WASH policy			
Low or absence of community support			
Inadequate supervision and management of WASH policies by school authorities			
Low or absence of sensitization programs on WASH policy to both teachers and pupils by health inspectors			
Ignorance on WASH programme			
Absence or inadequate water, sanitation and hygiene facilities			
Deliberate attitude of pupils to ignore sanitation and hygiene ethics			

SECTION D: EFFECTS OF INEFFICIENT OF THE WASH PROGRAMME IN JUNIOR HIGH SCHOOLS IN THE NINGO-PRAMPRAM DISTRICT

Effects	**Agree**	**Not sure**	**Disagree**
Pupils are exposed to various sicknesses			
Pupils participation in classroom learning has declined			
Pupils attendance is reduced when they get sick			
Leads to eventual withdrawal of pupils to other schools			
Makes school environment unattractive to live			

SECTION E: APPROPRIATE INTERVENTIONS TO IMPROVE WASH SITUATION IN JUNIOR HIGH SCHOOLS IN NINGO-PRAMPRAM DISTRICT

Appropriate Interventions	**Agree**	**Not sure**	**Disagree**
Regular sensitization programmes on WASH by health inspectors and school authorities in schools			
School authorities should cooperate with community to tackle challenges encountered by WASH policy			
Support from government in providing facilities to promote WASH policy			
Use of effective supervision mechanisms to check pupils			
Use of punishment systems to inculcate right WASH attitude in pupils.			
NGOs can be involved in improving sanitation in the school			
Setting enabling environment and culture to support WASH policy			
Provision of adequate and accessible toilet facilities			

THANK YOU

APPENDIX B

Questionnaires for Teachers

This research questionnaire is on evaluation of the Water, Sanitation and Hygiene (WASH) programme or policy in junior high schools of the Ningo-Prampram District. The questionnaire has been structured into five sections. Section A deals with the socio-demographic data of respondents, Section B entails information on WASH situation in schools, Section C focused on the causes of the inefficient WASH programme in schools, Section D is on the effects of the inefficient WASH programme in schools, and Section E is on the appropriate interventions to improve WASH situation in Junior High Schools in Ningo - Prampram District. Confidentiality is assured since data gathered will be used for academic purposes. You are therefore requested to provide information as accurately as possible.
INSTRUCTION: Please tick [√] against the appropriate answer or provide the necessary information where appropriate.

SECTION A: SOCIO- DEMOGRAPHIC DATA

1. Sex: Male [ ]
   Female [ ]
2. Age (in years): 20 - 30 [ ]
   31 - 40 [ ]
   41 - 50 [ ]
   Above 50 [ ]
3. For how long have you been a teacher (in years)? 1-5 [ ]
   6-10 [ ]
   11-16 [ ]
   Above 16 years and above [ ]
4. Your highest academic qualification
   Certificate „A" [ ]
   Diploma [ ]
   B.A., Bsc., B.Ed [ ]
   M.Ed, MA, Msc [ ]
   Other (please specify).....
5. Indicate your rank in the teaching service
   a. Senior superintendent
   b. Principal superintendent
   c. Assistant director I
   d. Assistant director II

SECTION B: NATURE OF WASH SITUATION IN JUNIOR HIGH SCHOOLS IN THE NINGO- PRAMPRAM DISTRICT

	Yes	No
Does the school have a source of running water?		
Is there a reservoir to store water to be used in times of shortages?		
The school has functioning toilet/urinal facility		
The toilet facility is adequate for entire staff and student population		
There is running water to wash hand after using the toilets		
There is soap to wash hand with water using the toilets		
Toilets/urinals are cleaned everyday		
Food is sold and served in a clean environment to pupils		
Food vendors are examined by environmental inspectors to ensure that they cook right in clean materials and environment.		
There is water available at all times to students to wash their hands anytime they feel to.		
Are pupils often made to clean their classroom and compound everyday		
Does the school have rubbish bins around the school compound		
Does the school have rubbish dumping site to manage rubbish		
Does the school properly manage the rubbish dumping site such that it doesn‟t give bad odor and flies?		

SECTION C: CAUSES OF THE INEFFICIENT WASH PROGRAMME IN JUNIOR HIGH SCHOOLS IN THE NINGO-PRAMPRAM DISTRICT

Causes	Agree	Not sure	Disagree
Inadequate funding from government (GES)			
Untimely release of funds for effective implementation of WASH policy			
Low or absence of community support			
Inadequate supervision and management of WASH policies by school authorities			
Low or absence of sensitization programs on WASH policy to both teachers and pupils by health inspectors			
Ignorance on WASH programme			
Absence or inadequate water, sanitation and hygiene facilities			
Deliberate attitude of pupils to ignore sanitation and hygiene ethics			

SECTION D: EFFECTS OF INEFFICIENT OF THE WASH PROGRAMME IN JUNIOR HIGH SCHOOLS IN THE NINGO-PRAMPRAM DISTRICT

Effects	**Agree**	**Not sure**	**Disagree**
Pupils are exposed to various sicknesses			
Pupils participation in classroom learning has declined			
Pupils attendance is reduced when they get sick			
Leads to eventual withdrawal of pupils to other schools			
Makes school environment unattractive to live			

SECTION E: APPROPRIATE INTERVENTIONS TO IMPROVE WASH SITUATION IN JUNIOR HIGH SCHOOLS IN NINGO-PRAMPRAM DISTRICT

Appropriate Interventions	**Agree**	**Not sure**	**Disagree**
Regular sensitization programs on WASH by health inspectors and school authorities in schools			
School authorities should cooperate with community to tackle challenges encountered by WASH policy			
Support from government in providing facilities to promote WASH policy			
Use of effective supervision mechanisms to check pupils			
Use of punishment systems to inculcate right WASH attitude in pupils.			
NGOs can be involved in improving sanitation in the school			
Setting enabling environment and culture to support WASH policy			
Provision of adequate and accessible toilet facilities			

THANK YOU

APPENDIX C

Semi-Structured Interview Guide for Teachers

Begin the interview process by explaining clearly to participants the WASH policy.

1. How would you describe the nature of water, sanitation and hygiene situation in your school?
2. In your views what factors account for inefficient WASH programme in junior high schools in the Ningo-Prampram District?
3. What are the effects of inefficient of the WASH programme in junior high schools in the Ningo-Prampram District?
4. What are your suggestions on improving the WASH situation in junior high schools in Ningo-Prampram District?

APPENDIX D

Semi-Structured Interview Guide for Pupils

This interview focuses on an evaluation of water, sanitation and hygiene (WASH) programme in Junior High School of the Ningo-Prampram District. Prompt: Begin the discussion with an in-depth explanation basic concepts such as hygiene, sanitation and WASH (water sanitation and hygiene) programme.

1. What are your general views on the WASH programme?
2. How would you describe the nature of water, sanitation and hygiene situation in your school?
3. Please mention and explain the conditions that are influencing WASH situation in your school?
4. What could be the factors responsible for inefficient WASH programme in schools?
5. Express your views on why WASH programme may be experiencing challenges in your school.
6. Describe your views on the possible effects of inefficient of the WASH programme in junior high schools.
7. Express your suggestions on likely ways of improving the inefficient WASH situation in schools.