

UNIVERSITY OF EDUCATION, WINNEBA

COLLEGE OF TECHNOLOGY EDUCATION

**EXAMINING THE HOUSE KEEPING PRACTICES OF STUDENTS IN
SELECTED SCHOOLS IN EAST AKIM DISTRICT.**

ALBERTA AGBAH

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ALBERTA AGBAH

7151180011

**A Dissertation in the Department of HOSPITALITY AND TOURISM EDUCATION, Faculty of
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Education, Winneba, in partial fulfilment of the requirements for award of the Master of
Technology (Catering and Hospitality) degree**

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DECLARATION

STUDENT'S DECLARATION

I, ALBERTA AGBAH, declare that this dissertation, with the exception of the 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 another degree elsewhere.

SIGNATURE:

DATE:

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this dissertation were supervised by me in accordance with the guidelines on supervision of dissertation laid down by the University of Education, Winneba.

NAME OF SUPERVISOR: DR. MRS. ELLEN L. OLU

SIGNATURE:

DATE:

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DEDICATION

I dedicate this work to my sweet and adorable Teddy Edem Kofi Kumi, Mr. And Mrs. Francis Agbah, Bernard, Albert and Cornelius Agbah.

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ABSTRACT

The main purpose of the study was to examine the housekeeping practises of students in selected schools in East Akim District. This study adopted the case study strategy. Quantitative research approach was used for the study. The population of the study was nine hundred and twenty three (923). The population consists of all boarding house students and house masters/mistresses engaging in housekeeping practises in selected schools in East Akim District specifically in Abuakwa State College. Non-Probability sample (convenience) procedure was used to select 269 respondents for the study. The main instruments used for the empirical data collection was questionnaires. Statistical Package for Social Science (SPSS version 18) were used for the data analysis. The study findings concluded that 89.9% of the respondents agreed students roles as house keepers in the college is to maintain operational tidiness and order. Secondly, 95.4% of the respondents agreed that student's roles as house keepers in the college is to properly control waste. The study further concluded that, 96.8% of the respondents agreed that student's roles as house keepers in the college is to regulate activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions, 95% of the respondents agreed that student's roles as house keepers in the college is to handle materials well and store them properly. The housekeeping supervisor's identify cleaning and maintenance requirements in all areas of the workplace. Furthermore, the housekeeping supervisor's conduct regular workplace inspections that include checking housekeeping and taking corrective actions as appropriate. The study recommended that the Management of the College should organize periodic workshops, seminars and conferences to enhance the knowledge and practical expertise of housekeeping practices supervisors to improve hygiene and cleanliness initiatives in the College.

CHAPTER ONE

Introduction

1.1 Background to the Study

The definition of house keeping according Nitschke & Frye (2008) is doing basic cleaning tasks in a house, hotel, college dormitories or other locations, or the department by employees who manage and perform cleaning tasks. These tasks may be performed by the household members, or by other persons hired to perform these tasks. When we think of the term housekeeping we tend to think of the cleaning of businesses and other large establishments but the term housekeeping has been around for many years, though in earlier days it was known by the term homemaker. A home maker was a person mainly a woman who would take care of the home and raise the children of the family by staying at home. The woman would take care of all the family needs, cleaning, shopping, cooking and looking after the children.

After years passed and the economic situation changed it was financially more important for women to go back to work. Their independence was a lot more important to them than taking care of the home. Instead of taking care of the home themselves they would hire housekeepers to take care of the daily running of their homes. These housekeepers would clean the house; do the shopping and also take care of the children. Housekeepers today are more found working in hotels around the world in the hospitality industry or for the rich and famous taking care of their homes and students taking care of their dormitories (Nitschke & Frye 2008, p.71.).

Today housekeeping is still used in households especially people who are rich and famous but it is now better known in hotels and resorts around the world (Talaat, 2011).

Housekeepers have a wide array of tasks they have to take care of in a day's work. The housekeeper is one of the most important employees in a hotel, some departments think that the housekeeping department is not worthy of even mentioning but without the housekeepers the hotel would not have anything to sell. The work that they do is variable and changes daily. Housekeepers typically work 8 hours per day and the work shift is usually from 9am to 5pm or 10am to 6pm, but in some big hotel resorts the days can be significantly longer. The work day starts with picking up their charts for the day. The charts tell them how many rooms they will be completing that day, what floor in the hotel they will be working on and whether or not they are leaving rooms or stay over rooms. The average rooms per day changes between twenty and thirty, this number also includes stay over and leaving rooms. The charts also show how many extra beds are needed to be placed in the rooms and if the customer requires something extra to be done. This could be allergy covers or a baby cot in the room (Talaat, 2011).

Once the charts have been collected and the orders for the day are understood the housekeeper moves from the office to the storage part of the department. The storage part is where all the cleaning products and carts are stored at the end of the day. The housekeeper will collect the buckets, mops, cleaning cloths, cleaning products and all the other pieces of equipment that are needed for the day. The housekeeper also has the task of putting information booklets, offers in the hotel, safety cards, notepads and pens, soaps, chocolates and drinking glasses in the rooms (Bowen, 2007).

The housekeeper then goes to the floor that they have been assigned. They also need to take to the floor the linen that they will use for the day. This includes sheets, duvet covers,

pillow cases, towels and bathrobes. Only when the floor has been set up for the day then the housekeeper can make a start on the rooms for the day. The check out in most hotels is usually 12:00 noon. This means that the customer has the right to stay in the room until that time. That is a great thing for the customer as they do not have to rush in the morning and can enjoy a long breakfast or sleep in late. For the housekeeper this is not a good thing as she has 7.5 hours to complete the whole list of rooms in that time. If no rooms have left the housekeeper will make a start doing the stay over rooms. This means the hotel customer is staying for more than one night. In big resorts and hotels this means that the housekeeper has to knock on the door and ask the customer if they want their bed made, trash taken out and floors wiped (Bowen, 2007). If the customer does not answer the door, then the housekeeper has the right to enter the room, unless there is a do not disturb sign on the door. Once going inside then the housekeeper has to make the beds, take out the trash, wipe the handles, change the glasses and towels, wipe the floors and update any supplies such as toilet paper, coffee, tea, sugar, water bottles and the minibar. If the stay over guest is staying for a longer period of time most hotels have a policy of changing the bed sheets every two or three days. This is to of course keep the customer happy, with fresh sheets but it is also to minimize any possible bed bug or lice infections (Lopez-Quintero, Freeman, & Yehuda, 2009).

In the college setting the students are internal housekeepers who does the hygienic practices like cleaning of the dormitories, toilets, sweeping the environment daily, mopping the floors, weeding the campus environment etc. This means the cost of buying equipment to start up an internal housekeeping department can be quite high depending on the size of the institution in question. The machinery needed will be washing machines and

drying machines to wash the housekeepers' dirty cleaning cloths at the end of the day. Different kinds of cleaning materials need to be purchased including products used to disinfect and clean the rooms. Cleaning carriages, buckets, brushes and other equipment need to be bought regularly so as to replace the worn and torn old ones. The promotion of housekeeping practices in the colleges is an art of inculcating cleanliness and hygienic practices in the students (Lopez-Quintero, et, al 2009). This eventually improves the prevention of diseases in the school. This study therefore examined the housekeeping practices of students in selected schools in East Akim District.

1.2 Statement of the Problem

From a public health point of view low hygienic standards are potential source of diseases (Ejemot, 2008). Observing and assessing performed hygienic practices reveals some sources of contamination and risk of infection. Sanitation and sewage are the main tools in combating endemic contagious diseases, and defeating them by improving the overall hygiene and conditions of the environment. This could be achieved by limiting the risk of contact with disgustful dirt and waste. Promoting good hygienic practices as well as a clean environment with dormitories became paramount in the boarding houses. What is not clear is the extent to which students are assigned to perform housekeeping duties. Also, how much supervision they are given is also not documented. Additionally, specific equipment used to perform the tasks would be investigated. Thus this study seeks to examine the housekeeping practises of students in selected schools in East Akim District.

1.3 Purpose of the Study

The main purpose of the study is to examine the house keeping practises of students in selected schools in East Akim District.

1.4 Specific Objectives of the Study

Based on background, the writer sets this dissertation's objectives below:

1. To examine the students' roles as housekeepers in the College.
2. To explore the level of supervision they receive as house keepers.
3. To examine the equipment required for housekeeping.

1.6 Research Questions

1. What are the student's roles as housekeepers in the College?
2. What is the level of supervision they receive as housekeepers?
3. What are the equipment required for housekeeping?

1.6 Significance of the Study

This study will examine the house keeping practices of students in selected schools in East Akim District. This study will improve the housekeeping practises of students in selected schools in East Akim District and improve cleanliness and hygienic practises in the school. Moreover, the study will identify the find solutions to the challenges the students face regarding their housekeeping practises and finally, the findings and recommendations of the study will recommend the necessary house keeping practises and strategies that could help the students to develop housekeeping practices to keep the school clean and tidy to prevent outbreak of diseases.

1.7 Scope of the Study

The theoretical, empirical and conceptual scope of the study is to examine the housekeeping practises of students in selected schools in East Akim District. Therefore, the study will be geographically limited in scope to selected schools in East Akim District.

1.8 Organization of the Rest of the Study

The study is presented in five chapters. The first chapter which is the introduction covers the background to the study, problem statement, purpose of the study, objectives of the study, research questions, significance of the study, as well as the scope and overview of the study. This would be followed by chapter two which reviewed extensive related theoretical, empirical and conceptual literature on the subject matter. Chapter three would look at the methodology of the research which comprises the research design, the research population, sample and sampling technique. It also considered the sources of data and data collection instruments, methods of data collection and analysis. Chapter four would be dedicated to data analysis, findings and discussions. Finally, chapter five would deal with a summary of the study, conclusions drawn from the findings and recommendations of the study and suggestion for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The chapter reviewed literature regarding the house keeping practices in schools and colleges in West Africa, House keeping practices in schools and colleges in Ghana, Supervision of House keeping operations in schools and colleges in West Africa, Supervision of House keeping operations in schools and colleges in Ghana, Equipment used in House keeping operations in West Africa, Equipment used in House keeping operations in Ghana.

2.1 Housekeeping practices in schools and colleges in West Africa

Housekeeping and workplace hygiene means providing adequate sanitation and hygiene facilities that are regularly cleaned and maintained so they do not pose a health and safety risk to students. Students need to have potable drinking water that is safe to drink, sanitary toilet facilities, safe food prepared in sanitary kitchens and served in clean canteens, and a work environment that is otherwise kept hygienic through periodic housekeeping practices. Performing regular housekeeping and maintenance helps you identify potential issues and take preventative action before problems develop. Good housekeeping practices also help you control problems by eliminating tripping hazards, making sure floors are never slippery and keeping exit routes clear (Waddington, 2009). A socially responsible school makes sure that none of its facilities and practices create a situation where students

and workers are at risk due to poor housekeeping and workplace hygiene (Clapp, *et al.*, 2011).

In many Schools and Colleges in West African 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 (Clapp, *et al.*, 2011).

This section on school sanitation and hygiene (SSH) housekeeping practices deals with both hardware and software aspects needed to bring about changes in hygiene behaviour of students and, through these students, in the community at large (Lorntz, 2016). The hardware is the total package of sanitary conditions and facilities available in and around the school compound. The software are the activities aiming to promote conditions at school and practices of school staff and children that help to prevent water and sanitation-related diseases (Clapp, *et al.*, 2011).

Why is it important to focus on schools? After the family, schools are most important places of learning for children; they have a central place in the community. Schools are a stimulating learning environment for children and stimulate or initiate change. If sanitary facilities in schools are available, they can act as a model, and teachers can function as role models. Schools can also influence communities through outreach activities, since through their students, schools are in touch with a large proportion of the households in a community (Clapp, *et al.*, 2011).

Why is it important to focus on students? A survey among school children in West African Colleges in Nigeria, Senegal, and Togo revealed that about half of the ailments found are related to unsanitary conditions and lack of personal hygiene. Such survey results show the need for a focus on students. Also, it is generally recognized that childhood is the best time for children to learn hygiene behaviours. Children are future parents and what they learn is likely to be applied in the rest of their lives (Waddington, 2009). They have important roles in the household, taking care of younger brothers and sisters, and depending on the culture, they may also question existing practices in the household. If children are brought into the development process as active participants, they can become change agents within their families and a stimulus to community development. They are eager to learn and help, and if they consider environmental care and their role in this as important, they will take care of their own health and the health of others. Being tomorrow's parents, children are also likely to ensure the sustainability of a programme's impact (Clapp, *et al.*, 2011).

In reality, schools are often more than just places for learning and behaviour change. If school sanitation and hygiene facilities are absent, or are badly maintained and used, 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. It is therefore important that schools have proper facilities (Bowen, 2007). However, improved facilities in themselves are not sufficient. If we want to reduce the incidence of sanitation and hygiene-related diseases, and to protect the natural environment, behavioural changes are also needed, leading to proper use of the facilities (Clapp, *et al.*, 2011).

Three factors have to be addressed if lasting changes in hygiene behaviour are to occur.

These are: - predisposing factors - knowledge, attitude and belief;

- Enabling factors - availability of resources like latrine facilities and safe water supply, enabling students to transform newly acquired knowledge, attitudes and beliefs into desirable behaviours;

- Reinforcing factors - factors affecting the students' ability to sustain a certain behaviour, like support and cooperation received from parents, guardians and peer groups.

Increasing students' knowledge about health and disease prevention should therefore only be part of the story. When knowledge is supported by enabling and reinforcing factors, desirable changes may occur in the school setting and in the community. This stresses the importance of combining hygiene education with the construction of water and environmental sanitation facilities and involving the community and health institutions in housekeeping practices. A good housekeeping programme is a comprehensive programme, including:

1. a participatory needs assessment involving students, teachers, parents and community members;
2. formulation of objectives, outputs/results and an action plan;
3. improved water and environmental sanitation facilities;
4. properly used and maintained facilities;
5. hygiene education for students;

6. teaching aids which build on the practical situation in and around schools, making students aware of the benefits of using improved facilities in a proper and hygienic way and the seriousness of diseases that result from poor housekeeping practices;
7. improved facilities and hygiene education going hand-in-hand;
8. involvement of students in planning, implementation and maintenance;
9. training for technical staff and teachers;
10. monitoring of the programme and its impact, with a focus on self assessment.

Although the need for sanitation is widely known, reality does not reflect this insight. Workshops held in West Africa and Latin America have revealed that the hygiene education and environmental sanitation situation in schools leaves much to be desired. In West Africa this is particularly so in boarding schools. Among the reasons most often mentioned to explain the often deplorable situation with regard to housekeeping practices are:

- inadequate training of teachers;
- absence of functioning water supply and sanitation facilities, to enable students to put into practice what they have been taught;
- inadequate access to appropriate teaching methodologies and materials;
- health or hygiene education is not a separate examination subject and is at the same time insufficiently addressed through other subjects;
- inadequate supervision and monitoring of housekeeping activities at schools.

2.1.1 Housekeeping practices in schools and Colleges in Ghana

Cleaning is a common activity performed to maintain a healthy, safe, and aesthetically pleasing environment in Ghanaian schools and Colleges. Various cleaning products have become ubiquitous parts of our everyday lives. There is increasing evidence that cleaning is related to asthma and other respiratory illnesses among those who perform cleaning tasks or spend time in recently cleaned indoor environments. While cleaning is common in nearly all industry sectors and in homes, it is particularly important in schools and Colleges which requires intensive and frequent cleaning and uses a wide range of cleaning and disinfecting products (Massawe, *et al.*, 2007).

Cleaning in schools and colleges serves the dual functions of providing surface cleanliness and infection prevention and control. Both the importance and complexity of infection prevention and control are increasing due to rapidly developing strains of multidrug-resistant organisms that can result in serious worker and patient illness and even death (Ejemot, 2008). More importantly the media attention to certain antibiotic-resistant organisms such as Methicillin-resistant *Staphylococcus aureus* (MRSA) or infectious agents that form spores (e.g., *Clostridium difficile*) has intensified interest in cleaning and disinfection in schools and colleges facilities (Massawe, *et al.*, 2007).

Cleaning products are complex mixtures of chemical ingredients. Toxicologic analyses of cleaning products show that many contain chemicals that are known or suspected triggers of asthma and other respiratory problems. Some of these ingredients are also associated with dermatitis, endocrine and neurologic effects, and cancer (Massawe, *et al.*, 2007).

However, many ingredients have not been tested and so their effects are still unknown. Several population-based studies confirm that health-care workers who are exposed to cleaning products have high rates of asthma and other respiratory symptoms, including illness severe enough to result in lost time from work (Talaat, 2011). However, very few of these studies provide information about which specific ingredients are related to the health effects and which cleaning tasks are most hazardous. In addition to human health effects, there is evidence that some cleaning product ingredients harm the environment, damaging aquatic ecosystems and causing air and water pollution (Massawe, *et al.*, 2007).

Concern for the environmental effects of cleaning products led to the development of new products, called “green cleaners”. However, these new products neither have consistent criteria for their environmental benefits, nor do they always consider the human health effects. As a result some green cleaners can still cause health problems to housekeepers (Lorntz, 2016). Changes to reduce the harmful effects of cleaning must ensure effective infection prevention and control as well as being healthier, safe, and environmentally sound. To develop new approaches that account for health, environment as well as infection prevention and control, it would be useful to have a broad overview of the functions of cleaning and the work environment systems in which it is performed. With this information, a full range of options for effective change can be identified and evaluated (Massawe, *et al.*, 2007).

Given the variety of activities brought under housekeeping practices (construction of facilities that need approval and finance, hygiene education which may require a change in curriculum, curriculum development for informal education, etc.), the involvement of

various line agencies and possibly NGOs is needed to cover the entire spectrum in a comprehensive way when implementing housekeeping practices (Massawe, *et al.*, 2007).

The parties involved could include the Ministry of Education, Ministry of Health, Public Works Department, international organizations, NGOs and the Teachers Organization. Government involvement at different levels - national, district, block - is essential to ensure the sustainability of sanitation programmes in Ghanaian schools and college (Njunguna, 2008). In Egypt, a pilot project therefore paid specific attention to improving the involvement of the Education Department. In order to help achieve cooperation among the agencies involved, the creation of a formal mechanism at the inter-ministerial level may be desirable. This could be in the form of a permanent committee or a task force having sufficient authority to influence policies and practices in the sectors involved (Massawe, *et al.*, 2007).

2.2 Supervision of housekeeping operations in schools and colleges in West Africa

In Togo school legislation contains sections on school sanitation and hygiene. The rules state that:

- the school is owned by the pupils, and they should therefore maintain it well while the teachers supervise.
- the compound and classes should be cleaned by the pupils every morning
- the pupils should be clean, every morning this is to be inspected before the school starts • schools should have drinking water facilities and latrines (Quinn, *et al.*, 2016).

A needs assessment at national level should include the departments involved, namely, education, health and public works, as well as international organizations and NGOs (Kochurani, 2008). Preferably a participatory needs assessment should be carried out, whereby all partners get a chance to voice their opinions and to share their expertise. If important potential actors in the field of SSH are not involved national support activities will not be optimal and it may even lead to actors negatively influencing development. For example, if teachers are not involved they may negatively influence school sanitation activities (Quinn, *et al.*, 2016).

In Togo a study on school sanitation was carried out in 1995. The objective of the evaluation was to get an overview of the condition of the sanitary facilities in schools and of hygiene education. One of the difficulties encountered by the evaluation team was that some headmasters did not want to cooperate (Kochurani, 2008). According to the headmasters, school sanitation was so marginalized that it would be of no use to inspect their school. The team found that 30 percent of the primary schools had latrines. Open field defecation was only practised in schools without latrines. The main reasons were insufficient number of latrines, the bad state of the latrines, and the habit of not using latrines. Twenty-six percent of the schools had access to drinking water (piped, spring, well, or handpump) (Quinn, *et al.*, 2016).

In many schools waste was not properly disposed of. Every morning teachers checked the personal hygiene of the children.

- The study recommended the following:
 - every school should have drinking water facilities

- every school should have well maintained latrines
- every school should have facilities to burn waste
- a system to control the quality of the food sold to the students should be established
- a health education programme should be developed

A pilot project in Egypt formulated the following objectives to improve the involvement of the Education Department:

1. Work out with the Education Department alternative strategies for sustaining the programme as part of its action strategies.
2. Provide teachers with intensive training to enable them to carry out their role as effective hygiene promoters with children.
3. Propose an alternative package for utilizing the time and effort of public service candidates by involving them in the programme as monitors and resource persons.
4. Develop and test a package of reference material and guidelines to be employed by others, especially teachers and officials in the education directorate, while carrying out similar programmes.

There is a need for political support, in particular when allocation of funds and changes in curriculum are required. Policy makers and politicians can provide support through:

- commitment to and promotion of the provision of water supply and sanitation facilities;

- formulation of objectives and standards for construction of facilities;
- creation of a conducive environment through hygiene education activities to ensure that facilities are properly used;
- monitoring and regulating implementing agencies;
- institutionalization of teacher training;
- appropriate legislation.

When monitoring we look at different issues. When developing and implementing housekeeping programmes we would like to find out whether they contain the right and most useful activities, i.e. whether they are in accordance with insights and lessons learned elsewhere. We also want to find out the impact of our programme; whether the hygiene behaviour of students changes and whether environmental conditions improve. Monitoring requires indicators and clarity on who collects the monitoring information and how it will be used (Kochurani, 2008). The choice of indicators depends on our objectives and on the activities planned to achieve those objectives, in which the local situation and perceptions play a crucial role. In general, it is important to consider monitoring as a positive activity, giving the opportunity to improve housekeeping programmes, and not as negative, ‘finding the weak spots or mistakes made and blaming people for it’. As with the initial data, obtained through the assessment, it is crucial that monitoring information is collected by and shared among the groups involved and that remedial action is decided upon jointly (Quinn, et al., 2016).

Monitoring the implementation of housekeeping activities implies finding out, first, whether planned activities are carried out, and secondly, whether the output of our

activities is of the required quality. Carried out as a continuous process, monitoring helps us to immediately detect deviations from what was planned. Whereas deviations may be positive or negative, they always help us improve future planning and to identify the corrective actions needed (O'Reilly, 2008). For SSH programmes the following criteria can be distinguished: • they should not merely focus on prevention of diseases, but also promote well-being; • activities need to be designed to also develop long-term decision-making competencies related to health and hygiene behaviour; • the students' needs and emerging health concepts are to be the basis of a planned, sequential curriculum; • they should offer opportunities for students to apply their hygiene-related knowledge, attitudes and practices in real-life situations (Hoppin, and Donahue, 2014).

If these criteria are adopted, monitoring indicators should reflect this. For example, monitoring the adaptation of the curriculum should not only tell us whether this is really being done, but also whether decision-making competences are addressed (O'Reilly, 2008). When monitoring the installation of sanitary facilities, we will not only monitor the number of latrines built, but also whether their design is appropriate, which may mean assessing whether the sanitary facility is adapted to local ablution practices and/or also accessible for small children. Refinement of the indicator requires further definition of 'appropriate' by the users (Hoppin, and Donahue, 2014).

Monitoring the impact of housekeeping activities requires indicators related to changes in hygiene behaviour and in environmental conditions. Indicators should not only relate to quantity but also to quality. As stated above, the choice of indicators depends on the objectives, the expected results and the activities required. Possible indicators for the objective 'students make consistent and proper use of the sanitary facilities' are: 'no faeces

laying around in and around the school compound' and 'toilets are clean', i.e. there is no faeces and/or urine on the slab (Hoppin, and Donahue, 2014).

The use of check-lists by an outsider to monitor and supervise housekeeping programme may be artificial and may not contribute to programme improvement, but if monitoring is done in a participatory way this will increase its effectiveness (O'Reilly, 2008). The outcome of monitoring activities should not be: 'you have done the following things wrong', but how can people be supported to improve their actions. Monitoring has to be thorough and be supportive to the project, the government and UNICEF. To make monitoring effective, the information obtained should be accessible to all persons involved (Hoppin, and Donahue, 2014).

An example of a participatory monitoring exercise is self-monitoring. Students could for instance make their own monitoring chart, posted visibly in the classroom. In this manner data can be collected on, for instance, who suffers from a disease. This type of monitoring does not necessarily require a lot of extra work from teachers, since students are involved and collect the information themselves. Sometimes this self-monitoring will already enhance improved hygiene behaviour related to housekeeping practices and increase motivation for it (Onyango-Ouma, Aagaard-Hansen, and Jensen, 2015).

In Madras, this led to schools and students initiating activities related to school sanitation. It is often necessary to strengthen self-monitoring to ensure follow-up action; for instance, data can be reported to a teacher who writes the information on the board. The same method may be used within families and neighbourhoods. Within families, mothers and fathers could strengthen the self-monitoring process, while within neighbourhoods, this could be done by community workers. Self-monitoring can also serve as a concrete

reminder to practise new behaviour. Feedback on the monitoring information is also an important mechanism for helping children to remember what they have learned and to positively reinforce changed behaviour. Positive reinforcement can come initially from teachers; at a later stage, the continuous approval of the teacher is no longer required and reinforcement can come from peers, friends and classmates, who want to adopt the same new behavior (Hoppin, and Donahue, 2014).

Whereas behavioural changes are usually monitored through observation, the monitoring of related knowledge can also be useful. Several ways of monitoring can be used, and some form of competition, such as an essay competition, a quiz contest, plays, etc. may, in addition, help in reinforcing behaviour changes (Onyango-Ouma, et al, 2015).

. In West Africa, for instance, contests among schools are organized. To help assessing the impact of housekeeping activities, health institutions could also take up monitoring of disease prevalence in schools. In Ghana, so-called ‘circuit supervisors’ visit schools on a regular basis (Hoppin, and Donahue, 2014).

Self-monitoring is not only important for pupils, it can also be helpful for government and UNICEF staff. If all parties involved consider their own role in supporting SSH and search for possibilities to improve the situation, this could mean a breakthrough from a situation where everybody blames someone else: students wait for the teachers to act; teachers wait for the school management to act; the school management waits for the government; UNICEF waits for government action, and vice versa (Hoppin, and Donahue, 2014).

To achieve good SSH programmes, a two-track approach may be useful; with UNICEF officers on the one hand working as a catalyst at the national level trying to create a conducive environment, while at the same time promoting SSH initiatives in schools. Self-monitoring of staff working at the national level and of teachers and pupils may be helpful in this.

In this document school sanitation and hygiene at two different levels - the district/national and school/community level - has been discussed, because we have seen that it is important to take both levels into account. At national level government policies have to be such that initiatives can be taken and that sharing of experiences and information among actors involved in housekeeping operations is stimulated. In practice, however, national and local governments often don't take responsibility for a healthy school environment due to limited financial and human resources. In such cases housekeeping programmes rely more and more on students, teachers, parents and communities (Hoppin, and Donahue, 2014).

UNICEF officers and other parties have a challenging role to play in the development and support of school sanitation programmes. Their enthusiasm can be a catalyst to encourage all parties involved in housekeeping programmes. This manual provide material to sustain this stimulating role, giving ideas and examples to continue with the development of new housekeeping programmes and the improvement of existing ones (Onyango-Ouma, et al, 2015).

Proper selection of technology is important. School staffs have to know about local conditions and preferences related to the design and use of facilities. The involvement of students, community members and local craftsmen will ensure the most appropriate design. 'Appropriate' also means that community members can copy the sanitary and (if possible) water supply facilities constructed for schools for their own purposes. In UNICEF-supported housekeeping programmes country-specific sanitation packages are developed in close cooperation with the Public Works or Water Department. Sanitation packages include both water supply and sanitation facilities. Water facilities provide water for:

- pour-flush latrines
- anal cleansing
- hand-washing
- drinking

Sanitary facilities include facilities for: • excreta disposal • drainage • garbage disposal

Although the sanitation package includes detailed designs, flexibility is needed. Depending on the local situation and needs it may be necessary to adapt a design. It is important to consider at an early stage how the housekeeping programme is to be spread to schools which are not included in the programme, and to communities. If the programme is not spread, this could mean that it will have limited impact, since the government and UNICEF cannot reach all schools and communities in a country (Curtis, 2011).

In this respect, private sector and NGO involvement may be considered. An example of private sector involvement is the set-up of sanitary marts in India, where materials for the construction and maintenance of sanitary facilities can be purchased, where the names of skilled masons are available, and where information on hygiene behaviour is given (Hoppin, and Donahue, 2014).

Site selection for all these facilities is important, and should be done by teachers, students and technical staff. If schools and communities are involved in site selection this may enhance their feeling of ownership and eventually contribute to behavioural change.

2.2.1 Supervision of Housekeeping operations in schools and colleges in Ghana

The Ghana Education Service has a school health policy, which states that schools have to establish School Health Committees to ensure:

- supervision of sanitation in schools
- supervision of the activities of school vendors
- provision of good drinking water and sanitation facilities
- proper refuse disposal sites
- provision of handwashing facilities
- development and implementation of health education programmes at schools (Dancer, 2009).

In Ghana, so-called ‘circuit supervisors’ visit schools on a regular basis. Using a monitoring checklist, circuit supervisors give scores on a number of issues. These include: implementation of the water and sanitation curriculum; the school environment; school facilities (latrines, drinking water, refuse disposal); and personal hygiene of teachers and students. The information obtained through observation is supplemented with information from interviews whereby the knowledge and skills of the students are assessed. The interview format has a number of headings. However, specific questions are formulated by the supervisor. The headings include personal hygiene, water-borne and sanitation-related diseases, the school health committee and formation of health clubs (Dancer, 2009).

As a supervisor your responsibilities are at two levels. You have responsibilities as a manager and you also have responsibilities as an employee. At the supervisor level of management you are responsible for your area. You implement the systems, policies and procedures in your area and with the team that you manage (Curtis, 2011).

As an employee you are responsible to set an example for your own team. Good housekeeping is the responsibility of everyone in the workplace. It is important that you set an example for your workers always demonstrating good housekeeping practices and encouraging your workers to do the same (Dancer, 2009).

As a supervisor your role in reducing the risks of poor housekeeping include: ensuring the work area you are responsible for is maintained in a tidy condition ensuring workplace policies and procedures for housekeeping practices are in place and being followed ensuring all your workers are appropriately trained and follow good housekeeping policy and procedures ensuring any incidents relating to poor housekeeping are reported, you investigate the incident quickly and take any actions to prevent the incident happening

again conducting regular inspections of your work area including cleanliness of floors, correct storage of equipment, hoses, waste bins are routinely emptied to prevent buildup etc. (Dancer, 2009).

You have legal responsibilities to ensure the safety of your area. If you do not meet your legal responsibilities you may be faced with serious consequences including fines. If you do your job you will be ensuring your work area is as safe as it can be. Objectives can be selected based on the assessment. The outputs or results needed to achieve the objectives reflect the improvements needed (Dongre, 2008).

As in planning at school level, it is important to formulate clear objectives to ensure a national school sanitation programme, whereby integration of software and hardware is ensured, directed ultimately towards behaviour change. In general it can be said that objectives need to be Specific, Measurable, Applicable, Realistic and Time-bound (SMART). Plans should include budget and manpower. Setting of objectives is preferably done with all the parties involved: the departments of education, health and public works and international organizations and NGOs. Examples of national level objectives are:

- two teachers of each school trained to develop good hygiene education lesson plans;
- separate latrine facilities for all girls at the upper primary level;
- school legislation adapted to include school sanitation and hygiene;
- school health committees established in every school.

After the objective setting is completed, action plans can be formulated with all parties involved. Action plans are not made once and for all. Ongoing monitoring and periodic

assessment of the achievements may call for adaptation of the plans at any time (Dancer, 2009).

It is important that hygiene education is incorporated in the school curriculum. Opinions differ as to whether it needs to become a subject in its own right, or whether it should be part of a wider syllabus of health education, home economics, natural science or civic education. A workshop held in West Africa concluded that it is not necessary to create a slot exclusively for hygiene education, since it would be most effective when integrated into various parts of the curriculum, such as natural science and civic education (Dongre, 2008).

Others argue that in order to give hygiene education the emphasis it needs, it requires a slot of its own and that it has to be an examinable subject. The most important point seems to be that a discussion takes place about whether or not hygiene education should be part of the curriculum, and if it should be graded and examined. UNICEF could be a partner in this discussion. In most cases teaching aids will have to be developed or adapted. It is important, not only that good quality materials are developed, but also that they are properly distributed and used by teachers and children. Teaching materials should be based and built upon the existing situation in schools (Dancer, 2009).

Often school sanitation is not included in the curriculum. In such cases it is important that UNICEF officers go through the existing textbooks. Often the science book includes information related to health, for instance on brushing teeth. The importance of focused information- and action-oriented messages may be discussed with the government. Key messages for the prevention of diarrhoeal disease and worm infections are: use a latrine

regularly and keep it clean; wash hands with soap before feeding brothers and sisters or eating and after defecation; cover your food (Rutala, & Weber, 2011).

These messages are more important for health than promoting teeth brushing. In order to facilitate the revision of textbooks, it is important for UNICEF officers to find out what the cycle is in which textbooks are revised. In India, for instance, this is every five years. Revision of the curriculum and textbooks is a long-term objective. As long as the adapted curriculum and textbooks are not yet available, UNICEF, with government support, could stimulate the production of teaching material, with the short-term objective of ensuring sufficient suitable teaching material for schools (Dancer, 2009).

In order to become effective promoters and implementors of housekeeping practices, teachers require a certain level of hygiene awareness and commitment. This includes:

- a working knowledge of the relation between water, sanitation, hygiene behaviour and health;
- awareness about their importance as a role model, resulting in proper hygiene behaviour;
- skills to work with students in a participatory way;
- commitment to bring about improvement themselves, or to get third parties involved if necessary.

Training of teachers who, if motivated and enthusiastic, are a key element for effective hygiene education, should also include effective teaching methodologies, e.g. the use of participatory techniques (Rutala, & Weber, 2011). For bringing about or facilitating improvements in the water and sanitation situation, teachers will need to know how and where to apply for assistance, how to mobilize community members, etc. Construction of a

latrine at the teacher's premises will help enhance the teacher's appreciation of sanitary facilities and at the same time be a motivating factor (Dancer, 2009).

Selection of teachers for training should be done carefully. Selection criteria include: the teacher can act as a role model and have good contacts in the community, the teacher has a genuine interest in housekeeping practices and the teacher can be allocated some time for taking housekeeping activities in the school a bit further. Care should also be taken that male as well as female teachers get involved in housekeeping operations (Dancer, 2009).

However, as we have seen earlier, teachers may not be able to put their knowledge and commitment to effective use if the curriculum does not allow for hygiene education, or if agencies do not respond to requests for assistance in the provision water and sanitation facilities. Training of teachers should therefore never be carried out in isolation, which also calls for interagency cooperation (Rutala, & Weber, 2011). The basic professional training of school teachers should include education related to sanitation and hygiene and to a participatory way of working. Teachers already in service have to get the opportunity to upgrade their knowledge and skills in this respect. Regular interdisciplinary workshops involving school teachers, health workers, planners, etc., (Dancer, 2009).

Although it is necessary to include housekeeping practices in the curriculum of teacher training institutions, this is in many cases a long-term objective. Including housekeeping practices in the curriculum does not reach teachers who have already been trained (Carlin, Parry, Von Beheren, 2008). As long as housekeeping practices is not a regular part of the programme in teacher training institutions a short-term objective of training teachers in

housekeeping practices could be established. This could, for instance, be in the form of one- or two-day orientations for teachers during the holidays (Dancer, 2009).

2.3 Equipment used in Housekeeping operations in West Africa

Cleaning products are designed to remove surface contaminants like soil particles and grease. Disinfecting products are meant to destroy microorganisms. Both cleaning and disinfecting products are often a mixture of many chemical ingredients. The Centers for Disease Control and Prevention (CDC) uses these definitions for cleaning, disinfection, and sterilization in healthcare:

- Cleaning is the removal of visible soil (e.g., organic and inorganic material) from objects and surfaces and normally is accomplished manually or mechanically using water with detergents or enzymatic products. or
- Cleaning is a form of decontamination that renders the environmental surface safe to handle or use by removing organic matter, salts, and visible soils, all of which interfere with microbial inactivation (Klevens, et al., 2007).
- Disinfection describes a process that eliminates many or all pathogenic microorganisms, except bacterial spores, on inanimate objects.

In addition, the CDC defines sterilization as a process that destroys or eliminates all forms of microbial life, including bacterial spores.

Antimicrobial products are registered as pesticides under the US Environmental Protection Agency (EPA) which uses this definition for antimicrobial pesticides:

- Antimicrobial pesticides are substances or mixtures of substances used to destroy or suppress the growth of harmful microorganisms whether bacteria, viruses, or fungi on inanimate objects and surfaces. Antimicrobial pesticides have two major uses:

(1) disinfect, sanitize, reduce, or mitigate growth or development of microbiological organisms; (Klevens, *et al.*, 2007).

(2) protect inanimate objects (e.g., floors and walls), industrial processes or systems, surfaces, water, or other chemical substances from contamination, fouling, or deterioration caused by bacteria, viruses, fungi, protozoa, algae, or slime.

While cleaning and disinfecting have essential benefits for combating infections, there is evidence of an association of conventional cleaning products with adverse health effects among cleaning staff and building occupants. Epidemiologic studies, carried out mostly in Europe, show that cleaning products are associated with respiratory irritation and asthma. In addition to potential harms to health, environmental risks are evident: many cleaning chemicals released into the environment biodegrade slowly or incompletely, posing a risk of water supply contamination and/or impact on wildlife (Carlin, *et al.*, 2008).

Nearly all used cleaning products and wastewater are disposed into municipal sewers. So far, efforts to replace toxic cleaning products with green cleaners have mostly focused on environmental impacts and not accounted (Klevens, *et al.*, 2007).

Cleaning holds special importance for hospitals and other healthcare facilities. The healthcare industry represents a significant population for health studies on cleaners because of the intensive and frequent cleaning with a wide range of cleaning and disinfecting products. While the aesthetic benefits of cleaning are necessary for attracting

and retaining patients, cleaning and disinfection play an essential role in healthcare settings by preventing healthcare-associated infections (HAIs) (Klebens, *et al.*, 2007).

As the use of cleaning and disinfecting agents is increasing due to infection prevention and control efforts, there is movement towards green cleaners or products that have fewer potential harms to health.

Improving cleaning is not just about transitioning to more benign chemicals but also about broadly examining the purpose that cleaning serves and systematically considering alternative, and sometimes very different, strategies for minimizing unintended consequences while achieving the desired outcome. The good organization of cleaning and maintenance of the water and sanitation facilities is of the utmost importance (Carlin, *et al.*, 2008). Badly maintained sanitation facilities often cause an even bigger health risk than scattered defecation. Stagnant water around tap stands and in blocked drainage channels attracts rodents and forms a breeding place for mosquitoes. It is not so important who cleans and maintains facilities, but that arrangements for it are made, and that this is done before construction starts (Klebens, *et al.*, 2007). A good cleaning and maintenance system requires funds, spare parts, people and equipment, and a clear division of roles and responsibilities among the actors involved. A number of organizational options for maintenance exist:

- through a cleaning committee
- by classes on a rotation basis, with or without a rewarding mechanism
- by external cleaning personnel
- by individual students

Older students could also be involved and trained in water supply management in the community at large. Responsibility for cleaning and maintenance and involvement in it are often seen as being synonymous. Often teachers refer to students, who have been given the task to clean latrines, as being finally responsible for the latrines' upkeep, whereas the final responsibility, involving supervision and corrective action if needed, should usually remain with the school management. In Nepal a school management committee supervises sanitation activities and provides guidance for the more effective launching of the sanitation programme. Pollution of the environment around places with a high concentration of people, like schools, is very likely. Therefore sanitary facilities are to be provided (Klebens, *et al.*, 2007).

2.3.1 Excreta disposal facilities

Three types of excreta disposal systems are recommended for schools: pit latrines, ventilated improved pit latrines (VIPs) and pour-flush latrines. For schools in areas where no or insufficient water for flushing is available close to the latrine or where stones or sticks are used for cleaning, the VIP latrine is the most suitable. If a sufficient amount of water is available close to the latrine and the facilities are expected to be well maintained, a pour-flush latrine may be considered (Talaat, 2011).

Regular cleaning of pour-flush latrines is particularly important; if these facilities are not cleaned they will become so dirty that they are no longer used. In Asian countries there is often a strong preference for pour-flush latrines, even when there is no water

available close to the latrine and when it is not clear who will keep the facilities clean. Although these three latrine types are recommended, there is a range of options available for schools and households, and any latrine is better than no latrine (Klevens, *et al.*, 2007).

The number of latrines required should be discussed with the technical department. An indication for the number of latrines required is one latrine for twenty students. It is advisable to include separate facilities for teachers. If teachers do not get their own facilities, they may lock the students' facilities and thus prevent their regular use by the students. Site selection of latrines is important and needs careful consideration. If facilities are located far away from the school this may encourage misuse; if they are too close, stench may penetrate the classrooms. Schools and housekeeping programmes may also be instrumental in promoting the construction and maintenance of household latrines (Bowen, 2007).

When planning the number of latrines for a school, certain issues should be considered: • Are separate urinals available for boys? If so, fewer latrines will be needed (Klevens, *et al.*, 2007).

- What is the proportion of boys to girls? If urinals are available, boys need fewer latrines.
- Are children allowed to leave the classes to use the latrine? If not, pressure on latrines during breaks is great and more latrines are required.
- Do all children have breaks from classes at the same time? If so, more latrines are required. Could breaks be staggered?

Since school facilities are most often used during peak hours (breaks between classes) and facilities are mainly for urination, it may be helpful to design separate urinals. A urinal will

reduce the smell from urine in the latrine (Bowen, 2007). Urine can drain to the pit or soakaway. If the urine is not flushed properly a very bad smell may result. Whether urinals are to be provided or not should be discussed with the technical department and with teachers and pupils (Klevens, *et al.*, 2007).

Drainage Stagnant water due to poor drainage, blocked sewers, and overflowing septic tanks or soakaways may create adverse health effects. It is important to distinguish between sullage and sewage. Sullage refers to wastewater from the kitchen, shower, etc. Sewage is water mixed with excreta or water which has been in contact with excreta. If possible, schools should not create an environmental hazard by polluting the environment with contaminated surface water, specifically with sewage. Schools with VIP or pour-flush latrines deal with the contaminated water on site and are therefore no danger to the environment (Klevens, *et al.*, 2007). Preferably schools try to limit the amount of contaminated surface water. This can be achieved by choosing on- site dry disposal systems or wet systems which deal with any contaminated water on site, such as a pour-flush latrine with leaching pit (Ejemot, 2008). When a septic tank is constructed, the soakaway should have sufficient capacity to filtrate all contaminated water. Soakaways may also be constructed for sullage. Effluent from septic tanks can, if a soakaway is no option, drain into small-bore sewers. Water which is not contaminated, such as excessive rainwater, can directly drain into a receiving water body, a river, lake or pond (Klevens, *et al.*, 2007).

The type of drainage system to be selected depends on the level of filtration and evaporation taking place. Those in turn depend on the soil and weather conditions and slope of the terrain. In peri- urban areas, drains should be cleaned by the municipality. In

rural areas, a soakage pit may be sufficient. For school compounds, unlined open drains may be considered (Ejemot, 2008). These are only advisable when the slope is less than 1 percent. Grass will help to hold the top soil. For slopes of more than 1 percent lining is needed. Closed drains can best be avoided, open drains should be cleaned and maintained regularly. Water should not remain stagnant in the drains to avoid health hazards (Klevens, *et al.*, 2007).

2.3.2 Garbage disposal

Poor garbage disposal may lead to stagnant water due to blocked drains, to fly breeding and to the attraction of vermin. These situations can contribute to the transmission of diseases. Garbage therefore needs to be dealt with in a safe way. The selection of a garbage disposal system is basically determined by the type and amount of waste being produced. In rural and peri-urban areas, garbage consists mainly of compostable matter. In such cases the establishment of a well-managed compost heap will suffice. It is not advisable to burn garbage, in view of health hazards such as respiratory diseases. In some schools, solid garbage disposal may be more complex because they have a wider variety of materials that need to be disposed of (Ejemot, 2008).

Plastic and tin waste, for instance, will have to be dealt with separately. These can either be collected for recycling or disposed of through a municipal collection system. Waste bins placed in every classroom and around the school compound should be used to facilitate collection before treatment (Lorntz, 2016). Sometimes space for garbage disposal is a problem. An option is for the older pupils to collect the garbage and take it to the municipality if it is not collected. Older pupils can also help with the selection of material

for recycling. Another option is to ask community members for their help (Klevens, *et al.*, 2007).

A survey in Benin showed that there are several ways in which solid waste is removed:

- depositing outside schools to be collected by the municipality (urban schools)
- depositing in the open field (rural schools)
- incinerating or burying in areas nearby the school (rural schools) • recycling of, for example, paper and cardboard (Klevens, *et al.*, 2007).

2.3.3 Equipment used in housekeeping operations in Ghana

● Detergent or Cleaning Agent

Both soaps and detergents help water to emulsify fats and to suspend solid soil particles. Soaps are made from fats and lye, while detergents are synthetic chemicals. Soaps and detergents act by reducing the surface tension of water, which increases water's interaction with soils, surrounds and lifts the soil from the surface, and allows water to flush the surrounded soils away (Lorntz, 2016). Proteins will hydrate and swell when they come into contact with water, which helps alkalis to react with them, forming soluble salts (Klein, *et al.*, 2015).

● Manual Cleaning

Pads, brushes and brooms should be: 1. Dedicated to tasks for which they are designed.

- Optimizes cleaning effectiveness; and
- Minimizes cross-contamination between areas of the plant.

Designed for the task.

- Brushes—proper stiffness;
- Pads—proper cutting properties; and
- Pressure sprays—moderate pressure.
- Cleaning aids that retain water, such as sponges, wiping cloths, and mops should not be used for routine cleaning.

Do not mix uses.

For example, never:

- Use floor brooms / floor squeegees on tables
- Use green pads used for cleaning waste barrels on grading or packing tables
- Use the same brush to clean floors on any food contact surface (Klein, *et al.*, 2015).

● **Broad-spectrum Germicides**

The term “Broad Spectrum” when applied to a sanitizer means that it will attack a wide variety of different types of microorganisms, including gram-positive bacteria (*Listeria* and *Staphylococcus*), gram negative bacteria (*E. coli* and *Salmonella*), viruses, fungi (both yeasts and molds), as well as many parasites (Njunguna, 2008). Broad-spectrum germicides act on microbial membranes, cellular enzymes, DNA, and protein.

Iodine-based sanitizers have been used as antimicrobial agents since the 1800s and have a broad spectrum of activity. They are a powerful sanitizer in strong acidic aqueous solutions. They are generally used at 12.5 to 25 ppm available iodine, and can cause staining on some surfaces, especially plastics (Klein, *et al.*, 2015).

● Other Sanitizers

Quaternary ammonium compounds (Quats) are cationic surfactants. They have fair wetting properties and react strongly with cell walls of certain microorganisms. Quats are more effective than chlorine against yeasts, molds and gram-positive microorganisms like *Listeria monocytogenes*, but less effective against gram-negative bacteria such as coliforms, *Salmonella*, and *E. coli*. Quats are incompatible with soaps and anionic detergents (Njunguna, 2008). Most cleaners are anionic, so surfaces must be thoroughly rinsed between cleaning and sanitation. Quats are excellent environmental sanitizers for floors, walls, drains, and equipment. They are non-corrosive to metals and stable at high temperature, but highly affected by water hardness (Klein, *et al.*, 2015).

Acid-anionic sanitizers are surface-active sanitizers, but negatively charged. Formulations include inorganic and organic acids plus a surfactant. Carboxylic acids (fatty acids) are some times incorporated as well. They are unaffected by hard water or organic soils. The dual function of acid is that it can be used for rinsing and sanitizing in one step. These sanitizers must be used at low pH. Activity above pH 3.5–4.0 is minimal. Acidity, detergency, stability, and noncorrosiveness makes them highly effective. Acid-anionic sanitizers are broad spectrum against bacteria and viruses, but not very effective against yeasts and molds (O'Reilly, 2008). Peroxyacetic acid (PAA) is an equilibrium mixture of

acetic acid and hydrogen peroxide in an aqueous solution. It is a very strong oxidizing agent and has a stronger oxidation potential than chlorine. It has a pungent acetic acid odor, and can be used to control odor and biofilms from food contact surfaces, and as a microbial control agent for sanitizing surfaces of equipment, floors, walls, and indoor processing and packaging facilities (Klein, *et al.*, 2015).

● **Methods of Applying Sanitizers**

Working with Concentrated Chemicals

- Follow label instructions carefully.
- Always store concentrated chemicals in original container.
- Work with proper dilutions.
- Wear protective equipment recommended by manufacturer.

● **Cleaning and Sanitation Basic Steps**

- Flush or sweep surfaces to remove gross soil.
- Wash the surface with the appropriate cleaning compound.
- Flush the cleaner from the surface.
- Apply a sanitizer.
- Flush the sanitizer.

2.4 Housekeeping Practices

Good housekeeping is essential to fire safety for each type of occupancy from the simplest dwelling to the most sophisticated industrial complex. Housekeeping is the maintenance of an orderly, clean and neat work place. Good housekeeping practices, both indoors and outdoors, reduce the danger of fire. They can control the presence of unwanted fuels, obstructions, and sources of ignition that can create extremely hazardous exposures both to life and property. It is not practical or possible to discuss every aspect of good housekeeping. Some aspects of housekeeping are common to practically all occupancies; others are peculiar to a particular occupancy and require special procedures. Although a cliché, the statement “a place for everything and everything in its place” captures the best approach to assuring good housekeeping practices (Nitschke & Frye 2008).

2.4.1 Principles of Good Housekeeping

Jones and Pizam, (2008) asserted that housekeeping consists of the simpler aspects of building care and maintenance:

1. Maintaining operational tidiness and order,
2. Properly controlling waste, and
3. Regulating activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions.

To be successful, housekeeping requires organization and continuous monitoring.

2.4.2 Responsibility for Housekeeping

No matter what the area of operation, work activity creates waste materials and obstructions to orderly movement throughout the premises. It is essential that every organization have a system for removing them. It is not enough to be aware that waste accumulates and obstructions to movement can occur and then remove them when they become unwieldy or a nuisance. Developing a systematic approach is the only way to make sure that housekeeping activities achieve their goal: an orderly work place that contributes to fire safety and disease control. It is essential to develop a disciplined approach to prescribed housekeeping practices, so that workers remove debris and trash regularly and store materials and equipment neatly. The same is true for routine building maintenance chores. Without a systematic approach, workers may neglect the chores and property can suffer Jones and Pizam, (2008). This may also indicate that the organization is neglecting the routines for maintaining fire defenses. In a large organization, management usually assigns housekeeping to a maintenance staff charged with the routines involved in housekeeping and maintenance. Direction for the overall effort, however, remains with management. Management communicates how important and urgent good housekeeping routines are if efforts are to be effective. Without direct and vigorous management support, housekeeping goals and objectives can become a low priority (Jones & Pizam, 2008). In a smaller organization without a maintenance staff, good housekeeping is more an individual effort. Yet the principles are the same: Management must lead workers and convey to them how important vigorous and systematic attention to the tenets of orderliness and cleanliness is.

2.4.3 Basics of Good Housekeeping

Except for the somewhat specialized activities of basic building maintenance, there are three factors required for good housekeeping:

1. Adequate space, proper layout and equipment.
2. Correct materials handling and storage.
3. Cleanliness and orderliness.

Good housekeeping is certain to result when the organization pays proper attention to establishing routines for these three factors.

2.4.4 Layout and Equipment

An adequately designed work area has adequate working space, adequate and proper storage facilities, and the right equipment for moving material. Otherwise good housekeeping falters as the work area becomes clogged, materials back up waiting for processing, and the messy surroundings result in a decline of overall cleanliness. A careful review of space requirements for the actual operations being carried on may suggest ways to rearrange the space. A better arranged space can improve the levels of housekeeping considerably (Jones & Pizam, 2008)

2.4.5 Materials Handling and Storage

The lack of adequate equipment to move and to arrange materials in convenient storage areas results in haphazard storage. This compounds the housekeeping problem. It can easily result in blocked exit paths and obstruct access to fire extinguishers, small hose

stations, and automatic extinguishing system control valves. Other fire protection equipment, such as fire doors, can become inoperable. Poorly organized storage may result in the collection of debris and trash in neglected corners and cul-de-sacs (Jones & Pizam, 2008).

2.4.6 Cleanliness and Orderliness

No matter what the occupancy, an organization can immeasurably improve the level of fire safety by paying attention to the fundamental need to keep all areas as clean and neat as possible. The most important defense against unsightly and dangerous accumulations of unwanted materials and trash is each individual's personal sense of responsibility and desire to keep the surroundings neat and clean. Management must support workers by providing efficient and timely waste removal programs (Jones & Pizam, 2008).

2.4.7 Building Care and Maintenance

There are several noteworthy procedures for the proper care and maintenance of buildings. These procedures apply regardless of occupancy. They either address inherent fire hazards or work to reduce the fire danger to the building.

2.4.8 Cleaning and Treatment of Floors

Cleaning and refinishing floors may present a fire hazard if workers use flammable solvents or finishes or if the process produces a sufficiently large combustible residue. For example, many fires have resulted from use of gasoline to clean garage floors. Cleaning or finishing compounds that contain solvents with flash points below room temperature are too dangerous for ordinary use except in very small quantities. The hazard depends upon the conditions under which individuals use solvents and on what precautions they take. Fire testing laboratories have listed many cleaning compounds that present little or no hazard (Linder, 2004)

2.4.9 Sweeping Compounds

These compounds, that consist of sawdust or other combustible material treated with oil, are hazardous. The degree of danger depends upon the character of the oil. The use of sawdust or similar materials to absorb oil spillage increases the fire hazard unnecessarily since non-combustible oil-absorptive materials are available for this purpose (Linder, 2004)

2.4.10 Floor Oils

Compounds containing oils and low-flash-point solvents are a hazard particularly when freshly applied. The oils are subject to spontaneous heating. To promote safety, organizations should require employee to store oily mops and wiping rags in metal or other non-combustible containers. The excessive use of any combustible oil increases the

combustibility of the floor. Oil soaked floors, resulting from years of use and cleaning, also show increased combustibility

(Linder, 2004).

2.4.11 Waxes

Low-flash point solvents are hazardous, especially when used with electric polishers. Water emulsion waxes are preferable.

Furniture Polishes: Polishes that contain oil subject to spontaneous heating become hazardous when individuals do not properly dispose of polish soaked rags.

2.4.12 Flammable Cleaning Solvents

Organizations should not use these since a number of nonhazardous cleaning agents are available. There are a number of relatively safe materials that have high flash point, stability, and low toxicity. There are several commercial-type stable solvents available that have flash points from 140° to 190°F and have a comparatively low degree of toxicity. Safe materials are available for most of the preceding purposes (Linder, 2004).

2.4.13 Chimney Cleaning

Chimneys need periodic cleaning. The frequency depends on the fuel used and how carefully workers operate boilers and furnaces. Soft coal and wood fuels may make annual cleaning necessary. Mechanical cleaning is best, but finding experienced chimney sweeps can be difficult. As a substitute, an employee may wrap a brick in an old piece of carpet material. He or she then ties a rope to the wrapped brick and slowly drops it down the flue. The employee may use a piece of chain, bunched, instead of the brick. Various proprietary products are available for removing soot. Some of the products work by promoting combustion of the soot and disposing of it by specially controlled burning. Other soot removing compounds that contain oxidizing agents have caused explosions when thrown into stoves or furnaces. The National Bureau of Standards has run tests that indicate that using chemical means to remove soot is, at best, of uncertain value (Mirzayev, 2015).

2.5 Housekeeping for Occupancy and Process

2.5.1 Rubbish Disposal

Rubbish handling is essential to the housekeeping process. Its success depends primarily upon having and observing a satisfactory routine. Most important is the proper and regular disposal of combustible waste materials. In industrial-type operations, the removal of combustible waste at the end of each day's work or at the end of each work shift is a common practice. Sometime, however, even more frequent waste disposal is necessary. In other operations, collecting waste, storing it safely pending disposal, and the routines for disposal vary with the nature of the property use. Regardless of the routine, having an adequate waste collection and disposal program is a fire safety essential. Keeping a place tidy also depends on providing enough wastebaskets, bins, cans, and other proper containers so that building users will find tidiness convenient (Mirzayev, 2015).

2.5.2 Receptacles

Disposal of waste and rubbish should be in non-combustible containers. This is applies to small receptacles such as ashtrays and wastebaskets and to larger units such as those used on commercial properties. Industrial waste barrels should be of metal and be equipped with a fitted cover. Organizations must make sure that workers avoid mixing waste materials where such mixing can create additional hazards. Plastic wastebaskets of varying sizes are widely available. These baskets are popular because they are quiet, attractive, and scratch and dent resistant. Some plastic baskets readily melt and burn. These baskets create a comparatively serious fire exposure problem by collapsing and spilling their burning contents as well as adding fuel to the fire. Other

baskets may contribute relatively little fuel to the fire while maintaining their shape fairly well. If an organization prefers plastic baskets, it should evaluate the various brands and types carefully. Many manufacturers now provide information on their products' burning characteristics.

2.5.3 Housekeeping Hazards

Many occupancies pose special housekeeping problems because of their operations. Specific planning and arrangements are necessary to address these.

Drip pans are essential for many operations. In particular, workers must place pans under some motors, under machines using cutting oils, bearings, and where work involves borings and turnings that may contain oil. Pans should be of non-combustible material. Workers can best handle spills and drips by using oil-absorbing compounds that consist primarily of diatomaceous earth. These compounds are commercially available and are preferable to sawdust or sand. Regular removal of oil soaked material is essential.

Organizations should anticipate **flammable liquid spills** whenever operations required the use of such liquids. The materials -- oil absorbing compound and appropriate tools -- to handle spills should be close at hand and readily available. Workers should receive training in the appropriate steps to cut off sources of ignition, to ventilate the area, and to safely dissipate any flammable vapours.

Flammable liquids waste disposal can often be troublesome. Organizations should never drain waste liquids, such as automobile crankcase draining, into sewers. Instead workers should place such waste in metal drums until proper disposal take place. Where such facilities exist, organizations should recycle such waste. There are companies that specialize in collecting waste petroleum products and refining them for further use. Organizations should burn flammable liquid wastes only in containers designed or adapted for this purpose. Many fire departments like to receive waste oils for training firefighters in handling flammable liquid fires.

Coatings and lubricants such as paint, grease and similar combustibles are widely used. Good housekeeping requires the collection and safe disposal of combustible residues. Experts recommend the use of non-sparking tools for cleaning spray booths and associated exhaust fan blades and ducts to prevent igniting combustible residues. It is essential to maintain sprinklers free from deposits. There are two effective methods. The first is to applying a thin coating of grease to sprinklers and then to clean them frequently. Another is to enclose each sprinkler in a light paper bag that workers change daily. Organizations should locate air ducts so vapors from spray booths vent directly to the outside and residues do not accumulate.

Clean cotton waste is mildly hazardous, chiefly because it is readily flammable when not baled. In addition, if dirty waste or small amounts of certain oils become mixed with them spontaneous heating can result. Although clean waste presents only a small fire hazard, it is a good practice to handle it in the same manner as dirty waste. Storage of large supplies

of clean waste should be in metal bins or in metal-lined woodbins. Bins should have covers and workers should close them except when removing waste. Organizations should provide an adequate number of bins if supplies are large or if it stores different kinds of waste. The bin covers should have counterweights so that the covers are easy to lift and lower. Experts recommend that the counterweight rope have a fusible link so that the cover closes automatically in the event of fire. Storage of local supplies of clean waste should be in small, properly labeled waste cans. Local supply points have the advantage of discouraging workers from keeping clean waste in lockers, drawers, benches, and other areas. This practice can be dangerous because someone might inadvertently store dirty waste in these areas and a fire might result.

Oily waste on wiping rags, sawdust, lint, clothing, etc. -- particularly waste containing oil subject to spontaneous heating -- is extremely dangerous. Storage of all such materials in ordinary quantities should be in a standard waste can. When selecting cans, organizations should look for a label indicating that a recognized laboratory has tested and approved them. Storing large amounts requires heavy metal barrels with covers. Good housekeeping includes emptying cans containing oily waste daily and keeping wiping rags in covered metal containers until laundered.

Packing materials are generally combustible and, therefore, hazardous. Workers should treat burlap, straw, excelsior, and similar materials as clean waste unless the organization uses large quantities. If this is the case, the organization may need special vaults or storerooms. Fire safety experts recommend automatic sprinklers in areas where workers

store or handle large quantities of packing materials even if the rest of the building lacks this protection. Promptly removing and disposing of used or waste packing materials and crating from receiving and shipping rooms is essential to minimize the danger of fire. Workers should be orderly when they pack and unpack to minimize scattering of materials around the area.

2.5.4 Lockers and Cupboards

When **lockers** are not clean and when workers use them as storerooms for waste material, they are fire hazards. This is particularly true if the stored items include oily rags, cloths or clothes smeared with paint. Pipes and cigars that workers do not completely extinguish before placing them in lockers are very dangerous; so is the careless storage of matches in lockers. Metal lockers reduce the danger of fire spreading from one locker to another. Organizations should conduct regular inspections if they use wooden lockers. In addition, solid construction can help to confine a fire to a locker. Therefore, lockers should have solid backs and solid dividing partitions rather than expanded metal or wire screen ones. Lockers stacked in two tiers, one upon the other, is not a good choice. They do not allow workers to hang their clothes so they do not wrinkle. As a result, workers often hang their clothes outside the locker or place them haphazardly into the locker. The latter practice can increase the danger of spontaneous heating if clothes are oil or paint spotted. If lockers have mechanical exhaust ventilation, the organization should follow NFPA No. 91, Blower and Exhaust Systems, to avoid the danger of spread of fire originating in a locker.

If it provides and washes protective clothing, fire safety experts suggest that the organization install a system of wire baskets, suspended from the ceiling by a small chain running over a pulley. Each employee should have his or her own basket. This system has proved successful in maintaining cleanliness, thereby reducing the fire hazard. If the locker area has automatic sprinklers, lockers should have expanded metal or screen tops so water from sprinklers reaches the locker contents. If necessary, workers can cover the top with paper to protect their belongings from dust. Using the tops of locker for storage is a bad practice both from fire and accident prevention standpoints. Sloping tops solve this problem because workers cannot place items on the top.

Wooden supply **cupboards** present a fire hazard in such places as machine and paint shops if the woodwork becomes oil or paint soaked and if workers leave clothes or oily waste in the cupboards. Regular inspections of such cupboards can verify that workers are maintaining an appropriate level of cleanliness. Steel is the ideal material for cupboards that store tools and similar materials.

2.6 Outdoor Housekeeping

Good housekeeping is as important out-of-doors as it is inside homes and buildings. Inadequate housekeeping may threaten the fire security of exposed structures and items stored out-of-doors. Accumulations of rubbish and waste and overgrown grass and weeds adjacent to buildings or stored items are probably the most common hazards. Inspecting the grounds and correcting problems is essential.

2.6.1 Weed and Grass Control

Dry weeds and grass around buildings and along highways and railroad properties present a clear fire hazard. Destroying the vegetation has always been the aim of those responsible for maintaining such areas. Applying a chemical solution that acts as a poison on the weeds is a frequent removal method. However, some chemicals can create hazards. For example, chlorate compounds, particularly sodium chlorate, are oxidizing agents. Although they do not burn themselves, they optimize conditions for fire or explosion when they come in contact with combustible materials. Using sodium chlorate solutions on dry grass and weeds has resulted in many fires during hot periods in the summer. Sodium chlorate solutions are suspect in numerous other fires in buildings and on properties where workers may have spilled such solutions. A personal hazard arises when a person's clothing becomes soaked while using such solutions.

Sodium arsenite and other compounds containing arsenic are efficient herbicides but are poisonous and are not recommended. Various proprietary weed-killers do not pose fire or serious toxic hazards. Calcium chloride and agricultural borax, applied dry or in solution, are effective non-hazardous weed killers. Ammonium sulfamate and various other commercial chemical weed killers also have little or no fire hazard and only a slight toxic hazard. The amounts of various chemicals needed for effective weed killing, and the duration of their effect, vary depending upon the weed-killing agent used, the character of the vegetation, and atmospheric and soil conditions. Manufacturers' directions indicate the amounts that workers should use under various conditions.

Burning as a method for removing dry grass and weeds frequently ignites buildings when grass fires spread out of control. Controlled burning at the proper time of the year under direct fire department supervision largely avoids this hazard. A good method is to cut grass and remove it or, if environmental regulations allow burning out of doors, burn it in piles. Fire extinguishing equipment should be adequate and available. Although flame-throwing torches can be useful, the organization should use them only when the vegetation sufficiently moist so that it cannot propagate fire readily beyond the area reached by the flame-thrower. However, the torches can introduce a hazard if not carefully operated. Organizations should always obtain a permit from the fire department before burning grass and brush. First, having the permit is a legal requirement. Second, the permit application process allows the fire department the opportunity to educate the public about safe burning. Third, the application process provides the department with an opportunity to prohibit burning during hazardous periods and to provide control of burning during other periods.

2.6.2 Refuse and Rubbish Disposal

If the organization keeps materials and equipment outdoors, good housekeeping requires keeping combustibles and obstructions out of the passageways between storage piles. Keeping passageways clear permits efficient firefighting should the need arise. Organization should locate storage areas at sufficient distances from buildings of combustible construction or from other combustible storage to prevent fire spread. Housekeeping focuses on maintaining these separations by prohibiting even the temporary introduction of objects such as contractors' shacks, discarded crates, or other combustibles.

Proper housekeeping also requires prohibiting smoking in areas of outdoor storage. The organization should provide suitable warning signs and non-combustible receptacles for the disposal of smoking materials before entering a “no smoking” area.

When it must store combustible materials from industrial operations out doors until disposal, the organization should locate the storage area at least 20 ft. (and preferably 50 ft.) distant from buildings. They should also be and at least 50 ft. from public highways and sources of ignition, such as incinerators. A secure non-combustible fence of adequate height should enclose the area. For most organizations, the regular collection of rubbish is the most satisfactory solution to the unavoidable accumulation of waste. Burning rubbish is generally unsafe and most urban areas do not permit it (Tesone, & Pizam, 2008).

Dumping rubbish creates a fire danger even in landfills. Sparks from a dump fire or a bonfire can carry fire long distances. This can also occur if the organization burns rubbish in an incinerator that lacks an adequate spark arrestor. In most parts of Michigan, there are certain days when dry conditions make burning is dangerous. Usually night and early morning are the safest time to burn rubbish because of there is more moisture. This helps to reduce the chance of ignition from sparks.

2.7 Reducing Risks of poor housekeeping

According to Tesone, & Pizam, (2008), good housekeeping practices and supervision are crucial to basic workplace safety. Work health and safety laws mandate that senior management must take a risk management approach to minimise the risks to health and safety in the workplace. This involves taking a systematic approach to identifying all the risks associated with poor housekeeping and implementing control


measures to eliminate the risks or, if that is not possible, to reduce the risks to the lowest possible level. This includes:

- identifying cleaning and maintenance requirements in all areas of the workplace
- assessing the risks associated with each situation
- identifying and implementing control measures that reduce the risks to the lowest possible levels
- reviewing the effectiveness of these control measures and making adjustments as needed
- conducting regular workplace inspections that include checking housekeeping and taking corrective actions as appropriate
- reporting, investigating and implementing control measures in regard to any incidents to ensure they don't happen again
- documenting this process so that there is evidence of everything that has been done in the workplace to reduce the risks to the lowest possible levels
- conducting training for all staff in the importance of good housekeeping practices, their role and the need for them to report hazards to their supervisor.

It is important that in identifying control measures the primary focus is on identifying and implementing the most effective control measures. The most effective control measures

include elimination, substitution and engineering controls. Every effort should be made to implement these types of control measures. Examples of control measures follow.

Table 2.1: Hierarchy of control measures

Effectiveness	Types of control	Examples
Most effective  Least effective	Elimination	
	Substitution	Resurface floors with hygienic non-slip flooring
	Isolation	
	Engineering controls	Install additional powerpoints Suspend cabling from the ceiling Use stands to store cabling and hoses Regular maintenance program
	Administrative controls	Replace damaged and worn equipment Provide appropriate training, instruction or information in good housekeeping procedures
	Personal Protective Equipment	Non slip footwear Pouch belt with safety rings for storing knives and steels

Some examples of good housekeeping practices include:

- conducting regular workplace inspections that include housekeeping
- regular cleaning program both during and before and after shifts
- workplace procedures for cleaning up spills and other emergency
- regular, scheduled maintenance program for plant and equipment
- keeping work areas well maintained, clean, well lit, uncluttered and free of waste

- cleaning up spills on floors immediately and locating and fixing the cause of spills or leaks
- keeping walkways clear of obstructions
- storing materials and equipment neatly and out of the way of production
- regularly removing waste
- repairing damaged plant and equipment quickly
- installing suitable containers for waste products that are conveniently located and regularly emptied to ensure that there is not a buildup of meat products on the floor
- having a ‘broom boy’ during production to keep the production area as clean and tidy as possible.

2.8 Summary/Cconclusions

The reviewed literature holds that housekeeping and workplace hygiene means providing adequate sanitation and hygiene facilities that are regularly cleaned and maintained so they do not pose a health and safety risk to students. Moreover, housekeeping practices like sweeping, scrubbing, burning waste, cleaning toilet facilities, weeding, mowing, etc improves students health on campus and ensures that students need to have potable drinking water that is safe to drink, sanitary toilet facilities, safe food prepared in sanitary kitchens and served in clean canteens, and a work environment that is otherwise kept hygienic through periodic housekeeping practices. Good housekeeping practices also help to control problems by eliminating tripping hazards, making sure floors

are never slippery and keeping exit routes clear. Good housekeeping practices are essential for a hygienic school management.

CHAPTER THREE

METHODOLOGY

This chapter describes the research design, population, sample and sampling technique, review of data collection procedures, validity and reliability of the research and data analysis.

3.1 Research Design

As cited by Parahoo (2007) describes a research design as “a plan that describes in details the strategies in which data would be collected and analyzed”. Polit et al (2001) define a research design as “the researcher’s overall strategy for answering the research question or testing the research hypothesis”. This study adopted the case study strategy. Yin (2014), defines the case study research method as the empirical enquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used, Among the various research designs, case studies are frequently regarded as using both quantitative and qualitative research and a combination of both approaches (Bryman, 2004). The researcher used both primary and secondary data sources, which were considered to be more appropriate for this study. These types of research were used because it eventually enables the researcher to make judgement about the effectiveness, relevance or desirability of the programme. Research methods can be placed into two basic categories: quantitative or qualitative. Qualitative research gathers information that is not in numerical form.

3.2 Research Approach

Quantitative research is deductive; therefore the researcher would try to explain one phenomenon with the sample of variables (Bryman and Bell, 2007). Also quantitative method gives the opportunity to cover bigger, comparatively to the qualitative method, sample of respondents which creates more possibilities to make any kind of generalizations. The researcher would use closed and open questionnaire to gather primary data. According to Bryman and Bell (2007) open questions give the opportunity for respondents to answer in their own words and, thus, for researches, to get unusual responses which can help to extend their knowledge within desired area. Closed questions are easy to process during the analysis and this type of questions enhances the possibility to compare the answers (Bryman & Bell, 2007).

3.3 The Study Population

Parahoo (2007) defines population as “the total number of units from which data can be collected”, such as individuals, artifacts, events or organisations. Burns and Grove (2003) describe population as all the elements that meet the criteria for inclusion in a study. Burns and Grove (2003) define eligibility criteria as “a list of characteristics that are required for the membership in the target population. The population consists of all boarding house students and house masters/mistresses engaging in housekeeping practises in the East Akim District specifically in Abuakwa State College.

3.4 Sample Technique and Sample Size

The ever increasing need for a representative statistical sample in empirical research has created the demand for an effective method of determining sample size. To address the existing gap, Krejcie & Morgan (1970) came up with a table for determining sample size for a given population for easy reference. According to the Krejcie & Morgan (1970), table of determining sample size, a population of 900 requires a sample size of 269. Non-Probability sample (convenience) procedure was used to select 269 respondents for the study. The sample size was made up 269 people comprising boarding house students and house masters /mistresses in the selected Senior High schools in the East Akim District.

3.5 Sources of Data

The data for this research was collected from the various selected population including: boarding house students and house masters and mistresses in the selected schools in the East Akim District through the administration of questionnaires.

3.5.1 Primary Data

The primary data for the study was obtained from the field through structured questionnaires. Data was collected from boarding house students and house masters and mistresses in the selected schools in the East Akim District.

3.5.2 Secondary Data

The secondary data collected was gathered from magazines, published books, newspapers, internet and articles. The essence of the primary and secondary data is that, they would help in the validity of the study, the primary data gave firsthand information while the secondary data will help crosscheck already existing works in the present study.

3.6 Research Instruments

A research instrument is “a tool used to collect data as stated by Parahoo (2007:52, 325). Considering the nature of the topic, it was realized that only questionnaires would not be the only means to gather information. However, questionnaires and interview guide would be used to collect data. The researcher gave a serious thought to the wording of individual questions. This was done to ensure that respondents answered objectively to the questions in the questionnaire.

Majority of the questions were in the closed ended form with only few open ended. In the open ended questions, the respondents formulated their own answers. In closed format, respondents were forced to choose between several given options. The open ended format allowed exploration of the range of possible themes arising from an issue. It was used where a comprehensive range of alternative choices could not be compiled. The closed or forced choice-format was easy and quick to fill and also minimized discrimination against the less literate (in self-administered questionnaire). It was easy to code, record, and analyze results quantitatively and easy to report results (Leung, 2001). The questionnaire consisted of four sections. Section 1 contains the demographic

information of the respondents including the respondent's gender, age and class. Section 2 examined the student's roles as housekeepers in the College. Section 3 explored the level of supervision they receive as house keepers. Section 4 examined the equipment required and the cost involved. The analysis of the study was based on these objectives of the study.

An interview involves an interviewer asking one or more interviewees a set of questions which may be highly structured or unstructured; interviews are usually synchronous and are often face-to-face. The interviews were conducted to get information for which satisfactory response may not be achieved through questionnaire and observation. The structured interview, as its most formal may be considered as an oral presentation of a written questionnaire. The interviewer read out the questions and the interviewees give their response. The researcher also observed how the students and their house masters and mistresses conducts their house keeping practices.

3.7 Administration of Questionnaire

Questionnaires had a personalized covering letter explaining briefly the purpose of the survey, the importance of the respondents' participation, who is responsible for the survey, and a statement guaranteeing confidentiality. This cover letter also expressed thanks to the respondents at the end.

3.8 Data analysis

Data analysis played a major part in the completion of this study. Data was reviewed after the collection of filled questionnaires and compilation of data from the interview was also performed. A critical analysis was done after which the data was

interpreted and graphically represented. Both quantitative and qualitative analysis of data was done.

Quantitative methods involves proceeding for the positivist assumption that, if something exists, it exists in some degree and can therefore be numerically measured. Qualitative methods were more of open-ended and required the researcher to elaborate with words convincingly, concerning the motive. The approaches for qualitative analysis of data involved data reduction, coding, tabulation and calculation of summarizing statistics. Microsoft Excel and Statistical Package for Social Studies (SPSS) were used. Tables, charts, frequencies and percentages were used to present the findings of the study.

3.10 Pilot study

The researcher conducted a pilot study to assess the authenticity of the research instruments. The pilot questionnaires were given to 25 people to answer to correct errors like repetition of questions and typographical mistakes and the avoidance of double questions. The pilot testing took place at Abuakwa State College in the East Akim District. The results from the pilot testing became a clear evidence that the questionnaire and interview guide were accurate and grammatically good for distribution.

3.11 Ethical Considerations

This relates to moral stand the researcher should consider in all research methods in all stages of the research design. The researcher followed three principles of the Belmont Report, namely beneficence, respect for human dignity as well as justice (Polit et al 2001:75).

3.12 Validity and Reliability of the Research

According to Rubin, et al. (2010, p. 209) the idea of validity and reliability of a research is the same in both quantitative and qualitative though it is mostly used in evaluating quantitative research. Qualitative research can employ validity and reliability in different ways. Validity and reliability are factors which any qualitative researcher needs to consider when designing and judging quality of a qualitative research as noted by Patton (2002).

The researcher made careful non – participant observation and accurate recording of activities. The interviews were carefully thought out by making each item relate to the objectives and research questions. Two other researchers read through the semi – structured interview items and provided useful suggestions for the revision or restructuring of the items. Successful interviews were conducted onsite with the respondents. Content validity is regarded highly because the researcher presented the exact information from the responds through the detailed description of the findings. The ability to generalize the findings in any Senior High School in Ghana renders the findings externally valid. This study can be used as guideline for housekeeping practices thereby making the research valid.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.0 Introduction

The researcher sent 269 questionnaires to the field to gather empirical data. Out of 269 questionnaires sent out for primary data, 218 questionnaires were retrieved while 51 questionnaires were not retrieved. This portrays that the analysis of the study was based on 81% response rate. This response rate was considered appropriate for the study.

4.1 Demographic information of the Respondents

This section contains charts and tables, depicting frequencies and percentages of the respondents demographic information like gender, age range and status.

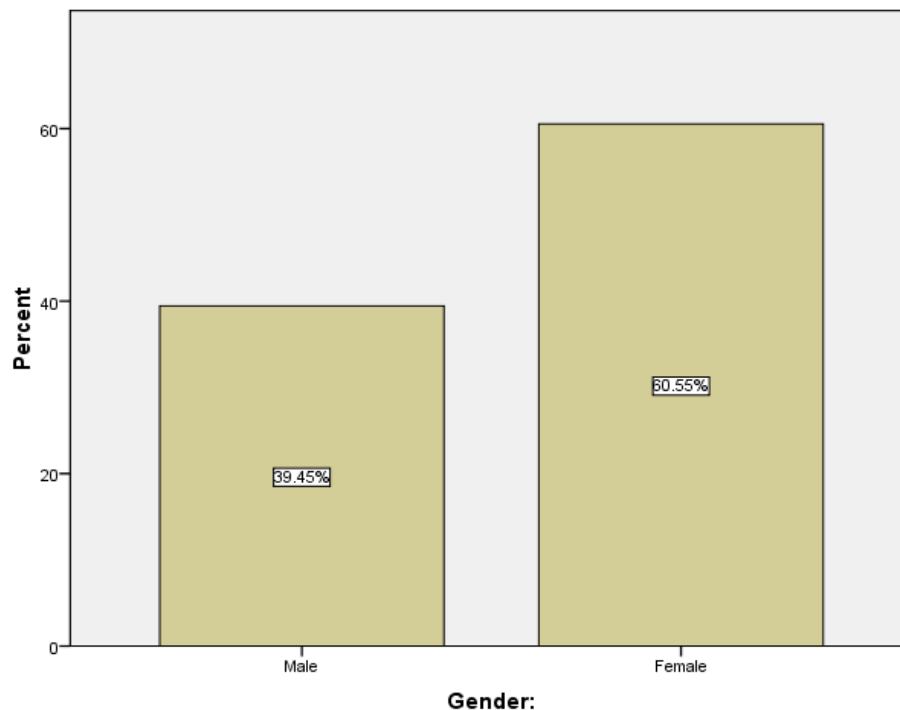


Figure 4.1: Gender of the Respondents

Source: Field survey, (2017)

Figure 4.1 shows that 60.6% of the respondents were females while 39.4% of the respondents were males.

Table 4.1: Age of the Respondents

Age of the Respondents	Frequency	Percent
Below 18 years	137	62.8
19-29 years	66	30.3
30-39 years	6	2.8
40-49 years	3	1.4
50-59 years	6	2.8
Total	218	100.0

Source: Field survey, (2017)

Table 4.2 indicates that majority 62.8% of the respondents were below the ages 62.8%, 30.3% of the respondents were between the ages 19-29 years, 2.8% of the respondents were between the ages 30-39 years and 50-59 years respectively while 1.4% were between the ages 40-49 years.

Table 4.2: Status of the Respondents

Status of the Respondents	Frequency	Percent
Teacher	6	2.8
House master / mistresses	17	7.8
School Prefect / Student	195	89.4
Total	218	100.0

Source: Field survey, (2017)

Table 4.2 indicates that 89.4% of the respondents were students and school prefects, 7.8% of the respondents were house masters/mistresses while 2.8% were teachers.

4.2 Examining the student's roles as housekeepers in the College

Table 4.3 examined the student's roles as housekeepers in the College. The respondents rated using a scale of 1-5 where 1 represents strongly disagree, 2 represent disagree, 3 represents uncertain, 4 represents agree, 5 represents strongly agree.

Table 4.3: Examining the student's roles as housekeepers in the College

Examining the student's roles as housekeepers in the College	1	2	3	4	5	Total
Maintaining operational tidiness and order	-	-	22 (10.1%)	165 (75.7%)	31 (14.2%)	218 (100%)
Properly controlling waste	-	-	10 (4.6%)	170 (78%)	38 (17.4%)	218 (100%)
Regulating activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions.	-	-	7 (3.2%)	143 (65.6%)	68 (31.2%)	218 (100%)
Materials Handling and Storage	-	-	11 (5%)	127 (58.3%)	80 (36.7%)	218 (100%)
Cleaning and Treatment of Floors	-	-	10 (4.6%)	162 (74.3%)	46 (21.1%)	218 (100%)
Sweeping Compounds	-	-	6 (2.8%)	178 (81.7%)	34 (15.6%)	218 (100%)
Furniture Polishes	-	-	14 (6.4%)	180 (82.6%)	24 (11%)	218 (100%)
Rubbish handling is essential to the housekeeping process.	-	-	10 (4.6%)	162 (74.3%)	46 (21.1%)	218 (100%)
Weed and Grass Control	-	-	8 (3.7%)	159 (72.9%)	51 (23.4%)	

Source: Field survey, (2017)

Maintaining operational tidiness and order

The study depicts that majority 89.9% of the respondents agreed students roles as housekeepers in the college is to maintaining operational tidiness and order while 10.1% of the

respondents were neutral. The study results holds it that students roles as house keepers in the college is to Maintain operational tidiness and order.

Properly controlling waste

The study revealed that 95.4% of the respondents agreed that students roles as house keepers in the college is to properly control waste while 4.6% of the respondents were neutral. The study concluded that student's roles as house keepers in the college is to properly control waste.

Jones and Pizam, (2008) asserted that housekeeping consists of the simpler aspects of building care and maintenance:

4. Maintaining operational tidiness and order,
5. Properly controlling waste, and
6. Regulating activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions.

To be successful, housekeeping requires organization and continuous monitoring.

Regulating activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions.

The study shows that 96.8% of the respondents agreed that student's roles as house keepers in the college is to regulate activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions while 3.2% of the respondents were neutral. The study

concluded that student's roles as house keepers in the college is to regulate activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions.

Materials Handling and Storage

The study shows that majority 95% of the respondents agreed that student's roles as house keepers in the college is to handle materials well and store them properly while 5% of the respondents were neutral. The student's role as house keepers in the college is to handle materials well and give them proper storage.

Cleaning and Treatment of Floors

The study indicates that majority 95.4% of the respondents agreed that student's roles as house keepers in the college is to clean and treat floors with disinfectants and detergents while 4.6% of the respondents were neutral. The student's roles as house keepers in the college is to clean and treat floors with disinfectants and detergents. These disinfectants kill all the germs and bacteria and improves the cleaning process.

Sweeping Compounds

The study reveals that 97.3% of the respondents agreed that student's roles as house keepers in the college is to sweep compounds while 2.8% of the respondents were neutral. The student's roles as house keepers in the college is to sweep compounds and burn all unwanted rubbish.

Furniture Polishes

The study demonstrates that 93.6% of the respondents agreed that student's roles as house keepers in the college is to polish furniture while 6.4% of the respondents were neutral. The student's roles as house keepers in the college is to polish furniture so that they may look neat.

Rubbish handling is essential to the housekeeping process.

The study results shows that majority 95.4% of the respondents agreed that rubbish handling is essential to the housekeeping process while 4.6% were neutral. The study indicated that rubbish handling is essential to the housekeeping process.

Weed and Grass Control

The study depicts that majority 96.3% of the respondents that agreed that student's roles as house keepers in the college is to weed and control grass and bush while 3.7% of the respondents were neutral. The student's roles as house keepers in the college is to weed and control grass and bush.

4.3 The level of supervision they receive as house keepers.

Table 4.4 assessed the level supervision students receive as housekeepers in the College. The respondents rated using a scale of 1-5 where 1 represents strongly disagree, 2 represent disagree, 3 represents uncertain, 4 represents agree, 5 represents strongly agree.

Table 4.4: The level of supervision they receive as house keepers

The level of supervision they receive as house keepers	1	2	3	4	5	Total
Identifying cleaning and maintenance requirements in all areas of the workplace	-	-	9 (4.1%)	177 (81.2%)	32 (14.7%)	218 (100%)
Identifying and implementing control measures that reduce the risks to the lowest possible levels	-	-	13 (6%)	183 (83.9%)	22 (10.1%)	218 (100%)
Reviewing the effectiveness of these control measures and making adjustments as needed	-	-	8 (3.7%)	196 (89.9%)	14 (6.4%)	218 (100%)
Conducting regular workplace inspections that include checking housekeeping and taking corrective actions as appropriate	-	-	12 (5.5%)	140 (64.2%)	66 (30.3%)	218 (100%)
Reporting, investigating and implementing control measures in regard to any incidents to ensure they don't happen again	-	-	8 (3.7%)	153 (70.2%)	57 (26.1%)	218 (100%)
Conducting training for all staff in the importance of good housekeeping practices, their role and the need for them to report hazards to their supervisor.	-	-	6 (2.8%)	125 (57.3%)	87 (39.9%)	218 (100%)

Source: Field survey, (2017)

Identifying cleaning and maintenance requirements in all areas of the workplace

The study results holds it that majority 95.9% of the respondents agreed that housekeeping supervisor's identify cleaning and maintenance requirements in all areas of the workplace while 4.1% of the respondents were neutral. The study concluded that housekeeping supervisors identify cleaning and maintenance requirements in all areas of the workplace.

Identifying and implementing control measures that reduce the risks to the lowest possible levels

The study shows that 94% of the respondents agreed that housekeeping supervisors identify and implement control measures that reduce the risks to the lowest possible levels while 6% of the respondents were neutral. The study results holds it that housekeeping supervisors identify and implement control measures that reduce the risks to the lowest possible levels.

Reviewing the effectiveness of these control measures and making adjustments as needed

The study indicates that 96.3% of the respondents agreed that housekeeping supervisors reviewed the effectiveness of these control measures and making adjustments as needed while 3.7% of the respondents were neutral. The study shows that the housekeeping supervisors reviewed the effectiveness of these control measures and making adjustments as needed.

Conducting regular workplace inspections that include checking housekeeping and taking corrective actions as appropriate

The study revealed that majority 94.5% of the respondent agreed that housekeeping supervisor's conduct regular workplace inspections that include checking housekeeping and taking corrective actions as appropriate while 5.5% of the respondents were neutral.

The study depicted that housekeeping supervisor's conduct regular workplace inspections that include checking housekeeping and taking corrective actions as appropriate.

Reporting, investigating and implementing control measures in regard to any incidents to ensure they don't happen again

The study revealed that majority 96.3% of the respondents agreed that housekeeping supervisor's report, investigate and implement control measures in regard to any incidents to ensure they don't happen again while 3.7% of the respondents were neutral.

Conducting training for all staff in the importance of good housekeeping practices, their role and the need for them to report hazards to their supervisor

The study findings shows that 97.2% of the respondents agreed that housekeeping supervisors' Conducts training for all staff in the importance of good housekeeping practices, their role and the need for them to report hazards to their supervisor while 2.8% of the respondents were neutral.

Table 4.5: How often do you organise housekeeping practices for students?

How often do you organise housekeeping practices for students?	Frequency	Percent
Every week	190	87.2
Every two weeks	28	12.8
Total	218	100.0

Source: Field survey, (2017)

Table 4.5 indicates that majority 87.2% of the respondents affirmed that they organize housekeeping practices for students every week while 12.8% of the respondents said that they organize housekeeping practices for students every two weeks. For most organizations, the regular collection of rubbish is the most satisfactory solution to the unavoidable accumulation of waste (Tesone, & Pizam, 2008).

4.4 The equipment required for housekeeping practices

Table 4.6 shows the equipment required for housekeeping practices

Table 4.6: The equipment required for housekeeping practices

The equipment required for housekeeping practices	Frequency	Percent
Detergents	26	11.9
Scrubbing brushes	23	10.6
Cutlasses	19	8.7
Hoes	20	9.2
Rake	21	9.6
Shovels	22	10.1
Brooms	23	10.6
Rag	24	11.0
Mob	21	9.6
wellington boots	5	2.3
Gloves	5	2.3
protective clothing	3	1.4
Buckets and head pans	3	1.4
Disinfectants	3	1.4
Total	218	100.0

Source: Field survey, (2017)

Table 4.6 indicates that 11.9% of the respondents said that they used detergents for housekeeping practices, 10.6% said that they used scrubbing brushes, 8.7% used cutlasses, 9.2% used hoes, 9.6% used rake, 10.1% used shovels, 10.6% used brooms, 11% used rag, 9.6% used mob, 2.3% used wellington boots and gloves respectively, while 1.4% used protective clothing, buckets and head pans and disinfectants. The study concluded the equipment used for the housekeeping practices are standard tools and detergents.

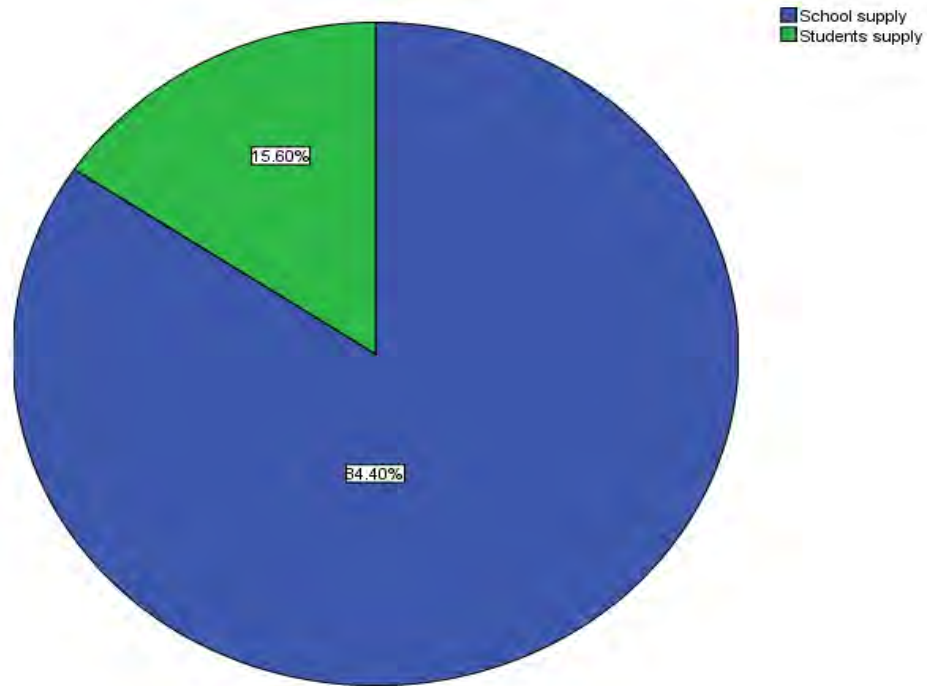


Figure 4.2: Who supply this equipment to the school?

Source: Field survey, (2017)

Figure 4.2 portrays that 84.4% of the respondents affirmed that the school supply housekeeping equipment while 15.6% said that students sometimes supply housekeeping equipment.

Table 4.7: What is the cost involved in supplying these equipment?

What is the cost involved in supplying these equipment?	Frequency	Percent
High	12	5.5
Low	3	1.4
Moderate	7	3.2
I do not know	196	89.9
Total	218	100.0

Source: Field survey, (2017)

Table 4.7 indicates that 89.9% of the respondents said that they do not know the cost involved in supplying the housekeeping equipment, 5.5% of the respondents said that the cost involved in supplying the housekeeping equipment are high, 3.2% of the respondents said that the price of the equipment are moderate while 1.4% said that the price is low.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The main purpose of the study was to examine the housekeeping practises of students in selected schools in East Akim District. This study adopted the case study strategy. The researcher used both primary and secondary data sources, which were considered to be more appropriate for this study. Quantitative research approach was used for study. The population of the study would be nine hundred and twenty three (923). The population consists of all boarding house students and house masters/mistresses engaging in housekeeping practises in selected schools in East Akim District specifically in Abuakwa State College. Non-Probability sample (convenience) procedure was used to select 269 respondents for the study. The main instruments used for the empirical data collection was questionnaires. Microsoft Excel and Statistical Package for Social Science (SPSS version 18) were used. Tables, charts, frequencies and percentages were used to present the findings of the study.

5.2 Major Findings of the Study

5.2.1 Examining the student's roles as housekeepers in the College

- ✧ The study depicts that majority 89.9% of the respondents agreed students roles as house keepers in the college is to maintain operational tidiness and order. The study revealed that 95.4% of the respondents agreed that student's roles as house keepers in the college is to properly control waste.
- ✧ The study shows that 96.8% of the respondents agreed that student's roles as house keepers in the college is to regulate activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions.
- ✧ The study shows that majority 95% of the respondents agreed that student's roles as house keepers in the college is to handle materials well and store them properly.
- ✧ The study indicates that majority 95.4% of the respondents agreed that student's roles as house keepers in the college is to clean and treat floors with disinfectants and detergents.
- ✧ The study reveals that 97.3% of the respondents agreed that student's roles as house keepers in the college is to sweep compounds.
- ✧ The study demonstrates that 93.6% of the respondents agreed that student's roles as house keepers in the college is to polish furniture.
- ✧ The study results shows that majority 95.4% of the respondents agreed that rubbish handling is essential to the housekeeping process.

- ✧ The study depicts that majority 96.3% of the respondents that agreed that student's roles as house keepers in the college is to weed and control grass and bush.

5.2.2 The level of supervision they receive as house keepers.

- ✧ The study results holds it that majority 95.9% of the respondents agreed that housekeeping supervisor's identify cleaning and maintenance requirements in all areas of the workplace. The study shows that 94% of the respondents agreed that housekeeping supervisors identify and implement control measures that reduce the risks to the lowest possible levels.
- ✧ The study indicates that 96.3% of the respondents agreed that housekeeping supervisors reviewed the effectiveness of these control measures and making adjustments as needed. The study revealed that majority 94.5% of the respondent agreed that housekeeping supervisor's conduct regular workplace inspections that include checking housekeeping and taking corrective actions as appropriate.
- ✧ The study revealed that majority 96.3% of the respondents agreed that housekeeping supervisor's report, investigate and implement control measures in regard to any incidents to ensure they don't happen again.
- ✧ The study findings shows that 97.2% of the respondents agreed that housekeeping supervisors' Conducts training for all staff in the importance of good housekeeping practices, their role and the need for them to report hazards to their supervisor.
- ✧ The study indicates that majority 87.2% of the respondents affirmed that they organize housekeeping practices for students every week.

5.2.3 The equipment required for housekeeping practices

- ✧ The study shows that 11.9% of the respondents said that they used detergents for housekeeping practices, 10.6% said that they used scrubbing brushes, 8.7% used cutlasses, 9.2% used hoes, 9.6% used rake, 10.1% used shovels, 10.6% used brooms, 11% used rag, 9.6% used mop, 2.3% used wellington boots and gloves respectively, while 1.4% used protective clothing, buckets and head pans and disinfectants.
- ✧ The study portrays that 84.4% of the respondents affirmed that the school supply housekeeping equipment. The study indicates that 89.9% of the respondents said that they do not know the cost involved in supplying the housekeeping equipment, 5.5% of the respondents said that the cost involved in supplying the housekeeping equipment are high, 3.2% of the respondents said that the price of the equipment are moderate while 1.4% said that the price is low.

5.3 Conclusions

The study concluded that the students roles as housekeepers in the college are to maintain operational tidiness and order, properly control waste, regulate activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions, handle materials well and store them properly, clean and treat floors with disinfectants and detergents, sweep compounds, polish furniture, rubbish handling is essential to the housekeeping process, to weed and control grass and bush. These are the major activities housekeepers perform at the college.

Moreover, housekeeping supervisor's identify cleaning and maintenance requirements in all areas of the workplace. Also, the housekeeping supervisors identify and implement control measures that reduce the risks to the lowest possible levels. They reviewed the effectiveness of these control measures and making adjustments as needed. Furthermore, the study the housekeeping supervisor's conduct regular workplace inspections that include checking housekeeping and taking corrective actions as appropriate. To add more, the housekeeping supervisor's reported, investigated and implemented control measures in regard to any incidents to ensure they don't happen again. Moreover, the housekeeping supervisors' conducted training for all staff in the importance of good housekeeping practices, their role and the need for them to report hazards to their supervisor. They organized housekeeping practices for students every week.

The equipment used for housekeeping practices were detergents, scrubbing brushes, cutlasses, hoes, rake, shovels, brooms, rag, mob, wellington boots, gloves, protective clothing, buckets and head pans and disinfectants. The school supplied the housekeeping equipment.

5.4 Recommendations

According to the major findings and the conclusion remarks, the study recommended that;

1. The Management of the College and the Parent Teacher Association (PTA) should continue to periodically provide housekeeping practices equipment to improve housekeeping practices in the College.

2. The Management of the College should organize periodic workshops, seminars and conferences to enhance the knowledge and practical expertise of housekeeping practices supervisors to improve hygiene and cleanliness initiatives in the College.
3. Moreover, the housekeeping supervisors' should continue to conduct training for all staff in the importance of good housekeeping practices, their role and the need for them to report hazards to their supervisor.
4. Teachers and housekeeping practices supervisors should continue to organise housekeeping practices for students frequently to improve environmental cleanliness and prevent infectious diseases in the College.

5.5 Suggestions for Further Research

The research conducted focused on selected Senior High schools in the East Akim district specifically Abuakwa State College. Therefore, the researcher suggested that a similar study should be conducted to investigate the impact of housekeeping practices on student's health using the selected schools in the whole Eastern Region as a case study.

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Appendix A

Questionnaire for the Students and House keeping Supervisors

The researcher is a product of UEW, Kumasi Campus. She is conducting a piece of research to **EXAMINING THE HOUSE KEEPING PRACTICES OF STUDENTS IN SELECTED SCHOOLS IN EAST AKIM DISTRICT**. I respectfully request that you form part of this research by completing the attached questionnaire. It is my fervent hope that you participate in the study. May I thank you for your valuable cooperation.

Section A: Demographic Information of the Respondents.

Please tick [] in the box where appropriate

1. Gender: Male [] Female []

2. Age: Below 18 years [] 19-29 years [] 30-39 years [] 40-49 years [] 50-59 years []
60-69 years [] above 70 years []

3. Status

Teacher [] House master / mistresses [] School Prefect / Student []

Section B: Examining the student's roles as housekeepers in the College.

To what extent do you agree on the following practices associated with student's roles as housekeepers in the college? Please rate using a scale of 1-5 where 1 represents strongly disagree, 2 represent disagree, 3 represents uncertain, 4 represents agree, 5 represents strongly agree.

The student's roles as housekeepers in the College	1	2	3	4	5	Total
4. Maintaining operational tidiness and order						
5. Properly controlling waste						
6. Regulating activities such as cleaning, weeding, washing and smoking that can lead to hazardous conditions.						
7. Materials Handling and Storage						
8. Cleaning and Treatment of Floors						
9. Sweeping Compounds						
10. Furniture Polishes						
11. Rubbish handling is essential to the housekeeping process.						
12. Weed and Grass Control						

Section C: To explore the level of supervision they receive as house keepers.

To what extent do you agree on the following practices associated with the level of supervision students receive as house keepers in the college? Please rate using a scale of 1-5 where 1 represents strongly disagree, 2 represent disagree, 3 represents uncertain, 4 represents agree, 5 represents strongly agree.

The level of supervision students receive as house keepers.	1	2	3	4	5	Total
13. Identifying cleaning and maintenance requirements in all areas of the workplace						
14. Identifying and implementing control measures that reduce the risks to the lowest possible levels						

15. Reviewing the effectiveness of these control measures and making adjustments as needed						
16. Conducting regular workplace inspections that include checking housekeeping and taking corrective actions as appropriate						
17. Reporting, investigating and implementing control measures in regard to any incidents to ensure they don't happen again						
18. Documenting this process so that there is evidence of everything that has been done in the workplace to reduce the risks to the lowest possible levels						
19. Conducting training for all staff in the importance of good housekeeping practices, their role and the need for them to report hazards to their supervisor.						

20. How often do you organise housekeeping practices for students?

Weekly every two weeks every three weeks one month or more

Section D: To examine the equipment required and the cost involved.

21. What are the equipment required for effective and efficient housekeeping practises? Please tick as appropriate.

Detergents Scrubbing brushes cutlasses hoes rake shovels brooms
] rag mop wellington boots gloves protective clothing Buckets and head
 pans

Disinfectants

Other please specify

22. Who supply this equipment to the school?

School supply [] Students supply [] PTA supply [] House masters /Mistresses []

23. What is the cost involved in supplying these equipment?

High [] Low [] Moderate [] I do not know []

Appendix B: Interview and Observation guide

1. What are the housekeeping practices of students?
2. How many times do you organise general cleaning programmes in a month?
3. Are students willing to participate in housekeeping practices?
4. Do you think it is important to conduct housekeeping programmes in the school?
5. Do you agree that frequent housekeeping practices can prevent infections and diseases?
6. Who provides detergents and cleaning items for housekeeping programmes?
7. How frequent do you receive detergents and items for housekeeping programmes?
8. Do you punish students who are not willing to participate in housekeeping programmes?