SANITATION FACILITIES AND ITS IMPLICATIONS ON THE GIRL CHILD'S PARTICIPATION IN PUBLIC PRIMARY EDUCATION: A CASE OF THIKA MUNICIPALITY

BY

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF EDUCATION IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION, KENYATTA UNIVERSITY
Declaration

This project is my original work and has not been presented for a degree in any other University.

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DEDICATION

This research project is dedicated to my husband Fredrick and my mother Serah

For their support throughout my studies;

And

To our children Amy, Alvin and Angela who had to bear with me for long hours of absence as I was attending to my studies.

Finally I wish to thank the Almighty God for His providence
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There are many people along my path that have been supportive and helpful either directly or indirectly. Thanks to all of you.

Last but not least, I sincerely thank God for giving me the gift of life, energy and health to pursue my studies.
ABSTRACT

The purpose of this study was to assess girl child access to sanitation facilities in public primary schools in Thika municipality with the aim of recommending intervention measures that would improve girl child access to improved sanitation facilities. This in turn was intended to improve girl child access and retention in primary schools. The objectives of the study were a) to assess the current state of sanitation in public primary schools in Thika Municipality, b) to establish the suitability of the sanitation facilities to the needs of the girl child in the area, c) to evaluate the influence of the existing state of sanitation on girl child access, retention and completion of primary education and d), to determine the factors behind the current state of sanitation in schools in the municipality.

The research adopted a descriptive survey design. The target population was all the pupils, teachers and school head teachers from all the 23 public primary schools in Thika Municipality. Simple random sampling technique was employed to select 15 schools out of the 23 public primary schools in the municipality. The study participants were 15 headteachers, 30 teachers (2 per school), and 180 pupils (12 per school). The Quality Assurance and Standards Officer (QASO) and the Public Health Officer (PHO) in charge of Thika Municipality also took part in the study. The instruments to be used for data collection included questionnaires and an observation checklist. Data was both qualitative and quantitative. Quantitative data collected was coded and entered into an SPSS programme for analysis. Qualitative data was put under themes consistent with the research objects. The study established that public primary schools in Thika Municipality were facing major challenges related to provision of sanitation facilities for the girl-child. The schools did not have adequate toilets, with all the schools not fulfilling the Ministry of Education recommended toilets ratio of 1:25 for girls. In addition to this, toilets in most of the schools were poorly maintained, with flash toilets having broken cisterns. There were inadequacies of toilet papers, sanitary pads and soap. The coping mechanisms used in some of the schools are hazardous, whereby some schools indicated that children answer the call of nature in bushes, which could expose them to diseases such as diarrhoea, cholera and worm infections. Due to lack of toilet papers, pupils used filled exercise books when visiting the toilets, which shows that teachers were not inculcating scholarly discipline, as the exercise books could be useful for revision. There were cases of girls dropping out of school or missing classes due to poor sanitation facilities in schools. Relevant recommendations have been given to policy makers and school administrators. The study recommends that all the stakeholders ensure that sanitation facilities are adequate for girls. It also recommends that the government should enforce the safety standard guidelines by the Ministry of Education for sanitation facilities. In addition the local authorities should maintain the water and sewerage system so that they are functional through out. The school administration should ensure cleanliness of the facilities.
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<tr>
<td>GNP</td>
<td>Gross National Product</td>
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<tr>
<td>IRC</td>
<td>International Research Consortium</td>
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<td>MoE</td>
<td>Ministry of Education</td>
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<td>NETWAS</td>
<td>Network for Water and Sanitation</td>
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<td>NGOs</td>
<td>Non Governmental Organisations</td>
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<tr>
<td>PHO</td>
<td>Public Health Officer</td>
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<td>QASO</td>
<td>Quality Assurance Standards Officer</td>
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<td>RoK</td>
<td>Republic of Kenya</td>
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<tr>
<td>SCT</td>
<td>Social Cognitive Theory</td>
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<td>UNDP</td>
<td>United Nations Development</td>
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<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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CHAPTER ONE
INTRODUCTION

1.1 Background

Children access and retention in education are related to their hygiene practices, which depend in turn on access to water and sanitation facilities. According to (WHO, 1998) despite all the progress reported world-wide in recent decades, more than 2.3 billion people, majority of whom are school going children, still live without access to sanitation facilities and are unable to practice such basic hygiene as washing their hands with soap and water. This has led to diseases related to poor sanitation with children who are the most vulnerable to health hazards being affected the most (WHO, 1998). WHO further estimates that in 1998 2.2 million people died because of diarrhoeal diseases, of which the vast majority were children. In addition poor sanitation has led to the infestation of nearly a billion people - largely children - with a variety of worm infections, with its corresponding costs in health and energy.

It has long been established that lack of adequate sanitation facilities, in particular has negative implications for the education of girls as compared to boys (Esrey, 1998). According to the UNDP (2002) about 1 in 10 school-age girls in Sub-Saharan Africa will not attend school during menstruation or will drop out of school at puberty because of the absence of clean and private sanitation facilities. For example, in Uganda, only 8% of schools have sufficient latrines and just one-third has separate latrines for girls. Moreover, access to water reduces the risks of health hazards and exposure to potential abuse and violence.
The rights of the girl-child, which have been in focus since the Beijing Conference in 1995 (Agarwall and Narain, 1999) should include access to appropriate and adequate sanitation. Parents are reluctant to send their girls to school in some parts of the world where school-level sanitation is inadequate. Experience from Tanzania in the 1980s revealed that parents sometimes took their girls out of primary school altogether because of poor sanitation facilities. In other cases girls' schooling was irregular because they could not go to school during menstruation, due to inadequate facilities (Esrey, 1998). It is against human dignity and wellbeing that girls in some parts of the world have to face a lifetime of the discomfort, lack of privacy, indignity, ill-health and other risks associated with systems where they are forced to urinate and defecate in open sites away from the community and only at specific limited times (Esrey, 1996).

Girls and women's perceptions, needs and priorities in relation to sanitation can be quite different from men's. While men do not often have gender specific needs with regards to sanitation, research in East Africa indicated that safety (particularly for children) and privacy were their main concerns. Women wanted to be sure that their children would not fall into the holes and they wanted doors which could be closed to prevent passers-by from looking in (Hannan-Andersson, 1984). Sanitation programmes, as with many other development programmes, have been built around assumptions on some sort of "gender-neutral" person who does not exist in reality.

Universal primary education in Kenya has put strain on schools water and sanitation facilities with the most affected being the girl child. It raised the school population from 5.9 to 7.2 million with no corresponding increase in sanitation facilities. Currently primary school enrolment in Kenya is 8.6 million pupils. Thika municipality in Thika
district has not been an exceptional. Increased school enrolment has exceeded the initial school capacity in terms of facilities especially those related to sanitation. Public schools have been the most affected since education was offered freely and thus they experienced high enrolments rates. The ministry of health through the National Environmental Sanitation and Hygiene Policy (ESHP) state that by 2015 every school community and 90% of households should have access to and make use of hygienic, affordable functional and sustainable toilet and hand washing facilities. The Kenya 1999 Population and Housing Census showed access to sanitation facilities to be 82%. However, the Ministry of Health puts the national coverage of adequate sanitation as below 50% mainly because the Ministry classification does not consider pit latrines (on-site sanitation) in urban areas as adequate. A study by Water and Sanitation Program-Africa (2004) on sanitation and hygiene in Kenya established that the proportion of Kenyans with access to sanitation and hygiene facilities varied from 91% down to 44%. This therefore shows that the National Environmental Sanitation and Hygiene Policy (ESHP) is off target and a lot of resources need to be mobilised if it is going to be achieved.

The Kenyan government has invested a lot of resources in an attempt to increase girl child access to education. Diseases caused by poor sanitation compromise children's attendance and performance at school leading to wastage. In addition, they have long-term consequences for a children's health and have not uncommonly resulted in death. As most of the infections are preventable, the emphasis according to UNICEF, (1999), should be on key interventions to break the transmission of these diseases such as isolation of excreta from the environment and regular washing of hands and safe disposal of faeces. This study sought to establish assess the status of girl child access to sanitation
facilities in primary schools in Thika municipality Thika district in order to recommend intervention measures towards improved sanitation and hygiene promotion.

Access to education for the girl-child in Africa is poor. Statistics by the Department for International Development (DFID, 2007) reveal that although girls’ primary school figures are improving in most countries in Africa and Asia, in absolute terms, 44 million girls worldwide remain out of school. Kenya is cited by DFID (2007) as among the countries with the highest numbers of out-of-school girls (that is, children of primary age not enrolled in primary or secondary school). A number of factors have been attributed to lack of access to education for the girl-child, including early marriages, community attitude towards girl-child education, and female genital mutilation (FGM) (Kagunye, 2004). Girls are also affected by violence, gender discrimination in the classroom and poor enforcement of policies and laws regarding issues such as corporal punishment, child labour, school charges/fees and re-entry into school especially when girls have become pregnant.

School sanitation is another factor that is associated with girl-child’s access to education. The Ministry of Health recommends a minimum of 1 toilet to 25 girls and 1 toilet to 30 boys. An assessment by Kirimi (2007) in a sample of public primary schools in Nairobi, Machakos, Kajiado and Kiambu districts found that on average 64 children shared one toilet. Kirimi noted that poor sanitation conditions is reflected in low enrolment, poor school performance and low pupil retention rates. In most schools, the toilets for girls and boys are semi-separated (back-to-back design), shared or constructed close together. Kirimi (2007) argued that when girls reach puberty, they drop out of school due to the embarrassment of having to share latrines with boys, or because the facilities do not give
them privacy and dignity. He cited a UNICEF report which shows that 1 in 10 school-age girls do not attend school during menstruation.

A study by Ng’ethe (2004), which was carried out in Thika District, established that 74% of the schools experienced a shortage of latrines. Similarly de Vreede (2003) found that a severe shortage of toilets in many public primary schools is undermining the efforts to provide quality education. After the introduction of free primary education in 2003, expansion of physical infrastructure has been too slow to cope with the influx of pupils. Kirimi (2007) notes that school sanitation and hygiene have received least attention in the allocation of free education monetary grants and other resources. What was not clear from previous studies is the impact that school sanitation has had on girl-child’s access to free primary education.

The legal provisions and policies governing education in Kenya, as spelled out in the School Management Guide (Ministry of Education, 2003) outline the number of sanitation facilities required in primary schools. According to this guide, sanitation facilities in primary schools should be in the following ratio: - 1:30 for boys; 1:25 for girls; at least a urinal pit for boys; and at least one toilet for staff. Studies carried out in the past indicate that a number of schools do not meet this requirement. One such study was carried out long before the introduction of Free Primary Education by Motuka (1999), who found out that in most of the schools latrines were inadequate and hence more needed to be constructed. Motuka (1999) found out that 5.6 % of the schools that were involved in the study had been closed down due to lack of toilets.
1.2 Problem Statement and Justification

The sanitary conditions of schools in rural and urban areas in developing countries are often appalling, creating health hazards and other negative impacts, thus schools are not safe for children. Although water and sanitation facilities are recognized as fundamental for hygienic behavior and children’s well-being, in practice, the sanitary conditions in most schools especially those in rural areas like Thika municipality are woefully inadequate. Water supply, sanitation and hand washing facilities are either non-existent, too few or inadequate due to poor maintenance of water systems and toilets or latrines (Burgers, 2000).

Lack of facilities is only part of the problem. Where they are present, facilities are not adapted to the needs of children, in particular girls. Also the motivation of teachers and head teachers to provide offer skills-based hygiene education is not always evident. Inadequate sanitation and water in schools jeopardize not only students' health but also their attendance. Girls in particular are likely to be kept out of school if there are no sanitation facilities (UNICEF, 1997). This study focused on the adolescent girl access to sanitation facilities in primary school in Thika municipality, Thika district. It was born out of realization that available studies (Motuka, 1999; de Vreede, 2003) are largely concerned with sanitation needs of children in general without special focus on the unique needs of the girl child.

1.3 Purpose of the Study

The purpose of this study was to assess girl child access to sanitation facilities in public primary schools in Thika municipality with the aim of recommending intervention
measures that will improve girl child access to improved sanitation facilities. This in turn was intended to improve girl child access and retention in primary schools.

1.4 Objectives of the Study

The main objective of this study was to examine the girl child access to sanitation facilities in Thika municipality. The specific objectives of this study were:

i. To assess the current state of sanitation in public primary schools in Thika municipality

ii. To establish the suitability of the sanitation facilities to the needs of the girl child in the area.

iii. To establish the impact of the existing state of sanitation on girl child’s access retention and completion of primary education.

iv. To determine the factors behind the current state of sanitation in the municipality.

v. To give recommendations for the improvement of sanitation in public primary schools in Kenya.

1.5 Research Questions

The study was guided by the following research questions.

i. What is the current state of sanitation in public primary schools in Thika municipality?

ii. Are the facilities available suited to the sanitation needs of girl child in the area?

iii. What impact does the existing state of sanitation have on girl child access and retention of primary education?

iv. What are the factors behind the current state of sanitation in the municipality?
v. What intervention measures can be put in place to increase girl child access to sanitation facilities?

1.6 Significance of the Study

The study sheds light on the current state of sanitation facilities in public primary schools in Thika municipality. The study could also help in highlighting the plight of girls' access to sanitation facilities and its implications to their participation in primary education. The findings could inform policy decisions towards improving sanitation facilities in public primary schools. Researchers in the areas of school management could be informed on the gender specific aspects of sanitation provision in public primary schools

1.7 Assumptions of the Study

The study was based on the following assumptions:

i. That the primary schools administration understands need for improved sanitation in primary schools

ii. That each school was committed to improving student's access to sanitation facilities.

iii. That the respondents would be co-operative and give truthful information about the status of girl child access to sanitation facilities in the study area.

1.8 Scope of the Study

The study focused on the current state of sanitation facilities in public primary schools in Thika municipality, Thika District. The study focused on public schools only. The areas of sanitation looked into included adequacy and access to infrastructural facilities, such as toilets and water, availability of soap and sanitary pads, sanitation and hygiene
components in the existing curriculum and the general attitude of respondents towards
girl child sanitation needs.

1.9 Limitations of the Study

The study was limited in that not all primary schools in Thika Municipality were covered.
The researcher however employed a sampling procedure that would increase
representativeness of the sample. Findings of the study are limited on the extent to which
generalizations can be made, since the study was carried out in Thika Municipality only,
and thus may not be a true reflection of the entire district or country.

1.10 Theoretical Framework

The study was guided by Focusing Resources on Effective School Health (FRESH)
framework, which is an initiative that promotes the focusing of resources on the school-aged child. The FRESH Start initiative was launched at the Education for all Conference in April 2000 in Senegal by UNICEF, WHO, UNESCO, and the World Bank (World Bank, 2001). FRESH developed a common framework as a starting point for an effective school health and sanitation component in a broader effort to achieve more child-friendly schools. This framework includes a core of simple and familiar interventions that capture the best practices from programme experiences. When they are supported by effective inter-sectoral and community partnerships they can even be implemented in the poorest schools and in hard-to-reach rural areas, as well as in more accessible urban areas (Snel, 2003). The framework is increasingly popular around the world as the basis of both government policy and school-community practices. The four core interventions in the framework are:
Provision of safe water and sanitation: An essential step towards a healthy physical learning environment.

Skills based health and sanitation education: This approach to health and sanitation education focuses on the development of knowledge, attitude, and life skills needed to deal with health, sanitation and hygiene and social issues. The development of specific psycho-social skills and the opportunity to use and practice them are central to effective skills-based health and sanitation education. When individuals have these skills, they are more likely to adopt and sustain a healthy lifestyle during schooling and the rest of their lives (Snel, 2003).

School-based health and nutrition services: Schools can effectively deliver a variety of health and nutritional services provided that the services are simple, safe and familiar, and address problems that are prevalent within the community and are recognised as important.

Health-related school policies: Health policies in schools can support the three interventions above. In addition, these policies could help promote strategies of inclusion and equity in the school environment if addressing issues like the further education of pregnant school girls and young mothers and of children (in)directly affected by HIV.

Besides the above noted four core interventions, the FRESH start approach defines three supporting activities that provide the context in which the interventions can be implemented. These supporting activities are:

- Effective partnerships between teachers and health workers and between the education and health sectors;
- Effective community partnerships: promoting a positive interaction between the school and the community is fundamental to the success and sustainability of any school improvement process; and
- Pupil awareness and participation - children must be important participants in all aspects of school sanitation and health programmes and not simply the beneficiaries (Snel, 2003).

1.11 Conceptual Framework

Poor sanitation in primary schools is caused by among others lack of appreciation of the link between sanitation health and academic performance, low economic status, poor enforcement of existing laws and poor community/parent's attitude toward sanitation and education often underplays the importance of sanitation in children's life (Figure 1). It often leads to low school enrollments, high dropouts, absenteeism, poor academic achievement, low cognitive development, education inequality, health hazard, sexual abuse, lack of productive skills and future income and low self esteem.

There is thus need to enforce sanitation laws, encourage hygiene education for teachers, school administrators and students, provide basic social services like water and health, provide education and training for parents of girl children, sensitize the community on the hazards poor sanitation, introduce support programmes like sanitation programmes in schools as well as improving the economic status of parents and guardians.
As shown in Figure 1.1, learning for the girl child can be optimized through improved sanitation, which leads to high self-esteem for girls, self-actualization, high retention rates, high job placement and good health. The opposite happens when schools have poor sanitation. The independent variable of the study was access to sanitation, while the dependent variable was access to quality education for the girl-child.

Source: Researcher (2009)
1.12 Operational Definition of Terms

Access: ability of the student to utilise the available opportunity and right to education services/facilities

Child: Any person below the age of 18 years

Performance: The ability to do well or succeed in education as reflected in the grades achieved and general child social development

Sanitation: a process whereby people demand, effect and sustain a hygienic and healthy environment for themselves, their family members and their community.

Retention: The ability of school going children to consistently attend the learning programme without interruption
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to the study under the following sub-headings: Background and rationale for school sanitation and hygiene education, rationale for the gender perspective in school sanitation and hygiene, the link between health and learning, the present situation in schools and the link between health and learning.

2.2 Background and Rationale for School Sanitation and Hygiene Education

Globally, more people have access to water than to sanitation facilities. According to (WHO, 2004) 1.1 billion people lacked access to safe drinking water, and 2.6 billion - 40 per cent of the world’s population - did not have access to a sanitary means of excreta disposal. As a result, each year more than 2.2 million persons in developing countries die from diseases associated with lack of access to safe drinking water, inadequate sanitation and poor hygiene.

At the eve of the new Millennium, despite all the progress reported world-wide in recent decades, more than 2.3 billion people still lived without access to sanitation facilities and were unable to practice such basic hygiene as washing their hands with soap and water (WHO, 1998). Diseases related to poor sanitation and water availability have caused many people to fall ill or even die. Children are the most vulnerable to health hazards and consequently are affected the most. WHO further estimates that in 1998 2.2 million people died because of diarrhoeal diseases, of which the vast majority were children.
While the impact of poor sanitation and hygiene is known to be disastrous for small children, it also has an important impact on the health of school-age children including adolescents. It is obvious that lack of sanitation and hygiene is a public disaster that deserves the highest priority. When children survive beyond their fifth birthday, they still face major problems of ill-health and malnutrition. According to UNICEF (2002), over 1.4 billion children between the ages of 5 and 14 - approximately 87% of all children - live in developing countries and are 14 times more likely to die between their 5th and 14th birthdays than their counterparts in industrialized countries.

One of the major problems faced by hundreds of millions school-age children is infection by parasites and flukes. These parasites consume nutrients from children they infect, bringing about or aggravating malnutrition and retarding children's physical development. They also destroy tissues and organs in which they live causing pain and various health problems. All of these have compromised children's attendance and performance at school and, not uncommonly, can result in death.

It is widely recognized that schools could play an important role in bringing about behavioral changes and promoting better health. Most of these infections are preventable. Access to sanitation facilities is a fundamental right that safeguards health and human dignity. Providing such facilities at schools not only help to meet that right; it also provides the most favorable setting to encourage behaviour change in the school and in the community (Almendom, Anila, & Francis, 1996).

In Mozambique, a project supported the construction of latrines for boys, girls and teachers, and hand-washing facilities for hygiene practice. Not only have these initiatives
provided safer, healthier learning environments, they have also encouraged girls to complete their basic schooling. In Bangladesh, a school sanitation project with separate facilities for boys and girls helped boost girls’ school attendance 11 per cent per year, on average, from 1992 to 1999 (UNICEF, 2003).

In Ghana, Plan International has developed model girl-friendly latrines for schools (Nahar & Ahmed, 2006). In this model toilets are designed taking into account the needs of girls and young women in several ways:

- There is a wash-room that the girls can use to change or clean themselves in privacy during menstruation and the other times of the month.
- The latrine is specially designed to meet the needs of the adolescent girl in that the squat holes are slightly bigger to cater for the girl’s physiological urge of urinating while defecating.
- The urinals have doors to allow for privacy.
- Rain water is collected from the roof of the sanitary unit.
- Water and soap is provided within the wash-room and at the exit of the urinal.

The model is participatory in that the design was developed by asking girls about their needs and ideas on how toilets should be designed. Plan International (Ghana) then worked on the development of effective education on menstrual hygiene and management along with the girl-friendly latrines (Nahar & Ahmed, 2006).

In Kenya, the Sustainable Aid in Africa International (SANA) integrated health and hygiene training into its projects in Kisumu, where the programme assisted schools in two areas: Manyatta ‘B’ and the eastern side of Kogony Sublocation. From each, one
school was selected for SSHE: these were Wandiege and Nawa Primary Schools. The SANA project had four key activities:

1. Improving the water supply through borehole drilling; the water would be sold to users outside the community to facilitate financial sustainability. The boreholes would provide safe water to two schools as well as the surrounding two communities;

2. Safe disposal of waste through promotion of appropriate latrine technology in both schools and in the community;

3. Community training and empowerment in order to ensure ownership and capacity for operation and maintenance of the installed facilities;

4. Training through School Health Clubs in the local primary schools. The training focussed on hygiene behaviour and awareness creation on major local endemic diseases including Malaria, and HIV/Aids (Snel, 2004).

As an example of typical need, one of the two SANA schools previously had no formal water supply within 200 metres. At the other, no improved water supply existed and the residents of the area have to fetch water from Lake Victoria, which is heavily polluted by industrial and organic effluent. The children go to school with water carried from home or fetch water from ponds during the rainy season (Snel, 2004).

2.3 Rationale for the Gender Perspective in School Sanitation and Hygiene

The gender perspectives on conventional sanitation systems have not been well established. It is difficult to generalise on gender perspectives in sanitation, given that women and men are not homogenous groups and gender relations are context-specific. At
a general level, however, there are a number of gender aspects which influence how boys, compared to girls, and women, compared with men, are involved in and benefit from improvements to sanitation (UNICEF, 1998).

Lack of facilities and poor hygiene affects both girls and boys, although poor sanitation conditions at schools have a stronger negative impact on girls. All girls should have access to safe, clean, separate and private sanitation facilities in their schools. In particular girls who are old enough to menstruate need to have adequate facilities at school and normally separate from those of boys. If they don’t they may miss school that week and find it hard to catch up, which makes them more likely to drop out of school altogether. Reijer and Chalimb, (2000) observed that:

"The complexity of girls' poverty or lack of soap leads to sexual risk behaviour, i.e. selling sex or massive girl dropout from school at puberty. At this particular school, it happens between standard 6 and 7. Without soap a girl stinks and boys mock. Her rugs (for sanitary towels) are recycled yet inadequately washed due to lack of soap. If she attends school, there are no girl-friendly sanitation facilities at school: no privacy, no water for washing hands. It seems a fallacy when we ask, 'Why do girls continue to drop out from school?"

One problem that has been observed is that the latrine designs, especially for primary and secondary schools, are mainly prepared by male masons (UNICEF and IRC, 1998). The tendency therefore has been to construct latrines which are not sensitive to the special needs of girls. This has resulted in girls staying away from schools when they are menstruating, even when their schools have latrines. In the case of small boys too, the urinals are often too high. Moreover, it is important that separate sanitary latrines are constructed for boys, in order to prevent boys from taking over the latrines that are meant for the girls. And toilet blocks for girls and boys should not be constructed next to each other. Sanitation design needs to be sensitive to physically challenged girls and boys too.
Unfriendly school environment also serves to discourage girls from persisting in school. Many girls drop out due to inadequate sanitation and hygiene facilities to cater for their needs during menstruation, few female teachers, inadequate school infrastructure such as classrooms and furniture and sexual harassment by teachers or boys. Girls are also affected by violence, gender discrimination in the classroom and poor enforcement of policies and laws regarding issues such as corporal punishment, child labour, school charges/fees and re-entry into school especially when girls have become pregnant.

A study conducted by Carasco in Uganda (1996) showed that approximately ninety-two percent (92%) of schools in the sample had six (6) latrine stances or less and sixty-seven (67%) had no latrine stances exclusively for girls. Management in several schools stressed the lack of latrine stances for girls as a serious concern. It was also observed that mature girls had no changing facilities. They would have to move to neighboring homes to change during their menstruation periods. In addition they found that the children’s worst experiences centered on water and latrines particularly for girls. The pupils were also concerned about the few teachers that were available in the schools. Other problems specific to pupils included lack of a senior woman teacher for female pupil guidance.

There are often considerable differences and inequalities between women and men in terms of the potential for having their voices heard and making viable choices on important issues in their lives (Reijer and Chalimb, 2000). While men in most areas in the South do the construction of latrines, women are usually responsible for keeping them clean and useable. Women assist children, the aged and the sick with their hygiene and sanitation needs. Women also take the main responsibility for socializing children into the use of latrines and for providing health/hygiene education for children. Women's
perceptions, needs and priorities in relation to sanitation can be quite different from men's.

Given the importance of gender issues in sanitation and hygiene, specific institutional arrangements are necessary to ensure that gender is considered an integral part of efficient and effective implementation of projects and programmes (WHO, 1997). Financing is one of the major constraints to expansion of sanitation services, partly because most policies delegate financing to local governments. Governments, NGOs, small-scale providers, development partners and male community leaders are important actors who should make sure that gender is addressed in policy formulation and that legislation and by-laws go through a gender review before they are adopted.

2.4 The Present Sanitation Situation in Schools

The sanitary conditions of schools in rural and urban areas in developing countries are often appalling, creating health hazards and other negative impacts, thus schools are not safe for children (UNICEF, 2002). Although water and sanitation facilities are recognized as fundamental for hygienic behaviour and children's well-being, in practice, the sanitary conditions in most schools are woefully inadequate. Water supply, sanitation and hand washing facilities are either non-existent, too few or inadequate due to poor maintenance of water systems and toilets or latrines. Lack of facilities is only part of the problem. Where they are present, facilities are not adapted to the needs of children, in particular girls. Also the motivation of teachers and head teachers to provide offer skills-based hygiene education is not always evident.
A Baseline Survey on sanitation conducted across the districts in Uganda (UNICEF, 1999) revealed that: 99% of the schools in the study area had latrines but only 44% of them had privacy. Majority of the pupils used latrines but only 2% of the schools had the recommended pupils: latrine cubicle ratio of 40:1; 16% of the schools had a latrine assigned to girls or boys only. 20% of the schools had hand washing facilities next to the latrine. 86% of the schools had urinals and of these 30% were smelly with flies and 15% were poorly drained. Solid waste disposal was reported in schools at only 25% and these were burnt in their pit. 44% of the pupils had knowledge of sanitation and hygiene. 91% of the students mentioned teachers as the main source of information, but 64% of them were not trained on sanitation. In most schools, posters (50%) and books (31%) were present but inadequate and pinned in wrong places.

A study in Senegal of over 5,000 schools showed that 53 per cent of schools had no water supply and 46 per cent had no sanitation facilities. Only half of the schools had separate facilities for boys and girls (UNICEF, 2002). In India, a survey carried out among school children revealed that about half the ailments found were related to unsanitary conditions and lack of personal hygiene (UNICEF and IRC, 1998).

According to the School Management Guide (Ministry of Education, 2003), sanitation facilities in primary schools should be in the following ratio: - 1:30 for boys; 1:25 for girls; at least a urinal pit for boys; and at least one toilet for staff. Studies carried out in the past indicate that a number of Kenyan primary schools do not meet this requirement. For example, a study carried out in Ruiru Division of Thika District by Ng'ethe (2004) found that 74% of the schools experienced a shortage of latrines, which interfered with teaching and learning as pupils queued for long periods of time to use the few toilets.
available. Such challenges are expected to be more severe for girls, who cannot use urinals like boys, meaning each has to wait for her turn to use a toilet. Likewise, Siwolo (2004), Asyago (2005), and Mugo (2006) conducted studies in public primary schools in Nairobi, Machakos, and Embu District respectively. They all found out that inadequacy of sanitation facilities (toilets and urinals) were among the challenges experienced by school principals in the implementation of free primary education.

Another study was carried out by Motuka (1999) to investigate the provision of educational facilities in primary schools in Rigoma Division of Nyamira District. Motuka (1999) found out that 5.6% of the schools involved in the study had been closed down due to lack of toilets. The closure had been directed by the public health officials until the pit latrines were constructed. He found that in most of the schools the latrines were inadequate and hence more needed to be constructed.

According to de Vreede (2003), a severe shortage of toilets in many public primary schools in Kenya is undermining the efforts to provide quality education. de Vreede notes that after the introduction of free primary education in 2003, national primary school enrolment rose from 5.9 million children in 2002 to a figure of about 7.3 million. A survey conducted in 2004 showed that the drop out rate had remained insignificant. The survey revealed that the expansion of physical infrastructure has been too slow to cope with the influx of pupils in primary schools. However, as noted by Kirimi (2007) school sanitation has received least attention in the allocations of free education monetary grants and other resources.
In 2004, the School Sanitation and Hygiene Education (SSHE) working group carried out rapid assessment in a sample of public primary schools in Nairobi, Machakos, Kajiado and Kiambu districts. The main findings of the rapid assessment, as summarized by Kirimi (2007), were that:

1. School toilet standards are not met - the assessment found that on average 64 children shared one toilet;
2. Pupils' hygiene practices are hazardous - Participatory and promotional hygiene is not emphasized and teachers are not sensitized on these issues. The assessments observed that where school lunch is served, children ate without washing their hands, partly because of ignorance and partly for lack of hand washing facilities. 87% percent of the children interviewed said they did not wash their hands after visiting the toilet.
3. The schools did not have flowing water or hand-washing facilities - Over 90% of primary schools in rural Kenya lack a source of safe water and do not have even the simplest hand washing facility. There is plenty of water during the wet season, but the quality of this water is poor (Kirimi, 2007).

2.5 The Link between Sanitation and Learning

The Millennium Development Goals for 2015 and other global initiatives all aim at getting more children in schools. The Dakar World Education Forum in 2000 pledged to ensure that by 2015 all children – and particularly girls, children in difficult circumstances and those belonging to ethnic minorities – have access to free and compulsory primary education. Dakar recommended that developing countries increase the proportion of GNP spent on education from 3.9 per cent to 4.3 per cent. The amount
of estimated additional resources required is between $9 and $28 billion. While there has been a significant progress in the total enrollment rate in some developing countries in terms of numbers registering in the lower classes, the retention rate has not equally increased. Efforts and resources in making sure that the school environment is conducive to learning is still lacking in most rural and urban public schools, which is one of the contributing factors to school drop-out especially for girl children.

As numerous studies show, education and health are inseparable: nutritional deficiencies, diarrhoea and helminth infections affect school participation and learning (UNICEF, 2002). Importantly, many of these issues can be addressed effectively through health, hygiene and nutrition policies and programmes for students and staff. Often there are not enough resources and time to address all the health problems at once and to accomplish all the goals of a health promotion or disease prevention effort.

Attention and funds should be focused on sanitation and hygiene in schools, in order to reduce transmission of water-related diseases and implement hygiene and health education. School children are key change agents because they can influence their parents and will be tomorrow’s adults. When they learn sanitation-related behaviours, such as hand washing, they can bring about change in their families and communities, leading to health improvements and higher school attendance of girls. It is critical that school sanitation and hygiene programmes address both boys and girls.

2.5.1 Health Perspective

A survey carried out in India among school children, revealed that about half ailments found are related to unsanitary conditions and lack of personal hygiene (UNICEF and
IRC 1998). A study in Senegal showed of over 5000 schools showed that 53 percent had no water supply and 46 percent had no sanitation facilities and only half of the schools had separate facilities for girls and boys (Republique du Senegal and UNICEF 2002)

Helminth infections are one of the leading causes of disease among young people and adults in the world today (UNICEF, 1998). Hundreds of millions of school-age children are infected by roundworm, whip-worm, hookworm, schistosomiasis and other flukes and/or guinea worm. Of these, the intestinal worms are most common. These parasites consume nutrients from children they infect. In doing so they bring about or aggravate malnutrition and retard children's physical development. They also destroy tissues and organs in which they live causing pain and various health problems. They affect the health and well-being of millions of people, especially young people. UNICEF (1998) observes that:

How sanitary conditions can be when 90 young children in a school are sharing one toilet? Or when 54% of the toilets are not functioning? Primary schools in some of the poorest countries have inadequate sanitation facilities, according to a pilot survey of 14 countries in 1995. The average number of users is often higher than 50 students per toilet in city schools. None of the 14 countries had increased the number of school toilets by more than 8% since 1990, suggesting that they are barely managing to keep up with the rise in student populations. Somewhat better progress had been achieved in providing safe water in schools. Inadequate sanitation and water in schools jeopardise not only students' health but also their attendance. Girls in particular are likely to be kept out of school if there are no sanitation facilities. (UNICEF, 1998)

School-aged children are infected by roundworm, whip-worm and/or hookworm. Children miss school when they have the disease themselves, and also when they have to stand in for their sick parents, working in the field or at home. Schools in endemic areas often have to close for a month or more each year as a result. Diarrhoeal diseases are not
exclusively a problem of infants; they are also an important cause of morbidity, absence from school and even mortality in older children.

The UNICEF Water and Environmental Sanitation WES (1995-2000) project established productive programmes in community and school sanitation in 34 districts in Uganda. Its key characteristics were; private sector involvement in sanitation infrastructure and strengthening hygiene education in 735 schools and 2468 teachers. In over 100,000 primary school children, there was adequate sanitation and safe water and another 300,000 had safe sanitation. A total of 1,449 five-cubicle latrines with hand washing facilities were constructed and the pupil: cubicle ratio was reduced from an estimated 700:1 to just above 100:1. (UNICEF, 1999)

2.5.2 Learning Perspective

Helminth reduction programmes in schools can have a significant impact on health and learning among school children. After de-worming, school children show remarkable spurts in their growth and educational development. Although limited in number, studies show that learning outcomes of healthy children are much higher than children infected with helminthes. These results from de-worming studies provide strong support for sanitation, because periodic use of anti-helminthic drugs can only be justified if at the same time the source of the infections (in most cases poor excreta management and poor excreta related hygiene) are addressed at the same time. Also there is a positive association between education and productivity, so that infections which inhibit educational achievement are also likely to affect production during adulthood.

26
Poor sanitation in schools impairs children growth and development. It also limits school attendance and retention of students and negatively affects student’s ability to concentrate and learn. According to WHO (1995), about 40 percent of the World’s 400 million school-age children are infested with intestinal worms. About 1 in 10 school age girls do not attend school during menstruation or drop out at puberty because of lack of clean and private sanitation facilities. Of all the children between the ages of five and fourteen in the world, 87 percent live in developing countries. For these children, the risk of death is now fourteen times higher than for children of the same age groups in the industrialised countries. That risk can be reduced enormously when children stay in a healthy environment and get used to practicing good hygiene both in and out of school.

Children’s education opportunities are profoundly affected by the availability of safe water and sanitation in their community. When there is easy access to safe water and sanitation, school attendance rates rise, while absenteeism and drop-out rates fall. Combined with higher quality teaching, these create valuable opportunities for greater academic achievements by children, particularly girls. Water Aid, Prince Consort House (2001)

The results of surveys and studies can be very instructive. For example, in a research study conducted by NETWAS International in Kenya (2003), the results suggested that women’s educational level is related to hygiene practices. Women with some primary school education tended to have some hygienic behaviour, but better-educated women were more likely to have hand washing knowledge, skills and practice, as well as consistent latrine use. Educated women and girls are agents of change.
2.5.3 Child's perspective

Children spend long hours in schools. The school environment will partly determine these children’s health and well-being by providing a healthy or unhealthy environment. Focusing on schools and the people connected to schools has several additional advantages. Compared to adults, children are more receptive to new ideas and can more easily change their behaviour and/or develop new long-term behaviours as a result of increased knowledge and facilitated practices. Depending on the culture, children and youth, accounting for more than half of the total population in many developing countries, may question existing practices in the household and become agents of change within their families and communities. Teachers as professionals and influential individuals, supported by the school management, can play an important role in the development of pupils through training and providing a role model in the communities. Children are future role models and parents. What they learn at school is likely to be passed on to their peers and to their own children. It is obvious that all sanitation facilities and educational programmes should be adapted to the different physical and cultural needs of girls and boys at different ages, key aspects enshrined in the concept of child friendly schools.

Water supply, sanitation and hygiene promotion and education must be considered as an integrated unit if real progress is to be made in improving the health and well-being of the poor. Sanitation and health are subjects that have been intimately associated with women and water supply or the lack of it.
2.6 Summary

Literature reviewed in this section revealed that school sanitation is an important aspect of learning especially for the girl child. Proper sanitation could help promote health, school retention, academic performance, and promote proper sanitation and hygiene attitudes and practices among children, and more so for the girl-child. Literature from Kenya showed that sanitation facilities in public primary schools were outstretched after the introduction of free primary education and the resultant influx of pupils.

In the course of conducting literature review, a number of gaps were identified with the study sought to fill. Previous studies from Kenya for example by Ng’ethe (2004), Siwolo (2004), Asyago (2005), and Mugo (2006) had concentrated on challenges experienced by headteachers in implementation of FPE, and their coping strategies on education quality. These studies mentioned school sanitation just in passing. The studies had also not given attention to the impact that school sanitation has on education for the girl-child. Researchers on challenges related to girl-child education also tended to concentrate on socio-cultural factors (for example Kagunye, 2004), without giving much attention to school factors like sanitation. To fill these research gaps, the study assessed girl child access to sanitation facilities in public primary schools in Thika municipality and determined its effects on their education.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter, details how the research was conducted and presented. The chapter is divided into seven sections: the research design, target population, sample and sampling technique, research instruments, reliability and validity of instruments, data collection procedures and methods and data analysis plan.

3.2 Research Design

The study employed the descriptive survey design. According to Kothari (1985), survey is concerned with describing, recording, analyzing and reporting conditions that exist or existed. Kerlinger (1973) argues that survey method is widely used to obtain data useful in evaluating present practices and in providing basis for decisions. This design was considered appropriate because it enables the researcher to collect and analyze data from a wide range of respondents from public health officers, school principals, students, parents, education officers and government officials. The design enabled the researcher to investigate the state of sanitation situation in schools in Thika municipality and its impact on girl child’s education without manipulating the variables.

3.3 Location of the Study

The study was carried out in public primary schools in Thika municipality. Situated about 40 kilometres from Nairobi, Thika Municipality serves as a dormitory town of the capital city. Thika town also attracts rural-urban migrants from all parts of Kenya, being an industrial town. Due to this and other related factors, population of Thika municipality
has been on the rise. This poses a challenge to provision of basic services like water, sewerage and waste disposal. By the time of the study, there were 99 primary schools within Thika Municipality, some situated within Thika town which had access to piped water and sewer services, and others located on the outskirts of the town, with no access to proper sanitation infrastructure like piped water and sewer system. This made Thika Municipality an ideal location for the study. Furthermore, Singleton (1993) noted that the ideal setting for any study should be easily accessible to the researcher and should be that which permits instant rapport, with the informants. Wamahiu and Karugu (1995) also point out that sometimes being familiar with the research locale helps in gaining acceptance. Thika municipality was chosen because it is easily accessible to the researcher and no similar study to the best knowledge of the researcher had been conducted in the municipality.

3.4 Target Population

The target population for the study was all the pupils, teachers, and school headteachers from the public primary schools in Thika municipality. The municipality had a total of 99 primary schools, out of which 76 are private schools and 23 public schools. Of interest to the study were the 23 public primary schools.

3.5 Sample and Sampling Procedure

Sampling means selecting a given number of subjects from a defined population as representative of that population. Any statements made about the sample should also be true of the population (Orodho, 2002). The respondents for this study were the pupils, teachers and school headteachers. Simple random sampling technique was employed to
select 15 schools out of the 23 public primary schools in Thika Municipality. This formed 65.2% of the target population, which is higher than the minimum of 10% as recommended by Gay (1992).

All the 15 headteachers from the sampled schools were automatically involved in the study. In addition two teachers from each of the schools were included in the study, making a total of 30 teachers. To select the pupils, stratified random sampling technique was used, whereby the pupils were stratified by gender – boys and girls. The sampling frame involved all the pupils in the sampled schools. Stratified random sampling was used to select four pupils (two boys and two girls) from each of the classes six, seven and eight. Pupils in these classes were expected to be sensitive about sanitary conditions in their environment especially because they are in their adolescent age. This gave a total of 12 pupils per school and a total of 180 pupils for the study. In addition, the Quality Assurance and Standards Officer (QASO) and the Public Health Officer (PHO) in charge of Thika Municipality took part in the study.

3.6 Research Instruments

Two types of research instruments, questionnaires and interview schedules, were employed in data collection. Questionnaires were used to gather data from the pupils, teachers and head teachers. Interview schedules were used to guide interviews that were held with key informants who included QASO and the Municipality PHO. The questionnaires were used for data collection because, as Kiess and Bloomquist (1985) observe, it offers considerable advantages in the administration: it presents an even stimulus potentially to large numbers of people simultaneously and provides the
investigation with an easy accumulation of data. Gay (1992) maintains that questionnaires give respondents freedom to express their views or opinion and to make suggestions. On the other hand, interview schedules are considered appropriate when the sample is small since a researcher is able to get more information from respondents than would be possible using a questionnaire (Kiess and Bloomquist, 1985). Details about the data collection tools are given below.

3.6.1 Questionnaire for pupils

This questionnaire contained three sections. The first section collected background information of the students. The second section of the questionnaire contained items regarding the current state of sanitation in public primary schools in Thika municipality. The third section had items to collect data related to the suitability of the sanitation facilities to the needs of the girl child in the area. The fourth section had items to collect data related to the impact of the existing state of sanitation on girl child access retention and completion of primary education while the last section collected data regarding the pupil’s perceptions on how to improve the current state of sanitation in primary schools in the municipality.

3.6.2 Questionnaire for Teachers and Headteachers

This questionnaire also contained three sections consistent with the research objectives. The first section collected background information of the respondents. The second section of the questionnaire contained items regarding the current state of sanitation in public primary schools in Thika municipality. The third section had items to collect data related to the suitability of the sanitation facilities to the needs of the girl child in the area.
The fourth section had items to collect data related to the impact of the existing state of sanitation on girl child access retention and completion of primary education while the last section collected data on respondent’s perceptions on how to improve the current state of sanitation in primary schools in the municipality.

3.6.3 Interview Schedule for QASO and PHO

An interview schedule was used to guide face-to-face interviews with the Quality Assurance and Standards Officer (QASO) and the Public Health Officer (PHO) in charge of Thika Municipality. The interview schedule had items that captured information for all the objectives of the study.

3.6.4 Observation checklist

The researcher constructed an observation checklist that was used in documenting sanitation aspects in the sampled schools. These included the general design of toilet facilities, their state of repair, cleanliness, and availability of cleaning materials, availability of water next to the toilets among others.

3.7 Validity and Reliability of Research Instruments

3.7.1 Validity

Validity is defined as the accuracy and meaningfulness of inferences, which are based on the research results (Mugenda and Mugenda, 1999). In other words, validity is the degree to which results obtained from the analysis of the data actually represents the phenomena under study. Validity according to Borg and Gall (1989) is the degree to which a test measures what it purports to measure. According to Borg and Gall (1989), validity of an
instrument is improved through expert judgment. As such, the researcher sought the assistance of research experts, experienced graduates, lecturers and experienced supervisors in order to help improve validity of the instrument.

3.7.2 Reliability

Mugenda and Mugenda (1999) define reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trial. To enhance reliability, research instruments were piloted in two schools in the municipality which were not included in the sample. Within each school, 10 students were required to fill the questionnaire. The aim of the pilot study was to enhance the validity and reliability of the research instruments and allow the researcher to gain familiarity with the instruments. Split-Half technique for reliability was employed. Spearman rank order correlation coefficient was calculated where a value of 0.5 was obtained and considered as indicating that the instruments were reliable. The researcher assessed the clarity of the questionnaire items so that those items found inadequate or vague were modified to improve the quality of the research instrument thus increasing its reliability.

3.8 Data Collection Procedure

The researcher obtained an introduction letter from Kenyatta University and a research permit from the Ministry of Education, (MoE). After this, the researcher booked an appointment with the sampled schools through the headteachers to visit and administer the questionnaires. The researcher then visited each of the schools and administered the questionnaires in person. The respondents were given instructions and assured of
confidentiality after which they were given enough time to fill in the questionnaires, after which the researcher collected the filled-in questionnaires.

3.9 Data Analysis Plan

Data collected from the field were coded and entered into the computer for analysis using the Statistical Package for Social Sciences (SPSS). As Martin and Acuna (2002) observe, SPSS is able to handle large amount of data, and given its wide spectrum of statistical procedures purposefully designed for social sciences, it is quite efficient. Data collected were both qualitative and quantitative nature. Qualitative data were analyzed by arranging responses according to the research questions and objectives. Descriptive statistics including percentages and frequency counts were used to analyze the quantitative data obtained. Bell (1993) maintains that when making the results known to a variety of readers, simple descriptive statistics such as percentages have a considerable advantage over more complex statistics. Borg and Gall (1989) also hold that the most widely used and understood standard proportion is the percentage. The results of data analysis were presented in frequency tables and bar charts. Thereafter, conclusions and recommendations were drawn.
CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study and a discussion of the study findings. The purpose of the study was to assess girl-child’s access to sanitation facilities in public primary schools in Thika municipality with the aim of recommending intervention measures that will improve girl child access to improved sanitation facilities. The study was guided by the following research objectives:

i. To assess the current state of sanitation in public primary schools in Thika municipality

ii. To establish the suitability of the sanitation facilities to the needs of the girl child in the area.

iii. To establish the impact of the existing state of sanitation on girl child’s access retention and completion of primary education.

iv. To determine the factors behind the current state of sanitation in the municipality.

v. To give recommendations for the improvement of sanitation in public primary schools in Kenya.

4.2 Background data of the Respondents

The study targeted 180 pupils and 45 teachers, among them 15 headteachers and 30 teachers. A quality assurance and standards officer and a public health officer were also interviewed. However, five teachers did not respond to the questionnaires and therefore data analysis is based on responses from 40 teachers and 180 pupils from 15 public primary schools in Thika Municipality. Fifty eight (32.2%) of the pupils indicated that
they were 12 years old or below, 111 (61.7%) were aged between 13 to 14 years while 11 (6.1%) were aged between 15 to 16 years old.

Ten (25.0%) of the teachers were males while 30 (75.0%) were females. Table 4.1 indicates the academic qualifications of the teachers.

Table 4.1: Academic qualifications of the teachers

<table>
<thead>
<tr>
<th>Academic qualification</th>
<th>Male</th>
<th>Female</th>
<th>No. of teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post graduate degree</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>17.5</td>
</tr>
<tr>
<td>Bachelors degree</td>
<td>6</td>
<td>8</td>
<td>14</td>
<td>35.0</td>
</tr>
<tr>
<td>Diploma</td>
<td>3</td>
<td>16</td>
<td>19</td>
<td>47.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10</td>
<td>30</td>
<td>40</td>
<td>100.0</td>
</tr>
</tbody>
</table>

As shown in Table 4.1, seven (17.5%) of the teachers indicated they had a Post graduate degree, 14 (35.0%) indicated a Bachelor’s Degree while 19 (47.5%) indicated they had studied up to Diploma level.

4.3 Current State of Sanitation in Public Primary Schools

The first objective of the study was to establish the current state of sanitation in public primary schools.

Majority of the teachers 30 (75%) admitted that sanitary facilities for girls were inadequate while 10 (25%) agreed that the sanitary facilities were adequate. Table 4.2 shows the ratio of toilets to pupils in the 15 primary schools.
Table 4.2: Ratio of toilets per number of boys and girls in the schools

<table>
<thead>
<tr>
<th>Ratio of Toilets to boys</th>
<th>No. of schools</th>
<th>Ratio of Toilet to girls</th>
<th>No. of schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:25 and below</td>
<td>0</td>
<td>1:25 and below</td>
<td>0</td>
</tr>
<tr>
<td>1:26-30</td>
<td>1</td>
<td>1:26-30</td>
<td>0</td>
</tr>
<tr>
<td>1:31-35</td>
<td>2</td>
<td>1:31-35</td>
<td>2</td>
</tr>
<tr>
<td>1:36-40</td>
<td>3</td>
<td>1:36-40</td>
<td>7</td>
</tr>
<tr>
<td>1:41-45</td>
<td>3</td>
<td>1:41-45</td>
<td>5</td>
</tr>
<tr>
<td>1:46-50</td>
<td>3</td>
<td>1:46-50</td>
<td>1</td>
</tr>
<tr>
<td>1:51 and above</td>
<td>3</td>
<td>1:51 and above</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Table 4.2 shows that majority of the schools had a toilet ratio of over 1:30 for both boys and girls. According to the Ministry of Education (2003) guidelines, sanitation facilities in primary schools should be in the following ratio: 1:30 for boys; 1:25 for girls. None of the schools had fulfilled this requirement for girls, and only one school had fulfilled the requirement for boys. It was also established that out of the 15 schools, 13 had only one urinal, one school had two urinals and only one school did not have a urinal. The Ministry of Education guidelines require at least a urinal pit for boys; and at least one toilet for staff. This indicates that the guidelines by the Ministry of Education on sanitation facilities had not been met.

Figure 4.1 shows the ratings of the teachers on adequacy of sanitation facilities for girls in their schools.
Figure 4.1: Teachers' ratings of adequacy of sanitation facilities for girls

Figure 4.1 shows that majority (75.0%) rated the sanitation facilities for girls to be inadequate while 25% rated them adequate. This suggests that for most of the schools, girls did not have adequate sanitation facilities. This confirms the concerns raised by UNICEF (2002), which argues that sanitary conditions of schools in rural and urban areas in developing countries are often appalling, creating health hazards and other negative impacts, thus schools are not safe for children. Previous local studies by Siwolo (2004) in Nairobi Province, Asyago (2005) in Machakos District, and Mugo (2006) in Embu District established a similar trend, whereby all of them established that sanitation facilities, especially toilets and urinals, were among the challenges experienced in the implementation of free primary education. While these previous studies were not specific on the sanitation needs of the girl-child, it is not in dispute that girls are the most affected by lack of adequate sanitation facilities.
Flash toilet with a broken cistern in one of the study schools: Inadequacy and poor conditions of toilets are major challenges to most of the schools.

Table 4.3 shows the specific facilities that were inadequate in the schools.

Table 4.3: Adequacy of various sanitation resources in schools

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Inadequate</th>
<th>Adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Sanitary pads</td>
<td>39</td>
<td>97.5</td>
</tr>
<tr>
<td>Toilet papers</td>
<td>36</td>
<td>90.0</td>
</tr>
<tr>
<td>Hand-washing water</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>Drinking water</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Soap</td>
<td>40</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.3 shows that the sanitation resources that were lacking according to the teachers were toilet papers, sanitary pads and soap. On the other hand, all teachers 40(100%) indicated that drinking water was adequate and 37(92.5%) of the teachers indicated that
hand-washing water was adequate. This therefore shows that sanitary pads and toilet papers are the resources that were most lacking in the schools. Kirk and Sommer (2005) indicate that from a very practical perspective, girls who lack adequate sanitary materials may miss school each month during their period. If girls attend schools which lack adequate latrines and water supplies for them to comfortably change sanitary pads and wash themselves in privacy, they may be unable to remain comfortably in class during their menstrual cycle (Kirk 2005). In southern Sudan, for example, the lack of sanitary protection during menstruation is often mentioned as a barrier to girls’ regular attendance in school. There is very limited availability of commercial sanitary products and those that exist are financially out of reach for most women and girls (Kirk & Sommer, 2005).

Figure 4.2 shows teachers’ ratings of the general condition of toilets in the schools.

![Figure 4.2: General condition of toilets](image)

Figure 4.2: General condition of toilets

Figure 4.2 shows that only 32.5% of the teachers indicated that the general condition of the school toilets/latrines was good, 42.5% indicated average while 25.0% indicated that
they were poor. Therefore the condition of toilets according to most teachers was average or slightly above average. The quality assurance and standard officer (QASO) indicated in a face-to-face interview that most of the schools did not have adequate toilets/latrines, noting that most of the schools had not fulfilled the guidelines of the Ministry of Education on this issue. The public health officer noted that lack of adequate sanitation facilities in schools posed a serious threat to the health of children, especially the young ones.

Table 4.4 shows the responses of pupils on adequacy of various sanitation facilities in their schools.

**Table 4.4: Adequacy of facilities as rated by the pupils**

| Adequacy of listed facilities | Adequate | | Inadequate |
|------------------------------|---------| |----------|
|                              | F | %    | F | %     |
| Toilets                      | 45 | 25   | 135 | 75 |
| Toilet papers                | 0  | 0    | 180 | 100 |
| Drinking water               | 180 | 100  | 0  | 0    |
| Hand-washing water           | 178 | 98.9 | 2  | 1.1 |
| Sanitary pads                | 48  | 26.7 | 132 | 73.3 |
| Soap                         | 6   | 3.3  | 174 | 96.7 |

Table 4.4 shows that 135 (75%) of the pupils indicated that there were inadequate toilets, all the pupils respondents indicated that there were no toilet papers in their schools. A majority of them 178(98.9%) also indicated that hand-washing water was adequate. On the other hand, sanitary pads and soap were also inadequate according to most pupils. UNICEF (2005) estimates that about 1 in 10 school-age African girls do not attend school
during menstruation, or drop out at puberty because of the lack of clean and private sanitation facilities in schools. Few schools have any emergency sanitary supplies for girls, and communal toilet facilities are generally very unsuitable for changing sanitary pads given a lack of water, and of sanitary material disposal systems. One study in Uganda found that 1 in 3 girls missed all or part of a school day during their menstrual cycle (GAPS/FAWE U 1999).

The teachers were asked to state the alternatives used to supplement the sanitation resources that were not adequate. In response, the teachers indicated that for toilets the alternative sources were using bushes and sharing the few pit latrines; for toilet papers, the alternatives were using old newspapers, plant leaves, and filled book pages; for sanitary pads the alternatives used by pupils included pieces of blankets/clothes, improvised pads or introduction of re-usable pads. For soap, the teachers indicated that they required pupils to buy own soap or use lemon juice. The pupils also gave alternatives for the facilities that were not adequate. For toilets, the pupils indicated that they used the bush as an alternative; for toilet papers, the alternatives were old newspapers or plant leaves; for sanitary towels, the alternatives were pieces of cloth or toilet paper. Some of these alternatives are unhygienic and could expose girls to diseases, for example use of dirty pieces of cloth as alternatives. It is widely recognized that schools could play an important role in bringing about behavioral changes and promoting better health. In order to prevent the exposure to these diseases. Access to sanitation facilities is a fundamental right that safeguards health and human dignity; providing such facilities at schools not only help to meet that right but also provides the most favorable
setting to encourage behavioural change in the school and in the community (Almendom, Anila, & Francis, 1996).

4.4 Suitability of the Available Facilities to the Sanitation Needs of Girls

The second objective of the study was to establish the suitability of the available facilities to the sanitation needs of a girl child.

The teachers were asked to indicate the convenience of toilets/latrines sanitation to needs of a girl child, to which they responded as shown in Table 4.5.

Table 4.5: Convenience of toilet/latrine sanitation to needs of a girl child

<table>
<thead>
<tr>
<th></th>
<th>No. of teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenient</td>
<td>10</td>
<td>25.0</td>
</tr>
<tr>
<td>Not convenient</td>
<td>30</td>
<td>75.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

As shown in Table 4.5, only 10 (25.0%) of the teachers agreed that the school toilets/latrines were convenient to sanitation needs of a girl child while 30 (75.0%) indicated that the toilets in their schools were not convenient for the girl-child. This is an indication that majority of the teachers were of the view that toilets are not convenient to sanitation needs of a girl child and they gave the reasons below:

- The toilets were very few, dirty and without disposal bins.
- The ratio of girls sharing a toilet is very high with some schools having above 1:46.
- Flash toilets were few in number and not convenient for disposal of sanitary towels.
- The sewer system was always breaking down.
- Toilets did not flash and there were no sinks for washing hands.

The QASO and public health officer confirmed these results by stating that in some schools sanitation facilities are not convenient to the needs of the girl-child, whereby some schools have boys and girls toilets constructed very close together. In other cases, schools did not have supportive resources such as toilet papers which are very essential for the girl child. The officers noted that most of the parents are poor and cannot afford sanitary pads for their teenage girls, which greatly affects their learning. These findings put in doubt the vision of the ministry of health of ensuring that by 2015 every school community and 90% of households should have access to and make use of hygienic, affordable functional and sustainable toilet and hand washing facilities.

Studies conducted in other African countries gave similar findings. For example according to the School Baseline Assessment of 2002, almost half of existing schools in southern Sudan do not have access to water and only 30% have latrines (UNICEF, 2002). When asked what they do when they need the toilet, girls in school replied, ‘You just have to wait until you go home.’ Similarly, in a study conducted in Ethiopia, fewer than half the schools had latrines and only one school had a separate latrine for boys and girls; while in Ghana, only a third of schools had latrines and in many cases these were unfit for use (UNESCO, 2003).
Only 62 (34.4%) of the pupils indicated that the toilets they used were convenient for their sanitation needs while 118 (65.6%) indicated that they were not convenient. Table 4.6 shows who the pupils shared toilets with in their schools.

Table 4.6: Persons with whom pupils share toilets

<table>
<thead>
<tr>
<th>Pupils share toilets with the following people</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Same-age girls</td>
<td>180</td>
<td>100</td>
</tr>
<tr>
<td>Under-age girls</td>
<td>176</td>
<td>97.8</td>
</tr>
<tr>
<td>Boys</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cleaners and other workers</td>
<td>37</td>
<td>20.6</td>
</tr>
<tr>
<td>Teachers</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strangers</td>
<td>64</td>
<td>35.6</td>
</tr>
</tbody>
</table>

As shown in Table 4.6, majority of the pupils indicated that they shared toilets with same-age girls or under-age girls (whereby lower primary and upper primary pupils share toilets). None of the girls indicated that they shared toilets with boys or teachers. However, 37 (20.6%) reported that they shared toilets with cleaners and other workers, and 64 (35.6%) indicated that they shared toilets with strangers (general public). Girls need to feel secure when visiting toilets and therefore should not share toilets with other people, especially those of the opposite sex. Under-age girls, that is, those from lower primary classes, should also have designated toilets to allow privacy for teenage girls.
4.5 Impact of Sanitation on girl Child Access and Retention in Schools

The third objective of the study was to find out the impact of the existing state of sanitation on girl child access and retention of primary education.

Thirteen (32.5%) of the teachers indicated that the rate of absenteeism due to sanitation related problems was average while 16 (40.0%) indicated low. Eleven (27.5%) teachers gave no response to this item. Twenty nine (72.5%) of the teachers indicated that there were cases of girls not attending school because of sanitation related problems while 11 (27.5%) said there were no known such cases in their schools. Figure 4.3 shows the extent to which lack of sanitation facilities affect the girl child learning.

Figure 4.3 Extent to which lack of sanitation facilities affect the girl child learning

Figure 4.3 shows that 7 (17.5%) of the teachers indicated that lack of sanitation facilities affect the girl child learning to a very great extent, 17 (42.5%) indicated that it affected learning of the girl-child to a great extent, 12 (30.0%) indicated a small extent while 4
(10.0%) indicated that it affected girl-child's learning to a very small extent. Majority 35 (87.5%) of the teachers reported that there were no cases of girls dropping out of school due to sanitation related problems. On the other hand, 5 (12.5%) of the teachers indicated that the frequency of girls dropping out of school due to sanitation related problems was low.

It has long been established that lack of adequate sanitation facilities, in particular has negative implications for the education of girls as compared to boys (Esrey, 1998). According to the UNDP (2002) about 1 in 10 school-age girls in Sub-Saharan Africa will not attend school during menstruation or will drop out of school at puberty because of the absence of clean and private sanitation facilities.

A significant proportion, 79 (43.9%) of the pupils indicated that their learning was greatly affected by the lack of sanitation facilities, while 88 (48.9%) indicated that they were slightly affected. Thirteen (7.2%) were not affected at all by lack of sanitation facilities. Figure 4.4 indicates the number of times in a month pupils are out of school due to sanitation related problems.
Figure 4.4: Times in a month pupils are out of school due to sanitation related problems

Figure 4.4 shows that majority of the pupils 106 (58.9%) reported that they were never out of school at any particular time of the month due to sanitation related problems. However, 54 (30%) established that they were out of school up to four times while 28 (11.1%) said that they were out of school more than four times in a month due to sanitation related problems. These sanitation problems included lack of money to buy sanitary towels.

Kirk and Sommer, (2005) note that insufficient or inadequate sanitary protection can be very embarrassing for a girl attending school during her monthly period. This is made worse if her school clothing is flimsy, worn and/or too small for her. Soiled uniforms can provoke ridicule from boys as well as from other girls, putting her at great risk of experiencing stigma and discrimination. For girls who cannot afford to buy washing soap, regular cleaning of her uniform or school clothes may not be easy. This situation means that for many girls and young women it is preferable to stay at home during menstruation
and not to attend school at all. The girl-child is therefore more affected by lack of adequate sanitation facilities in schools.

4.6 Factors behind the current state of sanitation

The fourth objective of the study was to find out the factors behind the current state of sanitation.

The quality assurance and standard officer (QASO) in charge of Thika Municipality indicated in a face-to-face interview that the main reasons why some schools have poor sanitation facilities were lack of adequate piped water, poor sewer system whereby the municipal council takes long to unblock sewer blockages, lack of adequate support from members of the community and ignorance on the part of school administrators and the school management committees when drawing up school development plans. In addition to these factors, a representative from the Public Health Office indicated that when free primary education was introduced, the government did not provide adequate finances to put in place adequate sanitation infrastructure. Consequently, schools were over-enrolled as a result of free education but resources were not increased, leading to overcrowding.
Pupils washing hands after visiting the toilet: Lack of adequate water points was a major challenge facing most of the study schools.

Another factor that could affect sanitation situation in schools is lack of labour to clean and maintain facilities. According to Dierkx (2002), there are three factors that have to be addressed if lasting changes in sanitation and hygiene behaviour are to occur. These are: predisposing factors (knowledge, attitude and belief, which are promoted by encouraging children to practice desirable behaviours for example through participating washing and maintenance of sanitation facilities); enabling factors, which refer to availability of resources like latrine facilities and safe water supply, enabling pupils to transform newly acquired knowledge, attitudes and beliefs into desirable behaviours; and reinforcing factors, which are factors affecting the pupils’ ability to sustain a certain behaviour, like support and cooperation received from teachers, parents, guardians and peer groups.
Ten (25.0%) of the teachers indicated that toilets in their schools are cleaned twice in a week while 30 (75.0%) indicated that toilets are cleaned more than four times a week. Table 4.7 illustrates the persons involved in performing various duties related to washing and maintenance of sanitation resources.

Table 4.7: Persons involved in cleaning sanitation facilities

<table>
<thead>
<tr>
<th>Duties</th>
<th>Pupils</th>
<th>Employees</th>
<th>Both pupils and Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
</tr>
<tr>
<td>Washing classrooms</td>
<td>39</td>
<td>97.5</td>
<td>1</td>
</tr>
<tr>
<td>Washing pupils toilets</td>
<td>17</td>
<td>42.5</td>
<td>23</td>
</tr>
<tr>
<td>Washing teachers toilets</td>
<td>17</td>
<td>42.5</td>
<td>23</td>
</tr>
<tr>
<td>Washing the staffroom</td>
<td>27</td>
<td>67.5</td>
<td>13</td>
</tr>
<tr>
<td>Cleaning the compound</td>
<td>29</td>
<td>72.5</td>
<td>4</td>
</tr>
<tr>
<td>Mowing/cutting grass in the compound</td>
<td>25</td>
<td>62.5</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 4.7 shows that cleaning of both teachers’ and pupils’ toilets were mostly done by employees. Cleaning of the compound and classrooms was mostly done by the pupils while cleaning the staffroom and mowing/cutting grass in the compound was somewhat distributed between the employees and pupils.

4.7 Intervention measures that can be put in place to increase girl child access to sanitation facilities

The teachers and headteachers proposed a number of intervention measures that could be taken to improve sanitation situation in schools. The measures proposed include:

- The government should provide funds for building more toilets
- The government should improve on sewer systems.
• The school administrators should sensitize parents on the importance of providing sanitary towels to their girls

• The headteacher should ensure that cleaners are always available and paid promptly

• Schools should look for funds from donors and well wishers to construct or repair toilets; or to provide sanitary items like sanitary towels to girls, toilet papers and soap

• The teachers should educate pupils on how to properly use the toilets and disposal of sanitary towels

• Teachers should come up with a kitty for girls

• should make proper use of the available toilets

• Pupils should be encouraged to report any cases of damage for immediate repair

• The community should chip in some extra funds to provide sanitation structures or support school projects related to sanitation.

These recommendations by teachers indicate that there are a number of strategies that can be employed to improve sanitation infrastructure in schools. Improvement of school sanitation facilities requires cooperation between the school and the community. The headteacher has a duty to mobilize support of the school to the community, which includes parents, politicians, religious organizations, non-governmental organizations, and so on. Devolved funds such as the Constituency Development Fund (CDF) and the Local Authorities Transfer Fund (LATF) can also play a vital role in improving sanitation infrastructure in schools.
Toilet block under construction through LATF: Devolved funds can play an important role in improving sanitation infrastructure in schools.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study and the key study findings, conclusions of the study, results of the study, recommendations and suggestions for further studies.

5.2 Summary

The purpose of the study was to assess girl-child’s access to sanitation facilities in public primary schools in Thika municipality. Given below is a summary of the key study findings.

Majority of the teachers 75% admitted that sanitary facilities for girls were inadequate. The sanitation resources that were lacking according to the teachers were toilets, toilet papers, sanitary pads and soap. while 75.0% indicated that the toilets in their schools were not convenient for the girl-child. The teachers noted that the toilets were very few, dirty and without disposal bins, the ratio of girls sharing a toilet is very high with some schools having above 1:46, flash toilets were few in number and not convenient for disposal of sanitary towels, sewer system was always breaking down, and toilets did not flash and there were no sinks for washing hands. In agreement with their teachers, only 34.4% of the pupils indicated that the toilets they used were convenient for their sanitation needs while 65.6% indicated that they were not convenient.

Thirteen (32.5%) of the teachers indicated that the rate of absenteeism due to sanitation relate problems was average. Twenty nine (72.5%) of the teachers indicated that there
were cases of girls not attending school because of sanitation related problems while 11 (27.5%) said there were no such cases in their schools. It was established that that 7 (17.5%) of the teachers indicated that lack of sanitation facilities affect the girl child learning to a very great extent, 12 (30.0%) indicated a small extent while 4 (10.0%) indicated that it affected girl-child’s learning to a very small extent.

Reports from the QASO and the PHO indicated that that the main reasons why some schools have poor sanitation facilities were lack of adequate piped water, poor sewer system whereby the municipal council takes long to unblock sewer blockages, lack of adequate support from members of the community and ignorance on the part of school administrators and the school management committees when drawing up school development plans. In addition, it was reported that when FPE was introduced, the government did not provide adequate finances to put in place adequate sanitation infrastructure. Consequently, schools were over-enrolled as a result of free education but resources were not increased, leading to overcrowding.

5.3 Conclusion

Based on the findings of the study, it can be concluded that poor and inadequate sanitation facilities had negative implications on the girl child’s participation in primary education. Public primary schools in Thika Municipality were facing major challenges related to provision of sanitation facilities for the girl-child. The schools did not have adequate toilets, with all the schools not fulfilling the Ministry of Education recommended toilets ratio of 1:25 for girls. In addition to this, toilets in most of the schools were poorly maintained, with flash toilets having broken cisterns. There were
inadequacies of toilet papers, sanitary pads and soap. The coping mechanisms used in some of the schools are hazardous, whereby some schools indicated that children answer the call of nature in bushes, which could expose them to diseases such as diarrhoea, cholera and worm infections. Due to lack of toilet papers, pupils used filled in exercise books when visiting the toilets, which shows that teachers were not inculcating scholarly discipline, as the exercise books could be useful for revision. There were cases of girls dropping out of school or missing classes due to poor sanitation facilities in schools.

5.4 Recommendations

Based on the findings of the study, the researcher recommends that:

1. The government, school administrators, parents and the community should pull together resources to ensure that sanitary facilities for girls are adequate. For example they should ensure that the girls have adequate sanitary towels, toilet papers, soap, disposal bins/incinerators for disposing off sanitary towels etc.

2. The government, through the Ministry of Education should enforce the safety standard guidelines for sanitation facilities in public primary schools.

3. The municipal council should maintain the water and sewerage system so that they functional through out.

4. The school administration should ensure there is frequent cleaning of toilets to ensure sanitation. Enough workers should be employed and remunerated fairly to motivate them. Pupils should be taught on how to maintain cleanliness as well.
5.5 Suggestions for Further Studies

1. The study was conducted in only one district - Thika district. A similar study could be conducted in other districts with the aim of recommending intervention measures that will improve sanitation facilities so as to ensure that the girl child participates fully in primary school education.

2. The study was conducted in public primary schools and therefore a similar study could be conducted in private primary schools to find out if sanitation facilities have got implications on the girl child’s participation in education.

3. The study could also be conducted in public day secondary schools to find out if they face similar challenges.
REFERENCES


Department for International Development (2007). Girls’ Education Fact Sheet, A DFID Practice Paper, DFID.


www.who.int/water_sanitation_health/Globassessment/GlobalTOC.htm
Appendix 1: Pupils' Questionnaires

This questionnaire is designed to gather information about girl child access to sanitation facilities in primary schools. Kindly respond by ticking or filling in the appropriate responses to the questions or information needed. All your responses and information in questionnaire will be confidential and will be used by researchers for the purpose of this study only. So do not write your name or the name of your school anywhere in this questionnaire.

Section 1: Background Information

Tick the appropriate response as it applies to you.

1. Indicate your age: .................... years

2. Indicate your Class
   [ ] Class 6    [ ] Class 7    [ ] Class 8

Section 2: Current State of Sanitation in Primary Schools

3. Are your parents/guardians able to buy you all sanitation requirements eg sanitary pads, toilet papers soap etc  [ ] Yes  [ ] No

4. If no in 3 above, please list the items that you lack.
   a) ........................................................................................................
   b) ........................................................................................................
   c) ........................................................................................................
   d) ........................................................................................................

5. Indicate whether the following sanitation facilities are adequate or inadequate in your school.

<table>
<thead>
<tr>
<th>Sanitation facility</th>
<th>Adequate</th>
<th>Inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urinals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Running water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand-washing basins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soap/detergent for washing hands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dustbins/compost pits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. How would you rate the adequacy of sanitary facilities in your school?

[ ] Very Adequate  [ ] Adequate
[ ] Inadequate  [ ] Very Inadequate

7. Which of the following facilities are adequate (please tick appropriately)

[ ] Toilets
[ ] Toilet papers
[ ] Drinking water
[ ] Cleaning/washing water
[ ] Sanitary pads
[ ] Soap

Others Specify

8. Which of the following facilities are available (please tick appropriately)

[ ] Toilets
[ ] Toilet papers
[ ] Drinking water
[ ] Cleaning/washing water
[ ] Sanitary pads
[ ] Soap

Others Specify

9. What are the alternative sources of these facilities where not adequate?

a) Toilets
b) Toilet papers
c) Drinking water
d) Cleaning/washing water
e) Sanitary pads
f) Soap
g) Others Specify
Section 3: Suitability of Sanitation Facilities to the Needs of Girl Child

10. In your own opinion, is the toilet you use convenient to your sanitation needs?
   [ ] Yes  [ ] No

11. Whom do you share toilet facilities with? (tick all that apply)

   [ ] Same age girls
   [ ] Under age girls
   [ ] Boys
   [ ] Cleaners and other workers
   [ ] Teachers
   [ ] Strangers
   Others Specify ____________________________

Section 4: Impact of the Existing State of Sanitation on Girl Child Education

12. To what extent do lack of sanitation facilities affect your learning?
   [ ] To a very great extent          [ ] To a great extent
   [ ] To a small extent              [ ] To a very small extent
   [ ] Do not affect at all

13. How many times are you out of school per month because of sanitation related problems

   [ ] Once  [ ] Twice  [ ] Thrice
   [ ] Four times  [ ] more than four times

   b. Please explain your answer above__________________________________________

14. Do you know of any pupil who dropped out of school because of sanitation related problems?
   [ ] Yes  [ ] No

   b. How many such pupils do you know of? ____________________________
Section 4: Possible solutions to the problems of sanitation in the school

15. In your opinion, what measures should be taken in place to ensure improve sanitation in school by the following stakeholders?

a. Government
b. Principal/ Headteacher
b. Teachers/staff
c. Students
d. Community
Appendix 2: Teachers/Headteachers' Questionnaires

This questionnaire is designed to gather information about girl child access to sanitation facilities in primary schools. Kindly respond by ticking the appropriate responses to the questions or information needed. All your responses and information in questionnaire will be confidential and will be used by researchers for the purpose of this study only. So do not write your name or the name of your school anywhere in this questionnaire.

Section 1: Background Data

1. Your gender
   Male [ ]
   Female [ ]

2. Level of education
   Post graduate Degree [ ]
   Bachelor's Degree [ ]
   Diploma [ ]
   Other (Specify) ........................................

3. Size of school
   Single stream [ ]
   Double stream [ ]
   Triple stream [ ]
   Four streams [ ]
   Above four [ ]

4. Indicate the school enrolment
   Total number of boys
   Total number of girls
   Total number of pupils
Section 2: Current State of Sanitation in Primary Schools

1. Does your school provide students with adequate and accessible sanitation facilities
   [ ] Yes        [ ] No

2. Indicate the number of boys and girls’ toilets available in your school

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Number available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys toilets</td>
<td></td>
</tr>
<tr>
<td>Girls toilets</td>
<td></td>
</tr>
<tr>
<td>Urinals</td>
<td></td>
</tr>
</tbody>
</table>

3. How would you rate the adequacy of sanitary facilities for girls in your school?
   [ ] Very Adequate  [ ] Adequate
   [ ] Inadequate    [ ] Very Inadequate

4. Which of the following facilities are inadequate (please tick appropriately)
   [ ] Toilets
   [ ] Toilet papers
   [ ] Drinking water
   [ ] Cleaning/ washing water
   [ ] Sanitary pads
   [ ] Soap
   Others Specify ____________________________________________

5. Which of the following facilities are accessible (please tick appropriately)
   [ ] Toilets
   [ ] Toilet papers
   [ ] Drinking water
   [ ] Cleaning/ washing water
   [ ] Sanitary pads
   [ ] Soap
   Others Specify ____________________________________________
6. What are the alternative sources of these facilities where not adequate?

   h) Toilets ____________________________________________
   i) Toilet papers _______________________________________
   j) Drinking water ______________________________________
   k) Cleaning/washing water ________________________________
   l) Sanitary pads _________________________________________
   m) Soap ________________________________________________
   n) Others Specify __________________________________________

7. How many functional toilets/latrines does your school have? ________________

8. Indicate their general condition of the toilets/latrines

   [ ] Good [ ] Average [ ] Poor

9. Indicate the persons involved in performing the following duties (whether pupils or employees)

<table>
<thead>
<tr>
<th>Duty</th>
<th>Duty performed by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washing classrooms</td>
<td></td>
</tr>
<tr>
<td>Washing pupils' toilets/urinals</td>
<td></td>
</tr>
<tr>
<td>Washing teachers' toilets</td>
<td></td>
</tr>
<tr>
<td>Washing the staffroom</td>
<td></td>
</tr>
<tr>
<td>Cleaning the compound</td>
<td></td>
</tr>
<tr>
<td>Mowing/cutting grass in the compound</td>
<td></td>
</tr>
</tbody>
</table>

10. How often are the toilets cleaned per week?

    [ ] Once [ ] Twice [ ] Thrice

    [ ] Four times [ ] more than four times

Section 3: Suitability of Sanitation Facilities to the Needs of Girl Child

11. In your own opinion, are the toilets convenient to sanitation needs of a girl child?

    [ ] Yes [ ] No
12. Please explain your answer in 11 above

Section 4: Impact of the Existing State of Sanitation on Girl Child Education

13. To what extent do lack of sanitation facilities affect girl child learning?
   [ ] To a very great extent
   [ ] To a great extent
   [ ] To a small extent
   [ ] To a very small extent
   [ ] Do not affect at all

14. Do you have cases of girls not attending school because of sanitation related problems?
   [ ] Yes    [ ] No

15. If yes, How frequent?
   [ ] High    [ ] Average    [ ] Low

16. Do you have cases of girls dropping out of school because of sanitation related problems?
   [ ] Yes    [ ] No

17. If yes, How frequent?
   [ ] High    [ ] Average    [ ] Low

Section 4: Possible solutions to the problems of sanitation in the school

18. In your opinion, what measures should be taken in place to ensure improve sanitation in school by the following stakeholders?
   a. Government
   b. Principal/ Headteacher
   c. Teachers/staff
   d. Students
   e. Community
Appendix 3: Interview Schedule for QASO and Public Health Officer

i. What are your comments on the current state of sanitation in public primary schools in Thika municipality?

ii. What role is played by your office in ensuring that schools have adequate and suitable sanitation facilities?

iii. What are your observations on the impact of sanitation facilities on girl-child’s education in Thika Municipality?

iv. Do the schools in Thika Municipality have sanitation facilities suited to the sanitation needs of the girl-child?

v. What impact does the existing state of sanitation have on girl child access and retention of primary education?

vi. What are the factors behind the current state of sanitation in the municipality?

vii. What intervention measures can be put in place to increase girl child access to sanitation facilities?
### Appendix 4: Observation Schedule

<table>
<thead>
<tr>
<th>Facility</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of latrines within the school compound</td>
<td></td>
</tr>
<tr>
<td>Accessibility of the latrines for the entire school population;</td>
<td></td>
</tr>
<tr>
<td>Appropriateness of the design</td>
<td></td>
</tr>
<tr>
<td>Are the toilets doors easy to open and lock?</td>
<td></td>
</tr>
<tr>
<td>Do teachers have separate toilets from children?</td>
<td></td>
</tr>
<tr>
<td>Are the toilets and urinals clean? (free from visible garbage, faecal matter on floor, not too many flies);</td>
<td></td>
</tr>
<tr>
<td>Are they well lighted?</td>
<td></td>
</tr>
<tr>
<td>Are they well ventilated?</td>
<td></td>
</tr>
<tr>
<td>Are there puddles of water around the toilet pan or just outside?</td>
<td></td>
</tr>
<tr>
<td>Are the toilets and urinals smelly in a way that may lead to stop its use?;</td>
<td></td>
</tr>
<tr>
<td>Presence of cleansing materials;</td>
<td></td>
</tr>
<tr>
<td>Water for cleaning inside or beside the toilets?</td>
<td></td>
</tr>
<tr>
<td>Are wash basins available?</td>
<td></td>
</tr>
<tr>
<td>Do children wash their hands after using the toilet?</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 5: Map of Thika District Showing Thika Municipality
Appendix 6: Work Plan

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>Year</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal writing</td>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
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<tr>
<td>Data analysis</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Project write up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project defence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix 7: Budget for the Study

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel Cost</td>
<td>20,000</td>
</tr>
<tr>
<td>Stationery</td>
<td>5,000</td>
</tr>
<tr>
<td>Telephone</td>
<td>6,000</td>
</tr>
<tr>
<td>Computer services</td>
<td>12,000</td>
</tr>
<tr>
<td>Printing/ Photocopying</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>53,000</strong></td>
</tr>
</tbody>
</table>