

**INFLUENCE OF ENVIRONMENTAL MANAGEMENT  
PRACTICES ON LEARNING PROCESS IN PUBLIC  
PRIMARY SCHOOLS IN KAJIADO NORTH DISTRICT**

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the Requirement for the Award of Degree of Master of Education in  
Educational Administration**

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## **DECLARATION**

This project is my original work and has not been presented in any other university for award of degree

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This research project has been submitted for examination with our approval as university supervisors

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## **DEDICATION**

This project is dedicated to my husband Kamau Wanyoike and my sons  
Wanyoike Kamau and Miring'u Kamau.

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## **LIST OF ABBREVIATIONS AND ACROYNMS**

ARI	Accute Respiratory Infections
DEAP	District Environmental Action Plan
EFD	Environment for Development
FAWE	Forum for African Women Educationists
GPWM	Global Partnership on waste Management
MDGS	Millenium Development Goals
NEMA	National environment management Authority
NEPAD	New Partnership for African's Development Organization
SSHE	School Sanitation and Hygiene Education
UN	United Nations
UNEP	United Nations Environmental Programs
UNESCO	United National Education Scientific and Cultural
UNICEF	United Nations Children's Education Fund
WHO	World Health Organization

## ABSTRACT

Children in school deserve a conducive environment to ensure completion of the full education cycle and receive expected outcomes. The purpose of this study was to establish the influence of environmental management practices on learning process in public primary schools in Kajiado North District Kajiado county. Four research objectives ; influence of tree planting, influence of provision of clean water, influence of waste management and influence of provision of sanitation facilities on learner' participation in the learning process. This study was conducted using the descriptive survey design. The sample comprised of 26 head teachers, 169 teachers and 360 pupils. Questionnaires and observation schedules were the main tool of data collection. After data was collected accuracy competences was checked. Quantitative data was analyzed using statistical package for social sciences version 12.0 which generated frequencies and percentages. Qualitative data was analyzed thematically according to themes generated from the research objectives. Findings from the study indicated that there were many tree planting programmes initiated in the schools. However, inspite of the trees in the schools there were damages in some schools. Trees in the schools did not stop dust and strong winds from blowing into classes which resulted in banging of doors and windows causing huge losses from their breakages. Majority of the schools had dumpsites where waste was thrown and burnt to reduce it. Sharp waste objects like nails and glass were thrown in the dumpsites but these objects did not cause injuries to pupils in a majority of the schools. Majority of the schools provided pupils with water to drink and to wash the classes. The main means of human waste disposal was use of pit latrines and a majority of the schools provided sanitary towels to girls. The study concluded that environment management practices influenced learning process. Where there were no trees strong winds banged doors and windows which disrupted learning when dust was blown in classes which made learners' books dirty and exposed learners to dust related illnesses .waste management practices in school like burning of waste reduced presence of vermin that would bite pupils. Provision of drinking water in school ensured that learners had thirst quenched and were able to concentrate in school. Learners did not spend learning time looking for water. Provision of sanitation facilities in the schools in the district reduced absence from school by mature girls. The researcher recommends that tree planting should be emphasized, safe water for drinking, sanitation facilities need to be provided and solid waste need to be well managed.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the Study**

Education plays a pivotal role in human life. Education is the foundation for alleviating poverty and economic development. Education raises the quality of life improves health and increases productivity. Forum for African Women Economists (FAWE 2004). Education is perceived to have key impacts on helping people make informed decisions and choices for economic and political development. Education also helps in reducing poverty by mitigating its effects on population crime rate, participating in politics health and nutrition and by increasing the value and efficiency of labour offered by the poor the only production factor available to them. Among developing countries education acts as a means of redistributing wealth and the scarce resources (Lockhead, vers poor and Associates 1991, Khatete 2002).

Education is a fundamental right for every child as stated by United Nations Humans right (1948), the Jomtein forum on education for all (1990) the convention on the rights of the child (1989) the World Education Forum: the Dakar Framework for Action (2000) and United Nations Millennium Development Goals (2000). Goal of human rights based approach to education is to ensure all children a quality education that respects and promotes their right to dignity and optimum development (United Nations children's'

Education fund and United Nations Educational scientific cultural organization UNICEF and UNESCO 2007). Investing in basic education greatly contributes to overall economic, social and human development through attainment of literacy, numeracy, life skills and improved health and nutritional status.

Environment is the sum total of physical and biotic Factors such as climate soil and living things that act upon an organization and ultimately determines its survival. Merman webstar (2002). Environment is the external conditions affecting growth of plants and animals (Coincise Oxford Dictionary 2000). Every person has a right to a clean and healthy environment which includes environment protected for the present and future generations (constitution 2010) (Republic of Kenya 2010). The state shall encourage public participation in the management protection and conservation of the environment (Constitution 2010).

South African region is yet to achieve the education for All (EFA) goals embodied in the Millennium Development Goals (MDGS) number two and three that call for achieving full primary school enrollment and completion as well as gender parity and equality in education by 2015. The South African region still had over 11.4 million school aged children who were out of school in 2008.(UNESCO, EFA, 2008) and 17.4 million children who arwere not attending school (UNICEF, progress of children, 2007) many of which were girls and orphaned or otherwise vulnerable children (OVC).

Children in school deserve a conducive environment to ensure completion of the full education cycle, achieve expected, learning outcomes and successfully transit to secondary school (UNICEF 2009). Environmental conditions need to be welcoming, child centred, flexible and more holistic where all children are respected and valued. The school environment must respect children's identities and varied needs (school friendly manual UNICEF 2006). The school environment needs to be protected from effects of strong winds by planting of trees, needs to provide safe drinking water for pupils, have sanitary facilities and have safe solid waste disposal management systems.

In Eritrea for example basic education faced a number of challenges. Lack of safe water resulted in learning time spent searching for portable water (Eritrea Ministry of education-in Eritrea the ministry of education Retention study (1998) asserted that young children enter a new world that may not please them as they have dusty classrooms. In contrast schools that had good supply of clean water had a modest edge in terms of retention.

In Kenya environmental management of the school is of great concern as no meaningful learning and teaching can take place in an environment that is not well managed. Well managed environment ensures there is safety of learners and staff and increases learners' enrollment, retention and completion. Ministry of education (MOE 2008). The quality of the environment determines whether the child survives their early years of life and greatly influences the child's subsequent physical and mental development UNICEF



(2002). Pupils in schools are at a higher risk from environmental hazards because of their physical size, immature organs, metabolic rate, behaviour and natural curiosity (UNICEF 2002). Environmental management practices like tree planting to act as wind breaks avert blowing off of rooftops and dust in classes which also promotes participation in teaching learning process. Provision of safe water in schools encourages learners' participation in schools. Provision of sanitation facilities like latrines promotes participation in the teaching learning processs where learners are not at risk of contracting diseases, solid waste disposal management of waste such as glass in school increase participation in the teaching learning process.

## **1.2 Statement of the problem**

Kajiado North district has 86 schools and is divided into five zones; Ongata Rongai, Ngong, Uwaso, Magadi and Kisamis zones. Despite the efforts of National Environmental Management Authority (NEMA) to ensure that resources are well managed in schools and the country at large, environmental degradation are prevalent in Kajiado with continued reliance on trees for fuel leading to deforestation. There is reliance on underground water with the schools getting a meager share. There are environmental risks like drought (Kajiado County Report 2006) contributed to illnesses like trachoma threatening the pupils in schools and lack of enough sanitation facilities, (Kajiado DEO office 2011) and wind blowing off classes (Ole Kasasi primary school 2006). Several studies have been carried out on environmental

management but this research focused on the influence of environmental management practices on learning process in public primary schools in Kajiado North District Kajiado County.

### **1.3 Purpose of the study**

The purpose of the study was to establish the influence of environmental management practices on learning process in public primary schools in Kajiado North District Kajiado County.

### **1.4 Objectives of the study**

This research study was guided by with four objectives;

- i) To determine how tree planting affects learners' concentration in teaching learning process in public primary schools in Kajiado North District.
- ii) To establish how solid waste disposal management contributes to learners' participation in the learning process in primary schools in Kajiado North, Kajiado County.
- iii) To determine how provision of safe clean water influences learners' involvement in learning process in public primary schools in Kajiado North District.

iv) To examine how provision of sanitation facilities affect learners participation in teaching learning process in public primary schools Kajiado North, Kajiado County.

### **1.5 Research questions**

The study sought to answer the following questions

- i) How does tree planting affect learners' concentration in the teaching learning process?
- ii) What is the contribution of solid waste management on learners' involvement in the learning process?
- iii) What is the influence of provision of safe clean water affect learners' participation in teaching learning process?
- iv) What is the effect of provision of sanitation facilities on the learners' participation in the teaching learning process?

### **1.6 Significance of the study**

The study sought to generate useful information on influence of environmental management practices on learning process. The research findings may be used by other researchers as basis for more enquiries on the field of environmental management. The findings may be used by Non Governmental Organizations (NGOs) and donors to provide facilities in schools like water tanks and latrines.

### **1.7 Limitations of the study**

Limitations are factors beyond control of the researcher which may affect the study (Mugenda and Mugenda 1999). Kajiado County received high rainfall in the 2013 long rains season and many of the bridges connecting the schools were washed away which made some schools inaccessible. The researcher collected information for this study from as many schools as possible that were accessible.

### **1.8 Delimitation of the study**

The study was carried out only in public schools in Kajiado North. The study was on environmental management therefore much of the findings were observable. The study was carried out in one administrative district which predominantly rural, hence the findings of the study were be generalized to other districts with caution. Though there are other stakeholders that are involved in environmental issues in the schools such as NGOs, the study solicited information from head teachers, teachers and pupils only. The study being on environmental management provoked objectives responses.

### **1.9 Assumptions of the study**

- i) The study assumed that there were environmental management programmes in the schools.

- ii) The study also assumed that head teachers, teachers and pupils had the information on how environmental management practices influenced pupils' participation in learning process.

### **1.10 Definition of Significant Terms**

**Environment** refers to the complex physical and biotic factors that act upon an organism and ultimately determine its survival.

**Environmental management** refers to systematic approach to minimizing the damage caused by an organization to the environment in which it operates.

**Headteacher** refers to a teacher assigned with administrative responsibilities in a school.

**Influence** refers to the power that someone has to make someone behave in a particular way.

**Solid waste** refers to all discarded material which is neither gas nor liquid.

**Waste management** refers to collection, removal processing and disposal of all discarded material.

### **1.11 Organization of the study**

The study is organized into five chapters. The chapter one, the introduction consists of background to the study statement of the problem purpose of the study objectives of the study and research questions. Included also is significance of the study, limitations of the study delimitation of the study, assumptions of the study, definition of significant terms and organization of the study. Chapter two, literature review consists of the following

subheadings; Introduction ,influence of tree planting on learners, concentration in learning process , influence of solid waste disposal management on learners' participation ,influence of provision of clean water on learners' involvement in learning process, influence of provision of sanitation on learners' participation, summary of literature review, therotical framework and conceptual framework.

Chapter three which is the research methodology describes research design target population, sampling procedures, research instruments, and instrument validity instrument reliability data collection procedures and data analysis. Chapter four presents the data analysis and interpretation of the research findings while chapter five comprises of summary of the study, conclusions, recommendations and suggestions for further studies.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The literature review deals with tree planting and pupils' concentration in the learning process, solid waste disposal management and learners' participation, provision of safe clean water and on learners' involvement and provision of sanitation facilities and learner's participation.

#### **2.2 Tree planting and learners' concentration in the learning process**

Forest plays a major part of the ecological structure that supports human well being. Forests goods and services support much of the economic livelihoods of many people food Aid organization FAO (2006). In the school the pupils need an environment protected from pollutants like dust convention of rights of the child (1989). Trees in schools act windbreaks minimizing exposure of pupils to dust and other pollutants like carbon dioxide and nitrogen dioxide.

Trees in school act as screens from the suns radiant energy Daniel Van (2002). Negative environmental indications like, dust polluted air contribute largely to occurrence of disease and UNEP and UNICEF (2002) affirm that environmental degradation is killing children. Tree planting in schools therefore needs to be a common practice as the learners get protection from dust and other pollutants. Strong winds blow off roofs of building and forcing

learners to study in the hot sun which reduces concentration. The needs of children particularly with regard to the living, environment in school; have to be taken fully into account Habitat Agenda (1996). Tree planting therefore should be practiced to provide children with a safe environment where learners concentrate in the learning teaching process as argued by G8 environment ministers' communique (2001).

Africa continues to face serious environmental and sustainable development challenges new partnership for African Development (NEPAD 2012) desertification being one of them. These challenges pose real impediments for sustainable developments efforts in education in A study by Bewket (2003) on Tree planting and its implication on environment a case study on Chemoge watershed (Ethiopia) showed planting of trees has contributed to the increased forest cover of the watershed present compared to forest cover four decades ago and has contributed to positive global ecosystem and health. This research is to study influence tree planting on learners' participation in the learning process.

### **2.3 Solid waste disposal and learners' participation in learning process?**

Solid waste in schools includes glass, wood, paper and nails. Waste management is the collection, transport and disposal of discarded materials. It is estimated that waste volumes will grow from 1.3 billion tonnes to 2.2. Billion tonnes per year by 2028. Global partnership on waste management G.P.W.M (1999). In schools waste is continually produced especially with high energy



and resource consuming economy Brundtland (1983) who further argue that environmental management and economic development should be balanced.

Waste in schools may produce harmful gases like methane, carbon dioxide and odor which may kill vegetation in schools. Wikipedia (2011). On exposure to such gases pupils, may contract acute respiratory infections ARIs which may reduce participation in curricular and co-curricular activities.

Vermin including rats and snakes from waste heaps harm pupils inhibiting participating in the learning process Declaration of the environment leaders of the fight on childrens health (1997) asserts that children face significant threats to health from environmental hazards like vermin in schools. Pupils need a safe environment in schools. Waste produces leachate (wikipedia 2011) which infiltrates the ground and may pollute underground water reserves. Learners are at risk of harm from waste when disposed in land fills. Solid waste may be incinerated to reduce the quantity or recycled. Incineration reduces waste by 20-30% wikipedia (2011). Recycling turns waste to energy W to E or energy from waste Ef.w. (Zimring 2003) Biological processing through decomposting and digesting of decomposable waste Doughty (1991) minimizes risk of learners exposure to solid waste .Community based organizations (C.B.O) managed by women are recycling waste from Korogocho market to produce organic manure for sale. Ikiara et al. (2004). There is not much literature on Kenyan solid waste management sector with

exception of Nairobi. Ikiara et. al. (2004). This research is to study influence of environmental management practices on teaching learning process.

#### **2.4 Provision of clean safe water and learners' involvement in learning process**

Drinking water should be available throughout the school day and children encouraged drinking water. Even minor dehydration reduces children's ability to concentrate. Pupils and staff who have to walk over long distances to school arrive in school thirsty UNESCO, WHO, WFP (1999). Hand washing should not be compromised by lack of water. Hand washing points with adequate drainage located next to toilets are necessary .Washing of faces and eyes is necessary to prevent eye diseases and water point close to the classroom is necessary (Zoomerplag & Monijman, 2005).

Water supplied to schools need to be free from pathogens and protected from contamination inside the school itself WHO (2004 b). This reduces outbreak of water related illnesses that will hinder learners' involvement in learning process.

A study by (Turo Elizabeth 2012) on influence of safe water and sanitation on the health of slum dwellers a case study Nyalenda informal settlement Kisumu city showed there should be more effective and sustainable projects on clean water and sanitary delivery. She further suggested that there should be more water projects constructed to improve health of Nyalenda's slum dwellers.

## **2.5 Provision of sanitation facilities and learners participation**

Sanitation deals with collection, storage treatment, reuse and recycling human waste and urine. UN (2002). Sanitation ensures access to safe, hygienic and convenient facilities for excreta and tillage which provide dignity and privacy while ensuring clean healthy living environment millennium project (2005). Pupils in schools should not get into contact with human waste which is the most dangerous pollutant. UNICEF (2000).

Children in school may be required to carry out activities like cleaning toilets which should be done without discrimination and not used as a punishment. Hygiene in school need to be adopted to maintain healthy lifestyle and to enable children develop knowledge, attitudes and skills (WHO 2003a).

Young school children need help to consistently and correctly use latrines to ensure maximum participation in learning process. Older girls and Female teachers need sanitation for menstrual hygiene depending on sanitary protection used and the prevailing cultural practices that prevail in an area. Such facilities include private place to wash and dry cloth, waste baskets to throw away sanitary pads and water inside toilet cubicles for cleaning. This encourages older girls and female teachers to attend school even when menstruating and the toilets should provide total privacy. UNESCO, WHO, WFP (1999).

Urinals for boys and men have been used with success in some countries De Gabrielle & Musakwa (2004) and reduce smells in toilets and are easy for

young boys in school to use encouraging the young boys to attend school. Pupils with disabilities sanitation' facilities are essential with ramped access, wide door and sufficient space inside for a wheel chair user to manoeuvre and provision of support structures such as hand rail and toilet seat. Jones and Reed (2005) for pupils with physical challenges participate in learning process.

Odors from toilets cause disturbance to learning process and prevailing winds should be considered when building toilets with all latrines and infiltration systems located at least 30m from ground water source and 1.5m above the water table Franceys, Pickford read 1992. To prevent sexual violence and assault the toilets should be lockable and well marked for boys and girls to reduce embarrassment in schools (Zomerplaag & Moosjman 2005).

## **2.6 Summary of Literature review**

From the foregone analysis, it can be observed that most of the findings have concentrated on general environmental management practices but not on its influence on teaching learning process which is the focus of this study.

## **2.7 Theoretical Framework**

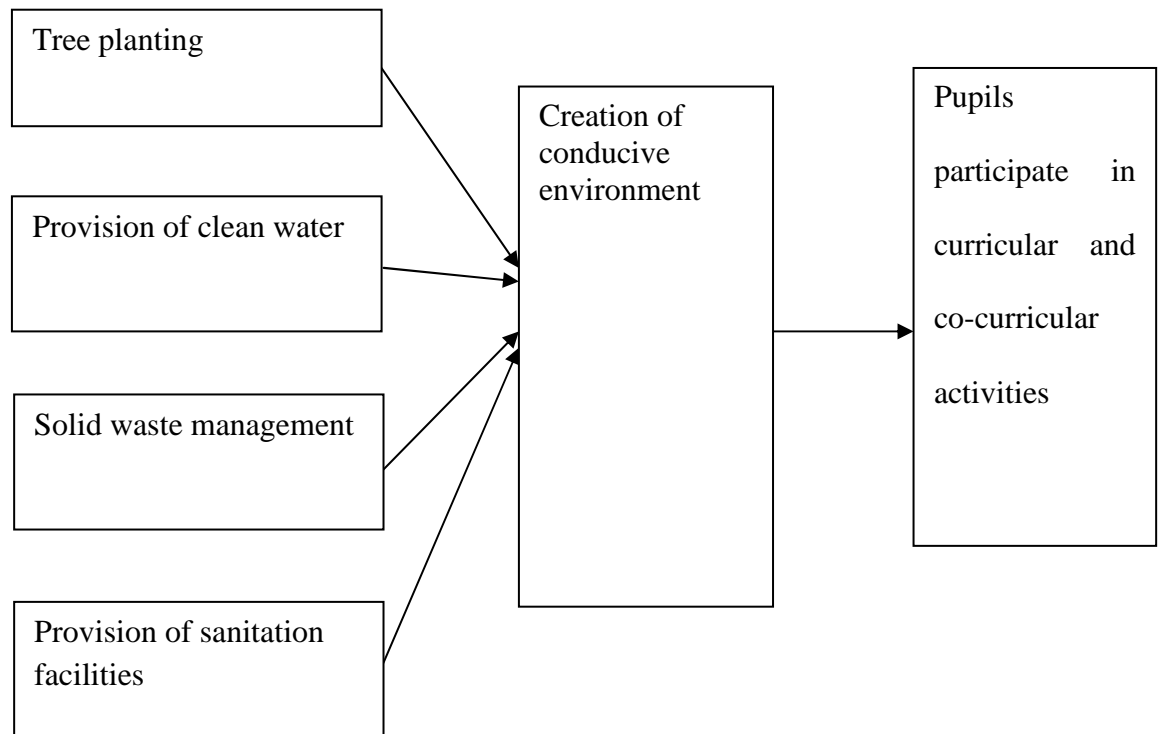
This study will be based on the context input, process and product evaluation theory CIPP by Stufflebeam Constein and Hunkins, (1988). It's a comprehensive theory for guiding formative and summative evaluations of projects, programmes, personnel, products, institutions and systems. In this study inputs are environmental management practices that include tree

planting, solid waste disposal, provision of clean safe water and provision of sanitary facilities which are the independent variables as inputs. The process is the production of a conducive environment and product is participation concentration and involvement of learners in the teaching learning process.

The advantage of using this theory is that it can be used for accountability purposes. It also represents rationale for assisting education stakeholders to be accountable for programmes such as environmental management.

## 2.8 Conceptual Framework

**Fig: 2.1 Relationship between environmental management practices and learning process in public schools**



Once trees grows in school they act as wind breaks and stop winds from blowing off classroom roofs that would otherwise force pupils to study in the sun. Trees also filter dirt that would disrupt learning during the windy season. Safe and clean water prevent pupils from contracting water borne diseases that would keep them away from school. Managing waste like paper and glass reduces harm caused when such waste cut pupils' skin. Provision of sanitation facilities ensures privacy; dignity and security of learners allowing them participate in learning process at all times regardless of their physical conditions.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Methodology is the overall approach the research. It's a strategy or a plan that links methods to outcomes. This chapter covers the research design, target population sample size and sampling techniques, research instruments. The chapter also presents the instrument validity, instrument reliability data collection procedure and data analysis techniques.

#### **3.2 Research design**

Borg and Gall (1989) points out that research design is a process of creating an empirical test to support or refute knowledge. This study was conducted using the descriptive survey design which is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Orodho 2003). The study used a descriptive survey design which enabled provision of insight to intensive descriptive and holistic analysis of data collected. The design was found ideal for the study because the study sought to establish how learners' participation in teaching-learning process was influenced by environmental management practices without manipulation.

### **3.3 Target population**

The population is defined as a complete set of individual cases or objects with some common observable characteristics (Mugenda, 2009). The study was conducted in Kajiado North district composed of five zones which are Ewaso, Ngong, Kisamis, Ongata Rongai and Magadi. The district has 86 public primary schools, 86 head teachers, 846 teachers and 3600 and 8 pupils (Kajiado County, 2013). The researcher feels it is important to include teachers and pupils in the study for triangulation of instruments.

### **3.4 Sample size and sampling procedure**

Sampling is the process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristic found in the entire group (Orodho and Kombo 2002). Stratified random sampling blended with purposive sampling was used to get the respondents. According to (Welman and Krunger 2002) stratified random sampling involves dividing the population into homogenous subgroups; urban public schools and rural public schools. Taking simple random sample in each group to determine the sample size thus the researcher divided the entire population of respondents into 3 strata headteachers' strata, teachers' strata and pupils' strata by location and further by sex so that members of each stratum are homogenous. Mugenda and Mugenda (2003) say a sample of 10 to 30% is suitable for descriptive survey. To sample the headteachers the researcher used 30% of the population. To sample the teachers the researcher



used 20% while 10% of the class 8 pupils were used as the sample. The sampling frame is presented in Table 3.1.

**Table 3.1 Sampling frame**

<b>Category of respondents</b>	<b>Target population</b>	<b>% sample</b>	<b>Sample size</b>
Head teachers	86	30%	26
Teachers	846	20%	169
Pupils	3600	10%	360
<b>Total</b>	<b>45</b>	<b>32</b>	<b>555</b>

The sample comprised of 26 head teachers, 169 teachers and 360 pupils. The sample size was 555 respondents.

### **3.5 Research instruments**

Questionnaires were the main tool for data collection. This is because they were easy to administer. They were used because they gave respondents ample time to answer the question and cover wide area under study. The questionnaires were designed in accordance with the objectives. The questionnaire had both closed and open ended items. The questionnaires were developed for head teachers, teachers and pupils guided by supervisors.

#### **3.5.1 Instrument validity**

According to Kombo and Tromp (2009), validity of a test is a measure of how well a test measures what it is supposed to measure. The researcher used face

validity to review and develop an informal opinion as to whether or not the test is measured what it was supposed to measure. Content validity on the other hand was used by the researcher to check whether the items in the questionnaire answer the research the objectives. The supervisors who are experts in the area of study validated the instruments through expert judgment (Kirk & Miller, 1986).

### **3.5.2 Instrument reliability**

Mugenda and Mugenda (1999) defines reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated tests when administered a number of times. To enhance the reliability of the instrument, a pilot study was conducted. The aim of pre-testing was to gauge the clarity and relevance of the instrument items so that those items found to be inadequate for measuring variables will either be discarded or modified to improve the quality of the research instruments. This ensured that the instrument captured all the required data. Pearson's product moment correlation coefficient formula was used.

According to Mugenda and Mugenda (1999) a coefficient of 0.80 or more shows that there is high reliability of data. The questionnaire for headteachers revealed a coefficient of 0.72 that of teachers had a coefficient of 0.78 while the pupils' questionnaire had a coefficient of 0.75 hence the instruments were deemed reliable.

### **3.6 Data collection procedures**

Data was collected from the sampled schools after obtaining a research permit from national council of science and technology and subsequent clearance to carry out the study were obtained from District education officer Kajiado North District and the head teachers of the sampled schools. A visit was done to the schools to make appointment with the head teachers on when administration of instruments was to be done. Through the head teachers, the researcher tried to create good rapport with the teachers and pupils before asking them to fill the questionnaire.

### **3.7 Data analysis techniques**

After the data was collected there was cross-examination to ascertain their accuracy, competences and identify those items well answered, spelling mistakes and blank spaces. Quantitative data was then entered into the computer for analysis using the Statistical Package for Social Sciences (SPSS) version 12.0. This generated the frequencies and percentages which were used to discuss the findings. Frequency distribution tables, pie charts and bar graphs were used to present the data while descriptive statistics in the form of percentages and frequencies were used to present the qualitative data (research questions). Qualitative data was analyzed thematically according to the themes in the research objectives.

## **CHAPTER FOUR**

### **DATA ANALYSIS AND INTERPRETATION**

#### **4.0 Introduction**

This chapter presents data presentation, analysis and interpretation of finding. The data presented in this chapter were processed using Statistical Package for Social Sciences (SPSS). All themes discussing the same research questions were presented and analyzed together. The analysis of data is presented in figures, tabular forms or narrative.

#### **4.1 Instrument response rate**

Questionnaire return is the proportion of the questionnaires returned after being filled by respondents to those issued. 26 head teachers' 169 teachers and 360 pupils sampled during the study, all of them filled and returned the questionnaires. These return rates were 100 %and hence were deemed adequate for data analysis.

#### **4.2 Demographic data of the respondents**

This section presents the demographic data of the head teachers and teachers that were sampled.

#### 4.2.1: Demographic data of the head teachers

The demographic data of the head teachers was based on their gender, level of training and duration they had served as a head teacher. To establish the gender the headteachers, were asked to indicate their gender. The response is recorded in fig 4.1.

**Figure 4.1: Distribution of the head teachers by gender**

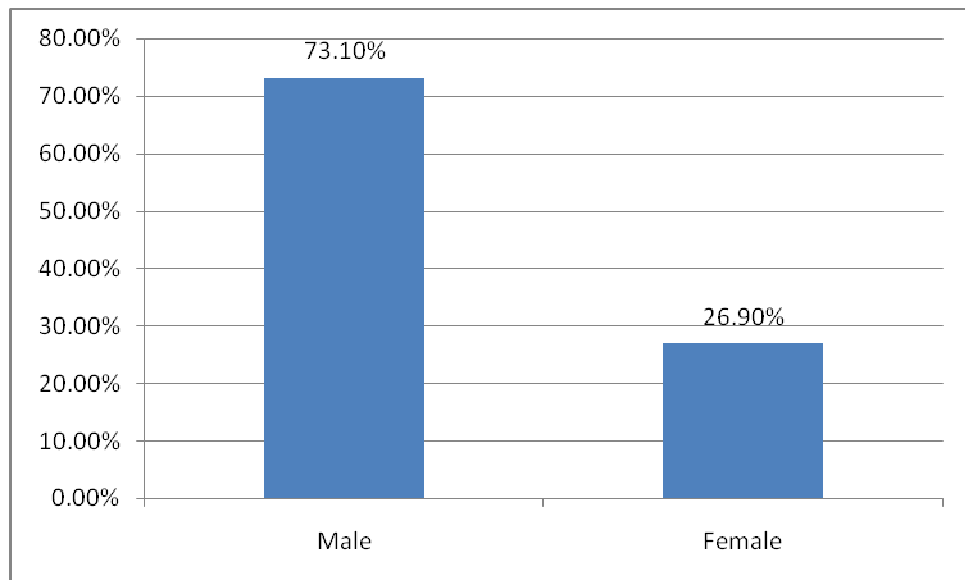


Figure 4.1 shows that a majority of the head teachers (73.1%) were male. The data shows that there were more schools headed by male head teachers hence the government's policy of one third representation in leadership position has not been adhered to in the district.

The head teachers were further asked to indicate their level of training. Their responses are indicated in Table 4.1.

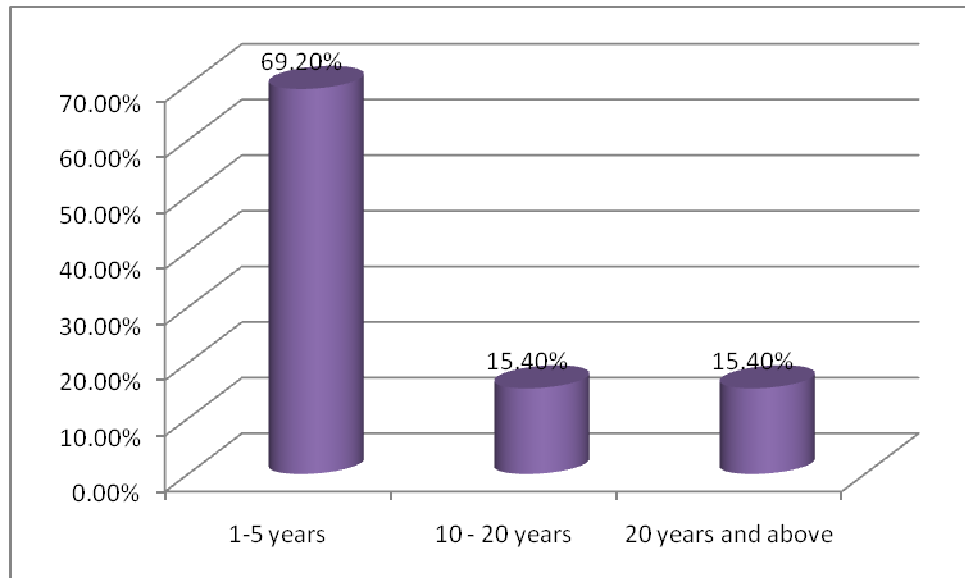
**Table 4.1: Head teachers' level of training**

<b>Level of training</b>	<b>F</b>	<b>%</b>
PI	7	26.9
Diploma	14	53.8
Graduate	5	19.2
<b>Total</b>	<b>26</b>	<b>100.0</b>

Data presented in Table 4.1 indicates that a majority (53.8%) of head teachers had diploma certificates. The data shows that the majority of the head teachers had the minimum academic qualifications and therefore are able to provide information on the influence of environment management practices on learning process in their schools.

The head teachers were further asked to indicate the duration they had served as heads. Figure 4.2 shows the duration the head teachers had served as head teachers.

**Figure 4.2: Administrative experience**

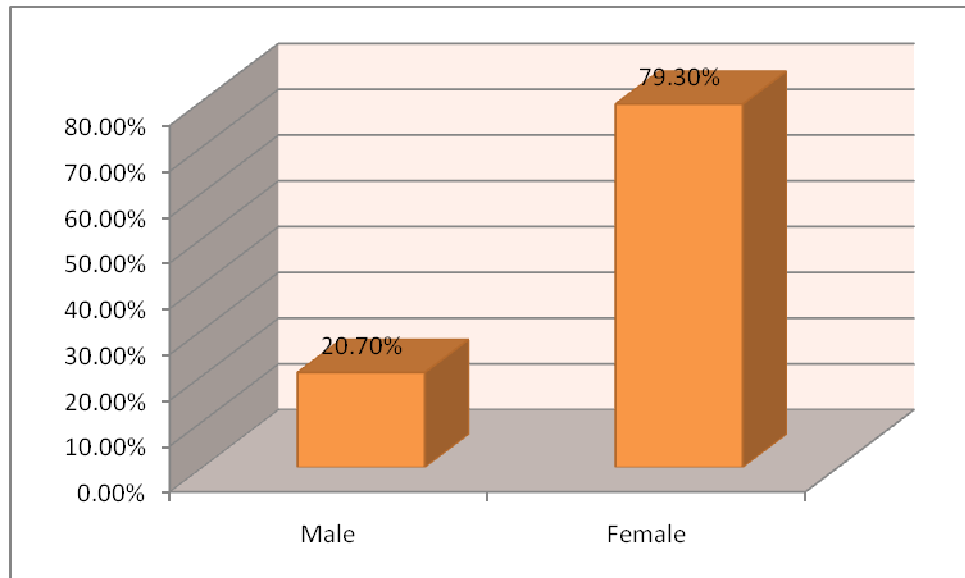


Data as presented in figure 4.2 shows that the majority (69.2%) of head teachers had served for between 1 and 5 years. The data implies that a majority of teachers had served for between 1 and 5 years and therefore have been exposed on how environmental management practices influence learning process.

#### **4.2.2: Demographic data of the teachers**

The demographic data of the teachers was based on their gender, level of training and duration they had served as a teacher. To establish the gender of the teachers, they were asked to indicate their gender.

**Figure 4.3: Distribution of the teachers by gender**



The majority (79.3%) of teachers were female contrary to gender representation of the head teachers, whose majority were females.

When asked to indicate their highest professional qualifications, their response is as indicated in Table 4.2

**Table 4.2: Teachers' professional qualifications**

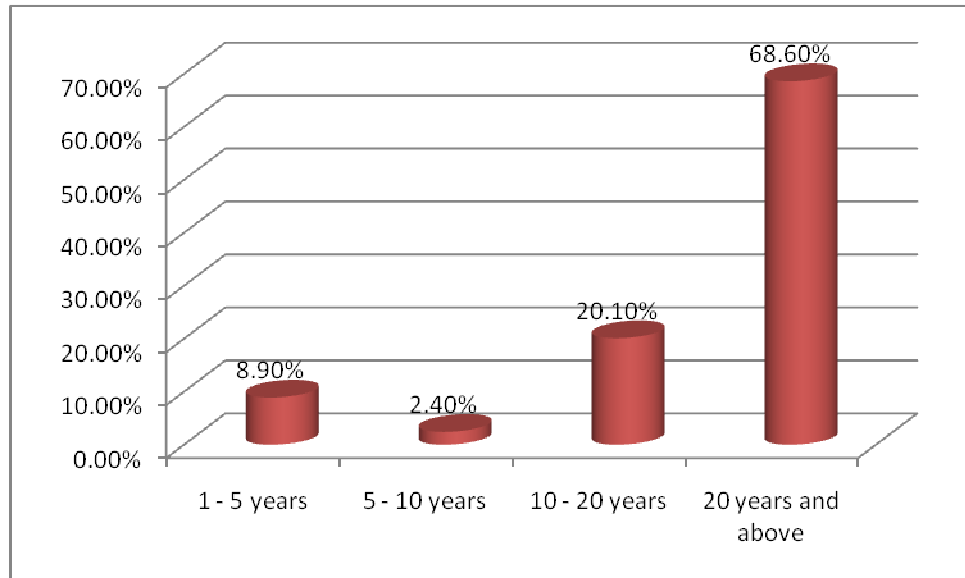
Highest level of training	Freq	%
P1	44	26.0
Diploma	72	42.6
Graduate	53	31.4
<b>Total</b>	<b>169</b>	<b>100.0</b>

Table 4.2 42.6% of teachers were holders of diploma certificates which may have exposed them to knowledge on influence of environmental management on learning process.



The teachers were further asked to indicate the duration they had served as teachers. The data is presented in Figure 4.4.

**Figure 4.4: Teaching experience**

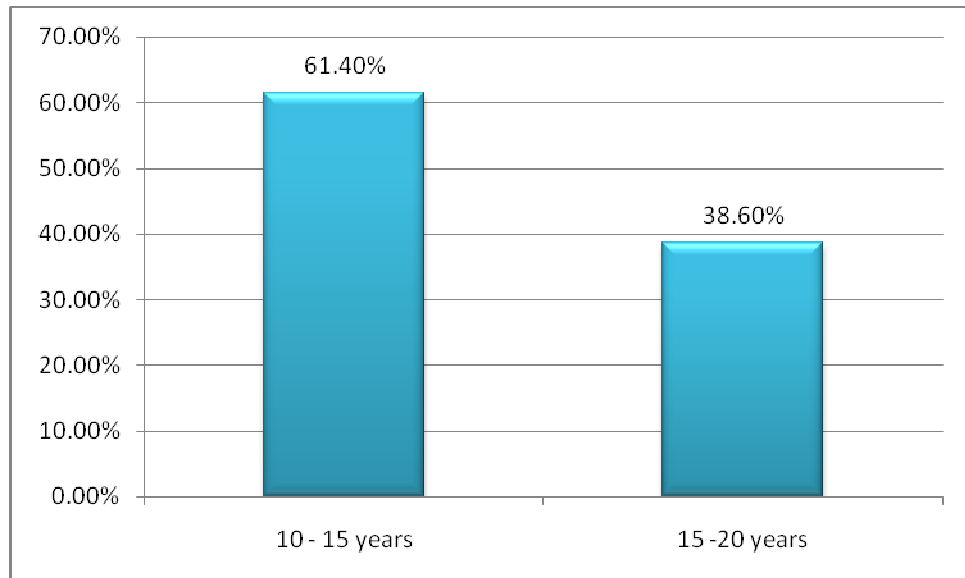


Data shows that majority (68.6%) of teachers had been teaching for more than 20 years. The data presents a high level of experience among the teachers which may have exposed them to how environment management influences learning process.

#### **4.2.3: Demographic data of the pupils**

The demographic data of the pupils was based on their age, class and the number of pupils in their class. To establish the age of the pupils, they were asked to indicate their age

**Figure 4.5: Distribution of the pupils' age**



Data in Figure 4.5 shows that majority (61.4%) of pupils were aged between 10 and 15 years. The data agrees with the sample of the pupils who were drawn from class 8. Pupils in class 8 are able to understand how environment management affects pupils learning process and answer questionnaires appropriately.

Class 8 pupils were asked to fill the questionnaire because the researcher felt the class eight pupils were able to understand how environment management practices influence pupils' learning process.

**Table 4.3: The number of pupils in the class**

<b>Pupils</b>	<b>Freq</b>	<b>%</b>
0 - 15 pupils	13	3.6
16 - 30 pupils	103	28.6
31 -45 pupils	97	26.9
Over 45 pupils	147	40.8
<b>Total</b>	<b>360</b>	<b>100.0</b>

Findings in table 4.3 show that (40.8%) pupils were over 45 pupils in a class. Data shows that a significant number of schools had a relatively higher number of pupils per class which could affect learning process as they assert pressure on the available resources such as water and sanitation facilities.

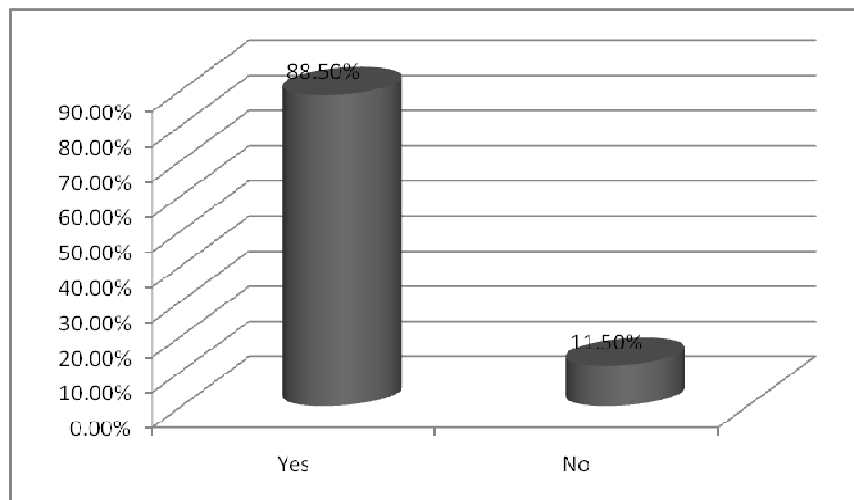
#### **4.3 Environmental management and learning**

The purpose of the study was to establish the influence of environmental management practices on learning process in Public primary schools in Kajiado North District Kajiado County. The first objective was to establish influence of tree planting on learning process. The study sought to establish how different environment management practices influenced pupils learning process. These variables under investigation are discussed in the following section of this chapter.

### 4.3.1 Tree planting and learning

To determine how tree planting affects learners' concentration in teaching learning process , the respondents were presented with various items in the questionnaire to which they were required to respond to. For example, the headteachers were asked whether there was a tree planting programme initiated in their school, the responses are presented in Figure 4.6

**Figure 4.6: Tree planting initiatives.**



Data shows that a majority (88.5%) of the head teachers responded that they had a planting programme initiated in their school. This agreed a with majority (78.1%) of teachers who also reported that there was tree planting programme. The data shows that a majority of schools had taken up tree planting programme as an environment management practice. According to Convention of Rights of the Child (1989), pupils need an environment protected from pollutants like dust. Trees in schools act as windbreaks minimizing exposure of pupils to dust and other pollutants like carbon dioxide

and nitrogen dioxide. The living, environment in school has to be well considered (Habitat Agenda 1996). The findings show that even if trees are planted in the schools they are insufficient and therefore learners are exposed to dust.

The researcher further sought to establish who initiated tree planting in the schools. The head teachers responded as in Table 4.4

**Table 4.4: Initiators of tree planting**

<b>Response</b>	<b>Freq</b>	<b>%</b>
School community	13	50
Local co operates	8	29.7
Government agencies	5	10.7
<b>Total</b>	<b>26</b>	<b>100.0</b>

Data in the table shows that 50% of head teachers said that the school community initiated tree planting programmes. This could be because of the need to reduce dust from blowing into classes during the windy days,

The teachers were asked to indicate who initiated tree planting programmes in the school. The responses were as indicated by Table 4.5

**Table 4.5: Initiators of tree planting.**

<b>Responses</b>	<b>Freq</b>	<b>%</b>
School community	100	59.17
Local co-operates	53	31.36
Government agencies	16	9.49
<b>Total</b>	<b>169</b>	<b>100.0</b>

A majority of the teachers (59.17) said the school community initiated tree planting showing the need to have trees included in the school environment. Teachers were asked whether the school provided shade for learning during hot days. Table 4.6 shows their responses.

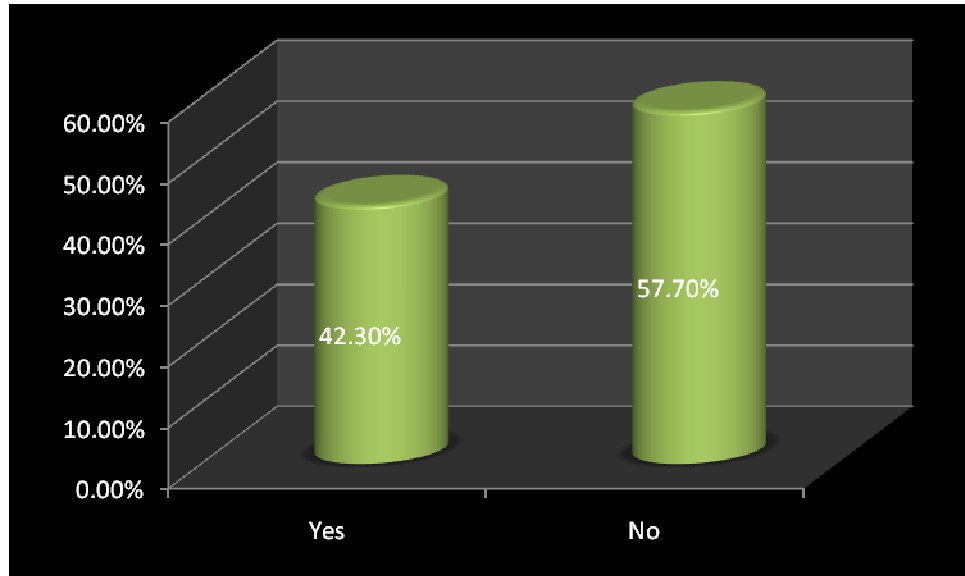
**Table 4.6: Teachers responses on trees for shade**

<b>Response</b>	<b>Freq</b>	<b>%</b>
Yes	36	21.3
No	133	78.7
<b>Total</b>	<b>169</b>	<b>100.0</b>

Data shows that the majority (78.7%) of teachers indicated that trees did not provide shade for learning during hot days and more trees are required to provide shade

When the head teachers were asked to indicate if trees provided shade during hot days, they responded as shown in Figure 4.7

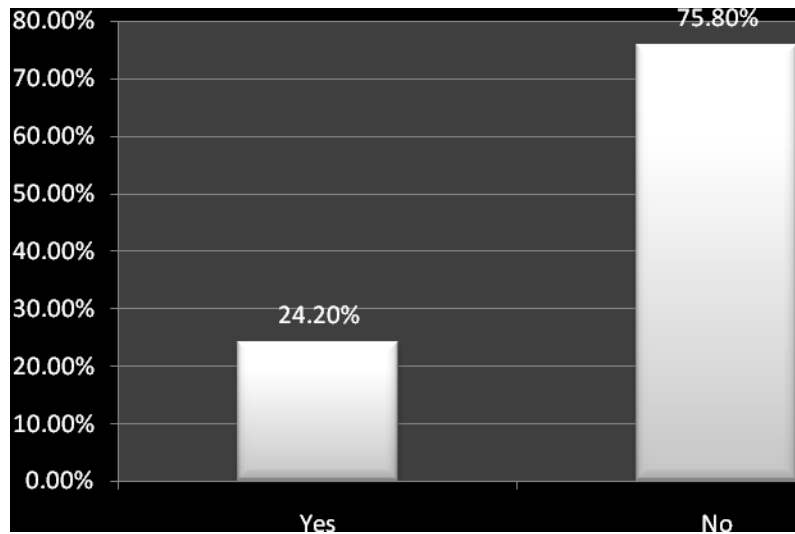
**Figure 4.7: Head teachers' responses on trees for shade.**



A majority (57.7%) of the head teachers said that during hot days pupils did not study under the shade.

The researcher further sought to establish from the pupils whether there were times that they studied in the shade during the hot days. Figure 4.8 shows their responses

**Figure 4.8: Pupils' response on study under shade.**



A majority (75.8%) of pupils indicated that pupils did not study in the shade during the hot days.

The researcher sought to investigate whether the trees planted in the school were well managed. 65.5% of the headteachers indicated that trees planted in the school were well taken care of while 82.2% of teachers reported that trees planted in the school were well taken care of.

To establish how the trees were managed the headteachers were asked to indicate the same.



**Table 4.7: Tree management practices**

<b>Response</b>	<b>Freq</b>	<b>%</b>
Pupils' participation	22	84.6
School management role	4	15.4
<b>Total</b>	<b>26</b>	<b>100.0</b>

Findings showed that (84.6%) of head teacher said that pupils managed the trees through pupil participation and role played by school management. The headteachers and teachers explained that trees were managed using a number of methods; by clearing undergrowth and agro forestry, they also watered them during dry season and weeding and pupils were also assigned to take care of trees. Head teachers indicated that their school compound was fenced and they looked after the existing and planted more trees. The data indicated that tree planting and maintenance was an important undertaking the schools and the school administration was keen in ensuring that trees were taken care of.

The teachers were asked whether there were trees in the school to break wind from blowing dust into classes. Their responses are presented in table 4.8.

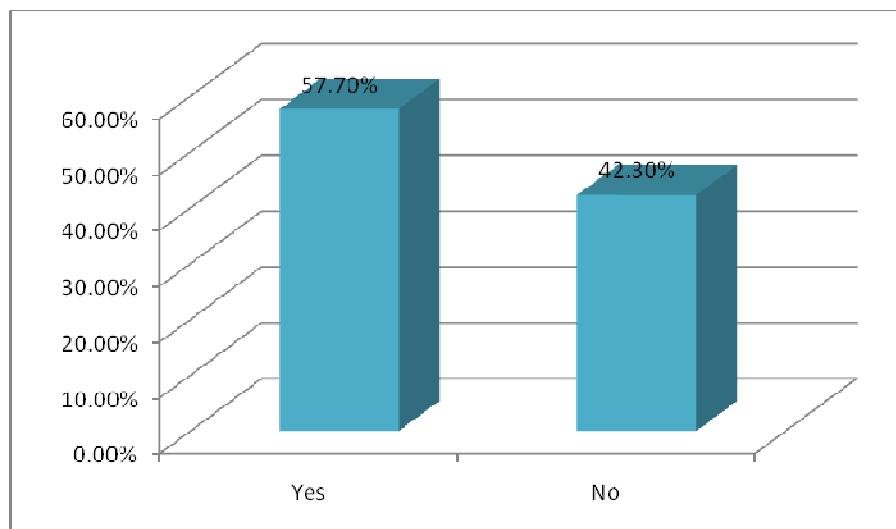
**Table 4.8: Trees' ability to break wind**

<b>Response</b>	<b>Freq</b>	<b>%</b>
Yes	127	75.1
No	42	24.9
<b>Total</b>	<b>169</b>	<b>100.0</b>

Findings as presented in table 4.8 indicated that there were trees in the school to break wind from blowing dust into classes as indicated by a majority (75.1%) of the teachers. The data shows that trees played an important part of pupils learning process by preventing wind from distracting pupils during the learning process. The data shows that tree planting as an environmental management practice influenced pupils learning process.

To establish whether there was dust in class during windy season, the headteachers were asked to respond to the same as indicated in figure 4.9.

**Figure 4.9: Presence of dust when windy**



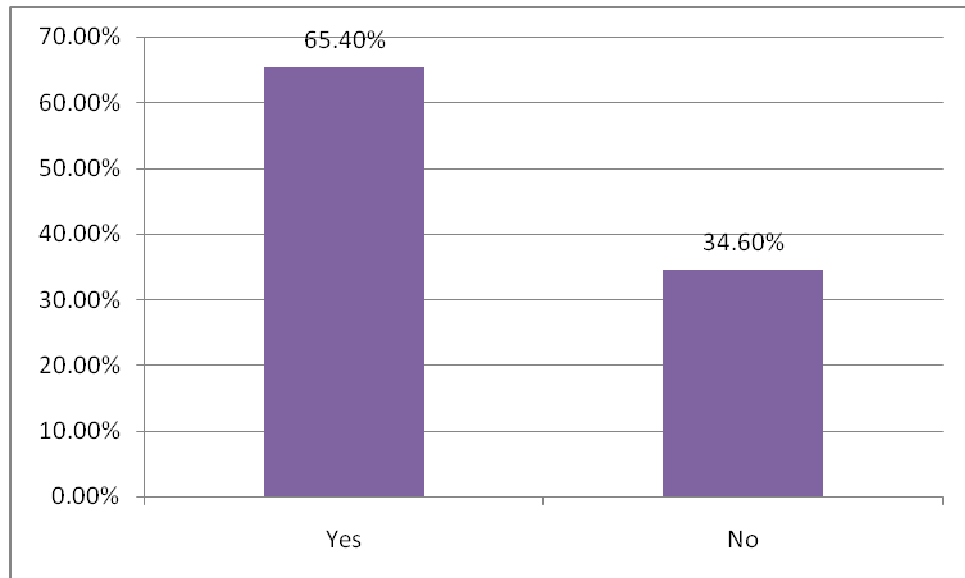
Data indicated that a majority (57.7%) of head teachers indicated that there was dust in class during windy season. When asked to indicate its effect on learning, they responded as indicated in Table 4.9

**Table 4.9: Influence of dust on learning**

<b>Effect</b>	<b>F</b>	<b>%</b>
Disrupting learning during windy days	7	26.9
Make classrooms dirty	8	30.8
Polluting the air	5	19.2
Results to cold infection associated with dust	6	23.1
<b>Total</b>	<b>26</b>	<b>100.0</b>

Data shows that a majority of head teachers indicated that wind disrupted learning during windy days, (30.78%) of head teachers said that the dust made classrooms dirty, dust polluted the air, there was cold infection associated with dust. Presence of dust as a negative indicator contribute largely to occurrence of disease (UNEP and UNICEF 2002). The data showed that learning process was affected by lack of trees. The head teachers were also asked to indicate whether trees in the school stopped wind from blowing off roofs.

**Figure 4.10: Ability of trees to protect roofs**



Data on the head teachers' responses indicated that the majority (65.4%) of head teachers reported that trees in the school stopped wind from blowing off roofs. The data implied that trees played an important role in the pupils learning process.

The above findings are in line with Bewket (2003) on tree planting and its implication on environment a case study on Chemoge watershed (Ethiopia) whose findings showed that planting of trees had contributed to the increased forest cover, compared to forest cover four decades earlier and had contributed to positive global ecosystem and health. Findings from this study show that there are insufficient trees therefore there may be a negative influence on learners' health.

Tree planting therefore should be practiced to provide children with an environment free from dust where learners concentrate in the learning teaching process G8 environment ministers' communique (2001).

#### **4.3.2 Influence of solid waste management**

The second objective and research question of the study was influence of solid waste disposal management on learners' participation. Solid waste in schools includes glass, wood, paper and nails left after construction. Waste management is the collection, transport and disposal of discarded materials. Waste in schools may produce harmful gases like methane, carbon dioxide and odor which may adversely affect vegetation in schools Wikipedia (2011). On exposure to such gases pupils may contract acute respiratory infections (ARIs) which may reduce participation in curricular and co-curricular activities. The study therefore sought to establish the influence of solid waste disposal mechanisms on learners' participation in learning process in primary schools. First the study sought to investigate whether there was a dumpsite for solid waste disposal in the schools. Table 4.10 shows teachers responses

**Table 4.10: Presence of dumpsites in schools**

<b>Response</b>	<b>Freq</b>	<b>%</b>
Yes	128	75.7
No	41	24.3
<b>Total</b>	<b>169</b>	<b>100.0</b>

Data as presented in table 4.10 shows that a majority (75.7%) of schools had dumpsite for solid waste disposal in the school. The data implies that schools had put in place a dumpsite as an environment management practice. The teachers were also asked to indicate where solid waste was disposed; the head teachers responses are presented in table 4.11.

**Table 4.11: Means of waste disposal**

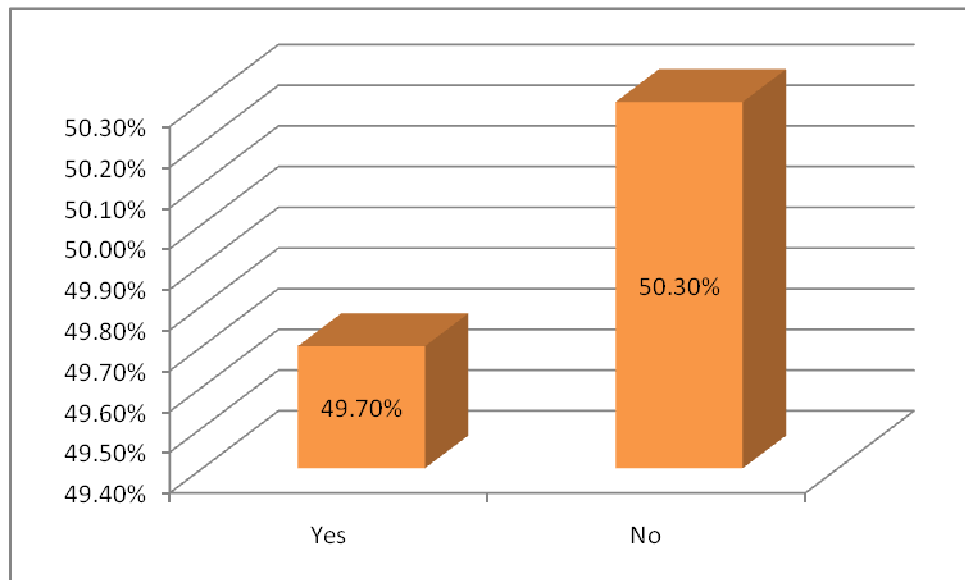
<b>Response</b>	<b>F</b>	<b>%</b>
Composite pit	14	53.8
In Pit latrines	12	46.2
<b>Total</b>	<b>26</b>	<b>100.0</b>

Table 4.11 shows that a majority (53.8%) of schools disposed their solid waste in composite pits while other schools disposed in pit latrines as indicated by the teachers. The data further confirms that schools had put in waste disposal areas in the schools as an environment management practice. Pupil respondents in the study were asked whether there were papers thrown all over in the school. Majority (63.9%) of pupils said that there were none. Pupils'

responses showed that there were composite pits where paper and other wastes were put hence reducing exposure of pupils from gases which may cause ARIs (wikipedia2011).

The researcher further sought to investigate whether there were times where solid waste likes glass and nails injured pupils in the schools. Figure 4.11 shows teachers responses.

**Figure 4.11: Occurrence of injuries by waste**



Data shows that a majority (50.3%) of teachers said that there were no instances where solid waste likes glass and nails injured pupils in the schools. The data implies that such nails and solid waste were managed hence no chance of endangering pupils while at schools. This finding further indicates that waste disposal practices were embraced at school. When such waste materials are well disposed, pupils are not endangered and hence are able to learn well.

The researcher further sought to establish whether there were harmful animals like rats and snakes in the school dumping sites. The head teachers and teachers were therefore asked to indicate the same. Table 4.12 shows their responses.

**Table 4.12: Presence of vermin in dumpsites**

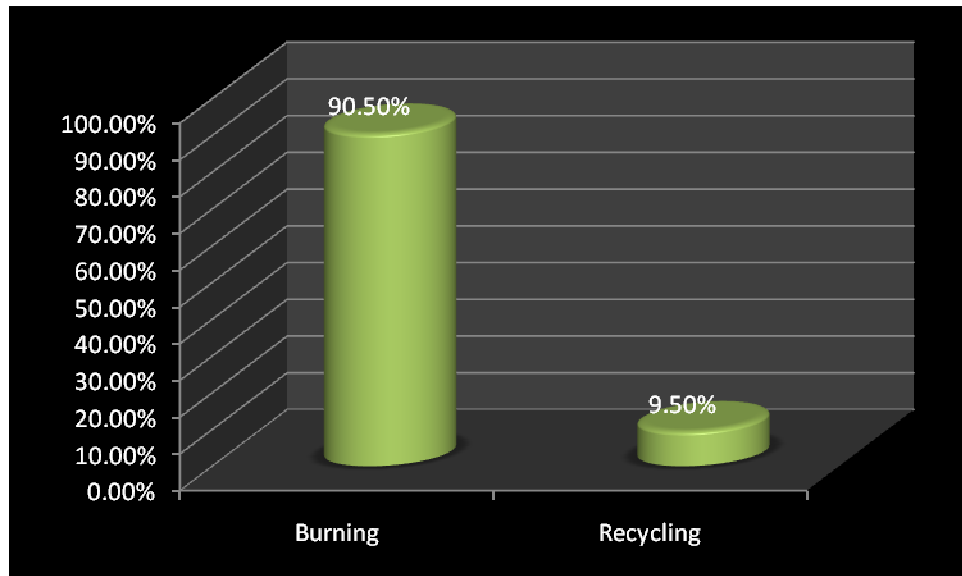
<b>Head teachers</b>				
<b>No</b>		<b>Yes</b>		
<b>Freq</b>	<b>%</b>	<b>Freq</b>	<b>%</b>	<b>Freq</b>
14	53.8	12	46.2	95

Data shows that a majority (53.8%) of head teachers indicated that there were no harmful animals like rats and snakes that were found in the dump sites in their school. 56.2% of teachers reported that there were no vermin on dumpsites. The findings are in line with the declaration of the environment leaders of the right on children’s health (1997) which stated that Vermin including rats and snakes from waste leaps harm pupils inhibiting participating in the learning process asserts that children face significant threats to health from environmental hazards like vermin in schools.

The researcher sought to establish the solid reduction method practiced in the schools. The findings are in Figure 4.12.



**Figure 4.12 Waste reduction methods**



As presented in Figure 4.12, the majority (90.5%) of teachers indicated that they burned their solid waste and others said that their solid waste was recycled. The data shows that apart from having and composite pits in the schools, there were other methods of solid waste reduction employed in the school which included burning and recycling of waste materials. Doughty (1991) states that biological processing through decomposing and digesting of decomposable waste minimizing risk of learners exposure to solid waste

The teachers were also asked to indicate whether there were human waste disposal facilities in the school and responses are indicated in Table 4.15

**Table 4.13: Human waste disposal facilities**

<b>Type</b>	<b>Freq</b>	<b>%</b>
Latrines	126	74.6
Flash toilets	43	25.4
<b>Total</b>	<b>169</b>	<b>100.0</b>

Table shows that a majority (74.6%) had latrines facilities for human waste disposal while the rest indicated there were flash toilets. The data shows that schools had put up human waste disposal mechanism as an environment management practice. This finding show that human waste is well managed in the school and pupils are protected from getting into contact with human waste which is the most dangerous pollutant (UNICEF 2000).

### **4.3.3 Safe water and learning**

The third objective and question of this research study was influence of provision of safe water on learning process. To determine how provision of safe clean water influenced learners' involvement in learning process in public primary schools, the head teachers were asked whether safe drinking water was provided in the school. Figure 4.13 shows their responses.

**Figure 4.13 Availability of safe water**

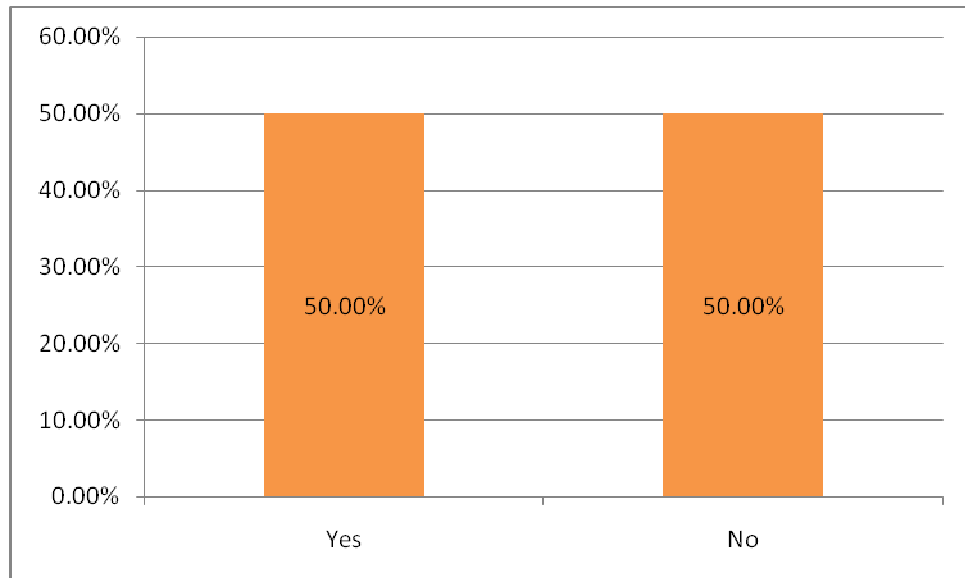


Figure 4.13 shows that (50.0%)of head teachers agreed that safe drinking water was provided in the schools while the same number of head teacher said it was not provided. WHO (2004 b) recommends that water supplied to schools need to be free from pathogens and protected from contamination inside the school itself as it reduces outbreak of water related illnesses that hinder learners' involvement in learning process.

When the pupils were asked whether their head teachers provided them with safe water for drinking in school, they responded as shown in Table 4.16

**Table 4.14: Water availability in schools**

<b>Response</b>	<b>Freq</b>	<b>%</b>
Yes	333	92.5
No	27	7.5
<b>Total</b>	<b>360</b>	<b>100.0</b>

Table 4.14 shows that a majority (92.5%) of pupils indicated that they were provided with safe water for drinking in school. The study further sought to establish where learners got drinking water from, for cases where school did not provide. Some of the head teachers said learners got water from nearby homes and others got water from nearby rivers. According to UNESCO, WHO, WFP (1999), drinking water should be available throughout the school day and children encouraged to drink it. Even minor dehydration reduces children's ability to concentrate. Pupils and staff who have to walk over long distances to school arrive in school thirsty. A majority of the learners had water in the school therefore were hydrated enabling them participate in the learning process. The teachers were further asked to indicate if there was water provided in the school and the data is presented in Table 4.15.

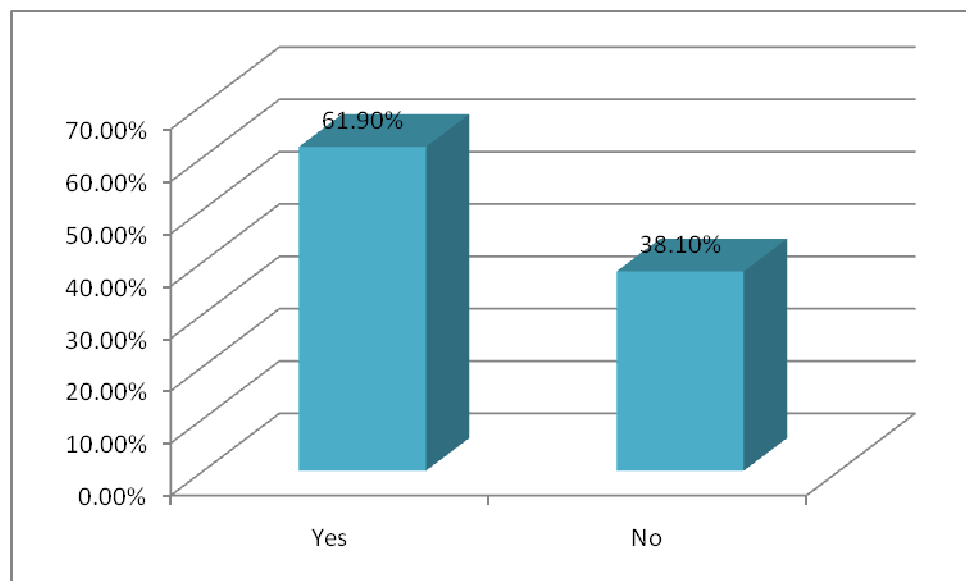
**Table 4.15: Water availability in the school**

Statement	Yes		No	
	Freq	%	Freq	%
Clean water provided in the school	157	92.9	12	7.1

Table 4.15 shows that the majority (92.9%) of teachers said that clean drinking water was provided for learners in the school.

The researcher further sought to establish whether there was water for washing classes in the school. The pupils were also asked to indicate whether there was water for washing classes in the school. Figure 4.14 shows their responses.

**Figure 4.14 : Pupils response on water in the school**



Data shows that the majority (61.9%) of pupils said that there was water for washing classes in the school. The data above established that schools provided water for the pupils to a great extent. Provision of clean water is one

of the environmental management practices that would influence pupils' involvement in learning process since when pupils are provided with clean water at school, they are able to learn better. The above findings are in line with a study by Turo Elizabeth (2012) on influence of safe water and sanitation on the health of slum dwellers a case study Nyalenda informal settlement Kisumu city showed there should be more effective and sustainable projects on clean water and sanitary delivery. She further suggested that there should be more water projects constructed to improve health of Nyalenda's slum dwellers. Where water is available learners are protected from dehydration allowing them involvement in the learning process. Provision of water for cleaning allows pupils study in a clean environment enhancing involvement in the learning process.

#### **4.3.4 Influence of sanitation facilities on learning**

The fourth objective and question for this research study was influence of provision of sanitation facilities on learners' participation on learning process. To examine how provision of sanitation facilities affect learners participation in teaching learning process, the study sought to determine the frequency at which latrines in the school were washed in a week. Table 4.16 shows teachers responses.

**Table 4.16: Frequency of cleaning latrine in a week**

<b>Frequency</b>	<b>F</b>	<b>%</b>
Daily	88	52.1
Three times	46	27.2
Once	35	20.7
<b>Total</b>	<b>169</b>	<b>100.0</b>

Data shows that the majority of teachers (52.1%) indicated that the latrines in their school were cleaned daily. The data shows that schools had put measures in place for maintaining clean latrines in the schools.

When the headteachers were asked to indicate the frequency of cleaning latrines, majority of head teachers (53.8%) said that the latrines in their school were cleaned daily. The pupils were also asked to indicate the frequency of cleaning latrines. Their responses are presented in Table 4.17.

**Table 4.17: Pupils' response on frequency of cleaning latrines**

<b>Response</b>	<b>F</b>	<b>%</b>
1 Time	150	41.7
2 Times	24	6.7
More than 3 times	186	51.7
<b>Total</b>	<b>360</b>	<b>100.0</b>

Majority of pupils (51.7%) indicated that they cleaned the latrines more than 3 times in a week. The data further shows that latrines in the school were cleaned.

Head teachers were asked if there was water available for pupils to wash hands after visiting the latrines and responses are indicated in table 4.18

**Table 4.18: Availability of water to clean hands**

<b>Response</b>	<b>F</b>	<b>%</b>
Yes	4	15.4
No	22	84.6
<b>Total</b>	<b>26</b>	<b>100.0</b>

Data tabulated in Table 4.18 show that the majority (84.6%) of teachers indicated that water for washing hands after visiting latrines was not always available. They further said that there were instances where learners have to leave school to fetch water. The findings are in line with WHO 2003a) which states that children in school may be required to carry out activities like cleaning toilets which should be done without discrimination and not used as a punishment. Hygiene in school need to be adopted to maintain healthy lifestyle and to enable children develop knowledge, attitudes and skills

The head teachers were further asked if latrines in the school according to ministry of education ratio and whether there were cases where girls stay at home because of menstruation. The data is presented in table 4.19.



**Table 4.19: Provision of sanitation facilities**

<b>Statement</b>	<b>Yes</b>		<b>No</b>	
	<b>F</b>	<b>%</b>	<b>F</b>	<b>%</b>
Latrines as per ministry's ratio	13	50.0	13	50.0
Mature girls stay in school during menstruation.	18	69.2	8	30.8

Table 4.19 show that half of head teachers said that the latrines in the school were not according to Ministry of Education ratio while a majority of head teachers (69.2%) said that mature girls stayed in school even during menstruation.

To establish the ratio of boys' and girls' latrines, the head teachers were asked to indicate the same. The head teachers indicated that the latrines were fewer as one latrine was shared among many pupils.

The study sought to investigate from head teachers how the school managed to keep girls from poor families in school during menstruation. They responded as indicated in Table 4.20.

**Table 4.20: Keeping mature girls in schools**

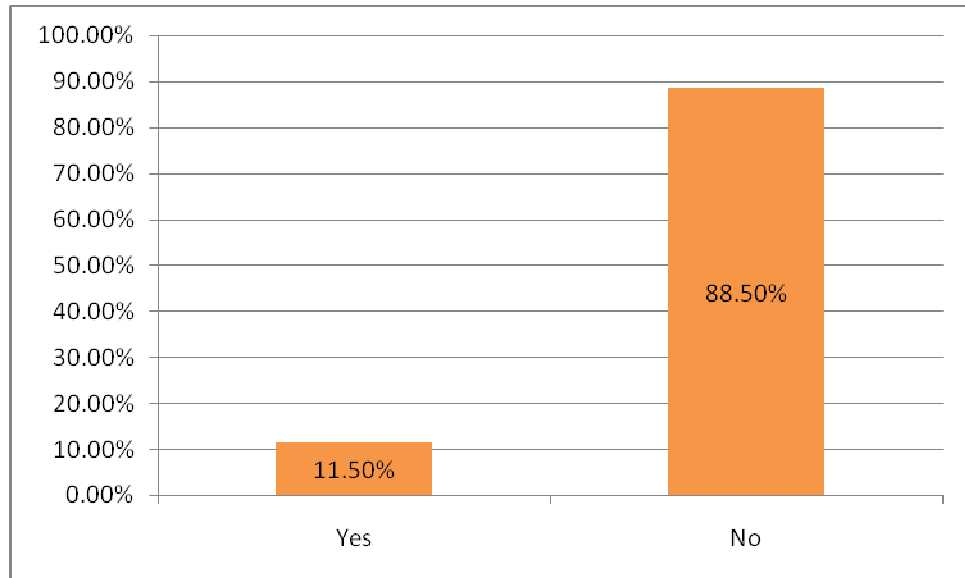
<b>Response</b>	<b>F</b>	<b>%</b>
By providing the sanitary towels	18	69.2
N/A	8	30.8
<b>Total</b>	<b>26</b>	<b>100.0</b>

Data shows that a majority of the head teachers (62.9%) managed to keep girls from poor families in school during menstruation by providing them with sanitary towels to stop them from staying at home because of menstruation.

The findings concur with UNESCO, WHO, WFP (1999) that young school children need help to consistently and correctly use latrines to ensure maximum participation in learning process. Older girls and Female teachers need sanitation for menstrual hygiene depending on sanitary protection used and the prevailing cultural practices that prevail in an area. Such facilities include private place to wash and dry cloth, waste baskets to throw away sanitary pads and water inside toilet cubicles for cleaning. This encourages older girls and female teachers to attend school even when menstruating and the toilets should provide total privacy. This study found out that recommendation of WHO and UNESCO are taken into consideration. Female learners are able to participate in learning process all the times they are supposed to without interference.

The study sought to investigate whether the odor from latrines was too strong to affect learning; Figure 4.15 shows head teachers' responses.

**Figure 4.15: Presence of odor from latrines**



A majority of the head teachers (88.5%) said that the odor from latrines was not too strong to affect learning. According to Zomerplaag and Moosjman (2005), odors from toilets cause disturbance to learning process and prevailing winds should be considered when building toilets with all latrines and infiltration systems located at least 30m from ground water source and 1.5m above the water table (Franceys, 1992). Finding from the study indicate that the learners participate in the learning process without discomfort caused by odor from latrines.

Asked to the distance of the latrines from the classrooms, they responded as presented in Table 4.21.

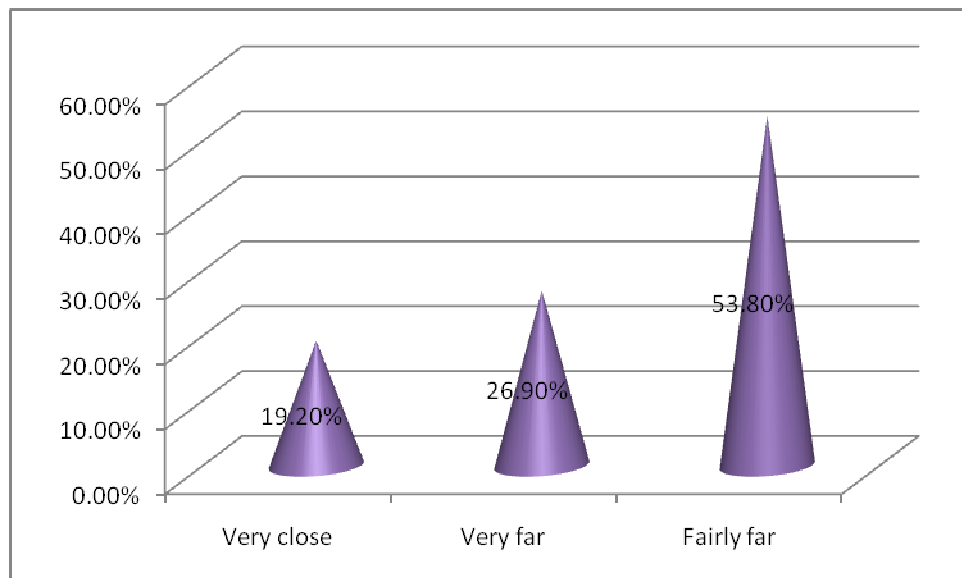
**Table 4.21: Distance of toilets from classrooms**

<b>Response</b>	<b>F</b>	<b>%</b>
Vey far	10	38.5
Fairly far	15	57.7
N/A	1	3.8
<b>Total</b>	<b>26</b>	<b>100.0</b>

Data shows that (55.7%) of head teachers said that the latrines were fairly far from classes while others indicated that they were very far. This stops odor from latrines from reaching the classes that would adversely affect learners' participation in learning process.

Head teachers were asked to indicate distance between boys' and girls' toilets and are indicated in figure 4.16.

**Figure 4.16: Distance between girls' and boys' toilets**



A majority of head teachers (53.8%) indicated that boy's latrines were fairly far from girl's latrines. The data shows that schools had put in place measures that latrines be put at a distance that they provide privacy needed to protect learners from sexual harassment as they used the latrines. Protect from sexual harassment as learners use latrines enhances learners participation in the learning process.

Teachers were asked on the state of sanitation facilities provided and response is per table 4.22.

**Table 4.22: State of sanitation facilities**

Statement	Yes		No	
	F	%	F	%
Sufficiency of latrines	71	42.0	98	58.0
Presence of odor from latrines	53	31.4	116	68.6
Privacy of latrines	120	71.0	49	29.0

Table shows that the majority of the teachers (568.0%) indicated that their school did not have enough latrines for boys, girls and teachers; the majority of teachers indicated that there were no bad smells from latrines smell in the classes. Data further shows that majority of teachers said that latrines provided in school offered privacy to learners while other teachers said that the latrines did not offer privacy to learners as some lacked doors and others were very close to each other. Data from head teachers indicated that majority of the head teachers said that there has not been an outbreak of water related illness

in their school in the recent past while other head teachers said that there has been Cholera and typhoid outbreak.

According to UN (2002) sanitation deals with collection, storage treatment, reuse and recycling human waste and urine. Sanitation ensures access to safe, hygienic and convenient facilities for excreta and tillage which provide dignity and privacy while ensuring clean healthy living environment millenium project (2005). Pupils in schools should not get in contact with human waste which is the most dangerous pollutant (UNICEF, 2000).The research findings show that learners were protected from getting into contact with human waste therefore are not at risk of contacting diseases caused by waste which include dysentery which would otherwise prevent them from participating in the learning process.

Table 4.23 shows head teachers’ responses on the greatest environmental challenge in their school

**Table 4.23 Environmental challenge in the schools**

<b>Challenge</b>	<b>F</b>	<b>%</b>
Erosion in the school compound	5	19.2
Lack of enough trees and lack of know how	7	26.9
Flooding	5	19.2
Overflowing pits	5	19.2
Preservation of environment due to large enrolment of learners	4	15.4
<b>Total</b>	<b>26</b>	<b>100.0</b>

Table 4.23 shows that (19.2%) of head teachers had erosion in the school compound, flooding and overflowing of pits as the greatest environmental challenge in their school. Other head teachers indicated lack of enough trees as the challenge. Other head teachers had the challenge of conservation of environment due to large enrolment of learners

The research study further sought to establish head teachers and teachers' suggestions of what can be done to improve the environment in the school. Findings indicated that there was need to improve on drainage, construct more pit latrines, plant more trees to prevent erosions, terracing, fencing school compound to protect the trees available and to relocate the dumping site and increase toilets.

Data from the pupils on the environmental challenges they faced in schools indicated that there was need of taking care of the environment by involving the learners in the cleaning of school environment; build more toilets in school compound, encourage practice of preventing soil erosion and wind breaks, practice hygienic practices, provision of water for cleaning all the buildings especially toilets in the compound, installing collection bins within the compound and ensuring the toilets are well maintained.

Environmental management practices influence leaning process. Where trees were not planted there was disruption of learning caused by blowing of dust into classes causing disruption. Proper waste management practices protected learners from bites by vermin and injury by sharp waste objects like glass and

nails that would otherwise disrupt learning. Providing of water for drinking in schools protected learners from dehydration which would negatively influence learning. Provision of sanitation facilities in the school provides learners with privacy enhancing participation in learning process.



## **CHAPTER FIVE**

### **SUMMARY OF THE FINDINGS CONCLUSIONS**

#### **ANDRECOMMENDATIONS**

##### **5.1 Introduction**

This chapter presents the summary of the research which sought to determine the influence of environmental management practices on learning process in Kajiado North District of Kajiado County. The research sought to study the influence of tree planting, waste management, provision of safe water and provision of sanitation facilities as environmental management practices. Conclusions, commendations and suggestions for further research are based on the findings of this research.

##### **5.2 Summary of the study**

The purpose of the study was to establish the influence of environmental management practices on learning process in public primary schools in Kajiado North District Kajiado County. Four research objectives were developed to guide the study. The research objectives sought to determine how tree planting influences learners concentration in teaching learning process in public primary schools in Kajiado North District; establish how solid waste disposal management contributes to learners participation in learning process in primary schools in Kajiado North, Kajiado County; determine how provision of safe clean water influences learners involvement in learning

process in public primary schools in Kajiado North District and lastly examine how provision of sanitation facilities influences learners participation in teaching learning process in public primary schools Kajiado North, Kajiado County. This study was conducted using the descriptive survey design. The target population was has 86 head teachers, 846 teachers and 3600 and 8 pupils. The sample comprised of 26 head teachers, 169 teachers and 360 pupils.

### **5.3 Summary of the findings**

Findings showed that tree planting influenced learners concentration in teaching learning process. For example, a majority of the head teachers and majority of the teachers indicated that they had a planting programme initiated in their school. A majority of teachers indicated that school did not provide shade for learning during hot days. It was also revealed that trees planted in the school were well managed as was indicated by majority of the head teachers and majority of the teachers. It was also revealed that there were insufficient trees in the school to break wind from blowing dust into classes as indicated by majority of the teachers. Majority of head teachers indicated that there was dust in class during windy season. This disrupted learning where pupils' books would be covered by dust and strong winds banged doors and windows causing damage. The data implied that trees played an important role in the pupils learning process. Where trees were present roofs of buildings were not blown off by wind thus learners study comfortably in the classes.

Where the trees did not filter dust learning was disrupted by soil getting into learners' eyes.

The second objective of the study was influence of waste management on learners' participation in the learning process. Findings also revealed that solid waste disposal management influenced learners' participation in learning process. For example, majority of the schools had dumpsite for solid waste disposal in the school. Majority of the schools disposed their solid waste in composite pits while other f schools disposed in pit latrines as indicated by the teachers. The data further confirms that schools had put in waste disposal areas in the schools as an environment management practice. Majority of the head that indicated there were no papers thrown all over in the school. Teachers reported that there were no instances where solid waste likes glass and nails injured pupils in the schools allowing learners participate in the learning process. Majority of the teachers indicated that they burned their solid waste. The data shows that apart from having composite pits in the schools, there were other methods of solid waste disposal employed in the school which included burning and recycling of waste materials. Majority of the teachers indicated that there were latrines facilities for human waste disposal.

The third objective of the study was the influence of provision of safe water on learners involvement in the learning process. Findings also revealed that availability of safe clean water influenced learners' involvement in learning process. For example majority of the head teachers agreed that safe drinking

water was provided in the school. Majority of pupils indicated that they were provided with safe water for drinking in school. Majority of the teachers also reported that clean drinking water was provided for learners in the school. Majority of the pupils reported that there was water for washing classes in the school.

The fourth objective of the study was the influence of provision of sanitation facilities on learners' participation in the learning process. Findings on the effect of provision of sanitation facilities on learners' participation in teaching learning process revealed that provision of sanitation facilities affected learners' participation in teaching learning process. For majority of the teachers indicated that the latrines in their school were cleaned daily, majority of teachers said they were cleaned three times in a week while majority of the teachers said that there were washed once in a week. Majority of the head teachers said that the latrines in their school were cleaned daily. Majority of pupils indicated that they cleaned the latrines more than 3 times in a week. Majority of the head teachers said that the odor from latrines was not too strong to affect learning.

### **5.3 Conclusions**

Based on the study findings it is concluded that tree planting as an environmental management practice played an important part of pupils learning process. Trees would influence learning process by preventing wind from blowing off roof of classes thus pupils are not forced to study in the sun.

When trees do not filter dust soil and dust are blown into classes distracting pupils during the learning process. The study therefore concludes that tree planting as an environmental management practice influenced pupils learning process to a great extent. The study also concluded that school effectively managed their solid waste by having disposal management practices which protected learners from injuries enhancing learners' participation in the learning teaching process. Schools had dumpsites as an environment management practice. The data implies that waste such as nails and glass were well managed hence no chance of endangering pupils while at schools. The study concluded that waste disposal practices were embraced at school. When such waste materials are well disposed, pupils are not endangered and hence are able to learn well. The study also concluded that there was provision of safe clean water in schools which affect learners' participation in teaching learning process. Provision of clean water is one of the environmental management practices that would influence pupils' learning process since when pupils are provided with clean water at school, they are hydrated and never spent learning time looking for water and there fore participated in the learning process. The study concluded that there was provision of sanitation facilities in schools which influenced pupils' participation in learning process. Schools also put in place measures for maintaining the cleanliness of the latrines. This ensured a clean and conducive learning environment for pupils.

#### **5.4 Recommendations**

Based on the findings of the study, the following were the recommendations:

- i. Schools that have not put in place environmental management practices such as tree planting should do so to prevent strong winds from blowing dust into classes.
- ii. Schools should put in place mechanisms of managing their dumpsite so as to eradicate vermin.
- iii. The study recommends that provision of clean and safe waters should be provided by the schools that have not provided to pupils to ensure learners are hydrated in school.
- iv. That school should continue providing sanitation facilities for both boys and girls to ensure privacy and dignity of the learners.

#### **5.5 Suggestions for further research**

The following were the suggestions for further research

- i. A study on influence of environmental management practices on pupils' academic performance should be conducted
- ii. A study on factors affecting effective environmental management practices in primary schools should be conducted.

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**APPENDICES**

**APPENDIX 1**

**LETTER TO HEADTEACHERS**

University of Nairobi

Department of Educational Administration and Planning

P.O. Box 92

Kikuyu

The Headteacher

.....Primary School

Dear Sir/Madam,

**RE: PERMISSION TO CONDUCT RESEARCH IN YOUR SCHOOL**

I am a post graduate student in UoN of pursuing a Master of Education degree in Educational administration.

I am conducting a research on influence of on environmental management practices on learning process in Public Primary Schools in Kajiado North District. I will be grateful for you allow me to involve you some of your teachers and some standard seven and eight pupils in this study.

The information collected will be used solely for research purpose and your identity will be treated with utmost confidentiality.

Thank you.

Yours faithfully,

Juliet W. Kamau.



ii) Do pupils study under tree shades during hot days?

Yes [ ] No [ ]

d) Is dust blown in classes during windy season ?Yes [ ] No [ ]

ii) Is so what is its effect on learning.....

e) Do trees in the school stop wind from blowing off roofs?

Yes [ ] No [ ]

5. Solid waste disposal management and learning.

a) Where in the school is solid waste disposed? \_\_\_\_\_

---

b) Are harmful animals like rats and snakes found in the dumping sites?

Yes [ ] No [ ]

c) Which of the following waste reduction methods is practiced in your school?

Burning [ ] Recycling [ ] Processing [ ]

d) Does the school have human waste disposal facilities?

Yes [ ] No [ ]

If so, what type of facilities are they?

6. Clean water and learner's involvement in learning

a) Is safe drinking water provided in the school Yes [ ] No [ ]

b) If no from where do learners get water to drink? \_\_\_\_\_

---

c) Is water for washing hands after visiting latrines available?

Yes [ ] No [ ]

d) How regular are latrines washed in the schools in a week?

a) daily [ ] three times [ ] Once [ ] Never [ ]

e) Are there instances where learners have to leave school to fetch water?yes(

) No ( )

If so, from where and how long do they take?

---

#### 7. Provision of sanitation facilities and learners participation

a) Are the latrines in the school according to ministry of education ratio?

Yes [ ] No [ ]

ii) If no, what is the ratio: of boys' latrines and girls latrines\_\_\_\_\_

---

b) Are there instances where girls stay at home because of menstruation?

Yes [ ] No [ ]

ii) If no, How does the school manage to keep such girls from poor families?

---

c) Is odour from latrines too strong to affect learning?

Yes [ ] No [ ]

If no, how far are the latrines from classes?

Very far [ ] Fairly Far [ ]

d) How close are boys' latrines from girls' latrines?

Very close [ ] Very far [ ] Fairly far [ ]

8. a) What is the ratio of toilets for girls and for boys in the school

---

b) Has there been an outbreak of water related illness in your school in the recent past.

If so, which one and when. \_\_\_\_\_

9 a) What do you consider as the greatest environmental challenge in your school \_\_\_\_\_

b) Give suggestions of what can be done to improve the environment in your school. \_\_\_\_\_

THANK YOU.

### APPENDIX III

#### TEACHERS QUESTIONNAIRE

This study seeks to establish the influence of environmental management practices on learning process in public schools in Kajiado North District.

Kindly fill the questionnaire by answering all the questions.

##### Section A: Background information

1. What is your gender            Male [  ]            Female [  ]
  
2. What is your highest level of training  
P1                                    [  ]                                    Diploma [  ]  
Graduate                            [  ]                                    Others [  ]
  
3. How long have you been a teacher  
1-5 years [  ]                                    5-10 yrs [  ]  
10-20yrs [  ]                                    20 years and above [  ]

##### Section B (4) Tree planting and learners concentration

4. a) i) Is there a tree planting programme in the school  
Yes [  ]            No [  ]  
  
ii) If yes, who has initiated it \_\_\_\_\_
  
- b) Are trees planted in the school well managed?  
Yes [  ]            No [  ]
- c) Do trees in the school provide shade for learning during hot days?  
\_\_\_\_\_
- d) Are there trees in the school to break wind from blowing dust into classes? Yes [  ]            No [  ]

5. (b) Solid waste disposal management

a) Is there a dumpsite for solid waste disposal in the school

Yes [ ] No [ ]

b) i) Are there instances where solid waste like glass and nails injure pupils? Yes [ ] No [ ]

c) How is solid waste reduced in the school?

Burning [ ] Recycling [ ]

d) Are harmful animals like rats and snakes found in the dumping sites in the school. \_\_\_\_\_

e) Are there human waste disposal facilities in the school?

Yes [ ] No [ ]

If so, what type? \_\_\_\_\_

6. (c) Provision of water

i) Is clean drinking water provided for learners in the school?

Yes [ ] No [ ]

ii) Does the school provide water for washing hands after visiting the latrines? \_\_\_\_\_

iii) How regular in a week are latrines washed in the school?

Daily [ ] Three times [ ] Once [ ]

7. Are there times learners leave school to fetch for water during learning times?

Yes [ ] No [ ]



8. Provision of sanitation and learners participation.

a) In your view does the school have enough latrines for boys, girls and teachers Yes [ ] No [ ]

b) Do girls stay at home during menstruation

Yes [ ] No [ ]

c) Are bad smells from latrines smelt in the classes Yes [ ] No [ ]

d) In your view do latrines provided in school offer privacy to learners?

Yes [ ] No [ ]

If no, why do you think so\_\_\_\_\_

9. a) What is the greatest environmental challenge in the school?

\_\_\_\_\_

b) Give suggestions of what can be done to manage environment in the school\_\_\_\_\_

## APPENDIX IV

### PUPILS QUESTIONNAIRE

Kindly fill this questionnaire. Your answer will be very useful for this study on the influence of headteachers initiatives on environmental management in public primary school in Kajiado North district.

Please answer all the questions. Do not write your name or the name of your school in the questionnaire. Put a Tick ( ✓ ) in the boxes and fill in the blank spaces provided.

1. What is your age?

10-15 yrs [ ]      15-20yrs [ ]      20 yrs and above [ ]

2. I am in class 7 [ ]      8 [ ]

3. How many pupils are there in your class?

0-15 yrs [ ]      16-30yrs [ ]

31-45yrs [ ]      Over 45yrs [ ]

4. Do you sometimes study in the shade during the hot days?

Yes [ ]      No [ ]

5. Is there paper thrown all over in the school?

Yes [ ]      No [ ]

6. Do headteachers provide safe water for drinking in school?

Yes [ ]      No [ ]

7. Do strong winds blow dust in the classes during the dry seasons.

Yes [ ]      No [ ]

8. Is there water for washing classes in the school

Yes [ ] No [ ]

9. Does the headteacher provide trees seedlings for planting during the rainy season.

Yes [ ] No [ ]

10. a) Are the latrines in the school clean

Yes [ ] No [ ]

11. b) How many times do you clean the latrines in a week?

I time [ ]

2 times [ ]

More than 3 times [ ]

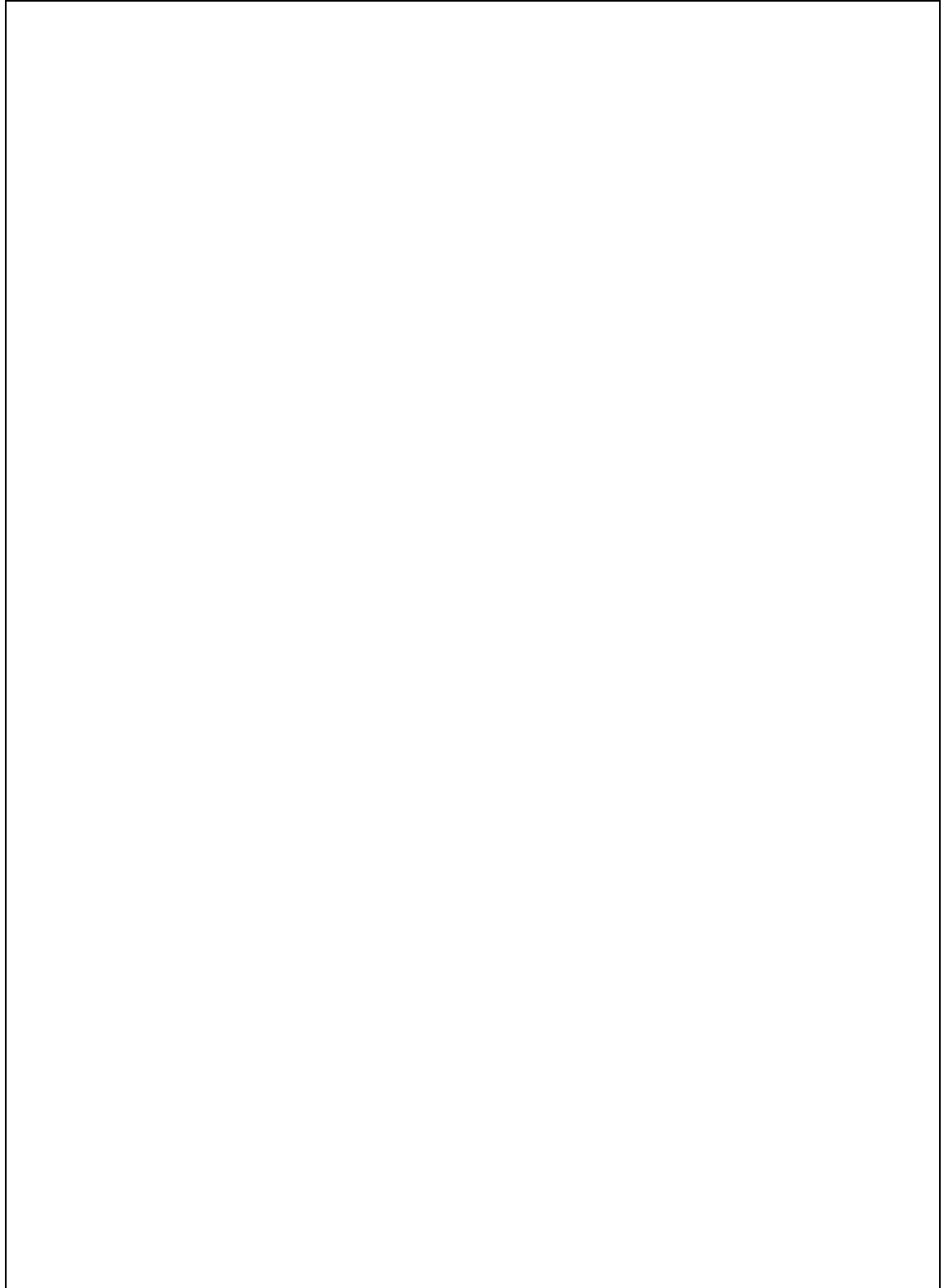
12. In your opinion what should be done to make the environment in the school better.

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THANKS FOR YOUR CO-OPORATION

**APPENDIX V**  
**RESEARCH AUTHORIZATION**



**APPENDIX VI**  
**RESEARCH PERMIT**

