

# Assessment of Safety Status of Physical Infrastructure (Classrooms, Dormitories, Sanitation Facilities, Laboratories and Kitchen) in Public Secondary Schools in Nairobi West Region, Kenya

Jane W. Gatua

P.O Box – 30426-00100, Nairobi

Email: [jawaga12@gmail.com](mailto:jawaga12@gmail.com)

## Abstract

Safety of learners is central to the provision of education in any country. Learning institutions in Kenya have continued to experience different disasters emanating from inappropriate school physical infrastructure among other factors (Mwangi, 2008). It is in this respect that this study assessed Safety Status of Physical Infrastructure in Public Secondary Schools in Nairobi West Region with an aim of giving recommendations regarding safety in schools. All (25) public secondary schools in the study area were stratified according to administrative districts, type and category. A representative sample of 15 schools, 240 students and 43 teachers was randomly selected. Fifteen head teachers and six Education officers were purposively included in the sample. For data collection, the study used both quantitative and qualitative approaches, where convergent parallel design was employed. Questionnaires were used to gather information from head teachers, teachers and students whereas Interview guide was used to collect data from District Education Officers (DEOs) and District Quality Assurance and Standards Officers (DQASOs). The study sought answers on safety of the following physical infrastructures; Classrooms, Dormitories, Sanitation facilities and Laboratories. Observation guide was used to complement other data collection instruments. The Study was guided by Invitational Theory of Practice (Purkey, 1999) which states that People, Places, Policies, Programs and Processes when adequately addressed make schools more safe and appealing. Data were analyzed using both descriptive statistics and narrative techniques. The study established that most schools had not fully implemented Ministry of Education Safety guidelines to ensure safety of physical infrastructure.

**Keywords:** Safety Status, Physical Infrastructure, Learners, Public Secondary Schools, Safety guidelines, Implementation.

## Introduction

Physical facilities play pivotal role in actualization of educational goals and objectives by satisfying the physical and emotional needs of staff and students in a learning institution (Squelch, 2001). Physical needs are met through provision of safe physical structures, adequate sanitary facilities, a balanced visual environment, appropriate thermal environment, and sufficient shelter space for work and play. Emotional needs are met by creating pleasant surroundings, a friendly atmosphere and an inspiring environment (Lupinacci, 2002). This concurs with Kennedy (2003) who asserts that when the learning process is at the core of design priorities, there is significant likelihood that the physical facilities will positively influence performance. This view is supported by Clark (2001) who pointed out that student who feels safe in school experience positive effect on their learning. Safe school environment is characterized by the presence of certain physical aspects such as a secure wall, fences and gates, buildings that are in good state of repair and well maintained school grounds. The most visible aspect of school's physical infrastructure entails quality of security systems and maintenance of school buildings and grounds. This implies a clean and safe environment that is conducive to education and has security of property, well cared for facilities, furniture and equipment, clean toilets, water and green environment and absence of harassment (Squelch, 2001). In view of this, the current study focused on the assessment of safety status of Physical Infrastructure in public secondary schools in Nairobi West region, Nairobi County.

## Literature Review

Over the years, Kenyan Government has devoted herself to enhancing delivery of quality education through provision of resources and other services. It is evident that quality education cannot be achieved in unsafe school environment. Various studies regarding school safety have been conducted both locally and globally as elaborated herein; Cornell, Sheras, Gregory, and Fan (2009) explored the usefulness of threat assessment guidelines in reducing violence in 280 public high schools in Virginia. Their study found out that in schools where threat assessment guidelines were followed, students reported less bullying, felt more comfortable seeking help, and possessed more positive perceptions of the school climate. Cash (1993) examined relationship between safety of school facilities and student achievement and behavior. The target population for the study was student in small rural high schools in the commonwealth of Virginia. Schools that were included in the study were high

schools located outside urban areas with a senior class population of less than 100 students. Cash (1993) identified a total of 47 high schools to include in her study. Their total school populations ranged in size from 90 to 695 and their senior class populations ranged in size from 12 to 99. Cash (1993) found that students' achievement scores were higher in schools with better and safe building condition. Students' achievement was related more to the cosmetic condition of the building while student behavior was related more to the structural condition of the building. The researcher also found that varying climate control, locker condition, and graffiti were factors that were positively related to the student's achievement. These findings underscore the importance of the current study since a school that has enhanced safety of its physical infrastructure attains increased student's achievement and desired behavior. A study was conducted by Oluremi (2005) on creating a friendly school learning environment for Nigerian children. The areas of the study included classroom environment, provision of infrastructural facilities, and teacher pupil interaction in the classroom setting. Results of the study showed that 25% of the schools selected were not child friendly since they lacked infrastructural facilities such as toilet facilities, chairs, desks and tables among others. Researchers such as Okpala (2006), Ndukwe (2002) and Okubukola (2000) among others highlighted the unsafe and gloomy state of the Nigerian school environment. According to Okpala (2006), many school children in Nigeria learn under the shades of trees while many others sit on the floor in their classrooms while learning. Ndukwe (2000) on the other hand found that many schools had no safe and adequate physical infrastructure as well as games and recreational facilities. Okubukola (2000) provided a statistical analysis of the unsafe situations in the Nigerian schools as follows; 12% of the pupils sat on floor, 87% were in overcrowded classrooms, 3% of the schools had no chalkboards, 38% of the classrooms had no ceiling, 77% of the pupils lacked textbooks and 36% of the pupils had no writing materials. Omolo and Simatwa (2010) conducted a study in Kisumu East and West districts on the implementation of safety policies in Schools. The study had a sample of 30 schools, 30 head teachers and a saturated sample of 2 Quality Assurance and Standards Officers (QASOs). data collection instruments included head teachers and QASOs questionnaires, interview and observation schedules. The findings from the study indicated that only 8 schools had fire extinguishers, a total of 38 fire extinguishers were found against a projected demand of 137, this according to the study raised a serious doubt about the fire safety preparedness in Kisumu East and West Public Secondary Schools. According to Waudu (2009), effective and quality learning requires adequate and safe physical facilities as this would contribute significantly to a conducive environment for teaching learning process. From the foregoing, it is therefore crucial for researchers to embark on studying safety in schools with a view of providing safe and secure learning environment.

### **Objective of the Study**

To establish Safety Status in Public Secondary Schools in Nairobi West Region Nairobi County

### **Research Methodology**

The study used a mixed methods approach and it was undertaken in Nairobi West region which comprises of three districts; Langata, Dagoretti and Westlands. The residents of this area are of different social, economic, religious and political backgrounds whose main economic activities include small scale traders, farmers and large scale traders. The study targeted all 25 public secondary schools, 25 headteachers, 816 teachers, 16,065 students, all 3 Quality Assurance & Standards Officers and all 3 District Education Officers in Nairobi West Region. Headteachers were targeted in the study since they play an integral part in the implementation of government policies in schools. Teachers were included in the study since they are important parts of the entire school system and their adequate involvement in the implementation of educational programs in their schools leads to greater achievement of the set goals. Students were included in the study given the pivotal role they play in school management. DEOs were targeted in the study because they oversee implementation of educational programs in the schools under their jurisdiction and have substantial knowledge of the current situation regarding safety of physical infrastructure in schools found in their districts. DQASOs were targeted in the study because they continuously assess the implementation process of government policies in schools to establish the progress of the implementation. Stratified random sampling was used to arrive at a representative sample where schools were placed according to three administrative districts, type and category, the sample included; 15 headteachers from the selected 15 out of 25 public secondary schools, 43 out of 816 teachers, 241 out of 16,065 students, all (3) District Quality and Standards Officers (DQASOs) and all (3) District Education Officers (DEOs). In order to carry out this study, the following instruments were developed, pilot-tested, revised and then administered to collect data from the respondents. Interview guide were used to obtain information from District Education and District Quality Assurance and Standards Officer. Questionnaires were administered to the headteachers, teachers and students. Observation schedule was also used to compliment other instruments. The analysis of data was based on research questions. Data were analyzed using both qualitative and quantitative procedures. The researcher categorized the instruments into their homogenous groups, coded the quantitative information and summarized them into frequencies and percentages with the help of SPSS windows version 13.0.

## RESULTS AND DISCUSSION

### Safety Status of Classrooms

**Table 1: Safety Status of the classrooms**

Item	Students				Teachers				H/Teachers		DEOs		DQASOs	
	Yes		No		Yes		No		Yes	No	Yes	No	Yes	No
	F	%	F	%	F	%	F	%	F	F	F	F	F	F
Whether Classrooms Were spacious	140	70	60	30	12	30	28	70	5	10	1	2	-	3
Whether Classrooms were Appropriately Located	90	45	110	55	10	25	35	75	8	6	2	1	1	2
Whether Classrooms Were safe	105	53	95	48	20	50	20	50	1	5	1	2	-	3

As indicated on Table 1, majority of the students, 140 (70%) indicated that classrooms were spacious. However, most teachers, 28 (70%), Headteachers, ten (10), two (2) DEOs and, two (2) DQASOs felt that classrooms were not spacious. Teachers reported that student to teacher ratio was as high as 60: 1. This was hampering effective teaching learning process and safety of students. This view is supported by Pouget (2010) who postulated that the classroom environment is not only the physical setting but also the learning environment, which the teacher determines and implements. Headteachers and Education officers felt that, in most schools, classrooms that had been designed to accommodate 35-40 students was now accommodating as many as 70 students. This contrasted the view mentioned by Squelch (2001) that, conducive classrooms are essential for sound learning and the safety of both teachers and the students. Regarding whether classrooms were appropriately located, majority of the students, 110 (55%) said yes. The rest 90 (45%) felt that classrooms were inappropriately located such as being too close to the toilets hence affecting their concentration level and health. This was in line with Carter (2002) who asserts that for any meaningful teaching to take place both students and teachers should be provided with safe and conducive environment to carry out their duties. Most teachers, 30 (75%) as compared to headteachers (6) felt that classrooms were not appropriately located, they indicated that some classrooms were too close to the fences, this exposed students to noisy environments that disrupted learning. Teachers reported that since some classrooms were adjacent to public roads, it was not unusual for students to peep through the windows and other openings to see what was happening even when teaching and learning was in progress. This was reported to be risky since students could access illegal items from outside. Responding to whether classrooms were safe most students, 105 (52.5%), headteachers, ten (10) and half of the teachers, 20 (50%) said yes. However, majority of the Education Officers, two (2) DEOs and all (3) DQASOs were of different view, they said most classrooms were not safe. Other unsafe situations reported by respondents included, overcrowding, poor arrangement of furniture, loose electrical fittings and uneven floors that generated a lot of dust which could affect health of students who spent a lot of time in these classrooms. A District Quality Assurance and Standards Officer commented that "injuries were occurring at schools due to potholes in classrooms" Out of the six (6) education officers who were interviewed, four (4) felt that in the storied buildings, stairways leading to classrooms were not wide enough to allow for easy passage, moreover, the handrails along the stairs were not strong, of there commended height and firmly fixed. This was unsafe for the learners who were sometimes observed pushing each other along the stairways. The researcher observed that, in most schools, classrooms were not adequate as compared to enrolment; furniture was inadequate, inappropriate to the size of users and poorly maintained with evidence of breakage that had not been addressed. Most windows had no glasses, partly painted glasses or with blinds to protect students from glare and heat from the sun. Some overgrown tress bending dangerously near classroom roofs were observed, this posed danger to students. Trees were littering school compound by shading leaves during dry season making such schools very untidy and disinventing. Some classrooms were observed having students' unfriendly black boards or walls which were very small, placed either too low for students at the back to see or too high for short teachers to use. Faint paint that hindered students to see what was written on them while some were broken and in bad state. In some schools, administrators had not emphasized on classroom safety since some electrical fittings were loose and trailing electrical leads and cables had not been protected. This could jeopardize safety of learners.

## Safety Status of Dormitories

**Table 2: Safety Status of Dormitories**

Item	Students				Teachers				H/Teachers		DEOs		DQASOs	
	Yes		No		Yes		No		Yes	No	Yes	No	Yes	No
	F	%	F	%	F	%	F	%	F	F	F	F	F	F
Whether Dormitories Were spacious	50	41.6	70	58.3	9	36	16	64	2	4	-	3	-	3
Whether Dormitories were Appropriately Located	70	58.3	50	41.6	10	40	15	60	2	4	1	2	1	2
Whether Dormitories Were safe	100	83.3	20	16.6	5	20	20	80	2	6	1	2	-	3

As indicated in Table 2 Most respondents, 70 (58.3%) students, 16 (64%) teachers, four (4) headteachers, all (3) DEOs and all (3) DQASOs stated that schools' dormitories were congested. Students indicated that overcrowding in the dormitories compromised their hygiene and safety because sometimes they were forced to share beds. This could promote moral decay among students. Teachers, headteachers and Education officers asserted that congestion in schools' dormitories was due to increased demand for boarding secondary schools and few boarding schools in the region. The researcher noted that five (5) schools out of the six (6) boarding schools that participated in the study had overcrowded dormitories and were using bunk beds that sometimes accommodated three learners hence exposing them to health risk. When asked whether dormitories were appropriately located, majority of the students, 70(58.3%) said yes. However, most teachers, 15(60%), headteachers, four (4) and four (4) Education Officers, felt that most dormitories were not appropriately located. They remarked that most dormitories were far from administration block making it hard for proper surveillance. Headteachers stated that some schools' layout did not allow proper location of dormitories. Majority of the respondents, 100 (83.3%) students, 20 (80%) teachers, four (4) headteachers and five (5) Education officers felt that school dormitories were not safe. Teachers, headteachers and Education Officers indicated that safety items were either lacking or inadequate in some schools' dormitories. Available fire extinguishers were not functioning and were not placed at easily accessible points. Students who felt their dormitories were not safe cited overcrowding, inadequate facilities, scarcity of water, dirty bathrooms and toilets; they said they were at high risk of getting infectious diseases. Other safety concerns raised by the students included; poor ventilation and lighting, dilapidated buildings, theft, lack of mosquito nets and temporary structures being used as dormitories. The researcher observed that, in most of the schools under study, dormitory doors and windows had grills, they were opening inwards and were not wide enough to allow easy passage. Most of the schools with storied buildings were not disability friendly since they had no ramps in place. In most (4) boarding schools, windows had grills that could hinder meaningful evacuation if students encountered any danger while in dormitories. Similarly, dormitories lacked doors at both ends and an additional emergency exit at the middle. In few cases where an emergency exit existed, it was not clearly labeled "emergency exit" and it was usually obstructed by debris making it hard to use in case of an emergency. The study established that although in boarding schools dormitories are the single most used physical infrastructure where learners spend the longest continuous period of time in a day, some school administrators had not given a lot of emphasis on their safety.

## Safety Status of Sanitation Facilities

**Table 3: Safety Status of Sanitation Facilities**

Item	Students				Teachers				H/Teachers		DEOs		DQASOs	
	Yes F	No %	No F	Yes %	Yes F	No %	No F	Yes %	No F	Yes F	No F	Yes F	No F	
Whether Toilets Were Adequate	90	45	110	55	18	45	22	55	5	10	1	2	-	3
Whether Toilets Were appropriately Located	80	40	120	60	19	47.5	21	52.5	6	9	-	3	-	3
Whether Toilets Offered required Privacy	73	35	130	65	11	27.5	29	72.5	4	11	1	2	-	3
Whether Toilets Were Safe	105	52.5	95	47.5	10	25	30	75	9	6	-	3	-	3

As shown in Table 3 Majority of students, 110 (55%), teachers, 22 (55%), headteachers (10) and Education Officers (5) indicated that schools' sanitation facilities were inadequate. This concurred with the views expressed by Siringi (2001) that, pupil to toilet ratio was grossly ignored by majority of schools despite the fact that provision of sanitation facilities has implication on access and quality of learning. Students felt that toilets were not matching the students' population since they had to make long queues in order to use the few available ones during the short breaks. One District Education commented that "most school administrators ignore the issue of toilets; they direct their finances to other tuition facilities". The researcher observed that due to shortage of sanitation facilities, students were forced to go back to class before relieving themselves since they were unable to access the facilities within the short stipulated time. This could have diverse health implications on them. Headteachers attributed shortage of sanitation facilities to inadequate funding by the government and parents' laxity to pay more for construction of schools' toilets. Teachers on the other hand felt that inadequate toilets were due to poor planning by school administration and less attention given to toilets by the school manager. Concerning teachers' and other staff's toilets, seven (7) out of fifteen (15) schools had clean and adequate toilets which were well designated for ladies and gentlemen, they were also well labeled for easy access by visitors. However, in eight (8) schools, these toilets were as few as one (1) closet that was being used by both male and female. In one (1) school, teachers were sharing the same toilets with the learners; this could interfere with privacy and safety of the users. Majority of the students, 120 (60%), teachers, 21 (52.5%), headteachers, (9) and all (6) Education Officers stated that schools' toilets were not appropriately located. Most students felt that toilets were located very far from the tuition facilities and in some dark alleys far from the eyes of the school administrators where bullying and other forms of abuse were evident. Other students said that some dormitories had no adjacent toilets and where they existed, they were barred from using them due to water shortage. On toilets location, the researcher observed that, two (2) out of five schools that had pit latrines, the structures were very close to the classrooms and were not on the downside. Stench from the toilets was evident in the classrooms and other parts of the school compound. This compromised health and safety of learners. In Table 3, it is notable that overwhelming number of respondents, 130 (65%) students, 29 (72.5%) teachers, eleven (11) headteachers and five (5) Education Officers felt that schools' toilets were not providing the required privacy. Students indicated that some toilets were located in old and dilapidated buildings; some had wide gaping gaps and no doors. This not only compromised their health but also their privacy. Teachers and headteachers felt that some toilets were not providing privacy to the users since they were placed too close to each other, had no doors, were too close to the fences or entrances and they had not been well designated for boys and girls. The researcher observed that, in two (2) mixed schools, toilets for boys and girls were too close to each other. This could compromise privacy and safety of students. It was observed that, in some schools, sanitary pads disposal bins for girls had not been provided. Available ones were not appropriately located, some had been placed in an open common place hindering access and compromising hygiene standards. It could also undermine students' privacy and impact negatively on their self-image and self-esteem. Compared to other respondents, a high number of students, 105 (52.5%) and headteachers (9) stated that sanitation facilities were safe. However, majority of the teachers, 30 (75%) and Education Officers (6) felt that sanitation facilities were not safe. Those who felt sanitation facilities were not safe cited lack of relevant facilities such as water points, sinks, soap, leaking roofs, poor maintenance among other issues. The researcher observed that in ten (10) schools where ablution block was attached to the dormitories, three (3) schools had not maintained high degree of cleanliness and maintenance.

Damaged taps, sinks, toilet seats and lack of mirrors especially in girls' toilets was observed. Regarding cleanliness and other hygiene situations in the toilets, 105 (52.5%) of the students indicated that, toilets were not cleaned regularly and water points to enable cleaning of hands after visiting the toilets were inadequate and very far from the facility. For at least 120 (60%) students who responded to the study, there was no provision or access to facilities for hand washing and drying, toilet papers, soap and hand towels. This deterred students from using toilets frequently and it was also affecting the development of positive habits around personal hygiene. The study established that the standards of cleanliness was satisfactory for 40% cases, 50% unsatisfactory and only 10% saying that their toilets were adequate, clean and well maintained. In five (5) schools, there were no urinals in the boys toilets and where a trough for this purpose existed, there was no running water to keep them clean all the time. This made the facilities unsafe and unfriendly to the users. In four (4) schools, toilet closets were found to be too small and much squeezed; passageways were narrow such that it was not possible for the learners to access them with ease. Among the students who responded to this study, 120 (60%) felt that, the issue of toilets was not being given priority and respect by the schools' administrators. It was observed that in some two (2) schools where flush toilets existed, toilet seats were inadequate and unclean; this was a real danger since students using them were crouching instead of sitting on them. Clark (2002), Squelch (2001) and Reid (2000) have shown that going to the toilet is more than just a physical reflex. The whole environment must be comfortable in order to relax and allow proper physical and psychological processes to take place.

### Safety Status of Laboratories

**Table 4: Safety Status of Laboratories**

Item	Students				Teachers				H/Teachers		DEOs		DQASOs	
	Yes F	No %	No F	Yes %	Yes F	No %	No F	Yes %	No F	Yes F	No F	Yes F	No F	
Whether Laboratories Were adequate	50	25	150	75	10	25	30	75	5	10	1	2	1	2
Whether Laboratories were Appropriately Located	70	35	130	65	15	37.5	25	62.5	6	9	1	2	-	3
Whether Laboratories Were well Equipped	30	15	170	85	5	25	35	87.5	3	12	-	3	-	3
Whether Laboratories Were safe	20	50	180	90	6	15	34	85	2	13	1	2	-	3

Table 4 shows that majority of the respondents, 150 (75%) students, 30 (75%) teachers, ten (10) headteachers and four (4) Education Officers indicated that schools' laboratories were not adequate. According to Lyons (2002) schools' laboratories are an expensive investment and are expected to last for many years. A poor location or design will impact on generation of students, teachers and technicians. Students felt that laboratories were few compared to the number of students using them. This interfered with comprehension of the subject content especially during practical lessons. This concurred with Reid (2000) who stated that a science department requires enough laboratories unless the curriculum is to be unduly constrained. Teachers stated that science laboratories were few and one laboratory was used for all science subjects. This constrained the existing facilities allowing very little time for cleaning and preparation for the next lesson. Overcrowding was observed during compulsory science subjects where one teacher was handling more than fifty students during a practical lesson. Headteachers noted that science laboratories were few and they were small in size making them unsafe for the users during practical lessons. One District Education Officer commented that "shortage of laboratories discouraged most schools from offering all science subjects as required by the set curriculum". A District Quality Assurance and Standards Officer noted that "inadequate and squeezed laboratories were major contributing factors to lack of safety and breakages of equipment during practical lessons". Responding to whether laboratories were appropriately located, 130 (65%) students, 25 (62.5%) teachers, nine (9) headteachers

and five (5) Education Officers said no. Students and teachers felt that some laboratories were situated next to the roads and busy pedestrians' paths and there were no measures taken to reduce noise levels. This disrupted learning since most windows were also facing this direction. Headteachers stated that due to lack of proper planning especially in the old schools, science laboratories were located in very unlikely places like between classes, next to libraries or even next to administration blocks. This caused interference during practical lessons. The researcher observed that some laboratories were not located on ground floor. This was learner unfriendly because most equipment were fragile and required to be moved a lot especially in cases where they were not stored in the same floor. This arrangement had not considered learners with special needs since ramps had not been provided to allow access to those on wheel chairs. As shown in Table 4. 11. Overwhelming number of students, 170 (85%), teachers, 35 (87.5%), headteachers, twelve (12) and all (6) Education Officers indicated that schools' laboratories were not adequately equipped. All of them felt that laboratory stools and benches were few, inappropriate, of low quality and poorly maintained. This was unsafe for students who were using them while in stooping position for long periods of time. The researcher observed that, during practical lessons other mostly used equipment such as flasks, test tubes, puppets and beaker were inadequate. This caused a lot of spillages because they were shared among many students. Breakages and minor injuries were also noted. Sinks and taps were observed to be few, small in size and inappropriately located to the proximity of users. This necessitated a lot of movements, spillage and littering of the laboratories in most of the schools. This situation could increase chances of injuries through slips and falls. A large number of respondents, 180 (90%) students, 35 (85%), thirteen (13) headteachers and five (5) Education Officers indicated that laboratories were not safe. All (15) headteachers who responded to the study indicated that teachers instruct students on how to use equipment in a science laboratory and demonstrate their usage. However, a few (5) of them reported that some teachers were leaving students unsupervised while using dangerous equipment or chemicals in a science laboratory. Out of 40 teachers who took part in the study, 35(87.5%) were not aware of the recommended laboratory safety guidelines, however, 38 (95%) considered knowledge of these regulations as very important. Overwhelming number of teachers, 37 (92.5%) who participated in the study considered their laboratory technicians not qualified and careless in the science laboratories. However, 20% of them were leaving students under their care. This was a dangerous practice that could endanger lives of the students. Safety problems associated with ventilation mentioned by teachers and students included availability of smoke and dust and inadequate air circulation in the laboratories. Thirty (75%) teachers and 110(55%) students indicated that, sources of hazards in school laboratory included improper techniques of using equipment, inadequate laboratory facilities, and improper storage of equipment and poor management and organization of laboratory facilities. Similarly, 12 (80%) headteachers felt that basic causes of accidents in laboratories included extensive use of glass wares, non-exposure of science teachers to laboratory safety, hastening activities during practical and in active supervision of students during laboratory activities. It was observed that safety devices that lacked in most science laboratories included eye protective shield, spectacles, and goggles, safety screen and fire extinguishers. It was established that all principals (15) and 35 (87.5%) teachers agreed that most schools' laboratories did not have adequate space for teachers' planning, preparation of investigations, and secure storage of laboratory supplies as well as space for students' and teachers' activities. This was evidenced by inadequate, squeezed, inappropriately located and ill equipped laboratories. Lack of necessary safety precautions such as availability of wide windows and doors without grills opening outwards with easy, Serviceable and suitably located fire extinguishers, safety rules posted in the laboratory. Inadequate or lack of appropriate furniture clearly marked emergency exits and, inadequate light and ventilation were also observed.

### Summary

The study concluded that, most of schools' physical facilities were not as safe as required. This was evidenced by presence of unsafe, squeezed, ill equipped and poorly maintained physical infrastructure. Majority of respondents lacked adequate knowledge on safety standard manual for schools and had not received adequate training on safety and disaster preparedness. There was no adequate time, material, human and financial resources to enhance safety of physical infrastructure in the schools under study. The researcher recommends further research on school safety in order to improve learning environment in learning institution in Kenya.

### REFERENCES

- Carter, S.P., & Carter, S.L. (2001). Planning Safe schools. American school and University.  
Cash, C.S. (1993). Building Condition and student achievement and behaviour. Unpublished doctoral dissertation: Virginia Polytechnic and state University, Blacksburg  
Clark, C. (2002). Texas state support for school facilities, 1971-2001. Journal of Education Finance, 27(2), 683-700.  
Cornell, D., Sheras, P., Gregory, A., & Fan, X. (2009). A retrospective study of school safety conditions in high school using the Virginia Threat Assessment Guidelines Versus alternative approaches. School Psychology

Quarterly,24

Kennedy, M. (2003). Comfort Zone. American School and University, 75(8), 20-25

Lupinacci, J. (2002). A safe haven. American school and University, 75(8), 20-25

Mwangi, J.W. (2008). A Survey of the status of Disaster Preparedness in Public Secondary Schools; A Case of Kiharu Division, Muranga District. Unpublished Med Thesis. Kenyatta University.

Okebukola, P. (2000). The Child-friendly school as a new dimension in educational development. Lagos state.

Omolo, D.O. & Simatwa, E.M. (2010). An assessment of the implementation of safety policies in public secondary schools in Kisumu East & West Districts, Kenya: Department of Educational Management & Foundations, Maseno University.

Okpala, P. (2000). Researching learning outcomes at basic education level in Nigeria. Inaugural lecture University of Nigeria.

Purkey, WW. (1999). A brief history of the International alliance for Invitational education. Invitational Education Forum.

Siringi, S. (2001). Is there recourse in Law for parents? Daily Nation, p.5. Nairobi, Nation Media Group.

Squelch, J. (2001). Do Schools governing bodies have a duty to create Safe Schools? An educational Law Perspectives in Education.



The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:

<http://www.iiste.org>

## CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

**Prospective authors of journals can find the submission instruction on the following page:** <http://www.iiste.org/journals/> All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

## MORE RESOURCES

Book publication information: <http://www.iiste.org/book/>

Academic conference: <http://www.iiste.org/conference/upcoming-conferences-call-for-paper/>

## IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digital Library, NewJour, Google Scholar

