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**Status of Physical Facilities under the Public Schools Infrastructure Investment Funds
in public primary schools of Nyamira County in Kenya**

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Abstract

This study was on the status of physical facilities under the Infrastructure Investment Funds in public primary schools in Nyamira County. The purpose of the study was to find out the extent to which the intervention in all its features had achieved its target objectives. The study was guided the following research question: What is the status of physical facilities under the Infrastructure Investment Funds program in public primary schools in Nyamira County; This study was anchored in the General Systems Theory by Ludwig Von Bertalanffy. The study used convergent parallel mixed method research design. The target population included, head teachers, teachers, parents and education officials. The sample was selected using probability and non-probability sampling techniques. Data was collected using questionnaires, interview guides and an observation guide. Quantitative and qualitative data analysis techniques were used to analyze data. Statistical Package for Social Sciences (SPSS) was used to generate descriptive statistic like frequencies and percentages, means, tables and pie charts. Qualitative data was analyzed, themed and presented by means of narratives. Null hypothesis was tested using Spearman's rank correlation. The findings revealed that the state of physical facilities was still inadequate. The absence of computers was evident in most schools visited. Findings also indicated that there was a strong, positive correlation between state physical facilities and level of funding, which was statistically significant ($r_s = .394$, $p = .013$). which implies that, there is a significant relation between the state and standard of physical facilities and the level of funding and investment in those facilities. The study recommends that efforts should be directed towards improving the physical facilities under the Infrastructure Investment Funds program.

Key Words: Kenya, Nyamira, Effectiveness, Status, Infrastructure investment, Physical facilities, Public schools

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Introduction

Shortage of physical facilities in schools is one of the major challenges in many learning institutions in the world. Ndirangu, Thinguri, and Chui (2016) argued that in Africa, learning institutions lacked adequate and appropriate teaching and learning facilities. Similarly, Motuka and Orodho (2014) emphasized that inadequate physical facilities in public primary schools in Kenya is a problem that the government and other education stakeholders have been trying to address by providing funds for the same. Classrooms, computer laboratories, libraries, toilets, dining halls, and offices are some of the key physical facilities required in any learning institution.

According to Miller and Elma (2013), poor infrastructure and overcrowding are some of the problems public primary schools in Kenya are grappling with. It is evident therefore that the public primary schools in Kenya are still having insufficient physical facilities notwithstanding the efforts made to provide infrastructure investment funds.

The role physical facilities play towards the realization of the goals of education cannot be over-emphasized. It is argued that some of the major objectives of education is to enhance the political, social, and economic development of a country. For example, Mujahid and Noman (2015) stated that education is one of the vital means of economic development and most important determinant of earnings. Mujad and Norman (2015) further indicated that education plays an important role in human capital. The value associated with education is the motivation behind increased investment in schools' physical facilities. According to Otieno (2016), most countries spend a great portion of their budget in education because it is viewed as the best method of overcoming poverty. The scholar added that many nations associate education with economic growth and development. In their work, Akomolafa and Adesua (2016) argued that physical facilities raise the learners' level of motivation and academic performance. Thus, it is necessary to ensure that schools have relevant and sufficient physical facilities to support the teaching and learning positively and to effectively realize the gains of education.

Adequate and relevant physical facilities in schools contribute to the achievement of the objectives of education. School physical facilities influence the realization of the school goals. This is because; poor, crowded, or uncomfortable school buildings lower the students' and teachers' morale resulting to low achievements. Maxwell (2016) stated that the condition of the school buildings affects student achievement. The scholar Maxwell (2016) indicated that the school physical facilities contribute to the quality of education. He went ahead to emphasize that students who learn in well maintained school physical facilities are more likely to have higher academic achievements than those from poorly managed physical facilities.

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Further, the Centre for Mental Health in Schools at UCLA (2011) pointed out that well-designed and maintained physical facilities at schools are critical in enhancing comprehensive teaching and learning. Given the role the physical facilities play in the provision of education, the ministry of education and other education stakeholders should participate actively in ensuring that schools are well endowed with these facilities.

Agenor (2011) noted that the education quality is inversely related to the degree of congestion in schools which is measured by the proportions of teachers and students in the population, and the ratio of government spending on education to teaching capacity. While contributing to the argument on what determines the quality of education, Afework and Asfaw (2014) stated that school physical facilities play a fundamental role in determining the quality of education. Taking the same line of argument, Javier and Roman (2011) also contended that the stakeholders in education should focus more on the provision of the adequate physical facilities and a healthy environment to enhance learning in classrooms and educational centers. It is therefore imperative for education stakeholders to ensure adequate and relevant school physical facilities through funding them to boost the quality of education in the country.

Boateng and Akafia (2014) argued that education and infrastructure are the most important sectors for governments to invest in. Boateng and Akafia further stated that governments should do more investment in education and physical facilities to break the cycle of poverty and speed up economic growth. Thus, governments have a duty of mobilizing resources to provide citizens with quality social services such as teaching and learning facilities.

There is a general agreement from the International Communities that there are problems of funding physical facilities in public schools throughout the world. For example, in Sub-Saharan Africa and the poorest countries in Asia, the provision of adequate primary education facilities is challenging. According to Tilaki (2014), many countries in Africa have not realized the main goal of Education for All (EFA) which is universal education. Tilak showed that over 40% of children within the age of school going were out of school.

a. The Kenyan Context

The major milestone in primary education in Kenya is the abolition of fees in 2003 and subsequent introduction of FPE which significantly increased enrolment in all public primary schools in Kenya (Abuya, Admassu, Ngare, Onsomu, and Oketch, 2015; Serem & Rono, 2012). Despite the introduction of FPE, the primary education still faces several challenges that affect the provision of quality education.

Accounting to Mbiti (2016), public primary schools in Kenya continue to operate under several constraints such as over-crowded classrooms, lack of electricity, poor and inadequate toilets, and high pupil teacher ratios. Mbiti argued that though schools in Africa regularly received funding for physical facilities, the schools still faced physical facilities problem. Other challenges are inadequate and poor school physical facilities, water and sanitation, and long distance between homes and schools (UNESCO, 2010).

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Momanyi and Mokeira (2015) underscored the challenges of FPE by stating that though the development partners such as World Bank, Department for International Development (DFID), Organization of Oil Exporting Countries (OPEC), UNESCO and the Swedish Government have continuously funded primary education in Kenya, the resulting increased enrolment created many problems.

Kalunda and Otanga (2015) noted that, school buildings throughout Kenya are generally in a poor state, and there are not enough classrooms, water or sanitary facilities for the increasing number of children attending school. To address challenges facing public primary schools, the GoK came up with the idea of expansion of primary schools' physical facilities through the construction of new primary schools and rehabilitation of existing ones, as well as purchase and rehabilitation of equipment. The Ministry of Education (MoE), through KESSP (2005-2010) and National Education Sector Plan (NESP) (2013-2018) also emphasized investment in school physical facilities. NESP (2013-2018) is an all-inclusive sector wide programme whose prime goal is quality basic education for Kenya's sustainable development. The sector plan builds on the successes and challenges of KESSP (2005-2010) (RoK, 2015).

Through the School Infrastructure Improvement Programme (SIIP) arm of the KESSP, the MoE directly funded schools to carry out permanent infrastructure projects planned by community members. KESSP was also tasked to scale up school water, sanitation and hygiene (WASH) in schools. The MoE provides SIIP manuals and training to explain the roles and responsibilities of various schools and community members (SWASH, 2011). However, according to UNICEF (2012), many schools in low-income countries like Kenya lack WASH facilities. The schools that have learning facilities cannot provide WASH services to staff and students on a regular basis.

Still on the public primary schools' physical facilities, Muthima, Udoto, and Anditi (2016), acknowledged that despite the fact that the government of Kenya had invested 27 billion by 2010 towards FPE, not all school going children had reaped the benefits from FPE by the year 2016. They noted that this was due to inadequate physical facilities, inadequate teaching and learning materials, lack of sanitary facilities among others. The researcher is therefore keen in finding out why public primary schools continue to operate under inadequate physical facilities even when the government and other education stakeholders have tried to alleviate the problem through school infrastructure investment funds.

Notably, it is also true that Kenya faces constraints in terms of physical facilities to cater for the children with special needs (Republic of Kenya, 2007). These facilities include computers specially made for children with special needs, ramps, toilets, and lifts in case of buildings with more than one floor among others. According to the National Gender and Equality Commission (2016), most schools for children with disabilities lack appropriate and adequate equipment such as textbooks and learning aids.

Despite legislation in Kenya providing free education, financial problems have resulted in problems meeting the needs of students with and without disabilities. Due to this financial constraint, many families often make the choice to use their limited funds to pay for their sighted child's schooling first. A child with vision impairment requires specialized

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resources such as teachers who have additional training, braille text books, paper and other tactile materials to meet their basic educational needs. Expenses for these resources add to the cost per student and are not fully covered by the government (Carrie et al, 2014).

This underscores the commitment of the GoK to the improvement of physical facilities of both primary and secondary schools in Kenya through financial support. Nyamira County being densely populated is characterized by inadequate and poor school physical facilities yet it is a beneficiary of primary schools' infrastructure investment funds.

b. Funding of Primary Schools' physical Facilities in Nyamira County

Preliminary evidence on primary schools in one of the Sub- Counties (Manga Sub-County) shows that schools have been receiving infrastructure funds for a number of years. As shown in Table 1 the specific Sub-County (Manga Sub-County) has benefited from infrastructure funds since the year 2005 from different support agencies.

Table 1: Funding of Primary Schools Infrastructure in Manga Sub-County

Type of physical facility	Number of schools	Source of Funds
Classrooms	17	MOE, CDF, ADRA, CSG, PTA, and Lake Victoria Project
Latrines	3	PTA, CDF, CSG, and ADRA
Administration Blocks	2	MOE and CDF
Dining Hall	1	PTA
Renovation of classes	1	MOE and CDF

Source: Manga Sub-County Education Office

Table 1 indicates that efforts are being made to address school physical facilities in Manga Sub-County by mainly the government through the Ministry of Education (MOE) and the Constituency Development Fund (CDF). It is also evident from the table that most of the funds for the development of physical facilities have been bumped into the construction of classrooms to ease congestion in the existing classrooms and to accommodate the rising number of pupils following the introduction of FPE. Of concern is the fact that little emphasis is put on investing in other school physical facilities which are equally important in a learning institution. It is based on such gaps that this study will attempt to unravel the whole situation of infrastructural development in the primary schools of the entire County.

Despite the efforts being made in investing in school physical facilities, the demand for school physical facilities particularly in ASAL regions, marginalized communities, poor rural areas, informal urban settlements, and pockets of poverty remains high. Existing physical facilities in most schools are incomplete, inadequate, or dilapidated (RoK, 2015).

It is evident that, while the Government mainly through CDF, Local Authority Transfer Fund, and grants by Department of Education, and other stakeholders have been funding physical facilities in public primary schools, majority of schools in Nyamira County continue to experience issues in infrastructure. According to the RoK (2014), the issues and constraints facing public schools' infrastructure is mainly poor state of physical facilities

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cutting across all institutions of learning. The challenges facing public primary schools include; inadequate and dilapidated physical facilities and shortage of permanent classrooms, limited number of primary schools serving populations in isolated rural areas and other pockets of poverty, and poor schooling environments restricting children with disabilities to access all levels of education. Additionally, Okendo (2018) identified inadequate physical facilities as the main bottleneck of public primary schools. Okendo (2018) further pointed out that most schools in Nyamira County lacked sufficient teaching and learning facilities.

Basweti (2011) did a study on the contribution of government infrastructure funding on access to public primary schools in Narok Central Division, Kenya. The findings of this study showed that the number of toilets that were government funded was between one and two in every school in the division. Motuka and Orodho (2014) researched on financing of Public Primary Schools and the provision of educational facilities to enhance quality in primary schools in Rigoma Division, Nyamira County. The study found out that though the government and parents funded the primary schools' physical facilities, funds were inadequate.

It is against this background that this study sought to assess the effectiveness of infrastructure investment funds in the improvement of primary schools' physical facilities. In particular, the study determined why public primary schools continue to experience shortages in schools' physical facilities in spite of regular funding through public school's infrastructure investment funds.

Statement of the Problem

Despite the efforts of the government and other education stakeholders, most primary schools in Kenya are still characterized by incomplete, inadequate, and/or dilapidated infrastructure. (Barasa et al., 2015; Momanyi & Mokeira, 2015; Omari & Wekesa, 2015). Muasya (2013) Motuka and Orodho (2014) contended that primary schools' physical facilities in some parts of Nyamira County were extremely inadequate. Angwenyi (2014) added that in Nyamira County, most public primary schools have poor physical facilities particularly classrooms some of which are either mad walled or are semi-permanent. This raises concern on whether primary school's infrastructure funds are effectively improving physical facilities in the County and specifically in Manga Sub-County.

Studies by Mackatian (2017), Muthima, Udoto, & Anditi (2016) and Girod, Ellis, Andes, Freeman, and Caruso (2017) all showed that while there was an increase in the quantity of primary education, its quality had dropped significantly, physical facilities were inadequate, and poorly maintained and that most primary schools did not provide adequate facilities for girls during their menstruation period. The schools lacked adequate water points and toilets with a ratio of 509:1 and 88:1 respectively. Therefore, this study filled these research gaps by assessing the effectiveness of public primary school's infrastructure investment funds in improving physical facilities in Nyamira County, Kenya.

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Research Question

The study was guided by the following questions;

What is the state of public primary schools' physical facilities under the infrastructural Investment Funds programme in Nyamira County in Kenya?

Research Hypothesis

The study was guided by the following research hypothesis

H₀: There is no significant relationship between the state of physical facilities and the level of funding.

H₁: There is a significant relationship between the state physical facilities and the level of funding.

Significance of the Study

This study will benefit various groups of people and stakeholders: the Ministry of Education (MOE), the School Management Committees (SMCs), Parents, Teachers, Learners, and other researchers. The study findings inform the MoE officials how the Public Schools Infrastructure Investment Funds (PSIIF) are being utilized and the state of physical facilities in public primary schools. The study will benefit the parents by highlighting challenges the PSIIF has been facing and how best to address them. The teachers will gain from this study in a major way. The study will provide best practices that are required to achieve effectiveness in the PSIIF.

Theoretical Framework

This study was anchored on the General Systems Theory (GST) which was put forward by Ludwig Von Bertalanffy in the 1940s and furthered by Ross Ashby in 1956 (Drack & Schwarz, 2010). Von Bertalanffy was influenced by Durkheim and Max Weber. Durkheim was interested in how societies were organized and how they maintained cohesion or group identity over time. Durkheim believed that human beings experience a unique social reality not experienced by other organisms and that order can only be maintained through the consent of individuals within the group who share the same morals and values. Durkheim's 1893 doctoral dissertation, later published as *The Division of Labor in Society*, Durkheim (1984) contended that in highly organized systems, the division of labor contributes to the maintenance of societies. According to Durkheim, in complex societies, individuals perform various roles based on their specialization which complement one another and express the significance of interdependence.

The General Systems Theory (GST) is looked at as an interdisciplinary study of the abstract organization of phenomena, independent of their substance, type, spatial, or temporal scale of existence (Zenko, Rose, Muleji, Mlakar, & Muleji, 2013). Nasib (2003) indicated that systems approach is a process for effectively and efficiently achieving a required outcome based on documented needs. The researcher noted that various systems/entities need to work in harmony to effectively utilize primary school infrastructure investment funds to improve physical facilities. The systems' view perceives the world as relationships and

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integrations. Systems are integrated wholes whose properties must interrelate to achieve a desired goal. Every organization is an integrated whole and thus depends on the effectiveness of the operations of its parts/units for success.

The General Systems Theory (GST) formed the basis of this study in that, for the school infrastructure investment funds to be effectively used to build the primary schools' physical facilities, all stakeholders must work in harmony or as a system. Each of the parties at school level, district level, and at the MoEST headquarters must carry out their roles as required. The different parties (school, district, and ministry officials) have significant roles to play in building school physical facilities. Therefore, parties should work as a system, where, though each party has distinct roles, their contributions are complementally and are geared towards a common goal. For instance, the MoE provides funds and ensures they are properly utilized while the schools identify the required physical facilities and use the funds to build the earmarked facility.

The General Systems Theory (GST) has a number of strengths. Millett (1998) argued that systems theory had served well and will continue to provide managers and students of organizations with metaphors, terminology and explanations about how organizations function. Systems theory has, in fact, dominated as a framework for managerial behaviour and organizational analysis. It also offers a unitary approach by combining psychological, social, and community approaches. The GST provided a framework upon which managers of school infrastructure investment funds based their varied ways of operation. For instance, unity among the key players in the construction of school physical facilities was of utmost importance to have the desired physical facilities in schools.

The theory is interactive. It facilitates being able to understand the impact of people on each other, as well the impact of systems on people & other systems. GST further offers more than one way to tackle an issue. This allows for the integration of approaches. It avoids strict determinist accounts of behavior. Covington (1998) maintained that systems theory provided a framework in which to study complex variables influencing one another. The theory has the ability to show the complex web of relationships in operations as a system moves towards its goal or goals. The players in the development of schools' physical facilities ought to realize the interdependence of each other. Therefore, all those that are concerned with the development of schools' physical facilities had to combine efforts where each group performed its duties with a sole purpose of achieving a common goal. Therefore, the researcher found the GST appropriate in the study due to its emphasis on the significance of involvement of all education stakeholders and interaction of various variables to enhance the desired outcome.

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Conceptual Framework

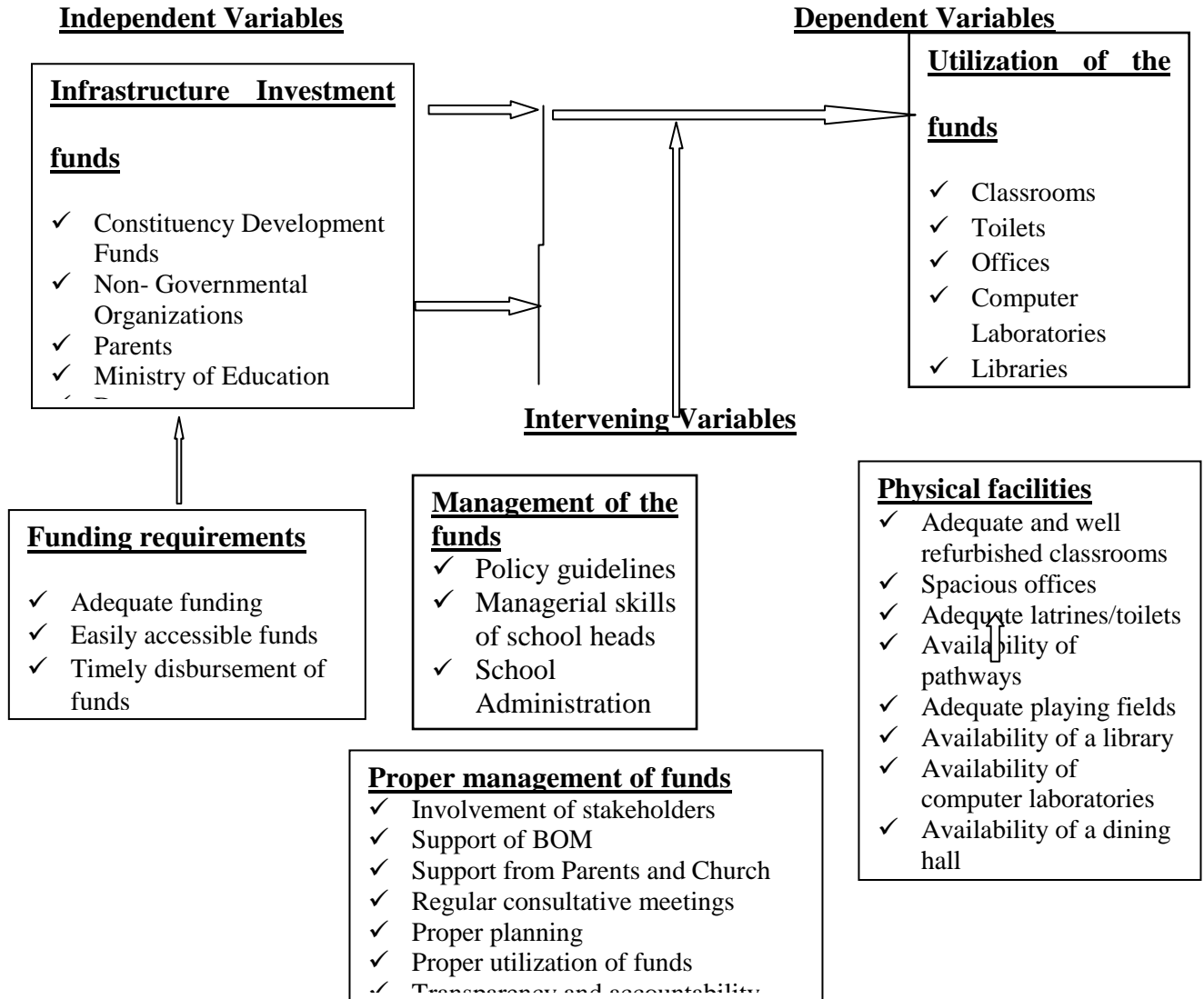


Figure 1: Relationship between infrastructure investments funds and the improvement of schools’ physical facilities

Source: Researcher

The conceptual framework in Figure 1 shows infrastructure investment funds as the independent variable can directly influence the state of physical facilities in schools. Some of the major physical facilities are classrooms, offices, computer laboratories, dining halls, libraries, and playing fields. The sources of funds for physical facilities in schools include the CDF, MoE, NGOs, Parents, and donors. The utilization of the infrastructure investment

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funds is guided by the policy guidelines by the government, and/or the body giving the funds, financial managerial skills of the school heads, and the school administration (BOM and PTA).

Review of Related Literature

The state of school physical facilities has been a source of concern for education stakeholders in the world today. The wellbeing of a school is pegged on among other things the state of its physical facilities which include all school buildings, equipment, and fields. Most schools experience a shortfall of school facilities despite the fact that there is continuous investment in school infrastructure by stakeholders. Leticia (2016) argued that there are millions of students across United States of America who are learning in dilapidated, obsolete, and unhealthy facilities that pose obstacles to their learning and overall wellbeing. In support of this argument, Filardo (2016) stated that many students attend schools that have facilities that fall below the required 21st century learning environment expectations because of inadequate funds for refurbishment and development of the schools' physical facilities.

Asiyai (2012) investigated school facilities in public secondary schools in Delta State, Nigeria. The purpose of the study was to find out the state of the facilities, the types of maintenance carried out on the facilities by school administrators, the factors encouraging school facilities depreciation and the roles of school administrators in the management and maintenance of school facilities. The study employed the ex-post-facto research design and used questionnaires to collect data from 640 respondents who were selected through stratified sampling techniques from all the 358 public secondary schools in the state. Findings revealed that school facilities in the schools are generally in a state of disrepair. The findings further revealed that the maintenance carried out on school facilities were inadequate for majority of the facilities.

According to Cellini, Ferreira, and Rothstein (2010), the United States of America (USA) had a high budgetary allocation for facilities. The scholars noted that the USA spent about \$50 billion on public schools' construction and repairs annually yet, most of the public elementary and secondary schools need renovation, expansion, and repair. One-third of public schools are characterized by portable or temporary classrooms and one-fourth are faced with air conditioning and lighting challenges which affect teaching and learning. The situation in Kenya is not any better since most primary schools require either expansion of the existing facilities due the continuously growing student population or repair of these facilities.

Further, Love (2012) noted that the Federal Government last formally assessed the state of the nation's schools in 1999 report "Condition of America's Public Schools" which estimated that it would take \$127 billion to bring the nation's schools to "good condition". The American Society of Civil Engineers (ASCE) issued its own report card the same year. The ASCE gave schools a D grade and estimated an even greater dollar amount (\$322 billion) was needed over five years to bring schools to good conditions. A policy statement of ASCE of 1999 became the focus in the organization's 2011/2012 priorities. The statement

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includes a concern that the nation would continue to struggle in the 21st century to make students competitive.

India has taken great strides in improving school infrastructure. Bhunia, Shit, and Duary (2012) conducted a study to establish infrastructure availability and stratification at micro level in education system, its impact on education process and to a lesser extent outlining block to educational disparities. The study was specifically done in Paschim-Medinipur district in West Bengal. The researchers focused on three themes: infrastructure accessibility, type and condition of classrooms and number of classrooms allocated for educational system at primary and upper primary. The findings of the study indicated lack of equity in the distribution of infrastructure throughout the district. Some blocks are having good facilities while others do not. Although this study is relevant in evaluation of the state of physical facilities, the geographical context is different. It was done in India. Furthermore, the study did not focus on school infrastructure investment funds.

Frost (2013), did a study on the condition of Victoria government school buildings. The study revealed that majority of school buildings (66.9%) were in excellent or good condition. Minority buildings (7.5%) are at deplorable state. The study also pointed out that though majority of the buildings are in a good condition, they require routine maintenance to be kept in this condition. The current study will not only assess the condition of school buildings, but also the adequacy of other types of school infrastructure such as school equipment and sanitation.

Lu, Chin-Chung, and Wu (2015) observed that in China there is a gap of ICT infrastructure and its application in middle and primary schools between urban and rural areas and that a conflict exists between the needs of constructing ICT infrastructure and patterns of promoting ICT application in education. Most city schools offer ICT courses for all students. At least half of the classrooms are equipped with multi-media projectors to support and promote the utilization of digital technologies for learning and teaching. County schools offer ICT courses for the third or higher-grade students. The equipment for teachers to use consists mainly of multi-media classrooms, but some teachers for subsidiary subjects such as history and geography cannot use information technology due to lack of multi-media classrooms and digital instruction facilities. On the other hand, only a few schools in the rural areas offer ICT courses and only a fraction of schools have multimedia classrooms and these tend to have poor operating environment and low utilization rates.

Mujahid and Noman (2015) revealed that in Pakistan, education is essentially the responsibility of the government. However, government spending on education is less than 2.5% of the Gross Domestic Product (GDP) which is the lowest spending in education compared to other countries in the region. As a result, physical facilities at both the primary and secondary school levels are quit dismal. Only 28% of the buildings are satisfactory for learning and teaching. In the current study, the researcher intends to determine whether the resources/funds set aside for school infrastructure are adequate and well utilized.

A study done by Afework and Asfaw (2014) in Harari Regional State and East Hararghe Zone in Ethiopia showed that school physical facilities had an effect on the quality of education. This study was a cross-sectional survey which used a questionnaire, interview

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guide and an observation guide to collect data from 12 primary schools and 24 primary schools of Harari Regional State and Eastern Hararghe Zone respectively. The study revealed that school facilities and instructional materials were inadequate and in a poor state creating a challenge in teaching and learning activities. This further led to a negative effect on improvement on the quality of education. Though the study is similar with the current study, it was done in Ethiopia which is a different context from Kenya where the research will conduct the study.

According to Ngugi (2015), though FPE was lauded the world over for increasing access to education for millions of Kenyan children, it also resulted in a severe strain on the country's already inadequate infrastructure and facilities. Ngugi further argued that non-existent or poor infrastructure has, along with teacher shortages, been a major barrier to improving access to primary education in Kenya.

Kubania (2014) pointed out that poor infrastructure in public primary schools is a problem the whole country is grappling with, though some regions suffer more than others. Kubania goes on to state that before the introduction of FPE in 2003, the GoK glossed over one of the most obvious challenges that increased admission would bring: infrastructure. Before FPE, public primary schools barely had enough classrooms or toilets. After FPE, barely enough became grossly overstretched and congested. As a result, in 2005, the GoK launched a five-year programme through KESSP to outline and implement strategies that would guide infrastructure development in public primary schools, taking into account the bloated numbers and contextualizing the solutions to fit each school. Through KESSP, the GoK proposed a programme that would see more than 4000 needy schools in Kenya receive Kshs. 100,000 and 200,000 per year depending on the enrolment numbers. The funds would be used for infrastructure development. A further 970 schools would receive additional grants to construct 3880 classrooms, 9700 toilets and upgrade water supplies. KESSP was also to oversee construction of 265 new primary schools based on priority needs in the country. However, Kubania notes that more than eight years since the launch of the programme, the reality on the ground indicates that infrastructure remains a headache for learning institutions.

Alexander et al. (2014) conducted a study on water, sanitation, and hygiene (WASH) conditions in Kenyan rural schools to establish if schools met the needs of menstruating girls. The researcher used a sample of 62 schools. Using a cross-sectional survey design, the study revealed that schools in rural Kenya lacked the sufficient water, sanitation, and hygiene. Particularly, the study showed that most of the schools lacked soap, water, and clean and private latrines for menstruating girls. The researcher recommended equipping the schools with adequate and relevant WASH facilities to make girls comfortable.

Gisore (2013) conducted a study on sanitation facilities in public primary schools. The objective of the study was to assess sanitation standards in public primary schools within Kajiado Central District in order to evaluate whether they conform to the guidelines set in the safety standards manual for schools in Kenya. The researcher used descriptive cross-sectional design, a structured observational assessment based on a prepared checklist and informant interviews for collection of data from a target population drawn 20 public schools

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in Kajiado Central District. The researcher observed 228 pupil latrines and 57 staff latrines. Finding from this study revealed that 58% of the mixed schools had boys' urinals. Overall pupil latrine was 45 girls: 1 latrine with a door, for boys in schools with urinals the ratio stood at 75 boys: 1 urinal and 2 latrines. Schools without urinals were at 75 boys to 1 latrine with a door. Thirty percent of the schools had piped water, 20% bought water from vendors, 15% got water from the community, 5% had boreholes and the rest of the school depended on rain water. The study concluded that public schools in Kajiado Central District do not meet national requirements with two parameters: latrine pupil ratios and functional hand washing points falling extremely short.

Muthima, udoto and Anditi (2016) conducted a study whose purpose was to determine teachers' perceptions of the adequacy and quality of physical facilities in public primary schools under free primary education in Ndaragua Division in Nyandarua County. The researchers used a cross-sectional survey design. A structured questionnaire was used to collect data from a target population of all public schools' head teachers and class teachers. Data were analyzed by descriptive and inferential statistics. The study revealed that pupils' sanitary facilities and ICT facilities were inadequate while chalks, desks, staffrooms, and playing fields were adequate. The researchers recommended that stakeholders should harmonize the physical facilities within schools and avoid overcrowding in particular schools. The study did not determine the effectiveness of infrastructure funds in addressing the problem of physical facilities in public schools. Besides, the researchers used only a questionnaire to collect data. For more credible findings, a part from a questionnaire, the researcher will also use interview guide and observation guide.

Wambua, Murungi, and Mutwiri (2018) did a study on physical facilities and strategies used by teachers to improve pupils' performance in social studies in Makueni County, Kenya. The aim of the study was to determine how the adequacy and utilization of physical facilities affected the performance of pupils in social studies. The researcher used descriptive research design and the target population was teachers and pupils in lower primary. Data were collected using a questionnaire and an observation schedule.

Muasya (2013) reported that a Primary School in Kitui had poor infrastructure which has driven many pupils away. The school lacks adequate facilities especially decent classrooms. All classrooms are mud walled while other pupils learn in the open. The school has neither a staffroom nor head teacher's office. Water borne diseases stalk the pupils as toilet structures are flittered with human waste and are still in use. This situation is experienced by many other schools in rural setups, slums in urban centers and ASAL areas in Kenya.

Carrie et al. (2014) noted that, despite the potential usefulness of Information Communication Technology (ICT) for students with vision impairments in Kenya, most schools have not been successful at building an effective computer laboratory programme to train students in computer skills and use of computers for academics. Although a number of specialized schools in Kenya for the blind students have received computer donations over the years, the computers often go unused by students with vision impairments. The schools often have budget constraints, space, connectivity problems and lack of trained personnel that make it nearly impossible to operate a computer laboratory programme.

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A study by Barasa, Wanjala, Shaviya, Mustafa, Sowayi, Odin, Wakhisi and Abwajo (2015) on the state of sanitation and hygiene in public primary schools in Kakamega municipality, western Kenya serves as an example of the state of infrastructure in public primary schools. The researchers included all public primary schools in Kakamega municipality. The study used descriptive cross-sectional study design. A sample of 400 pupils and 21 purposively selected teachers participated in the study. Observational checklist and structured questionnaires were used to collect data. The study established that the state of sanitation facilities was poor, unmaintained and inadequate in almost 50% of the schools. The researchers concluded that there was need for increased attention on sanitation facilities to ensure they are sufficiently provided. The current research will be done in Nyamira County and will focus on the state of all types of school infrastructure.

Simiyu (2019) did a study on the challenges of free primary education (FPE) implementation in primary schools in Bungoma County, Kenya. The researcher used stratified sampling method to select a sample which consisted of head teachers, teachers, School Management Committee chair persons, and students. Data collection instruments were questionnaires, interview schedule, document analysis, and observation schedules. The study revealed that pupil enrolment in public primary schools continued growing every year, overcrowding in classrooms, understaffing, and inadequate teaching/learning facilities. The study by Simiyu focused on challenges of FPE in Bungoma County while the study being conceptualized will specifically deal with the relationship between infrastructure investment funds and the state of physical facilities in Nyamira County.

Research Design and Methodology

Research Design

In this study, the researcher used a mixed-methods research approach. A mixed methods is an approach to inquiry that combines both qualitative and quantitative forms (Creswell, 2009). Specifically, the researcher used a convergent parallel mixed method design. This is a research design that was proposed by Creswell (2014). The mixed methods approach to inquiry combines both qualitative and quantitative research designs prioritizing both methods almost equally. In this study therefore, the researcher collected both quantitative and qualitative data concurrently; giving approximately equal weight to each method Creswell (2014) (Creswell, 2014; Creswell & Clark, 2011).

Integration of qualitative and quantitative research designs had several advantages. Qualitative data can be useful in determining the validity of quantitative findings. Besides, quantitative data can be used to explain findings from qualitative data (Fetters, Curry, & Creswell, 2013). Thus, the qualitative and quantitative methods complemented each other to obtain reliable data on effectiveness of public primary schools' infrastructure investment funds in improving physical facilities in Nyamira County. The resulting two data sets were merged throughout the study and, the data concurrently analyzed. Closed-ended questionnaires and document analysis guide were used to gather quantitative data while open ended questionnaires, observation, and interviews were employed to gather qualitative data.

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Target Population

The researcher targeted all public primary schools in Nyamira County that have received infrastructure investment funds since 2005. The targeted population were Head Teachers, Teachers, Students, County Quality Assurance and Standards Officer (DQASO) and the County Director of Education.

Sample and Sampling Procedures

The study used both probability and non-probability sampling methods to obtain the sample. According to Sharma (2017), probability sampling is referred to as random sampling where each member of the population has equal and known chance of being selected to participate in the study. Sharma further identified simple random sampling, systematic sampling, stratified sampling, and cluster sampling as probability sampling methods and quota sampling, self-selection sampling, purposive, and snowballing as non-probability methods of sampling. Specifically simple random and systematic random methods were used under probability sampling while purposive sampling was applied under non-probability sampling.

Table 2: Summary of the Sample of Participants in the Study

Study Participant	Sampling procedure	Target	Actual Sample	Percentage (%)
Schools	Systematic & Stratified random	399	50	12.5
Head teachers	Purposive	399	5	1.3
Teachers	Simple Random	570	100	13
Pupils	Simple Random	2500	204	8.2
QASO	Purposive		1	100
D.O. E	Purposive		1	100

Source: Researcher

Data Collection Instruments

The study utilized questionnaires to collect data from teachers, Pupils, and Parents Association Chairpersons. In-depth interview guide was used to collect data from school Head teachers, Teachers, County Quality Assurance and Standards Officer and County Director of Education (DOE). Observation guide was used to examine the adequacy and state of physical facilities. Instrument and source triangulation was realized through the use of different instruments and participants in the study.

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- i. Questionnaire:** The study used the questionnaire for the following categories of respondents: Questionnaire for Teachers and Questionnaire for Pupils
- ii. Interview Guide:** This instrument was used to gather information from the Head Teachers, County Quality Assurance and Standards Officer and County Director of Education.
- iii. Observation Guide:** The researcher personally visited the schools to observe the physical facilities to determine their adequacy and appropriateness.

Validity of the Research Instruments

This study employed content validity for the questionnaire and method triangulation for qualitative data to enhance the validity of the study. Bolarinwa (2015) posited that content validity entails readability, clarity, and comprehensiveness of the instrument which the current study considered. Content validity enabled the researcher to determine whether or not the instruments rightly measure the concept that is being measured. Mugenda and Muenda (2003) advocated use of professionals or experts to determine content validity. The researcher subjected the data collection instruments to thorough scrutiny by the two researcher supervisors and thereafter gives them to two experts from Education Department at the Catholic University of Eastern Africa for further scrutiny. The researcher used the opinions of the experts to ensure the items are relevant, clear, and comprehensive.

Triangulation enabled the researcher to corroborate evidence from different sources to shed more light on the problem being investigated Bolarinwa (2015)Mugenda and Muenda (2003) (Creswell, 2008). According to Carter, Bryant-Lukosius, DiCenso, Blythe, and Neville (2015), triangulation refers to the use of different methods in qualitative research to fully understand what is being studied. Carter, Bryant-Lukosius, DiCenso, Blythe, and Neville further stated that triangulation tests validity through concurrence of information from different sources. Other than the questionnaire instrument, the researcher used both interview and observation guides to increase the depth and consistence of the information on the effectiveness of infrastructure of investment funds in improving physical facilities in public primary schools.

Reliability of the Research Instruments

This study used internal consistency and more specifically the Cronbach Alpha method to establish the reliability of the quantitative research instruments (questionnaire). This method was preferable since it is generally the most appropriate reliability for survey research and other questionnaires in which there is a range of two possible answers for each item (Mcmillan & Schumacher, 2001). According to Tavakol and Dennick (2011), Cronbach Alpha is presented in number form and it ranges between 0 and 1.00. Tavakol and Dennick indicated that Cronbach Alpha entails determining the interrelationship of a test items, squaring the correlation minus the result from 1.00 to determine the index of measurement error.

As the estimate of reliability increases, the fraction of a test score that attributable to error decreased. Alpha ranging from 0.7 or higher was considered acceptable reliability

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(Taherdoost, 2016; Radhakrishna, 2007). Taherdoost (2016) argued that an instrument with a coefficient of between 0.7 and 0.9 has a high reliability. The SPSS was used to compute the alpha and the researcher considered the instrument reliable if the value was 0.7 and above.

Data Analysis Procedures

Quantitative and qualitative data was analyzed concurrently. Quantitative data was analyzed using both inferential and descriptive statistics. Qualitative data was obtained from questionnaires (open-ended), interview guide and observation guide. Data obtained through interview and observation was transcribed.

To obtain understanding and clarity for qualitative data, the researcher read and re-read raw transcribed data while making summaries. Then preliminary coding of data was done. Guided by the research questions, the researcher created themes and engaged in coding to come up with well-defined categories (Lacy & Luff, 2009). Similar data was grouped together while describing formed categories (Creswell, 2014). Findings were then interpreted using triangulation, explanatory, and exploratory methods (Creswell & Plano, 2007).

Quantitative data was coded manually and analysis was done using descriptive and inferential statistics in SPSS and was presented in form of pie charts, bar charts, bar graphs and, frequency tables. Null hypothesis was tested using correlation (Spearman's rank) at $p \leq 0.05$ to test if there is a significant relationship between schools' infrastructure investment funds and the development of physical facilities.

Ethical Considerations

The study was carried out guided by the established research ethical considerations. According to Mugenda (2008), ethics in research entails application of ethical standards in planning the study, data collection and analysis, dissemination and used of the study findings. The researcher sought for permission from the relevant authorities before collecting data (Cresswell, 2014). In this case, the researcher obtained a letter of introduction from the head of Research Department, the Catholic University of Eastern Africa explaining the kind of research to be carried out. The letter was used to apply for a research permit from the National Commission for Science, Technology and Innovation (NACOSTI). The permit was then presented to the County Director of Education (Nyamira County) through whom the researcher gained access to the public primary schools so as to get data from the participants after seeking consent from them (Creswell, 2009). This process helped in vetting the research to ensure that participants are protected from unduly harmful procedures. To protect participants' privacy and anonymity, the researcher used code in place of names for people and places (McMillan & Schumacher, 2006).

Participants were at liberty to choose whether to participate in the study or not and this was made clear to them before conducting the study. Anonymity of the respondents were upheld by use of codes instead of their names. The researcher further ensured that data is free of bias towards and group such as age, ethnicity, sexual orientation race or gender. Information obtained was kept confidential and respondents were assured of the same (Terrell, 2012). The researcher sharing personal information experienced with respondents

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during interviews. Ethical guidelines (2003) advocates inclusion of all relevant individuals or groups in the study who might otherwise be excluded for reasons such as communication, disability, comprehension or expense. The researcher included all the relevant participants in the study.

The study also acknowledged intellectual contributions from other sources by referencing them to avoid plagiarism (Gall, Gall, & Borg, 2007). The researcher reported the findings in complete and honest manner avoiding fabrication of data to support a particular conclusion.

Discussion of Findings

Basing on the above parameters, the teachers were to respond to statements relating to state of public primary schools' physical facilities using a Likert scale (1=strongly disagree, to 5=strongly agree). This was for confirmation on the state of public primary schools' physical facilities. The results are presented in Table 3.

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Table 3; Teachers response on state of physical facilities (n=93)

	N	Strongly disagree		Disagree		Undecided		Agree		Strongly agree		Mean	Std. Deviation
		f	%	f	%	f	%	F	%	F	%		
The classrooms are in good condition	93	11	11.8	13	14.0	10	10.8	37	39.4	22	23.7	3.4946	1.31566
The school has spacious classrooms	92	5	5.4	20	21.3	14	15.2	41	44.6	12	13.0	3.3804	1.12750
The classrooms have good ventilation	90	10	11.1	15	16.7	10	11.1	41	45.6	14	15.6	3.3778	1.25042
The classrooms have lockable doors and windows	91	17	18.7	23	25.3	10	11.0	32	35.2	9	9.9	3.3516	4.50277
The class rooms have a ceiling board	92	43	46.7	24	26.1	8	8.7	8	8.7	9	9.8	2.3913	3.47979
The school has sufficient latrines for both teachers and students	91	15	16.5	29	31.9	10	11.0	26	28.6	11	12.1	2.8791	1.32359
The school latrines are in good condition	91	21	23.1	26	28.6	15	16.5	18	19.8	11	12.1	3.7912	7.82804
The school latrines have lockable doors	91	22	24.4	24	26.4	9	9.9	24	26.4	12	12.8	2.7802	1.41266
The school offices are in good condition	91	10	11.0	20	22.0	12	13.2	30	31.9	19	20.9	3.3077	1.32239
The school offices are adequate	91	14	15.4	22	24.2	12	13.2	24	26.4	19	20.9	3.1319	1.40007
The school offices are spacious	92	14	15.2	22	23.9	9	9.8	32	34.8	15	16.3	3.1304	1.36049
The school has computer laboratory	91	43	47.3	21	23.1	9	9.9	15	16.5	3	3.3	2.0549	1.24153
The school has a stocked library	92	28	30.4	24	26.1	11	12.0	23	25.0	6	6.5	2.5109	1.33008
The school has paved pathways	92	47	51.1	19	20.7	8	8.7	17	18.5	1	1.1	1.9783	1.20419
The school has a dining hall	89	43	48.3	17	19.1	12	13.5	12	13.5	5	5.6	2.0899	1.29369
The school has playing field (s)	90	8	8.9	4	4.4	8	8.9	36	40.0	34	37.8	3.9333	1.20672
The school has enough chairs/desks for all the students	92	12	13.0	14	15.2	15	16.3	28	30.4	23	25.0	3.3913	1.35838
Overall mean score	91	21	23	20	22	11	12	26	28	13	14	2.9985	1.99753

Source: Research data

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The overall mean score of the teachers' responses to statements concerning the state of physical facilities is 2.9985 and standard deviation of 1.99753. This depicts uncertainty of the physical facilities being in good state. According to Thompson, Wood, and Crampton (2008), adequate levels of fiscal investment in physical infrastructure of schools are essential to ensure that all pupils and staff have access to physical environment that is conducive to learning that is safe, healthy and appropriate. However, physical facilities funding lags behind other areas of school education needs. On the individual influence of statements on state of physical facilities, it was established that the statement on classrooms being in good condition had a mean score of 3.4946 and standard deviation of 1.31566. This implies that the classrooms were in poor condition.

The situation of classrooms being in poor condition was closely followed by the statement that the school has spacious classrooms with a mean score of 3.3804 and standard deviation of 1.12750. This implies that public primary secondary schools in Nyamira County had no proper physical facilities. The statement on classrooms having good ventilation had a mean score of 3.3778 and standard deviation of 1.25042 implying that some schools did not have good ventilation while the classrooms having lockable doors and windows had a mean score of 3.3516 and standard deviation of 4.50277 also implied that there were no lockable doors and windows.

The classrooms having a ceiling board had a mean score of 2.3913 and standard deviation of 3.47979 showing that some classrooms in public primary schools in Nyamira County had no ceiling boards. The school had no sufficient latrines for both teachers and students as shown by a mean score of 2.8791 and standard deviation of 1.32359. The contribution and significance of adequate and quality school physical facilities, was highlighted by Buckley, Schneider, and Shang (2005) who cited overcrowded classrooms, poor ventilation, indoor air quality, temperature control, or lighting, inadequate computer hardware or wiring, and broken windows or plumbing as problems that hampered student learning. Buckley, Schneider, and Shang further contended that mitigating such environmental conditions could immensely contribute to student success in the short run by creating a conducive learning environment which in turn would reduce cases of student absenteeism. For Buckley, Schneider, and Shang, a conducive learning environment would also improve teachers' morale, which would indirectly impact on student achievement.

In finding out whether the school latrines were in good condition, the study revealed a mean score of 3.7912 and standard deviation of 7.82804 implying that majority of teachers agreed that the schools have latrines. While on the school latrines having lockable doors had a mean score of 2.7802 and standard deviation of 1.41266 showing that there were no lockable doors in the schools. Findings on whether the school offices were in good condition had a mean score of 3.3077 and standard deviation of 1.32239 indicating that offices in public primary schools in Nyamira County are not in good condition. The teacher respondents were also not sure on the school offices being adequate as indicated by a mean score of 3.1319 and standard deviation of 1.40007. The school offices were also not spacious as revealed by a mean score of 3.1304 and standard deviation of 1.36049 while the school

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had no computer laboratory as indicated by a mean score of 2.0549 and standard deviation of 1.24153.

The teachers' responses also showed that the schools had no stocked libraries as shown by a mean score of 2.5109 and standard deviation of 1.33008 while there were no paved pathways in the schools as revealed by a mean score of 1.9783 and standard deviation of 1.20419. A large number disagreed that the schools had a dining hall as revealed by a mean score of 2.0899 and standard deviation of 1.29369 while majority agreed that the schools had playing field (s) as shown by a mean score of 3.9333 and standard deviation of 1.20672. Majority were not sure if their schools had enough chairs/desks for all the students as shown by a mean score of 3.3913 and standard deviation of 1.35838.

Motuka and Orodho (2014) emphasized that inadequate physical facilities in public primary schools in Kenya is a problem that the government and other education stakeholders have been trying to address by providing funds for the same. Classrooms, computer laboratories, libraries, toilets, dining halls, and offices are some of the key physical facilities required in any learning institution. According to Miller and Elma (2013), poor infrastructure and overcrowding are some of the problems public primary schools in Kenya are grappling with. It is evident therefore that the public primary schools in Kenya are still having insufficient physical facilities notwithstanding the efforts made to provide infrastructure investment funds.

Through interviews with the head teachers, it was revealed that the school infrastructure was in fairly good condition although they highlighted that they did not have adequate physical facilities. Head teacher F was quoted saying;

The classrooms are in good condition although they do not have shutters while the toilets are not enough for all students. The computer laboratory lacks a storage room and we do not have a library. We use a book store where the students pick books for their revision. A6 (11/07/20).

The results indicated that the state of physical facilities in public primary schools in Nyamira County is not up to the expected standards. The QASO said:

Most of the schools in the county do not have pathways, and for the few that have, they need renovation. Majority of the schools' physical infrastructure is overwhelmed by the high number of students and lack enough facilities to sustain them. B1 (18/07/20).

These findings are in concurrence with previous study by Leticia (2016) which revealed that there are millions of students across United States of America who are learning in dilapidated, obsolete, and unhealthy facilities that pose obstacles to their learning and overall wellbeing. In support of this argument, Filardo (2016) stated that many students attend schools that have facilities that fall below the required 21st century learning environment

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expectations because of inadequate funds for refurbishment and development of the schools' physical facilities.

The study further interviewed Quality assurance and standard officers on the state of physical facilities in the public primary schools. The results indicated that the schools had poor state of physical facilities. The QASO was quoted saying;

Most schools do not have enough classrooms and the few available are congested, head teachers prefer to build the classrooms, subsequently, other physical facilities such as the libraries are seen as a luxury. There is Lack of regular maintenance of the available school's infrastructure. C1 (18/07/20).

The findings of the study agree with that of Asiyai (2012) which revealed that the maintenance carried out on school facilities was inadequate for most of the schools' physical facilities. Asiyai noted the state of schools' physical facilities had deteriorated due to excess pressure on available facilities and delayed maintenance amongst others. The study recommended that school administrators, teachers and students should develop and inculcate good maintenance culture, government should budget for facilities maintenance and allocate more funds to schools for effective management and maintenance of school facilities. Likewise, the physical facilities in public schools in Nyamira County require maintenance and building of additional ones to ease the congestion in the classrooms and offices and also guarantee adequate facilities.

Pupils Responses on the State of Public Primary Schools Physical Facilities

The state of physical facilities in the schools was evaluated by use pupils. The state of physical facilities was investigated by examining if the schools had adequate classrooms, the condition of the classrooms including having good ventilation and lockable doors and windows. There was need to establish that latrines for teachers and students were in good condition and if the school had enough latrines/toilets for all the pupils and teachers. Besides, the research investigated whether school latrines had lockable doors and if the schools had spacious offices. The pupils were further asked if school offices were in good condition, whether they had a computer laboratory and a library, whether there were designated pathways, a dining hall and adequate chairs and desks for all students. Basing on this argument, the pupils were to respond on how the statements on state of physical facilities were manifested in their schools and measured using a Likert scale (1=strongly disagree, to 5=strongly agree). The results were presented in Table 4.

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Table 4: Pupils response on state of physical facilities (n=93)

	N	Strongly disagree		Disagree		Undecided		Agree		Strongly agree		Mean	Std. Deviation
		f	%	F	%	f	%	F	%	f	%		
My school has adequate classrooms	204	4	2.0	3	1.5	10	4.9	29	14.2	156	76.5	4.8971	3.62452
The classrooms are in good condition	204	13	6.4	21	10.3	9	4.4	59	28.9	102	50.0	4.0588	1.23833
The classrooms have good ventilation	201	8	4.0	13	6.5	0	0.0	52	25.9	127	63.2	4.6368	3.72189
The classrooms have lockable doors and windows	202	16	7.9	25	12.4	17	8.4	34	16.8	110	53.9	3.9752	1.35836
The latrines for teachers and students are in good condition	200	14	7.0	24	12.0	8	4.0	49	24.5	105	52.5	4.1750	2.42358
My school has enough latrines/toilets for all the pupils and teachers	198	27	13.6	21	10.6	7	3.5	39	19.7	104	52.5	3.8687	1.48527
The school latrines have lockable doors	201	24	11.9	27	13.4	9	4.5	44	21.9	97	48.3	4.3085	5.29664
The school has spacious offices	198	10	5.1	17	8.6	6	3.0	28	14.1	137	69.2	4.8434	5.21621
The school offices are in good condition	196	28	14.3	19	9.7	14	7.1	33	16.8	102	52.0	4.0816	3.95013
The school has a computer laboratory	199	80	40.2	40	20.1	14	7.0	15	7.5	50	25.1	2.6030	1.74605
The school has a library	197	44	22.3	42	21.3	14	7.1	20	10.2	77	39.1	3.6751	4.96581
The school has designated pathways	197	52	26.4	43	21.8	13	6.6	21	10.7	68	34.5	3.0508	1.66521
The school has a dining hall	190	74	38.9	49	35.8	9	4.7	13	6.8	45	23.7	2.5947	2.13784
My school has adequate chairs and desks for all students	202	9	4.5	9	4.5	3	1.5	34	16.8	147	72.8	4.4901	1.04258
Overall mean												3.9470	2.84803

Citation: Kinyanjui, T. M; Ntabo, J. A & Nduku, E. (2021). Effectiveness of Types of In-Service Programs Offered to Enhance the Quality of Teaching and Learning in Public Secondary Schools of Nakuru North Sub-County, Kenya. *Journal of Popular Education in Africa*. 5(5), 53 – 78.

The overall mean score for the state of physical facilities according to pupils' responses is 3.9470 and standard deviation of 2.84803. This is an agreement extent implying good state of physical facilities. The statement with the highest mean score was that the schools had adequate classrooms (Mean=4.8971, SD=3.62452). The majority of the pupils also agreed that their schools had classrooms being in good condition and with good ventilation. Moreover, majority of the students agreed that the classrooms had lockable doors and windows and that the latrines for teachers and students were in good condition. The study also revealed that the schools had enough latrines/toilets for all the pupils and teachers and the latrines have lockable doors.

The means and standard deviations also indicated that the schools had spacious offices and are in good condition. However, the pupils, as shown by the mean and standard deviation disagreed that their schools had a computer laboratory and that their schools had designated pathways. Majority of the schools did not have a dining hall. The state of physical facilities in Nyamira County seemed to be in line with the RoK (Kenya Vision 2030) that though the government of Kenya had made progress in improving school infrastructure, some of the existing ones are in poor condition due to lack of sufficient infrastructure investment funds, low quality buildings and inadequate maintenance.

From the observations above, it is clear that at least all the schools visited had classrooms. Most of the classrooms were permanent but in some schools' classrooms in the lower primary section were still semi-permanent. It was also observed that lessons in all the schools visited were held inside classrooms and none were held outside for lack classrooms. However, it was noted that most classes were congested, especially in lower primary sections where there were up to 50 or more children per class.

Concerning the latrines/toilets, the researcher observed that the facilities were available in every school visited. Some schools had permanent buildings while others were built of timber. In most schools, the latrines were not up to standards set by the Republic of Kenya (2008) which states that 25 pupils should use one latrine. The ratio of students to toilets seemed to be unproportioned being approximated to be one (1) toilet to fifty (50) pupils. The researcher observed long queues at the washrooms over break time and lunch time. There should also be separate latrines for boys and girls. Most schools had only one latrine for the staff, both male and female.

Most of the observed schools did not have teachers' quarters. This was attributed to the fact that in Nyamira County, majority of the teachers live near their schools; they, therefore, commute to and from school. Of the total 21 schools visited, only 6(28%) had teachers' quarters. All the schools visited had old structures with rooms where a few teachers lived. In most other schools, the teachers' quarters were mainly used by the teachers to prepare their meals while they were in school (break tea and lunch) since most teachers preferred operating from their homes. According to Miller and Elma (2013), poor infrastructure and overcrowding are some of the problems public primary schools in Kenya are facing. The study confirmed that the public primary schools in Kenya are still having insufficient physical facilities notwithstanding the funds that have been provide for the construction of physical facilities.

All boarding schools had dining halls. Only 7(33%) of the observed schools were boarding schools. The rest of the schools had multi-purpose halls which served in part as dining

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halls. It was observed most of the multi-purpose halls were large classrooms separated by hardboards. The hardboards would be opened to enlarge the classes and provide temporary halls during functions like parents' days. The researcher further noted that some other schools had no dining halls. The same was observed with staffrooms. Only a few of schools had staffrooms while the others had classrooms that had been converted into staffrooms without shelves for putting books. It was also observed that only 8(38%) schools visited had constructed libraries or resource centers. In the schools where the facility existed, there existed filing systems for sorting books into various categories such as storybooks, reference books for teachers, course books for pupils and other supplementary books. The remaining 30(89.5%) schools had constructed structures within the staffrooms where shelves were placed and books were arranged accordingly. A library is a requirement of the FPE where the purchased instructional materials (IM) are to be kept in lockable rooms for safety (Ministry of Education [MOE], 2018).

Hypothesis Testing

The researcher sought to determine if there is any significant relationship between the state of physical facilities and level of funding using the Spearman's rank-order correlation. Motuka and Orodho (2014) noted that the physical environment in most secondary schools in African countries is literacy aggressive due to poor funding and maintenance of school facilities. The quality and quantity of the school facilities available and the level of its maintenance have a direct relationship with the sources and quantity of funds that the schools received. Therefore, this study determined the relationship between the state of physical facilities and the level of funding by testing this hypothesis;

Ho: There is no significant relationship between the state of physical facilities and the level of funding.

H1: There is a significant relationship between the state of physical facilities and the level of funding.

A Spearman's rank-order correlation was run to determine the relationship between state physical facilities and level of funding. There was a strong, positive correlation between state physical facilities and level of funding, which was statistically significant ($r_s = .394$, $p = .013$).

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Table 5: Correlations

	State of physical facilities	Level of funding
Spearman's rho	1.000	.394*
State of physical facilities		
Correlation Coefficient		
Sig. (2-tailed)	.	.013
N	39	39
Level of funding		
Correlation Coefficient	.394*	1.000
Sig. (2-tailed)	.013	.
N	39	39

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Research data output

Table 5 shows that, the significant value 0.000 is less than the p-value 0.05. Since $0.000 < 0.05$, it can be concluded from the test that there is evident significant relationship between the means. Therefore, the null hypothesis is rejected and the alternative accepted. This study findings is reflected in a study by Muthima, Udoto, and Anditi (2016) who established that the quality and quantity of the school facilities available and the level of maintenance have positive impact with the standard as well as the general attainment of school objectives. There was significant correlation amongst funding, provision of facilities and maintenance of school facilities. They believed that adequate funding has significant impacts on provision of facilities, suitability of facilities and maintenance of school facilities.

Discussion of Findings

It was revealed from the findings that only a few schools had spacious classrooms. The classrooms did not have good ventilation while the classrooms having lockable doors and windows and also the schools had no lockable doors and windows. Some of the class rooms had a ceiling board while some classrooms in public primary schools in Nyamira County had no ceiling boards. The schools had no sufficient latrines for both teachers and students. The researcher also observed that the school latrines were not in good condition, some schools had latrines without lockable doors. Nevertheless, some of the school offices were found to be in good condition. The respondents were also not sure on the school offices being adequate and the school offices were also not spacious while some schools had no computer laboratory. The findings showed that the schools had no stocked library while there were no paved pathways in most of the schools. A large number of the schools had a dining hall while majority agreed that the schools had playing field (s) and majority were not sure if their schools had enough chairs/desks for all the students. Through the head teachers, it was revealed that the school infrastructure was in fairly good condition although they highlighted that they did not have adequate physical facilities. This means that the public primary schools in Nyamira County are in bad condition and need more funding to improve the physical facilities in general. The

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findings were in concurrence with the study of Asiyai (2012) which revealed that the maintenance carried out on school facilities were inadequate for majority of the facilities.

Majority of pupils' respondents also agreed that their schools had classrooms being in good condition and with good ventilation. The classrooms also had lockable doors and windows and the latrines for teachers and students are in good condition. The school has enough latrines/toilets for all the pupils and teachers and the latrines have lockable doors. The means and standard deviations also revealed that the schools had spacious offices and are in good condition. However, the pupil's respondents as shown by the mean and standard deviation disagreed that their school has a computer laboratory and that their school has designated pathways. Majority of the schools were found not to have a dining hall.

From the observations, most of the classrooms were permanent but, in some schools, the classrooms in the lower primary section were still semi-permanent. It was also observed that lessons in all the schools visited were held inside classrooms and none were held outside for lack classrooms. However, it was noted that most classes were congested, especially in lower primary sections where there were up to 50 or more children per class. Generally, the schools visited had large compounds enough for pupils to engage in extracurricular activities such as games and sports. Most of these compounds were neatly mowed and clean without litter, although some of the schools with small compounds left theirs tardy. The classrooms of the permanent buildings were also large enough, with lighting for pupils to read well, well ventilated and with doors and windows that had shutters.

Concerning the latrines/toilets, the facilities were available in every school visited. Some had permanent buildings while others were built of timber. In most schools, the latrines were not up to standards set by the Republic of Kenya (2008) which states that 25 pupils should use one latrine. There should also be separate latrines for boys and girls. Most schools had only one latrine for the staff, both male and female. Most of the observed schools visited did not have teachers' quarters. This was attributed to the fact that in Nyamira County majority of the teachers live near their schools; they, therefore, commute to and from school. Of the total 21 schools visited, only 6(28%) had teachers' quarters. All the three schools had old structures built with timber, with rooms in them where several teachers lived in. With house allowance, most teachers now prefer to rent houses at shopping centers near their schools.

All boarding schools had dining halls. The rest of the schools had multi-purpose halls which served in part as dining halls. It was observed that these were in fact large classrooms separated by hardboards. The hardboards would be opened to enlarge the classes and provide temporary halls during functions like parents' days. The other schools had no dining halls. The same was observed with staffrooms. Only a few of schools had staffrooms while the others had classrooms that had been converted into staffrooms without shelves for putting books. It was also observed that only a few schools had constructed libraries or resource centers. In the schools where the facility existed, there existed filing systems for sorting books into various categories such as storybooks, reference books for teachers, course books for pupils and other supplementary books. The remaining schools had constructed structures within the staffrooms where shelves were placed and books were arranged accordingly. A library is a requirement of

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the FPE where the purchased instructional materials (IM) are to be kept in lockable rooms for safety (Ministry of Education [MOE], 2018).

Precisely, the findings indicated that some schools had no proper physical facilities since some did not have spacious classrooms. Many classrooms did not have good ventilation and lacked lockable doors and windows. It was observed that some public schools had classrooms without ceiling boards. The school had no sufficient latrines for both teachers and students. It was also revealed that the schools with latrines were in bad condition, like having no lockable doors. Findings indicated that the school offices were not spacious while some schools had no computer laboratory. There was no stocked library and no paved pathways in most of the schools. A large number of the schools had a dining hall while majority had no playing fields. The head teachers, it was revealed that the school infrastructure was in fairly good condition although they highlighted that they did not have adequate physical facilities.

Notably, the results indicated that the state of physical facilities in public primary schools in Nyamira County is not up to standards, and this indicates poor utilization of the PSIIF fund. These findings are in concurrence with previous study by Leticia (2016) which revealed that there are millions of students across United States of America who are learning in dilapidated, obsolete, and unhealthy facilities that pose obstacles to their learning and overall wellbeing. In support of this argument, Filardo (2016) stated that many students attend schools that have facilities that fall below the required 21st century learning environment expectations because of inadequate funds for refurbishment and development of the schools' physical facilities. Asiyai (2012) findings revealed that the maintenance carried out on school facilities were inadequate for majority of the facilities. The factors encouraging school facilities depreciation included excess pressure on available facilities and delayed maintenance amongst others. Although the study of Asiyai assessed the state of facilities in schools, it was done in Nigeria while this study will be conducted in Kenya. Besides, the study by Asiyai was done several years ago and it will be important to establish the current status.

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Conclusion

From the analysis and the summary of the findings, and based on the research questions of this study, the following conclusions are drawn: It can be concluded that the state of public primary school's physical facilities is poor. The schools do not have spacious classrooms and some classrooms do not have good ventilation. The classrooms do not have lockable doors. Some of the class rooms had a ceiling board while some of the school had no sufficient latrines for both teachers and students. The school latrines were not in good condition, the schools that had latrines some did not have lockable doors. The school offices are inadequate and the few school offices are not spacious and some schools have no computer laboratory.

The findings led to a conclusion that the most schools had no stocked library while there were no paved pathways in most of the schools. A large number of the schools had a dining hall while majority had playing field (s) but did not have enough chairs/desks for all the students. The results indicated that the state of physical facilities in public primary schools in Nyamira County is not up to standards, and this indicates poor utilization of the PSIIF fund.

Recommendations

On the State of public primary schools' physical facilities, this study revealed that there is room and avenues that can ease the burden borne by parents and the government in financing of public primary schools. The recommendations made here are for Nyamira County. Public primary schools should seek diversified ways to raise money for their schools. In Nyamira County, public primary schools have adequate land for development of schools. They can carry out income generating projects within their compounds. School halls can also be hired out at a fee and the money should go to the school. They should initiate projects such as bee-keeping and irrigated vegetable farming which does not require arable land.

Parents should be made aware of cost-sharing and the policy should be clearly spelt out to them. This could be done by more involvement of parents in school activities. Financing of primary level education should be viewed as a partnership between the local communities and the central government. The government should propagate its policy of cost-sharing in the community. The problem of community indifference to education financing is not very common in Kenya. The local administration should encourage the local communities to fully participate in supporting their schools. The support of the local communities currently is lukewarm. The schools themselves should engage more in communal activities so that they (parents) do not relent giving support to their schools. It is not enough for them you give only monetary support; they should also help in manual work since such activities contribute to the reduction of costs.

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