



Effects of Internal School Environment on Learners’ Academic Performance in Public Secondary Schools in Khwisero Sub-county Kenya

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Abstract

This study examined the effect of internal school environment on learner’s academic performance in secondary schools in Khwisero sub-county Kenya. The researcher sought to investigate factors such as physical facilities, classroom environment, instructional resources and financial resources and their effect on academic performance of secondary school learners. This study utilized descriptive survey research design and was guided by Erick Hanusheks education production function theory which discussed various inputs affecting students learning including physical facilities, instructional material, learners- teacher ratio that affect quality education. The target population was 23 schools in the sub-county out of which 11 schools were sampled. Respondents were 11 principals and 110 secondary school teachers. The study used purposive sampling technique to select the teachers. Based on the findings of the study, it was concluded that schools the Khwisero Sub-County have inadequate physical facilities. In addition, insufficiency of instructional materials in schools has also been found to greatly influence the academic performance of the students. The class environment was found to influence academic performance as well arranged and ventilated classes were mostly preferred by most teachers and even students. Also, most schools lacked the financial resources to adequately support school projects and in acquiring learning and instructional materials which in the end tend to affect the academic performance of the students. The study recommended that the head teachers should ensure the schools have enough instructional materials as they have the responsibility of procuring the materials for effective teaching and learning and consequently improve academic performance and that classes should also be made equipped with modern furniture so as to make the students comfortable when learning.

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Keywords: School; Academic performance; Internal school environment; Instructional resource; Financial resources

1. Introduction

The internal school environment includes classrooms, libraries, laboratories, classroom environment, instructional resources, and financial resources among others. These are variable that affect learners' academic performance [6, 15]. In this case school internal environment remains an important area that should be studied and well managed to enhance learners' academic performance.

The issue of poor academic performance of students has been of much concern to the government, parents, teachers and even students themselves. The quality of education not only depends on the teachers as reflected in the performance of their duties, but also in the effective coordination of the school environment [2].

The extent to which students learning could be enhanced depends on their location within the school compound, the structure of their classroom, availability of instructional facilities and accessories. It is believed that a well-planned school will gear up expected outcomes of education that will facilitate good social, political and economic emancipation, effective teaching and learning process & academic performance of the students.

The Kenyan education system places a minimum grade (C+) which students must obtain before they are admitted to universities. Scrutiny of education statistics between 2011 – 2014 shows that, most schools had their students stacked in the lower end of the KCSE individual ranking [26]. Notably, those are public county schools that usually admit over 70 per cent of students that join secondary education each year. But whereas those schools would like to link their poor performance to limited resources, emerging evidence indicate poor administrative style, chronic teacher and student absenteeism and student indiscipline as key to poor performance recorded by that category of schools (18, 20, 25)

The research examined the aforementioned areas of school environment as it affects learners' performance in Khwisero District schools.

1.2 Statement of the Problem.

Many reasons have been put forward explaining reasons for the poor quality of education in public secondary schools as measured by academic performance. Top on the list are poor quality of amenities and infrastructure. The Kenyan education system places a minimum grade (C+) which students must obtain before they are admitted to universities. Scrutiny of education statistics between 2011 – 2014 shows that, most schools had their students stacked in the lower end of the KCSE individual ranking. Notably, those are public county schools that usually admit over 70 per cent of students that join secondary education each year. Statistics from the Kenya National Examination Council indicates the academic performance of Khwisero sub-county from the year 2016 to 2018 were as follows 3.845, 3.552 and 3.866 respectively [26]. The sub-county mean grade has thus been below minimum C+ indicating that, most students failed to qualify for university admission during the three-year period which will lead to most students missing out on higher education from universities. This

necessitated a study to establish how internal school environment contributed to learners' academic performance in public secondary schools Khwisero Sub-County in Kenya as evidenced by students' results in KCSE Examination.

1.3 Objective of the Study

The objectives of this study were: -

- i.** To determine the effect of physical facilities on the academic performance of learners in the Secondary schools in Khwisero sub-county, Kenya.
- ii.** To establish the effect of classroom environment on the academic performance of learners in public secondary schools in Khwisero sub-county, Kenya
- iii.** To establish the effect of instructional resources on the academic performance of learners in public secondary schools in Khwisero sub-county Kenya.
- iv.** To determine the effect of financial resources on the academic performance of learners in public secondary schools in Khwisero sub -county Kenya.

2.0 Literature Review

2.1 Concept of Internal School Environment

A study done in USA by [7] outlined that a good school facility supports the educational enterprise. In such a school, learning resources like physical facilities which include classrooms in habitable state, equipped library, computer room and laboratories are available and adequate. Other learning resources which include; - text books, projectors, videos, software and other materials coincidental to learning should be sufficient. Research has shown that clean air, good light, and a small, quiet, comfortable and a safe learning environment are important for general positive academic achievement of learners (4, 7, 17, 16, 27).

This means that the poor the condition of the building, the less the learning by students. Location of a school facility is also another significant factor which can be linked to students' outcomes. Schools located close to busy roads expose children to traffic-generated air and noise pollution and may have a wide range of adverse health effects in children [2]. This is because children spend a large portion of time at school, and both air pollution and noise are elevated in close proximity to roads, so school location may be an important determinant of pollution exposure. As a result, the locations of schools may negatively impact the healthy development and academic performance of a large number of children.

Reference [15] examined the impact of school environment and peer influence on the pupils' academic performance in Vihiga County, Kenya. The study established that school environment and peer influence made significant contribution to the pupils' academic performance. It is therefore clear from the researcher view that the study of the influence of learning environment on learner academic performance has been neglected in Kenya.

2.2 Physical Structure and Learners' Academic Performance

Physical environment is pivotal for any educational institution and is directly associated with performance of students in academics as well as in co-curricular development [34]. Similarly, a close and constant link between building availability and test scores among students has been observed by [7] while [24] and [5] are of the opinion that physical facilities improve basic skills and higher grades. Research studies show that students in facilitated infrastructure in school perform well health wise, in attendance, discipline [5] behavior and achievement in personality [14, 23]. Further the available design mapping and topography is also important as noted by [1].

A well-planned facility will be able to accommodate changes in use (e.g. class size, technology upgrade and perhaps flexible use room), be easy to maintain and upgrade, be energy efficient, and address the safety concerns of the occupants [9, 30]. The custodial staff needs to be included in the costs budgeted for operating the building. Reference [10] asserted that students perceive that their schools reflect important things related to their communities and also believe that good schools helps them to make good transition to life in the community.

2.3 Class Environment and Learners Academic Performance

According to [30] stated that the learners should be provided with a rich and suitable environment in the classroom where the child would be free to move and play. Although the authors [31] comment that "The classroom is the basic structural unit of our educational system", the nature of the classroom is clearly affected by the school design and objectives adopted at the school level" (p67). Reference [20] model of the learning environment includes 'school context' as a factor affecting 'classroom climate', but he argues that the classroom is the appropriate level to observe and evaluate.

There is reason to expect the classroom environment to affect behaviour: Reference [19] found that participants in an 'ugly' room made significantly less positive judgments about photographs than did the participants doing the same task in a 'beautiful' room to measure student working. In [11] study, students' conditions were positively related to exam success, teachers were reported to desire more space, a good location and quiet environment, and have lots of storage and water in the classroom. Teachers preferred classrooms with windows, -daylight and views, but these were not a top priority

2.4. The Instructional Resources and Academic Performance

According to the authors [32] instructional material, teaching resources, learning aids and audio-visual aids are aids that teachers use to assist learning and also increase interest for learner's process. Teachers use resources to enhance learners' participation in class for effective learning. Instructional material has been defined by various authors for example; the author [22] viewed them as didactic materials things which are supposed to make learning possible. The author [12] referred to them as objects or devices, which help the teacher to make a lesson much clearer to the learners.

Use of educational resources saves energy and time because most of the concepts are easily clarified and understood. They promote learning as clear images are formed when learners see, hear, touch, taste, and smell as their experiences are direct and concrete, learning the method of senses is the most natural and easiest way of learning. Instructional materials are considered important in teaching and learning in all levels of education because textbooks and other resource materials are basic tools. Absence or inadequacy makes teachers handle subjects in an abstract manner, portraying it as dry and non-exciting [8]. The condition of the learning resources in terms of cleanliness and in good state of repair, have also been confirmed to bear positive impact on performance in K.C.S.E. A study by [25] on factors contributing to poor performance in Kenya Certificate of Primary Education (KCPE) in public day primary schools conducted in Kenya in Mwimbi division Maara district established that inadequate learning resources are contributing to poor performance.

2.5 Financial Resources and Academic Performance

Financial resource is key element among educational resource, Financial resources are used for acquisition other resources such as physical facilities, textbooks and human resources [18]. Availability or adequacy of financial resources will enable a school acquire other facilities, despite the importance of financial in promoting acquisition of other resources Draft Report on Cost and Financing of education [26] notes that schools have a narrow revenue base which consists of mainly school fees. School fees make up over 90% of total revenue collected by the schools [28]. Even if government has been making contribution in form of subsidized secondary education (SSE), the contribution may be inadequate unless well managed; collection of fees still varies from school to school. Where collections are inadequate, the state of infrastructure will be poorly developed comprising content delivery, this ends up putting a lot of strain on existing resources which end up compromising academic performance of the school [8].

The taskforce on implementation of [26] recommended that schools should start income generating projects to supplement the fee paid by parents and FDSE grants. As to whether schools adhered to this advice so as to ensure adequacy of resources was one of the issues to be addressed in this research. A report by Ethics and Anti-Corruption Commission in 2018 revealed that head teachers were issuing wrong enrolment figures, flouting procurement procedures, taking bribes and hiding crucial audit documents to steal free educational funds. The report also unearthed massive irregularities in the procurement of text books for public schools, with head teachers playing a key role in the racket. The fraud ranged from forged signatures, delivery of phantom books, overpricing and single-sourcing of suppliers by instructional materials selection committees at the school level. Many times, the school administrators have not respected the fee guidelines set by the government with the major reason being that the funds are not sufficient thus they have tended to increase fee paid by the students [15]. The optimal utilization of these funds depends on the managers of these schools.

2.6 Theoretical Framework

Theoretical framework is an examination of the existing or self-formulated theories that are related to research objectives. This study was guided by Erick Hanusheks Education Production Function theory. In this theory Education Function represents mathematically the process of which a school transforms Inputs [29]. An

education production function is an application of the economic concept of a Production function to the field of education. The theory relates to the study variables and the conceptual framework of the study as in the inputs affecting a student's learning like pupil-teacher ratio, instructional materials, physical facilities that affect the quality of education. It measures outputs including subsequent labor market success, school enrollment, graduation rates, and most frequently, standardized test scores. The output of the educational process, the achievement of individual students is directly related to inputs of the education process. The characteristics of schools, teachers, curricula, controls academic achievement. A large number of successive studies, increasingly involving economists, produced inconsistent results about the impact of school resources on student performance leading to considerable controversy in policy discussions. Additionally, policy discussions about class size reduction heightened academic study of the relationship of class size and achievement.

2.7 Literature Gap

Various studies have been carried out previously to evaluate the relationship between learning environment and academic performance of students. However, it is important to note that most of the studies focused on general environment while others focused one aspect of the learning environment such as the size of the classroom or the size of the school. Most of the studies have also focused on foreign countries and few studies have focused on the situation in Kenya. Further, no studies have evaluated the situation in Khwisero sub-County Kenya and therefore this study will attempt to fill that gap.

3. Methodology

3.1 Research Design

The study adopted the descriptive survey design which when used would create a detailed description of the research problem. Descriptive survey design was used to study and describe what was existing in a natural setting without any manipulation. It also involved survey or interviews to collect information.

The descriptive research design allowed the researcher to employ mixed methods approach which this study adopted. The descriptive survey was used under a mixed method approach that used both qualitative and quantitative techniques in data collection and analysis. In this case descriptive survey research design gave facts as they are on effect of internal school environment on learners' academic performance in public secondary schools in Khwisero sub-county

3.2 Sample and Sampling Procedure

The author [33] describes a sample as a small population of the target population selected systematically from the study. Sampling is a research procedure that is used to select a given member of subjects from a target population. Purposive sampling technique was used to sample all the 11 head teachers from 23 head teachers because they are the ones who are in charge of the schools and are deemed able to respond to the study questions. 110 teachers from 430 teachers who were selected randomly. Purposive sampling technique was used basing on earlier knowledge of the researcher in terms of research purpose and characteristics of the population.

3.3 Data Collection Procedure

An approval letter was obtained from Mount Kenya University that was presented to National Council for Science and Technology (NACOSTI) to obtain a research permit. The researcher then proceeded to seek further clearance from Sub-County before proceeding to visit the selected schools. The participants were requested to give their informed consent to take part in the study after detailed information regarding the nature and purpose of the study was made available to them. These enabled participants to make informed on the voluntary nature of participation; they also were informed that they can terminate their participation in the study whenever they felt uncomfortable to continue. The participants were also assured of the confidentiality of the information they shared.

3.4 Data Analysis

According to the authors [21], data obtained from the field in a raw form is difficult to interpret. Such data must be cleaned, coded, key-punched into a Computer programme and analyzed. It is from the results of such analysis that researchers are able to make sense of the data. The study used statistical package for social sciences (SPSS) and Pearson Correlation Coefficient to analyze data.

Quantitative data was analyzed using descriptive statistics, like frequencies and percentages.

Qualitative data obtained from the interviews was analyzed thematically by arranging content responses according to the research objectives.

3.5 Ethical Consideration

The participants were requested to give their informed consent to take part in the study after detailed information regarding the nature and purpose of the study is made available to them. This made the participants to make informed choices to participate or not to participate. The participants were also informed on the voluntary nature of participation; they also were informed that they could terminate their participation in the study whenever they felt uncomfortable to continue. The participants were also assured of the confidentiality of the information they gave the researcher.

4. Results

4.1 Influence of Physical Facilities on Students Performance

Table 1 shows that most of the respondents' 47(42.7%) agreed that the school buildings were easily accessible, 49(44.5%) agreed that school size affect learners academic performance, 54(49.1%) agreed that school buildings are well arranged, 37(33.6%) agreed that school buildings are well painted, 55(50.0%) agreed that physical facilities affect learners academic performance, 42(38.2%) disagreed that the buildings are old while 47(42.7%) disagreed that there are enough classrooms to handle all the students in the school and 35(32.0%) agreed that availability of physical facilities affect academic performance of students.

As noted from head teachers views, 7(63.6%) of the head teachers strongly agreed that physical facilities influenced students’ performance while 3(27.3%) agreed that physical facilities influenced performance to an extent and 1(9.1%) disagreed that physical facilities influenced students’ performance.

This implies that that there is need for more classrooms to be built so as to handle the all the students. This will in turn supplement the other physical facilities like school building painted, well arranged buildings and the size of the school, in enhancing academic performance of the students

The findings concur with the authors [29] studies in that Physical environment is pivotal for any educational institution and is directly associated with performance of students in academic. Similarly, a close and constant link between building availability and test scores among students has been observed by the authors [7] while [5] and [24] are on the opinion that physical facilities improve basic skills and higher grades. Research studies show that physical facilities improve basic skills and higher grades.

Table 1: Influence of Physical Facilities on Students Performances.

Statement	SA	A	U	D	SD
The school buildings are easily accessible	31(28.1%)	47(42.7%)	3(2.7%)	19(17.3%)	10(9.1%)
School size affect learner’s academic performance	28(25.5%)	49(44.5%)	2(1.8%)	17(15.4%)	14(23.0%)
School buildings are well arranged	32(29.1%)	54(49.1%)	1(0.9%)	19(17.3%)	4(3.6%)
School buildings are well painted	28(25.5%)	37(33.6%)	13(11.8%)	20(18.2%)	12(10.9%)
Physical facilities affect learner’s academic performance	21(19.1%)	55(50.0%)	3(2.7%)	15(13.6%)	16(14.5%)
The buildings are old	12(10.9%)	21(19.1%)	6(5.5%)	42(38.2%)	29(26.4%)
There are enough classrooms to handle all the students in the school	10(9.1%)	25(22.7%)	3(2.7%)	47(42.7%)	25(22.7%)
Availability of physical facilities affect academic performance of students	31(28.2%)	35(32.0%)	2(1.8%)	24(21.8%)	18(16.4%)

In order to make inferences concerning the relationship between the independent variable and dependent variable, the first null hypothesis for this study was tested at the 0.05 level of significance.

H₀1 There is no significant relationship between physical facilities and students' performance in KCSE in public secondary schools in Khwisero Sub- County, Kenya.

Table 2: Correlation between physical facilities and KCSE performance.

		KCSE PERFORMANCE
Physical facilities	Pearson correlation	0.626
	Sig. (2 tailed)	0.037
N		110

Significance 0.05 2-tailed

Results from table 4.2 show that there was a positive relationship of $r = +0.626$ which was significant at $p = 0.037$ a level lower than $p \leq 0.05$. This means that physical facilities and academic performance have a positive significant relationship. Consequently, the null hypothesis which stated that there was no significant relationship between physical facilities and students' academic performance in KCSE was rejected.

These study findings indicate that availability of physical facilities had a direct link with the performance of pupils in examinations. The author [8] concurs with the findings when he pointed out those schools with best facilities were among the high achieving schools and that those with inadequate facilities performed poorly.

This means that the respondents acknowledge the importance of physical facilities on the student's academic performance and therefore all schools should be keen in developing them. This might influence the student's academic performance positively. Various studies done on effect of school environment on academic performance attest to the fact that school environment that is not conducive for learning may lead to underperformance [6]. Provision of adequate learning facilities at all levels including equipment and human resources enhances the quality and relevance of imparted skills of learners [18]. Learning involves interaction of students with the environment. Teaching and learning resources include classrooms, laboratories, libraries, playing fields, textbooks among others. Indeed, physical resources go a long way in creating conducive environment that promote effective teaching and learning. It is with this in mind that the Draft Report on Cost and Financing of Education in Kenya that [26] identifies textbook ratio and school facilities as some yard sticks to be used to gauge the quality of secondary school education.

4.2 Instructional Resources and academic performance

The study sought to find out the influence of instructional resources on students' academic performance, according to the respondents' level of agreement, majority 35(31.8%) agreed that the school has adequate instructional material, 45(40.9%) agreed that there is use of text books in teaching, 47(42.7%) disagreed that there is use of audio visual aid in learning and 54(49.1%) agreed that there is use of learning aid in learning.

The study found out that 8(72.7%) of the headteachers strongly agreed that instructional resources had a big influence on the academic performance while 3(27.3%) agreed that it had an influence on the academic performance of the students.

This implies that technologies are not being utilized in instructional programmes as were expected because the design of classroom physical environment does not support the integration of technology.

The author [13] stated that the arrangement of classroom educational facilities and instructional spaces might be selected for learning rather teaching. Besides, it should ensure to facilitate teacher in making an atmosphere where quality learning may be promoted. The study findings concur with other studies done by the authors in [34] who found that audio visual aids i.e., charts, graphs, maps, globes, radio, mock up, multimedia, computers, overhead projectors and internet are the part of classroom environment.

Table 3: Instructional Resources.

Statement	SD	D	U	A	SA
The school has adequate instructional material?	18(16.4%)	24(21.8%)	5(4.5%)	35(31.8%)	28(25.5%)
There is use of text books in teaching	21(19.1%)	45(40.9%)	3(2.7%)	25(22.7%)	16(14.5%)
There is use of audio-visual aid in learning	10(9.1%)	25(22.7%)	3(2.7%)	47(42.7%)	25(22.7%)
There is use of learning aid in learning	32(29.1%)	54(49.1%)	1(0.9%)	19(17.3%)	4(3.6%)

4.3 Correlation between Instructional Resources and Academic performance

Concerning the relationship between the independent variable and dependent variable in line with the third null hypothesis for this study was formulated and tested at 0.05 level of significance. The formulated null hypothesis stated that “H₀2: There is no significant relationship between instructional resources and students' performance in KCSE in public secondary schools in Khwisero Sub-county Kenya? In order to test the validity of this claim, a correlation analysis was performed and results were presented in Table 4

Table 4: Correlation between Instructional Resources and KCSE Performance.

		KCSE PERFORMANCE
Classroom environment	Pearson correlation	0.680
	Sig. (2 tailed)	0.037
N		110

Significance 0.05 2-tailed

Results from Table 4.4 show that there was a positive relationship of $r = +0.680$ which was significant at $p = 0.037$ a level lower than $p \leq 0.05$. This means that instructional resources and academic performance have a positive significant relationship.

Consequently, the null hypothesis which stated that there was no significant relationship between instructional

resources and students' academic performance in KCSE was rejected.

5. Conclusions and Recommendations

5.1 Conclusions

Based on the findings of the study, it was concluded that schools the Khwisero Sub-County have inadequate physical facilities. In addition, insufficiency of instructional materials in schools has also been found to greatly influence the academic performance of the students. The class environment was found to influence academic performance as well arranged and ventilated classes were mostly preferred by most teachers and even students. It can be concluded that physical resources were not well developed in most of the secondary schools since the study revealed that an overwhelming number of head teachers and teachers disagreed that their schools have well developed physical resources. This affects the academic performance of the students negatively since they do not get a comfortable environment to study.

The findings concluded that there is direct relationship between the independent variables and the dependent variable. It can be concluded that physical facilities and classroom environment have impact on the academic performance of the students. Proper maintenance of the physical facilities and the classroom should be encouraged always so that students can be able to achieve high academic standards. Adequate financial resources should be provided to the schools by the government so that they can be able to maintain and support academic projects in addition to purchasing school needs comfortably.

In conclusion, learning techniques is practiced since majority of the headteachers and teachers agreed that teachers employ use of teaching and learning aids in their teaching. This shows that learning techniques is taken seriously in majority of the schools but the performance of the students is still affected.

5.2 Recommendations

The recommendations contained in this report may be useful for the educationists, educational administrators and other stakeholders in improving the academic performance of the students in the area by ensuring the hindrances to the teaching-learning process are addressed.

- The head teachers should ensure the schools have enough instructional materials as they have the responsibility of procuring the materials for effective teaching and learning and consequently improve academic performance.
- Classes should also be made equipped with modern furniture so as to make the students comfortable when learning.
- The government should allocate more resources for the improvement of capital infrastructure in the schools. The head teachers should also plan and adequately utilize the Free Secondary Education funds for the purpose of developing the priority areas in the school so as to improve academic performance.

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