

Teachers' appraisal of classroom physical environment on students' academic performance in Kenya certificate of secondary education in Laikipia county

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Abstract

The Universal Declaration of Human Rights has declared that education is fundamental human rights to the well-being of any society. Therefore, the study was motivated by the need to improve students' academic performance in Kenya Certificate of Secondary Education examination, a case in Laikipia County, Kenya. The study was guided by one objective. To determine the extent to which appraisal of teachers on classroom physical environment influences students' performance in Kenya Certificate of Secondary Education in Laikipia County. The study targeted 94 public secondary schools which comprises of 94 principals and 1100 teachers in Laikipia County. Purposive sampling was used to select 45 principals while simple random sampling was used to select 300 teachers. Questionnaires were used to collect data from principals and teachers. The findings of the null hypothesis there is no significant relationship between teacher appraisal on classroom physical environment and students' performance using Chi square test was (df=16, Pearson $\chi^2=233.083$, $p=0.005$ at 0.05 significance level). The null hypothesis was rejected hence there is a significant relationship between teacher appraisal on classroom physical environment and students' performance to both principals and teachers to enhance establishment of effective appraisal process and Teachers Service Commission to have a well-placed sound policy and include all stakeholders, well-defined criterion on how to appraise, promote and appoint competent and experienced principals because a number of them lack competency in appraisal process.

Keywords: Performance appraisal, Classroom physical environment, students' KCSE Performance.

1.0 Introduction

According to the Task Force Report (2012) on Realignment of the Education Sector to the new constitution, the Government of Kenya is committed to the provision of quality education and training to its citizens at all levels. The on-going free primary Education, Free Secondary Education, bursaries, scholarship and loans provided bear testimony to this fact. The social pillar in the vision 2030 singles out education and training as the main drive leading Kenya into a middle-income economy. In addition, the constitution 2010 under article 53 1(b) has provided for free and compulsory Basic Education as a human right to every Kenyan child. Therefore, transforming schools and their systems through effective appraisal process is critical to sustain growth and upward mobility to both the individuals and worldwide. MOEST (2014) emphasizes that, schools' principals shoulder the greatest burden to supervise, control, lead and coordinate schools to achieve educational goals. Notably, the Kenya government immensely invests in training educationalists to enhance establishment of effective evaluation practices among teacher trainees and provision of quality education for all schools to enable learners achieve good performance in national examination.

Performance Appraisal is the process through which an individual employee's behaviour and accomplishments for a fixed time period are measured and evaluated (Sekaran & Bougie, 2011).

Performance Appraisal as postulated by Wildblood (2006) is a management function, which is a continuing process to determine how effectively employees are performing certain tasks in their positions with the aim of correcting their weak points and to recommend for promotion to better jobs and for making 'merit', increase in hourly rates and salaries. It is used as a check on the success of recruitment, selection, placement, training, lay off procedures, transfers, dismissals and help to identify people with promotion potential and pinpointing development needs which will leads to increase productivity. An effective Appraisal helps keep people's attention focused on the work results they are trying to achieve.

The introduction of performance contract was to have an open system to teacher performance appraisal. This would also lead to meeting the gaps and provide professional involvement for Promotion of teachers. Teachers Service Commission (TSC) was supposed to be regularized. Despite these, poor academic performance in Laikipia County raises concerns as to whether principal's instructional appraisal activities are effective in schools. Principals are expected to ensure conducive classroom physical environment, motivate, stimulate and consult with teachers in order to improve student's learning, skills and knowledge on instruction process management. With these interventions in place, it would seem reasonable and indeed necessary, to investigate the influence of teacher' performance appraisal of classroom physical environment on students' performance in public schools for Kenya Certificate of Secondary Education, A Case of Laikipia County, Kenya

Classroom environment refers to the kind of learning environment that exists in a classroom. Instructors can influence classroom environment by emphasizing the type of learning environment, such as valuing achievement, love of learning (Alimi& Akinfolarin,2012), competition, collaboration, or caring. Teachers structure the learning environment by making pedagogical choices, and both instructors and students play an active role in defining the interactions among classroom participants. Research on classroom interaction and its effects on learning support the assumption that a student's level of classroom participation is related to intellectual skill development (Terrence & Joyce, 2004).

In Australia Taylor and Tyler (2012) conducted an appraisal exercise in elementary schools and found that physical classroom environment is a combination of different things that include lighting, space, displays in class room, size of the room, sitting arrangement, desks, chairs, records of students, lab chemicals, text books, chalks and use of teaching/learning aids. They further pointed that environment supports student's safety and promote self-awareness in a learning environment. Favorable physical environment has significant positive effects on the efficiency of any school and acts as catalyzing agent to provide a straight way for achieving predetermined objectives of a school. However, physical environment in some classrooms are not conducive for smooth teaching and learning process resulting to fatigue, frustration, stress and poor students' academic performance (Taylor & Tyler, 2012).

Classroom physical environment is the hub of every learning interaction between the teacher and his/her students. Aluende, et al. (2009), observed classroom environment have now become human poultry, where more than 50 students are canned in one classroom which is at variance with the expected. Subsequently, Afobi (2010) observed that in a majority of Nigerian secondary school, the classroom physical environment accommodation is grossly inadequate. As a result of the large enrolment in these schools, the classrooms designed for only thirty or forty students and in most cases the chairs and desks are not enough as students were found sharing chairs, standing up, or sitting on windows or broken desks. When students are overcrowded like this, there is a stalling

of the teaching learning process and a disruption of the children's mental activity, a situation that generally militate against effective teaching and intellectual development of the children. In many of these schools, classroom, libraries and laboratories was nothing to write home about, all leading to decline in academic standards and achievement (Aluende et al., 2009). Classroom lighting plays a particularly critical role in students' performance (Clark & Lampert, 2014). Obviously, students cannot study unless lighting is adequate.

Henry (1998) sees the classroom as a powerful instrument in organizing the attitudes and feelings of students. On the basis of observational research, Henry study found out that the skill in being a teacher is one of a learned capacity to keep shifting states of order in classroom. As teachers and learners vary in their effective characteristics and behaviours, so the feeling or affective tone of the classroom setting for learning varies. Whatever the specific goals of classroom instruction might be, the classroom affective tone can facilitate or interfere with their attainment. In this regard, proper classroom control and effective tone variation by the teacher enhances students' academic performance.

A smoothly functioning classroom is a prerequisite to good instruction and high levels of student engagement. Teachers establish and monitor routines and procedures for the smooth operation of the classroom and the efficient use of time. In a perfect world, the physical environment of a classroom would promote learning, enhance learners' academic achievement, and facilitate appropriate behaviour in and between students. The ways in which children perceive their surroundings greatly affects how they will perform; therefore, it is imperative that instructors and administrators thoroughly examine the physical environment of classrooms with an eye toward making improvements that will benefit the teaching and learning therein (Danielson, 2011).

A study conducted by Maxwell and Chmielewski (2008) on essentials of a good learning environment reported that personal displays have been known to increase student self-esteem as well as academic performance. On the topic of the acoustic environment, Shield and Dockrell (2010) concisely stated that poor classroom acoustics created a negative learning environment for students thus negating their performance. Furthermore, Kundari (2016) nicely organized the topic of noise into two categories: internal noise and external noise. It was discovered that when internal noise was superimposed with external noise, performance on classroom tasks drastically declined (Dockrell & Shield, 2004). Three central findings were recorded regarding thermal environment within the context of a classroom. First, developing children have a different set of standards for their ideal thermal environment than adults. In addition, thermal induced stress could alter the learning and growth of children. Lastly, classroom temperature significantly affects children's problem-solving abilities thus reflecting negatively on their academic performance (Ayoo, 2002).

It is pertinent to note therefore, that the appraisal of the teachers is necessary to guarantee and instill professional standards in teaching profession. As such, principals should assist teachers through appraisal to diagnose a remedy challenge that hinder teachers' performance, growth and provide effective guidance in promoting, teachers' professional abilities to enhance good performance of students. It is on this note that the researcher was interested in investigating teachers' appraisal on students' performance in public secondary schools Laikipia County.

According to Wanjiku (2012), findings advocated that appraisal activities in secondary schools have been largely attributed to gaps in teachers' competence in curriculum instructional activities. In Laikipia County the performance of students has been poor. This calls for the principals in public secondary schools to improve performance appraisal process to enhance students'

performance in KCSE Examinations. Laikipia County performances in KCSE mean scores for the period 2012-2017 are shown in Table 1

Table 1: Laikipia County and the Neighbouring Counties KCSE Analysis 2012 – 2017

Year	2012	2013	2014	2015	2016	2017
National Index	28.36	27.46	30.78	31.52	24.64	26.98
Laikipia county	20.64	19.61	18.45	19.01	14.83	17.97
Nyeri county	23.42	23.91	24.85	19.31	20.92	23.91
Nyandarua county	23.82	24.01	25.08	26.21	20.41	21.34

Source: Laikipia County, Education Department (2018)

Table 1 shows declining KCSE mean scores of public secondary schools in the last six years. The grades are actually low. The number of candidates scoring above C+ and above which is the minimum requirement for admission to the university has been relatively low, with only 13% of the registered candidates qualifying to join higher education institutions (Laikipia County Director Office, 2018). Therefore, the researcher anticipated that classroom instructions were ineffective and unproductive in most of public secondary schools in Laikipia County to make Kenyan youth globally competitive. The reasons for poor students' academic performance at KCSE Examinations are varied and not yet clear. These could be poor appraisal systems, lack of enough instructional materials and leadership styles among others. Before 2005, Teachers Service Commission employed a confidential teacher's appraisal approach that was found to have shortcomings, as teachers were not aware of the ratings posted on their evaluation by their respective principals. Kassahun (2014) notes that the perception of teachers about appraisal had a significant influence on the outcome of the exercise making it very subjective and prone to abuse. It is important that those charged with responsibility for appraisal of teachers promote positive attitude towards appraisal and the role of appraisal in enhancing performance of students (Verspoor, 2008). Therefore, continued poor performance of students in KCSE Examinations in public secondary schools in Laikipia provoked this study to carry further investigation on some of the underlying causes such as teachers' performance appraisal.

1.2 Statement of the Problem

According to the Task Force Report (2012) on Realignment of the Education Sector to the new constitution, the Government of Kenya is committed to the provision of quality education and training to its citizens at all levels. The on-going free primary Education, Free Secondary Education, bursaries, scholarship and loans provided bear testimony to this fact. The social pillar in the vision 2030 singles out education and training as the main drive leading Kenya into a middle-income economy. In addition, the constitution 2010 under article 53 1(b) has provided for free and compulsory Basic Education as a human right to every Kenyan child. Therefore, transforming schools and their systems through effective appraisal process is critical to sustain growth and upward mobility to both the individuals and worldwide. MOEST (2014) emphasizes that, schools' principals shoulder the greatest burden to supervise, control, lead and coordinate schools to achieve educational goals. Notably, The Kenyan government immensely invests in training educationalists to enhance establishment of effective evaluation practices among teacher trainees and provision of quality education for all schools to enable learners achieve good performance in national examination.

The introduction of performance contract was to have an open system to teacher performance appraisal. This would also lead to meeting the gaps and provide professional involvement for Promotion of teachers. TSC was supposed to be regularized. Despite these, the KCSE performance in the last three years is still poor. Though there are few studies in education on teachers' appraisal, findings show that professional growth (training) and recognition of teachers' efforts have positively enhanced teaching and students learning. Based on the new teacher appraisal policy TSC, (2016), poor academic performance raises concern as to whether principals' instructional appraisal activities are effective in schools. Principals are expected to motivate, stimulate and consult with teachers in order to improve student's learning, skills and knowledge on instruction process management. With these interventions in place, it would seem reasonable and indeed necessary, to investigate the influence of principals' appraisal of teachers' teaching methodology on students' performance in public schools for Kenya certificate of secondary education, A Case of Laikipia County, Kenya.

1.3 Objective of the Study

To determine the extent to which teachers' appraisal on classroom physical environment influences students' performance in Kenya Certificate of Secondary Education in Laikipia County.

1.4 Research Hypothesis

H₀1: There is no relationship between teachers' appraisal on classroom physical environment and students' performance at Kenya Certificate of Secondary Education in Laikipia County.

2.0 Literature Review

2.1 The Concept of Students' Academic Performance

The student's academic performance refers to the enhancement of the students' current state of knowledge and skills reflected in their GPA and also in the formulation of their personality and academic growth from lower levels of study to higher levels (MOET, 2019).

Education is one of the imperative aspects that not only inculcates the essential skills, abilities and knowledge among the individuals, but also leads to overall growth and progress of the individuals, community and globally. The inculcation of academic knowledge, skills, abilities and proficiency among the individuals is enhanced through learning and academic performance. The academic performance determines the future goals and objectives of students, what subjects they will specialize in, colleges and university they will be enrolled into and what career opportunities they would take up.

Students' output (educational excellence) is critical in producing high-quality achievers, leaders and provide workforce for the nation, ultimately responsible for the region's social economic development. Measuring student's academic performance has previously been a source of concern. Researchers have discovered that there are numerous factors that influence students' learning performance. Top student tends to have common attributes, positive emotions about their college experience; credit their high school accomplishment to factors like hard work, conscientiousness, organization, capabilities and self-motivation; watch comparatively little media during school week, correlate with classmate who are also academically successful (Mulatya, 2022).

The determinants of academic performance of the students include, class participation, assignments, home-work, projects, tests, examination such as KCSE and minimum entry to

university and participation in competition or other events. The pressure of the parents and other individual upon teachers and school's administrators to improve the academic performance has enabled schools to come up with advanced strategies. These include: promoting extra-classes for students, introducing effective teaching/learning methods and instructional strategies, using technology and rewarding students for good performance for motivation (Nyagosia, 2011). For realization of good academic performance in schools, instructional resources must be put in place and effectively in classroom practice. During appraisal process on teachers the resources materials such as, the text books, notes learning materials, hand-out, technology, library facilities and laboratory facilities, especially in science subjects should include the essential materials during appraisal process. When students will be provided the necessary tools and equipment, they will be able to acquire a better understanding regarding academic concepts and how to perform the experiments (Otieno, 2022).

Leadership aspect which include-principals, teachers, HODs and administrative staff members of the school are vested with the authority to implement the managerial functions of planning, organizing, supervising, controlling and directing the activities. The principals primarily have the right to make decisions and appraise the teachers' performance according to (TSC, 2016). The decisions may include others and seek ideas and suggestions. The major role of appraisal aspects in influencing the academic outcomes of the students is based upon principals and management of the school of the school (Muia, 2018).

2.2 Concept of Teachers appraisal and performance

Today, all organizations have specific goals that they aim to achieve within a specified period of time. This is made possible if the work force is focused to their targets and is willing to work towards them. Unfortunately, most workers lose focus thus making organizations unable to attain their goals as planned. Performance appraisal came up as a tool to help employees and employers in assessing the performance of an individual in relation to the objectives, activities, output, and targets of job over a given period of time. In organizational settings, performance appraisal is defined as a structured formal interaction between a subordinate and supervisor, that is usually takes the form of a periodic interview [annual or semi-annual], in which the work performance of the subordinate is examined and discussed, with a view to identifying weaknesses and strengths well as opportunities for improvement and skills development. Appraisal may involve formative aspects that focus on developing performance, such as career development, professional learning and feedback. Summative aspects, on the other hand, evaluate performance for career progression, possible promotion or demotion and termination purposes. When used for both accountability and instructional improvement, performance appraisal that identifies and enhances teaching quality may be considered the ideal quality assurance mechanism [Danielson and McGreal, 2000].

The introduction of the new teacher appraisal system in Botswana came with number of new benefits which include, development of teachers in order to improve their delivery in schools, improvement of communication in schools through giving ideas and expectations as well as employees progress, improvement of quality working life by increasing the mutual understanding between managers and their staffs and also enhanced productivity through mutual interaction between the supervisor and the subordinates [OECD,2019]. In Kenya, formalized procedures for appraisal of teachers' performance have been viewed by educators as logical and essential for accountability, quality improvement and best practice in schools. In a school set up, appraisal

draws its foundation and data from the events that take place inside and outside the classroom. It is through appraisal that the principals get a clear framework of activities and responsibilities of each member of staff in the school to undertake in a given period [Imoleit et al, 2022].

As far as secondary education is concerned, effective appraisal should involve identifying the goals, objectives and standards of educational organization and should be conducted by professionals who are qualified. The obvious purpose of performance appraisal is to lead a teacher to improve his/her teaching capabilities in order to deliver his/her best (TSC, 2016). Good quality secondary education is desired because is a prerequisite for good quality human life, labour skills and economic productivity (URT, 2012). Zaare (2015) reported that appraisal of teachers is crucial because in order to succeed in educational reforms, there should be capable and high-quality teachers in classrooms. They also state that effective teachers can only be seen when there are high quality appraisal systems

So as performance appraisal to be effective, extensive training is necessary to provide trainees with broad opportunities to practice the specified skills, provide trainees with feedback on their practice appraisal performance and that a Comprehensive acquaintance with the appropriate behaviours to be observed. Also, Tesfaw & Hafman (2014) asserts that training of supervisors should be frequently updated and involves appraisal aspects as for example how to give and take feedback, active listening skills and conflict resolution approaches. Choi and Tang (2009) study finding also emphasizes the importance of training if implemented well, employees are less confused; less disappointed concerning measures and are more aware about the intentions of performance appraisal. This means that they will be capable of useful critique and feedback concerning the appraisal process.

Apart from that central aim of appraisal, it has many other objectives like accountability and professional growth of teacher. Makpodia (2011) asserts that, accountability is crucial in order to ensure that a teacher is delivering the service as required by the institution and improvement leads to professional growth and development of a teacher. The effective monitoring and evaluation of teaching is central to the continuous improvement of the effectiveness of teaching in a school. There are many methods of appraisal used in education before such as 360-degree, merit, ranking, critical incident, management by objective (MBO) behaviourally anchored rating scale among other. Nevertheless, these methods were found be ineffective in appraising teachers' performance which led introduction of teachers' performance appraisal and development (TSC, 2016)

2.3 Teachers' appraisal of classroom physical environment on students' academic performance

Classroom physical environment refers the overall design and layout of a given classroom and its learning centers. In this sense, the design of an appropriate and accommodating physical learning environment should address the size and temperature of the rooms, location. Noise, visual distractions inside or outside, seating arrangement teaching materials and other accommodations {MOEST, 2018}. Teachers should design the environment by organizing its spaces, furnishings, and reaching materials to maximize the learning opportunities and the engagement of every child. Teachers should design the environment by organizing its spaces, furnishings, and teaching materials to maximize the learning opportunities and the engagement of every child.

According to World Bank {2018}, the classroom physical environment includes buildings, spatial arrangement of furniture, walls, ceiling, equipment, instructional materials, visual teaching aids like maps, charts, posters, and murals to increase the interest, attentiveness and motivational levels of the students, students, laboratories, libraries, chalkboard, lighting, fittings and all the physical enablers of teaching and learning in the classroom. The conducive physical environment is an agent of intellectual stimulation and an essential factor in strengthening the child's educational development. According to World Bank, its only principals in school through effective appraisal can make effort to ensure that the standard design of their schools is adhered to and ensure that all the required recourses are available in school to promote excellent student performance in class.

A study by Ampofo and Gyambrah {2018} in Ghana, according to the West African Examination Council, 2012, the academic performance of Junior high school students {JHS} in Ghana has been on the decline since 2009 General performance declined from 62.165% to 50.21%, in 2010, from 49.12% to 46.93%. Ghana Education Service {2014}, reported that out of the 51 candidates for 2010. None achieved a required grade of 6-10: only 9 had aggregate 11-30 while in 2011, out of the 34 candidates presented for the exams, none achieved aggregate 6-10, 10 obtained aggregate 11-20 and the other had 21 and above. The problem is not only in Ghana alone but also in other West African Countries who also take part in the West African Secondary School Certificate Examination {WASSCE} report, reported similarly high rates of failures. The study observed that the declining standards of students' academic performance constitute not just an educational challenge but also a developmental challenge in a country that seeks to use education as a vehicle for achieving development. Despite the tremendous progress in academic access for all Ghanaians, several problems are affecting thousands of school-going children from learning in schools. Most classroom environment in Ghana are not conducive to learning: students are overcrowded in classes, others are standing due to lack of enough desks, inadequate water and sanitation facilities most of all, the facilities do not favour the girl child in terms of menstrual hygiene management {MHM}. The poor quality of education depicts the students' performance which is traceable to the classroom learning environment {Ampofo & Gyambrah, 2018}

Today in Kenya the ministry of education through the latest plan {2013-2025}, insights the importance of technology-based teachings into the schools national curriculum. Intergration of Information Communication and Technology {ICT} will assist teachers to the global requirements to replace traditional teaching methods with a technology-based teaching and learning materials and facilities ICT consists of internet, WI-FI, cell, telephone, and other mediums of communication consisting computer and vital company software, storage, audio-visible structures, middle ware that allows customers to contact, shop, transfer, and manage data Ghaviefekr et.al., {2015}. ICT has a vital part in establishing the new international economic system to provide fast changes in the world. In proceeding era, at all these speeds, the ICT advanced and developed that the developing nations were unable to catch the transition anymore and were left behind and as a result of their interaction with the developed countries lagged behind. ICT offers the impetus for the present world so that know-how and essential concepts of this technology are seen as an important factor of learning {UNESCO, 2020}

In classroom teaching and learning environment, ICT-based process offers various interesting ways which include educational videos, simultaneous storage of data, the usage of databases, mind-mapping guided discovery, brain stimulating and music that will make the learning process more fulfilling and meaningful. On the other hand, students benefit as they are not bounded by the limited curriculum and resources instead hands-on activities in a technology-based course is

designed to help them stimulate their understanding about the subject. It also helps teachers to design their lesson plans in an effective, creative and interesting approach that would result in student active learning. UNESCO (2020), research provided that use of ICT in classroom environment teaching enhances the learning process and maximizes the students' abilities in active learning.

Taylor and Vlastos (2009) conducted a study which developed a theory regarding the relationship between environment and design within the classroom. They referred to the physical environment of the classroom as the "silent curriculum" and hold strongly to the belief that understanding the physical environment is essential to the successful education of learners. Elementary school classrooms serve as the main context for learning and development during childhood. Empirical studies conducted by Reggio (2011), on spatial learning environment revealed that space and furniture, seating arrangements, and density are the domains that make up the spatial environment. She suggested that the optimal learning environment included plenty of space for classroom supplies, rearrangement of furniture, and designing spaces for both large and small-group activities. She concluded by asserting that there are several different teaching styles and methods, but overall, a teachers' pedagogy must match the space of the environment. The visual environment consists of lighting, colour, and personal displays. These three components all have psychological effects on children that apply to the classroom. The general consensus found among researchers who have assessed lighting was that appropriate lighting improved academic results, reduced off-task behaviour and played a significant role in students' achievement Schneider, (2002), as cited in Spenser and Blades (2006). Additionally, Magana (2016) addressed the psychological and behavioural effects of colour on children. They found that colours could be perceived as warm, cool, stimulating, or relaxing. They also stated that colour has the power to change moods, judgments, and behaviour, thus validating the importance of assessing colour in the classroom. Lastly, personal displays such as wall maps, charts, best essays/insha, marking of exercise books and ICT inventory within the classroom were shown to have psychological effects on children as well.

According to MOET (2019), a school principal is responsible for supplying the needed materials, facilities, textbooks, labs chemicals and all other instructional materials relevant to impact the learning process. Instructional materials in a classroom make the environment conducive for learning and thus make a great impact on the academic achievement of students. As a result, therefore the principal should accumulate all available resources from the MOE, community, stakeholders, CDF and other donors to construct equipped labs and other facilities (UNESCO,2020). Teachers have challenges teaching with inadequate textbooks, congestion in classrooms, inadequate desks and lockers, chalks, labs chemicals and substandard classrooms (TSC,2018).

Okoth (2014) found that head teachers did not provide adequate resources such as text books, lab chemicals. Teaching aids such as charts, models, and nature cover. Field visits like nearby forests or factories were also lacking. This could be due to limited government funding and general economic status of communities. This aspect of the classroom environment can negatively affect KCSE results. Some classrooms are also too large affecting marking of exercise books by teachers. Findings also revealed that although text books were available the frequency of use was below

average. Additional poor sitting arrangements, lack of enough desks and congestion affected the concentration of learners. According to KNEC (2017) schools with the best physical environment are among the top schools in KCSE. This encompasses educators who contribute to the school's funds to provide equity.

3.0 Research Methodology

Ex-post-facto research design was used which involved observing and accurately describing the behaviours' of individuals in a certain situation without influencing them in any way (Sekaran & Bougie 2011). The study targeted 94 public secondary schools which comprises of 94 principals and 1100 teachers in Laikipia County. Purposive sampling was used to select 45 principals while simple random sampling was used to select 300 teachers. This study found Pagano and Gauvreaux (2000) formula suitable to compute number of schools and teachers sample sizes respectively. Questionnaires were used to collect data from principals and teachers. To enhance the content validity of the instruments a pre-test of the instruments was carried out. Piloting aimed at testing the clarity of test items, suitability of language used and the feasibility of the study. The reliability of the instruments was determined using test-retest technique. Pearson product moment correlation was used to compute the reliability coefficient at $p < 0.05$ (Best and Khan 2011). The descriptive statistics used included frequencies and percentages while Chi-square (χ^2) test was used to compute inferential statistics at 0.05 degree of freedom.

4.0 Study Findings and Discussion

The section provides the data analysis and discussions under the extent to which Principals' appraisal of teachers' classroom physical environment influences students' performance in Kenya Certificate of Secondary Education in Laikipia County.

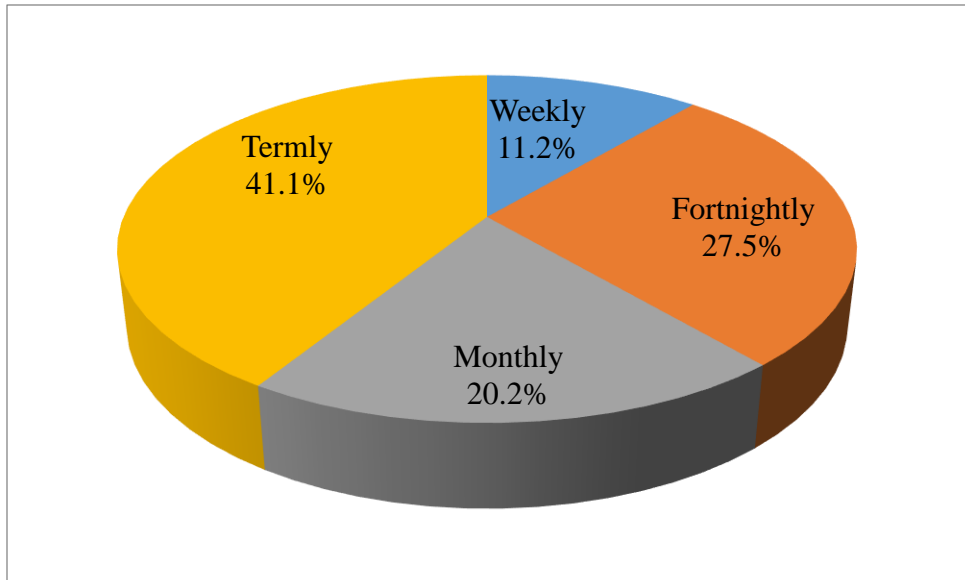
4.1 Teachers' appraisal on classroom physical environment on students' academic performance

Teacher appraisal is for improvement. It is a key driver required in the process of school development. It is critical for principals to ensure that classroom physical environment is conducive to help teachers shape and improve their teaching practice. Greenberg and Lind (2000) recommended and categorized forms of teacher appraisal in summative and formative ways. Often this data is gathered through structured and at times informal classroom observations established by the school.

4.1.1 Principals' appraisal of teachers on classroom physical environment

Principals can influence classroom climate by emphasizing the type of learning environment. Teachers too structure the learning environment by making pedagogical choices. Students also play an active role in defining the interactions in the classroom. Classroom physical environment has effects on students' level of classroom participation which is related to intellectual skill development. Teachers were to indicate the frequency to which appraisal on classroom physical environment is carried out. Data collected was then recorded in Figure 1.

Figure 1: Teachers' response on frequency of appraisal on classroom physical environment



Results from Figure 1 show that most classroom appraisal by the principals in the school was carried out termly (41.1%) and if not, fortnightly (27.5%). Rarely was it done weekly (11.2%) in most schools. Frequent performance appraisal is common activity in exceptional organizations. This is similar in most public secondary schools in Laikipia County, Kenya. The only thing is that the actual time period varies in different organizations and with different aims (Range et al 2012). This concurs with Fletcher (2008), who asserts that a typical frequency would be bi-monthly or quarterly. However, the problem of frequency has always been one of the major limitations of any formal approach to performance appraisal. Fletcher says that too long an interval between each appraisal and its contents lose relevance and risk artificiality and, in turn, too short an interval and the process become too time-consuming. But, the frequency of evaluations provides an indication of the breadth of the evaluation of teachers in schools (OECD, 2009).

A number of studies have been conducted to compare the frequencies of teacher evaluation and performance appraisal in different schools and findings indicate that some teachers worked in schools whose school principal did not perform classroom appraisals at all. Such schools have relatively little in the way of a framework for school evaluation works. However, in Kenya policies are being implemented to increase the frequency and reach of school appraisals but through survey these policies were not yet fully in place (OECD, 2009). The TSC and teachers' unions are still bargaining about it.

This study established that only 41.1% of the principals were reported to be appraising teachers once per term and on the other hand there were 27.5% who were appraising them a fortnightly. Maliehe's (2011) study established a relationship between frequency of teacher appraisal and school performance, with schools where teachers are regularly appraised recording better performance. Table 2 shows Teachers' response on the classroom physical environment that influence performance of students

Table 2 Teachers' response on the items in classroom physical environment that influence performance of Students.

Teachers' response	SA	%	A	%	U	%	D	%	SD	%
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Organized seating arrangement	187	65.2	100	34.8	-	-	-	-	-	-
Displays e.g. charts & wall maps	217	75.6	70	24.4	-	-	-	-	-	-
Class observation	196	68.3	91	31.7	-	-	-	-	-	-
Marking of exercise books	175	61.0	112	39.0	-	-	-	-	-	-
Child friendly environment	255	88.9	32	11.1	-	-	-	-	-	-

N=287

The results in Table 2 shows that 65.2% of teachers strongly agree and 34.8% agree that sitting arrangement and enough physical space influence performance of students in schools. A considered sitting plan must reflect the layout of the physical classrooms, teamwork and inclusion to create an effective learning environment. This implied that the safety of students must be of the utmost importance. To guarantee a safe and secure classroom, there should be enough space for students to walk and move around comfortably without the risk of any accidents (TSC, 2016). This conquers with fobi (2010) who found that the classrooms physical environment accommodation is grossly inadequate, as a result of the large enrolment, some learners sit on the floor and this led to stalling of the teaching learning process leading to poor academic performance. According to Clark and Lampert (2014) a classroom is designed for only thirty or forty students. However, in most cases in Nigeria majority of secondary schools had no enough chairs and desks. Therefore, students were found sharing with others standing up, others sitting on the floor and small space which definitely led to disruption of the learners' mental learning process.

On the item about display of learning and teaching resources the results on Table 5:2 shows that 75.6% strongly agree and 24.4% agree that appraisal of teachers learning resources and display of learning/teaching resources like wall maps, charts, news bulletin and models help students to perform better in exams, teachers must embrace proper use of these teaching and learning aids. Otieno {2022} found that preparation of teaching learning materials gives a teacher confidence and allows consistence of subjects matter for students better understanding. Okoth {2014} found that principals did not provide adequate teaching resources materials such as charts, wall maps, models, lack of field visits to nearby forest and factory. This could be due to limited funding from the government. This could affect negatively to low performance of students.

The results also in Table 2 indicate that 68.3% strongly agree and 31.7% agree that classroom observation can help education managers benchmark the performance of schools and school systems in important areas such as teachers use of instructional time and educational materials, students engagement and use of best-practice teaching techniques.

Although there are several types of observational procedures that have been used to appraise effective teaching/learning {e.g.,charts, ratingscales, checklists and narrative descriptions}. The most widely used procedure has been systematic classroom observation based on interactive coding systems (Adawale,2014). These interactive coding systems allow the appraiser to record nearly everything that students and teachers do. They are very objective and typically do not require the observer to make any high judgements about the behaviors they observe in the classroom. Some of the more commonly used observation instruments are the interaction system, Stallings observation system and class observation schedule. Some of the major strengths of using classroom observation allows provision of more detailed and precise evidence than others data sources, stimulate change and verify that the change occurred and to provide a coherent, well-

substantiated knowledge based about effective instruction. However, the process of observation and evaluation require a very high degree of professional ethics and objectivity (Adewale,2014).

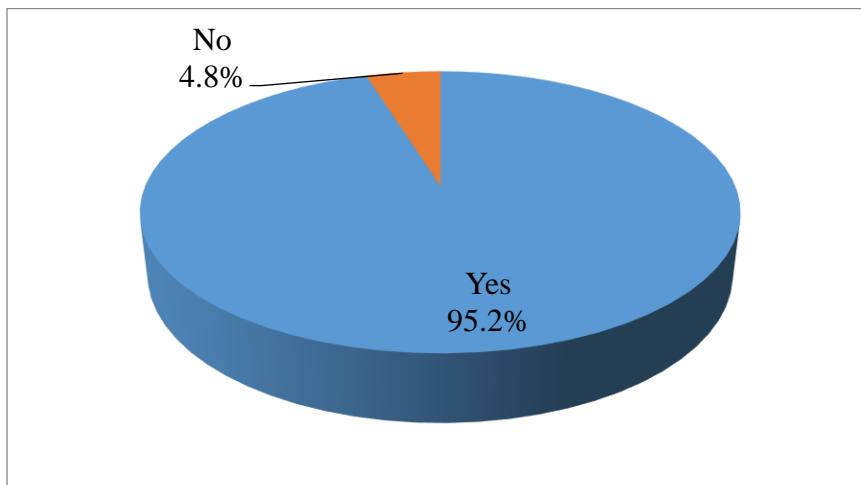
Results also on Table 5:2 shows that 61.0% strongly agree and 39.0 agree that marking of exercise books provide students with a clear and precise guide to how to improve their next piece of work and a clear expectation that they concentrate on improving this aspect as the next small step in making progress in their learning overall. Marking, assessment and feedback are under the quality of teaching judgement. During the scrutiny of students work appraiser will be looking for how well and frequently marking, assessment and testing are used to help teachers improve learners' learning (TPAD,2015).

In order to achieve an outstanding judgement, there must be evidence that consistently high - quality marking and constructive feedback from teachers ensures that students make rapid achievements in their performance. However, there are some unresolved issues. Detailed marking takes a lot of time. There can be resentment if the schools marking policy becomes too generous schools must find a balance between effective marking that moves students learning on and a system that does not leave teachers feeling swamped {KNUT,2019}.

4.1.2 Principals' response to ascertain teachers' information on given items

To ascertain the information given by the teachers on whether the given items influence students' performance, there was need for principals give their response by stating "Yes" or "No". Data obtained was presented in Figure 2

Figure 2: Principals' response to ascertain teachers' information



Results from Figure 2 indicate that majority of principals (95.2%) responded that given items influence students' performance to great extent. This clearly indicates that experienced teachers who plan before going for lessons will capture students' attention attracting their interest in the subject and teacher's methodology hence better results will be realized.

Testing Null Hypothesis

H₀₁: There is no relationship between principals’ appraisal of teachers on classroom physical environment and students’ performance in Kenya Certificate of Secondary Education in Laikipia County.

The chi-square was used to determine if there is relationship between teachers’ appraisal on classroom physical environment and students’ performance in KCSE. The acceptable level of significance for the chi-square test was 0.05. Levels of significance found to be greater than 0.05 meant that the null hypothesis was rejected while the levels of significance found to be less than 0.05 meant that Alternative hypothesis was accepted. Table: 3. shows the chi-square results on relationships between teacher appraisal on classroom physical environment and students’ performance in KCSE.

Table 3: The chi-square results on relationships between teacher appraisal on classroom physical environment and students’ performance in KCSE.

	Value	Df	Asymp. Sig.2sided
Pearson chi-square	233.083 ^a	16	.000
Likelihood Ratio	98.791	16	.000
Linear-linear Association	47.421	1	.000
No. of valid cases	250		

A.20 cells (84.0%) have expected count less than 5: The minimum expected counts 0.04.

Table 3 indicates the result of Chi square (χ^2) testing for the hypothesis on relationship between teacher appraisal on classroom physical environment and students’ performance. The null hypothesis was tested using Chi square test (df=16, Pearson $\chi^2=233.083$, p=0.005 at 0.05 significance level). The null hypothesis states that there is no significant relationship between teacher appraisal on classroom physical environment and students’ performance which was accepted when the $p>0.05$. The null hypothesis was rejected. This implies that teacher’s appraisal on classroom physical environment influences performance of students in KCSE greatly

6.0 Conclusions

Appraisal of classroom physical Environment

The findings of the hypothesis H₀₁ showed there was strong significant coefficient between teacher appraisal on classroom physical environment and students’ performance. where (df=16, Pearson $\chi^2=233.083$, p=0.005 at 0.05 significance level). was rejected. This implied that there is a correlation that exists between items given for teaching and learning and students’ performance at KCSE in Laikipia County. Principals feel that for students to perform better in exams there is need to embrace proper preparation and planning before embarking on teaching.

7.0 Recommendations

The study recommended the following:

1. The Ministry of Education should highlight how curriculum appraisal in schools could be enhanced for educational excellence in Kenya. Therefore, it is good to have well placed policies that ensure schools teachers' follows proper teaching methods to enhance students' performance in KCSE examinations.
2. The Teachers Service Commission should have well-placed sound policies and include all stakeholders, well-defined criterion on how to appraise, promote and appoint competent and experienced principals because a number of them lack competency in appraisal process.
3. Teachers should provide high levels of commitments in preparation and planning, use of relevant teaching /learning materials and use of proper teaching methodologies which leads to quality teachings and learning process in all classes. This will better the quality standards in students' performance in national examinations.
4. Ministry of Education science and Technology should emphasize that, principals shoulder the greatest burden to lead schools achieve academic excellence, educational goals and objectives. Therefore, should provide a conducive environment for teachers. This will lead to good academic performance of students in national examination. Therefore, there is need to attend workshops and training courses to be updated with the most competitive appraisal practices.
- 5.

Suggestions for Further Research

1. A similar study to this be carried out in other public secondary schools in other Counties across the country and findings be compared which can help educational planners and managers find concrete solutions to cases of poor performance of students at KCSE.
2. Factors affecting the implementation of appraisal process in public secondary schools in Kenya.

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