

# An Evaluation of Learning Environment in Predicting Academic Performance of Secondary School Students in Kenya

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**Abstract:-** In the global context, education stands as a vital driver of progress impacting individuals and communities. This study sought to evaluate the impact of learning environment on academic performance of secondary school students in Kenya. The article is an excerpt from a research project conducted within public secondary schools in Katulani Sub-County, Kenya. The study utilized a descriptive survey research design and drew its theoretical framework from Robert House's Path-goal Theory of Leadership. The sample size was 91 participants comprising 73 teachers selected through stratified and simple random sampling techniques and 18 principals chosen purposively. Questionnaires for teachers and for principals were used to gather data which underwent analysis utilizing both descriptive and inferential statistics with the support of SPSS. The outcomes demonstrated a strong positive correlation between an enabling learning atmosphere and the academic achievement of students. Based on these results, the research concluded that the principals' fostering of positive learning environments through encouraging teamwork among teachers, maintaining open communication lines, ensuring wellbeing of staff and students and providing adequate instructional facilities results in higher students' academic achievement. It was recommended that principals need to encourage teamwork among teachers around educational best practices. Further, they should maintain open communication with and among the staff and students. On policy, the Ministry of Education should provide adequate human, material and internet resources in schools to enhance productive teacher-learner interaction. The study findings could be utilized by principals to create conducive learning environments in secondary schools to improve students' performance in academics.

**Keywords:-** Learning Environment, Students, Academic Performance, Public Secondary Schools, Katulani Sub-County, Kenya.

## I. INTRODUCTION

Education spurs innovation, ensures equality of opportunities, promotes employment and reduces poverty (World Bank report, 2022). It is expected to be the main impetus in achieving the Sustainable Development Goals (SDGs) which aim to provide globally competitive and quality education enabling individuals to participate in social, economic and political activities (World Bank, 2008). According to Bell (2018), stakeholders in education have been advocating for improved quality of learning processes and outcomes by school principals since good results provide job security and more career choices for students. Grissom et al. (2021) observed that principals indirectly influence students' achievement by strategically managing material and human resources and facilitating collaboration with teachers. The authors averred that the creation of a positive learning environment in a school has a significant influence on learning processes which in turn determine students' academic performance. Consequently, the primary objective of this study was to explore the impact of the learning environment on the academic performance of students within the public secondary schools situated in Katulani Sub County, Kenya.

In support of this focus, a World Development report in 2018 underscored a worldwide learning crisis attributed to below par school management and insufficient learning conditions. Day, et al. (2016) ascertained that secondary school principals in England play a vital role in improving students' academic achievement by creating conditions for teachers to deliver effective instruction. Jerry and Mike (2011) asserted that principals' identification of a school vision, promotion of group goals and provision of support to teachers determine student achievement.

Mustary (2021) found that principals' focus on creating conducive learning environments and providing adequate resources is crucial for increasing interaction between the learner and the instructor to improve learning outcomes. However, Dotterer and Lowe (2011) noted that creating a positive school setting was insufficient to enhance results for pupils with learning disorders in Singapore. A research conducted in Botswana by Mphale and Mhlauli (2014) on learners' scholarly attainment yielded results indicating that inadequate resources and poor working conditions resulted in poor learner performance in academics. Melesse and Molla (2018) confirmed that establishing a school culture (vision, mission and values) and providing adequate instructional facilities in Ethiopia prompted teachers to commit themselves to improve learning outcomes.

Students' performance in Kenya is very important since formative evaluation prepares learners to sit summative evaluation (KCSE) examination and the results are used to determine transition to career training. This has led to intense competition with instances of examination misconduct (Amutabi, 2019). The Competency Based Curriculum (CBC) which has now been introduced by the Kenya government lays more emphasis on skills development than cognitive evaluation.

Wanjala (2021) established that principals in Bungoma East Sub-County who developed adequate physical school facilities such as laboratories, libraries and classrooms to increase interaction between the learners and teachers recorded improved learning outcomes. On the contrary, a study by Long'ore et al. (2023) on impact of instructional resources on teaching of special needs learners in elementary schools in Kenya concluded that most facilities were inappropriate for utilization by students with disabilities. This was reaffirmed by Obama et al. (2016) who adopted Ex-post facto research design to establish the connection between leadership practices of principals and learners' attainment at KCSE in Homa Bay County and found that most principals did not create a learning environment for effective teaching. However, ex-post facto research design which does not provide the basis to define a clear link between dependent and independent variables being studied (Kinlua, 2020) was utilized in the study while the current research adopted descriptive survey design. Macharia's (2013) research on factors affecting KCSE performance in Nakuru County recommended that principals should encourage teamwork.

## II. STATEMENT OF THE PROBLEM

Upon admission to secondary schools, students are anticipated to achieve high grades in the KCSE examinations and qualify for higher education thereby gaining skills for profitable employment. However, data from the Katulani Sub-County education office (2023) revealed a consistent pattern of poor performance in KCSE within the Sub-County's secondary schools. This disappointing trend has elicited

concern among education stakeholders. The 2023 report by the Quality Assurance and Standards Officer (QASO) suggests that the low quality performance in Katulani Sub-County could be partially attributed to unfavourable learning environments. These include a lack of teamwork and open communication among staff, insensitivity of administrators to the needs of staff and students and a shortage of instructional resources. The persistent trend of poor academic performance in secondary schools in Katulani Sub-County has been a source of worry for parents and other stakeholders in education. In response to this worry, the Kenyan government implemented the Competency-Based Curriculum (CBC) which emphasizes continuous assessment of students' skill acquisition over time hence reducing the heavy reliance on KCSE for student progression. Nevertheless, the intolerable performance yet remains in schools located within Katulani Sub-County this necessitates the need for the research.

### ➤ *Study Objectives*

The primary aim of this study was to assess the influence of the learning environment on the academic performance of secondary school students in Kenya.

The specific objectives included the following:

- Assess the influence of team building activities on the academic performance of students in Katulani Sub-County.
- Explore the role of effective communication channels in enhancing students' academic performance.
- Examine the impact of prioritizing staff and student wellbeing on academic performance.
- Determine the effect of sufficient instructional facilities on students' academic achievement.

## III. LITERATURE REVIEW

### ➤ *Empirical Review*

Numerous empirical studies conducted worldwide underscore the importance of a positive learning environment in enhancing students' academic performance. According to Osher et al. (2015), the school principal is expected to create a positive learning environment where both teachers and students feel safe, engaged, challenged, socially connected, supported and capable of succeeding academically. Day et al. (2016) employed descriptive survey design to investigate the link between principals and students' success in elementary and secondary schools throughout England. Data was acquired from a sample of 20 schools using mixed-methods. The results indicated that principals who diagnosed and addressed the needs of teachers and students and created environments that promoted engagement raised students' achievement levels. Nonetheless, the research did not evaluate the influence of principals' initiatives in cultivating a positive learning atmosphere on students' KCSE scores in Kenya.

Closs et al. (2022) investigated the impact of learning environment on students' performance in Australia by using mixed methods. The authors utilized observation schedule,

focus group discussions and interviews to collect qualitative data from 21 students and six teachers. The findings revealed that when head teachers supported tutors and learners, teachers engaged in better pedagogical practices such as collaborative pedagogies, cooperative work, student-centered learning and knowledge creation. The authors noted that supported teachers engaged in pedagogical tact, better subject organization, time management, assignment planning and content delivery which encouraged students to be physically present in class and to willingly participate in the learning process. Additionally, such learning environment provided more involvement, personalization, cooperation, equity and satisfaction resulting in improved learning outcomes. Nevertheless, the researchers utilized a small sample of 31 participants which could have averted the findings from being generalized in contrast to the 91 respondents sampled in the present research.

Anderson (2008) conducted research to determine whether principals' plans for enhancing student performance in elementary schools in four Latin American nations (Argentina, Brazil, Chile and Mexico) were successful. Information was gathered from 96 administrators, 102 instructors, 2,048 fourth-graders and their parents in 96 public primary schools via interviews, classroom observations and questionnaires. Data analysis was performed using hierarchical linear modeling. It was established that principals' plans for enhancing student performance were successful when they promoted positive relationships among teachers, open communication trust and respect. However, this study focused on elementary schools while the present one focused on secondary schools.

Awori et al. (2020) conducted research in Uganda's Universal Secondary Education (USE) schools using a mixed-method approach to analyze how the school environment affected student involvement. A sample of 40 educators and 404 pupils were interviewed and given questionnaires to fill out. Pearson Correlation Coefficient was used to analyze quantitative data and the qualitative data was analyzed using themes. The results indicated that improving student academic performance in Ugandan schools required recruiting qualified teachers, providing updated teaching materials and developing well-equipped classrooms and laboratories. However, principals were not included in the study sample but they were sampled in the present research as indispensable informants since they were responsible for creating positive learning environments in their institutions.

In Kenya, Maende et al. (2018) examined the link between roles performed by school principals and students' learning outcomes in Kakamega County. Descriptive survey and correlational designs were employed. Questionnaire and structured interviews were utilized to gather information from 393 Form four (4) students, 199 teachers and 30 principals. In data analysis, inferential and descriptive statistics were utilized. The research outcomes revealed that the principals' roles in random placement of students in streams as enrolled, organizing prize giving programmes, inter school assessments

and collaboration positively influenced students' achievement levels. Nevertheless, the researchers did not investigate the relationship between the learning environment and learning outcomes in Katulani Sub-County, Kenya.

Kamoche (2013) investigated how the management styles of Mathioya district principals affected their students' KCSE results. The research was conducted using a descriptive survey design. Eighty-five teachers and eight principals made up the sample. Information was gathered by using questionnaires and it was analyzed both qualitatively and quantitatively. The research established that principals' management styles including the creation of an enabling environment, sustenance of adequate staff, instructional materials and support for teachers' professional growth strongly influenced students' academic achievement. However, the sample size of the study was smaller although the research technique was similar to that of the current study.

#### ➤ *Theoretical Framework*

This study was anchored by the Path-Goal Theory of Leadership proposed by Robert House in 1971. This theory outlines four distinct leadership styles: directive, supportive, participative and achievement-oriented. In this study, the theory implies that principals can employ various leadership styles and administrative practices to boost students' academic performance. For example, principals can adopt a supportive approach by fostering a positive and amicable environment and demonstrating concern for the welfare of their staff. They could also involve teachers and students in decision-making processes, allowing for a participative leadership style (Keya, 2019).

The Path-Goal Theory underscores the interplay between the behavior of the leader and the characteristics of the subordinates such as their needs and the environment in which they operate. It suggests that effective leadership is based on understanding and meeting the needs of subordinates to enhance their performance. According to Landrum and Daily (2012), the theory provides flexibility in choosing the appropriate leadership style based on the circumstances and the characteristics of the individuals involved. While the Path-goal Theory offers valuable insights into leadership, it can be complex to apply in practice because it encompasses various management and leadership concepts. However, the theory was relevant to this research as it provided a framework for understanding how principals could create positive learning environments by adopting explicit administrative practices that consider the specific context of each classroom. This could be done by ensuring staff and students' well-being, providing adequate instructional resources, promoting teamwork and maintaining open lines of communication to support the subordinates in achieving their educational objectives.

#### IV. MATERIALS AND METHODS

The chosen research design for this study was a descriptive survey research approach which aims to collect information from a specific population by distributing questionnaires to individuals (Mugenda & Mugenda, 2009). This design was considered appropriate because it allowed the researcher to depict how the learning environment impacted student academic performance in public secondary schools within Katulani Sub-County, Kenya. The target population consisted of 265 individuals comprising 21 principals and 244 teachers from 21 public secondary schools in the area. For the pilot phase, three schools were selected and the remaining 18 schools were included in the study using a census method. To determine the sample size, a combination of stratified and simple random sampling techniques was employed resulting in a sample of 73 teachers while 18 principals were purposefully selected.

Information for this study was collected using two distinct questionnaires, one for principals and another for

teachers. The data from the closed-ended questions were processed using both descriptive and inferential statistical methods including means, frequencies, percentages, Pearson's correlation coefficient, chi-square and multiple regression analysis. This analysis was facilitated by SPSS version 23. The threshold for statistical significance was set at an alpha level of 0.05. The findings were then presented in tables displaying frequencies, percentages and means. For the open-ended questions, qualitative responses were transcribed and examined to identify emerging narratives and themes.

#### V. RESULTS

##### ➤ Descriptive Statistics

Descriptive statistics were employed in this study to assess how the establishment of a favorable learning environment by school principals influences the academic performance of students in public secondary schools within Katulani Sub-County, Kenya. These evaluations were based on the perspectives of both teachers and principals and the findings are presented in Table 1 and Table 2 respectively.

**Table 1: Descriptive Statistics for Teachers' Views on Principals' Creation of a conducive Learning Environment and Students' Academic Performance**

Statement	5 F %	4 F %	3 F %	2 F %	1 F %
The principal encourages teamwork among the staff around instructional best practices such as team teaching	43 62.3	15 21.7	8 11.6	1 1.4	2 2.9
The principal diagnoses, understands and addresses the needs of teachers and students to ensure their mental and physical safety	25 36.2	31 44.9	7 10.1	4 5.8	2 2.9
The principal encourages and maintains open communication and a culture of respect and trust with and among teachers	36 52.2	22 31.9	4 5.8	2 2.9	1 1.4
The principal provides adequate instructional facilities such as classrooms, well equipped laboratories and libraries with updated instructional materials to increase teacher-learner interaction	17 29.0	32 46.4	7 10.1	5 7.2	5 7.2

Table 1 depicts that a sizable number of educators believed that their principal actively promoted staff collaboration on instructional best practices such as team teaching as illustrated by 62.3 % who extremely agreed and 21.7 % who were in agreement. Contrarily, a small proportion of the teachers, 2.9 % strongly disagreed and 1.4 % disagreed whereas 11.6 were doubtful. The majority of the teachers were in one accord that the principal encourages and maintains open communication and a culture of respect and trust with and among teachers as exemplified by 52.2% who strongly agreed and 31.9 % who agreed. Conversely, 2.9 % disagreed, 1.4% strongly disagreed and still 5.8% were unsure.

Comparatively, most of the instructors (44.9 % agreed) and (36.2 % strongly agreed) that the head teacher diagnoses, understands and addresses the needs of teachers and students to ensure their mental and physical safety. On the other hand, 5.8% disagreed, 2.9 % strongly disagreed and yet 10.1 % were uncertain. Majority of the teachers confirmed that the principal provides adequate instructional facilities such as classrooms, well equipped laboratories and libraries with updated instructional materials to increase teacher-learner interaction as indicated by 46.4 % who agreed and 29.0% who strongly agreed. Contrarily, 7.2 % disagreed, another 7.2 % strongly disagreed and still 10.1% had no opinion.

**Table 2: Principals' Views on their Creation of a Conducive Learning Environment and Students' Academic Performance**

Statement	5 F %	4 F %	3 F %	2 F %	1 F %
The principal encourages teamwork among the staff around instructional best practices such as team teaching	9 52.9	4 23.5	1 5.9	2 11.8	1 5.9
The principal diagnoses, understands and addresses the needs of teachers and students to ensure their mental and physical safety	6 35.3	8 47.1	1 5.9	1 5.9	1 5.9
The principal encourages and maintains open communication and a culture of respect and trust with and among teachers	10 58.8	2 11.8	2 11.8	2 11.8	1 5.9
The principal provides adequate instructional facilities such as classrooms, well equipped laboratories and libraries with updated instructional materials to increase teacher-learner interaction	4 23.5	6 35.3	2 11.8	3 17.6	2 11.8

Table 2 illustrates that a large number of the principals were having consensus that the principal encouraged and maintained open communication and a culture of respect and trust with and among teachers as demonstrated by 58.8 % who strongly agreed and 11.8 % who agreed. Conversely, 11.8% disagreed, 5.9 % strongly disagreed and yet another 11.8% were indecisive. The majority of principals (52.9 %) strongly agreed and 23.5% agreed that the head teacher supported cooperation among the staff around instructional best practices like team teaching. Conversely, 5.9% strongly disagreed and 11.8 % disagreed while another 5.9% were unresolved. Similarly, most of the principals reasserted that the principal diagnosed, understood and addressed the needs of teachers and students to ensure their mental and physical safety as indicated by 47.1% who agreed and 35.3% who strongly agreed. However, 5.9% disagreed, another 5.9% strongly disagreed and another 5.9% were undecided. It was clear that most of the principals accepted that the principal provided enough instructional facilities such as classrooms, well equipped laboratories and libraries with updated instructional materials to increase teacher-learner interaction as indicated by 35.3%

who agreed and 23.5% who strongly agreed. Nevertheless, 17.6% disagreed, 11.8% strongly disagreed and yet another 11.8 were indecisive.

## VI. INFERENCE STATISTICS

### ➤ Correlation Analysis

A Pearson's correlation analysis was performed to assess the relationship between students' academic performance and the principal's efforts to foster a positive learning environment. This relationship was evaluated in terms of its association, direction and strength at a 0.05 level of significance. A positive coefficient indicated a direct relationship while a negative coefficient suggested an inverse relationship. As per Creswell and Creswell (2018), a correlation coefficient below 0.29 is considered weak, between 0.30 and 0.49 is moderate, between 0.5 and 0.69 is strong and 0.7 or above is very strong. The correlation matrix reflecting teachers' perspectives on the creation of a positive learning environment and its impact on student's academic is presented in Table 3.

**Table 3: Correlation Between Teachers' Views on Conducive Learning Environment and Students' Academic Performance**

		Conducive learning environment	learner's academic performance
Creation of a conducive learning environment	Pearson Correlation	1	.711(**)
	Sig. (2-tailed)		.000
	N	69	69
Learner's academic performance at KCSE	Pearson Correlation	.711 (**)	1
	Sig. (2-tailed)	.000	
	N	69	69

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

The data in Table 3 demonstrates that there was a strong positive relationship  $r(69) = 0.711$ ,  $p < 0.05$  between principals' creation of a conducive learning environment and students' academic achievement.

**Table 4: Correlation Between Principals' Responses on Conducive Learning Environment and Students' Academic Performance**

		Conducive learning Environment	Learner's Academic Performance
Conducive learning Environment	Pearson Correlation	1	.601(**)
	Sig. (2-tailed)		.000
	N	17	17
Learner's Academic Performance at KCSE	Pearson Correlation	.601(**)	1
	Sig. (2-tailed)	.000	
	N	17	17

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

Table 4 presents the findings of the study indicating a strong positive relationship between a conducive learning environment and students' academic attainment. The correlation coefficients,  $r(17) = 0.601$  and the p-value of less than 0.05 demonstrates that this relationship was statistically significant.

The qualitative data obtained from teachers' perspectives on how the principals' creation of a positive learning environment impacted on Lerner performance in Kitui County further supported the importance of a favorable learning atmosphere in influencing academic performance. A large number of teachers (54) constituting 78.3% reported that the learning environment positively impacted on the students' academic performance. This finding was reaffirmed by thirteen principals representing 76.5% who asserted that the conducive learning environment created by the principal in their school had greatly boosted students' academic performance.

## VII. DISCUSSION

The results from the teachers' opinions and principals' viewpoints are in agreement. According to Asogwa et al. (2020), the principal is expected to provide sufficient learning resources, encourage good student -teacher relationship, identify and address learners' and tutors' wellbeing. The results in Table 1 and Table 2 revealed that a majority of teachers (62.3%) strongly agreed that the principal encouraged teamwork among staff to improve learners' performance. This claim was supported by 52.9% of the principals. Additionally, 58.8% of the principals strongly agreed that the principal encouraged and maintained open communication and a culture of respect and trust among teachers and 52.2% of the teachers agreed with this statement. Moreover, a significant percentage of teachers (36.2%) and principals (35.3%) strongly agreed that the principal diagnosed, understood and addressed the needs of teachers and students to ensure their mental and physical safety.

The research findings revealed that the principal's role in encouraging collaboration and maintaining open communication and a culture of respect and trust with and among teachers contributed to good learning outcomes in Katulani Sub-County in schools where the principals applied them. Therefore, all school principals in Kenya need to prioritize the creation of a conducive learning environment. This could be achieved through various means such as providing adequate resources, promoting teachers and students' wellbeing, encouraging positive teacher-student relationships and maintaining open lines of communication. By doing so, schools could further enhance students' academic performance and create an atmosphere conducive to learning and growth.

However, a smaller percentage of teachers (29.0%) and principals (23.5%) strongly agreed that the principal provided adequate instructional facilities such as classrooms, well-equipped laboratories and updated instructional materials to facilitate teacher-learner interaction. Therefore, there is need for principals to improve the physical and internet infrastructure in their schools in order to enhance productive interaction between the instructors and learners.

According to Creswell and Creswell (2018), a correlation coefficient that is below 0.29 is weak, between 0.30 and 0.49 is moderate and between 0.5 and 0.69 is strong while 0.7 and above is very strong. The Pearson's Product Correlation Coefficient results  $r(69) = 0.711$ ,  $p < 0.05$  for teachers and  $r(17) = 0.601$ ,  $p < 0.05$  for principals indicated a strong positive relationship between principals' creation of a conducive learning atmosphere and students' academic attainment (Table 3 and Table 4). The results stressed the pivotal role played by an accommodating and engaging learning environment in improving learner's academic attainment. The positive correlation and qualitative feedback from both teachers and principals highlighted the importance of creating an environment that fosters effective teaching and learning. The findings concurred with those of Day et al. (2016) who found out that principals in England who diagnosed and addressed

their subordinates' needs improved students' academic performance in their institutions. The findings also agreed with Anderson (2008) who discovered that promotion of teamwork and open communication by principals was crucial in improving learning outcomes in America.

## VIII. CONCLUSION AND RECOMMENDATIONS

The study concluded that creation of conducive learning environments by school principals enhances students' academic performance. Further, encouraging teamwork among teachers, maintaining open communication with the staff and learners as well as providing adequate resources increases productive teacher-learner interaction resulting in higher learners' academic achievement. Additionally, the study concluded that if principals in Katulani Sub-County create conducive learning environments in their schools, student's performance would be enhanced.

It was recommended that principals should encourage teamwork among teachers around educational best practices. Further, the principals should promote the welfare of teachers and learners and maintain open communication channels with and amidst teachers and learners to foster student engagement in learning. On policy, the Ministry of Education should provide adequate human, material and internet resources in schools to increase productive teacher-learner interaction.

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