**International Journal of Innovation Scientific Research and Review**
*Vol. 04, Issue, 01, pp.2278-2281, January 2022*
*Available online at http://www.journalijisr.com*
*SJIF Impact Factor 4.95*


**ISSN: 2582-6131**

**Research Article**

# SECONDARY SCHOOL PRINCIPALS' MANAGEMENT OF INSTRUCTIONAL RESOURCES AND ACADEMIC ACHIEVEMENT IN KENYA CERTIFICATE OF SECONDARY EDUCATION EXAMINATIONS IN SIAYA COUNTY, KENYA

**[1,] * Janerose Mang'eni, [2]Edwin Masibo, [2]Manasi Echaune**

[1]Teachers Service Commission, Kenya.
[2]Kibabii University, Kenya.

**Received 20th November 2021; Accepted 21th December 2021; Published online 30th January 2022**

**ABSTRACT**

This study sought to examine the relationship between secondary school principals' management of instructional resources and school academic achievement. The study was based on Couriers leadership model. The study adopted a correlational research design. The target population comprised of 146 principals and 1460 teachers in Siaya County. The study adopted simple random sampling to distribute the sample size. Data was collected using a questionnaire. The study established a statistically significant relationship between secondary school principals' management of instructional resources and school academic achievement.

***Keywords:*** Academic Achievement, Finances, Involvement, Management, School Boards.

## INTRODUCTION

Isola (2010) referred to instructional materials as items or devices, used by teachers in the class to make a lesson more stimulating for the learners. Lunenburg (2010) highlights that teachers need to have access to teacher guides and textbooks. The significance of teaching and learning materials cannot be overstated. Jacobs, Vakalisa and Gawe (2011) uphold that a requirement for positive teaching and learning is the accessibility of the specific teaching materials. Consequently, teaching and learning resources need to be provided in schools before teaching and learning takes place. It is often through the use of learning equipment that learners are able to gain the appropriate learning experiences in the school. The careful and effective control of equipment is essential in establishing and maintaining a comprehensive culture in learning and teaching. The acquisition, allocation, utilization and preservation of teaching materials are key points for the principal as an instructional leader in resource management. Lyons (2012) state that learning is an intricate activity that involves students' interaction, motivation, physical facilities, teaching resources, skills of teaching and curriculum demands. Resources are basic items that enhance the effectiveness of learning and they are able to enhance learning among students. According to Blumberg (2011), instructional materials possess some inherent advantages that make them unique in teaching. For they provide the teacher with interesting and captivating platforms for conveying information since they motivate learners to want to learn more and more. By providing opportunities for private study and reference, the learner's interest and curiosity are increasingly stimulated. Further, the teacher is assisted in overcoming physical difficulties that could hinder effective demonstration of a given topic.Likoko, Mutsotso & Nasongo (2013) records that effective curriculum delivery to learners is dependent on the adequacy of the teaching and learning materials. According to Earthman (2016), high educational performance was associated with several comfort factors such as; air conditioning, less noisy external environments, less graffiti and where classroom furniture is in good repair. More recent reviews have consistently found relationships between building quality and academic outcomes. These studies also seek to find if design criteria and building conditions related to human comfort, indoor air quality, lighting, acoustical control, and secondary science laboratories have a demonstrable influence on student performance. The quality of school buildings has also been related to student behaviour, including vandalism, absenteeism, suspensions, disciplinary incidents, violence, and smoking (Schneider, 2012). Thus, reviews of research on various aspects of the physical environment tend to conclude that adequate student capacity and appropriate acoustical conditions are important factors in a school environment (Schneider, 2012 & Earthman, 2016) Students are not the only ones affected by poor-quality buildings. Teacher attitudes and behaviors have also been found to be related to the quality of school facilities. Teacher retention/attrition decisions were significantly related to the quality of school facilities, even when controlling for a host of factors. Factors that most directly affected the quality of teacher work-life also included indoor air quality, thermal controls, noise level and acoustics, adequate classroom lighting, and the amount of natural daylight. Teachers who perceived a detrimental effect on their health due to building conditions, or who were stressed by high noise levels, poor acoustics, and lack of thermal controls were more likely to seek employment elsewhere. They, therefore, become demotivated and unsettled. Thus, this study assessed such characteristics mentioned above and their influence on the KCSE performance in public secondary schools in Siaya County. In Kenya, current research that relates to the concept of teaching and learning resources and their relationship to teaching, effective curriculum implementation and students achievement has established that the challenges of acquisition, allocation and accessibility of learning resources was found to negatively affect teacher effectiveness in the classroom (Orodho, Waweru, Ndichu & Nthinguri, 2013). It was also recounted that there was an upsurge in learners who either had no textbook or had to share with at least two other learners in Kenya, (UNESCO, 2015). Cohen, Raudenbush and Ball (2003) states that even with the

***Corresponding Author: Janerose Mang'eni,**
1Teachers Service Commission, Kenya.

availability of educational resources in schools, they are of no use if those resources are not provided at the right time and allocated to teachers and students for effective teaching and learning. Heilig and Williams (2010) also caution that student achievement can not only be improved solely by the availability of the resources but rather how they are used. It is against this background that this study is necessary in order to examine the relationship between principal's acquisition and allocation of teaching and learning resources and students' academic achievement in public secondary schools.

## RESULTS AND DISCUSSION

### Examine the Relationship between Principals' Management of Instructional Resources and School Performance

### The Description of Variables being tested

**Table 1.** Description of variables used in modelling the relationship between of school Principals management of instructional resources and academic achievement

| Var. | Variable label | Scale | Values |
|---|---|---|---|
| a1z | School KCSE performance | Interval | 2.802-8.762 |
| a1z* | School KCSE performance | Nominal | 1=Below Average Performance<br>2=Average Performance<br>3=Above Average Performance |
| 6a | Sufficient teaching and learning resources are available in the school | Nominal | 0=Not at all<br>1=very small extent<br>2=small extent<br>3=Medium extent<br>4=Large extent<br>5=Very large extent |
| 6b | Availability of computers and science laboratories has influenced performance in science subjects | Nominal | 0=Not at all<br>1=Very small extent<br>2=small extent<br>3=medium extent<br>4=large extent<br>5=very large extent |
| 6c | Use of ICT based teaching and learning resources has positively influenced academic performance in the school | Nominal | 0=not at all<br>1=very small extent<br>2=small extent<br>3=medium extent<br>4=large extent<br>5=very large extent |
| 6d | Learning revision material are sufficiently provided at school | Nominal | 0=not at all<br>1=very small extent<br>2=small extent<br>3=medium extent<br>4=large extent<br>5=very large extent |

Note: (1) The outcome variable (school KCSE performance) was transformed in three categories i.e., <2.999=below average, 3.000-5.900= average, >6.000= above average

### Descriptive for the Independent Variables Used

Table 2 presents the descriptive statistics on teachers' responses on the variable principal provides adequate instructional resources.

**Table 2.** The Principal provides adequate instructional resources

| | Freq. | Percent | Cum. |
|---|---|---|---|
| 0=Not at all | 13 | 5.9 | 5.9 |
| 1=very small extent | 17 | 7.8 | 13.7 |
| 2=small extent | 29 | 13.2 | 26.9 |
| 3=medium extent | 46 | 21 | 47.9 |
| 4=large extent | 44 | 20.1 | 68 |
| 5=very large extent | 70 | 32 | 100 |
| **Total** | **219** | **100** | |

The results shown in table 2 indicate that majority of the teachers, 70 (32.0%) were of the opinion that the principal provides adequate teaching and learning resources on a very large scale.

**Table 3. Availability of computers and laboratories has influenced school academic performance**

| | Freq. | Percent | Cum. |
|---|---|---|---|
| 0=Not at all | 3 | 1.4 | 1.4 |
| 1=very small extent | 18 | 8.2 | 9.6 |
| 2=small extent | 35 | 16.0 | 25.6 |
| 3=medium extent | 75 | 34.2 | 59.8 |
| 4=large extent | 42 | 19.2 | 79.0 |
| 5=very large extent | 46 | 21.0 | 100.0 |
| **Total** | **219** | **100.0** | |

As shown in Table 3, the largest proportion of teachers who took part in the study, 75 (34.2%) reported that availability of computers and laboratories influenced school academic performance on a medium extent.

**Table 4. The principal encourages use of ICT based teaching and learning**

| | Freq. | Percent | Cum. |
|---|---|---|---|
| 0=Not at all | 30 | 13.7 | 13.7 |
| 1=very small extent | 14 | 6.4 | 20.1 |
| 2=small extent | 32 | 14.6 | 34.7 |
| 3=medium extent | 33 | 15.1 | 49.8 |
| 4=large extent | 29 | 13.2 | 63.0 |
| 5=very large extent | 81 | 37.0 | 100.0 |
| **Total** | **219** | **100.0** | |

The results shown in table 4 indicate that majority of the teachers, 81 (37%) were of the opinion that the principal encourages use of ICT based teaching and learning to a very large extent.

**Table 5. Learning revision material are sufficiently provided in the school**

| | Freq. | Percent | Cum. |
|---|---|---|---|
| 0=Not at all | 14 | 6.4 | 6.4 |
| 1=very small extent | 6 | 2.7 | 9.1 |
| 2=small extent | 35 | 16.0 | 25.1 |
| 3=medium extent | 32 | 14.6 | 39.7 |
| 4=large extent | 66 | 30.1 | 69.9 |
| 5=very large extent | 66 | 30.1 | 100.0 |
| **Total** | **219** | **100.0** | |

Shown in table 5 are the teachers' responses on whether learning revision materials were sufficiently provided in the school. According to the results presented in table 5, 66 (30.1%) said that they agreed either largely or to very large extent that revision material was sufficient at school.

**Correlation Matrix between School Performance and Principal's Management of Instructional Resources**

**Table 6. Correlations Matrix between school performance and Principal's management of instructional resources at α=0.05**

| | var.a1z | Var.6a | var.6b | var.6c | var.6d |
|---|---|---|---|---|---|
| var.a1z School KCSE Mean Scores (2017-2019) | 1 | | | | |
| var.6a Sufficient teaching and learning resources are available | 0.679 | 1 | | | |
| | 0.000 | | | | |
| var.6b Availability of computers and science labs has influenced academic performance | 0.409 | 0.19 | 1 | | |
| | 0.000 | 0.005 | | | |
| var.6c Use of ICT based teaching and learning resources has influenced academic performance | 0.782 | 0.544 | 0.313 | 1 | |
| | 0.067 | 0.000 | 0.000 | | |
| var.6d Learning revision material are sufficiently provided in the school | 0.622 | 0.472 | 0.247 | 0.592 | 1 |
| | 0.564 | 0.000 | 0.000 | 0.000 | |

* Correlation is significant at the 0.01 level (2-tailed).

The results presented in table 6, indicate that only variables; var.6a was found to be statistically significant at α= 0.05, r=0.679.

**Modelling the Effect of Principals Management of Instructional Resources Academic Achievement in Kenya Certificate of Secondary Education Examinations**

The null hypothesis being stated was;

**$H_0$:** There is no statistically significant relationship between Principals management of instructional resources on School Performance in Siaya County.

**Table 7. Likelihood Ratio Tests**

| Effect | Model Fitting Criteria -2 Log Likelihood of Reduced | Likelihood Ratio Tests | | |
|---|---|---|---|---|
| | Model | Chi-Square | df | Sig. |
| Intercept | 101.798[a] | .000 | 0 | . |
| The principal provides adequate teaching and learning resources | 148.519 | 46.721 | 10 | .000 |
| The principal has provided adequate science laboratories | 126.815 | 25.017 | 10 | .075 |
| The principal encourages ICT based teaching and learning | 186.589 | 84.791 | 10 | .055 |
| The principal has provided adequate revision material | 128.151 | 26.353 | 10 | .056 |

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom The likelihood test ratio presented in table 7 confirms that the variable principal provides adequate teaching and learning resources was the only one that was statistically significant at α=0.05.

**Table 8. Parameter Estimates**

| School category by academic achievement | | | Std. Error | Wald | df | Sig. | Exp(B) | 95% Confidence Interval for Exp(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower Bound | Upper Bound |
| Below Average Performance | Intercept | 11.86 | 3.19 | 13.821 | 1 | 0 | | | |
| | [The principal provides adequate teaching and learning resources=0] | 13.709 | 3494.901 | 0 | 1 | 0.997 | 899291.8 | 0 | .[b] |
| | [The principal provides adequate teaching and learning resources=1] | 3.113 | 8720.58 | 0 | 1 | 1 | 22.479 | 0 | .[b] |
| | [The principal provides adequate teaching and learning resources=2] | 8.839 | 2.551 | 12.009 | 1 | 0.001 | 6898.998 | 46.517 | 1023199 |
| | [The principal provides adequate teaching and learning resources=3] | 5.711 | 1.553 | 13.523 | 1 | 0 | 302.22 | 14.4 | 6342.885 |
| | [The principal provides adequate teaching and learning resources=4] | 1.291 | 1.496 | 0.745 | 1 | 0.388 | 0.275 | 0.015 | 5.159 |
| | [The principal provides adequate teaching and learning resources=5] | 0[c] | . | . | 0 | . | . | . | . |
| | [The principal has provided adequate science laboratories=0] | 19.299 | 7385.911 | 0 | 1 | 0.998 | 1574.862 | 0 | .[b] |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Average Performance | Intercept | 2.686 | 0.7 | 14.734 | 1 | 0 | | | |
| | [The principal provides adequate teaching and learning resources=0] | 13.063 | 3494.9 | 0 | 1 | 0.997 | 244.977 | 0 | .[b] |
| | [The principal provides adequate teaching and learning resources=1] | 16.049 | 9642.402 | 0 | 1 | 0.999 | 2345.2 | 0 | .[b] |
| | [The principal provides adequate teaching and learning resources=2] | 16.448 | 2954.858 | 0 | 1 | 0.996 | 7.188 | 0 | .[b] |
| | [The principal provides adequate teaching and learning resources=3] | 1.944 | 0.855 | 5.163 | 1 | 0.023 | 6.984 | 1.306 | 37.341 |
| | [The principal provides adequate teaching and learning resources=4] | 0.599 | 0.785 | 0.583 | 1 | 0.445 | 0.549 | 0.118 | 2.558 |
| | [The principal provides adequate teaching and learning resources=5] | 0[c] | . | . | 0 | . | . | . | . |

The results presented in table 8 suggests that schools that performed below average would increase their odds of attaining above average performance by between 1.291 and 13.709 if the principal increased the provision of teaching and learning resources by one point. This finding is similar to that of Isola (2010) who found that the achievement of students in the West Africa School Certificate Examination (WASCE) had a positive relationship with the teaching and learning resources used in the class.

## CONCLUSION

Based on the findings, the study established a significant relationship between secondary school principals' management of instructional resources and academic achievement in Kenya Certificate of Secondary Education Examinations in Siaya County.

## RECOMMENDATION

This study recommended a revision and introduction of structured policies on management of instructional resources in public secondary schools in Kenya

### Authors' Contributions

Author 1designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript under guidance and supervision of Author 2 and 3. Authors 2 and 3 managed all the sections and approved the final manuscript.

## REFERENCES

1. Blumberg, P. (2011). "Making evidence-based practice an essential aspect of teaching. "The Journal of Faculty Development 25.3 27-32.
2. Earthman, P.N.,( 2016). Review of research on the relationship between school buildings, student performance and student behavior. Nairobi: Kanezja Publisher
3. Likoko, S. Mutsotso, S. & Nasongo, J. (2013).Adequacy of Instructional Materials and Physical Facilities and their Effect on Quality of Teacher Preparation in Colleges in Bungoma County. International journal of science and research (IJSR)
4. Lyons, A. (2012). Workers of Tomorrow, Education in Progress, Ministry of Education and Scientific Research. Port Fortis: Fiji.

*********