

Availability of Learning Resources and Management of KCSE Irregularities in Nairobi County, Kenya

^{1*}Samuel Kinoti Mugambi, ²Tarsilla Kibaara and ³Paul Gichohi

¹²³Kenya Methodist University

*Corresponding author email: kinotimugambi1976@gmail.com

How to cite this article: Mugambi, S. K., Kibaara, T., & Gichohi, P. (2022). Availability of Learning Resources and Management of KCSE Irregularities in Nairobi County, Kenya. *Journal of Education*, 2(2), 40-48.

Abstract

Examinations play a critical role in the education sector in assessing learners' knowledge and skill mastery. Therefore, they must be credible and free of irregularities. However, over the years, Kenya has seen an increase in examination malpractice. This has compelled the Kenya National Examination Council to devise some solutions to these problems. Despite the strict measures in place, several cases of KCSE examination irregularities every year are usually reported. This demonstrates that none of the existing measures have been able to eliminate examination malpractices, particularly in secondary schools in Nairobi County. This study investigated the impact of learning resource availability on the management of KCSE examination irregularities in Nairobi County, Kenya. The study population included all 99 secondary schools in Nairobi County, of which 80 were chosen. The descriptive survey design was used. The principal, dean of students, student leaders, and the county director of education were the units of observation. Data was gathered using an interview guide and questionnaires. The instruments were pre-tested to ensure their content, construct validity, and reliability. Data were analyzed by computing descriptive and inferential statistics using SPSS. The study discovered a positive link between the availability and the management of KCSE irregularities. The study, therefore, concluded that adequate learning resources such as laboratory equipment, instructional or teaching aids, textbooks, revision books, a well-equipped school library, and spacious classrooms were very helpful in the management of examination irregularities. It recommended that sufficient funds be committed to developing school infrastructure, facilities, equipment, and learning resources and that the government, through the ministry of education, disburse adequate funds and material resources. The findings provide new insight on how to address examination irregularities.

Keywords: *Learning and Teaching Availability, Management of Examination Irregularities, Secondary Schools, Examination*

1.0 Introduction

In secondary schools, one method of assessing knowledge gain and idea mastery is through examinations (Yambi, 2018; Suleman, Gul, Ambrin & Kamran, 2015). Examinations aid in the issuance of certificates of educational success and can also be used to advise institutions on areas where further improvement in teaching and learning institutions is required. Despite its importance, examination credibility and validity have been adversely affected by an alarming increase in examination irregularities at all levels and systems of education around the world (Frempong, Arloo & Amissah, 2016). Examination irregularities are a violation of academic

integrity. It is the act of engaging in deceptive conduct or behavior to gain an advantage over others when taking a test (Ushie & Ishanga 2016; Tas & Tekkaya, 2010). According to Asinya (2012), malpractice is a violation of the policies and standards established during examination administration. Examination irregularities are classified as occurring before, during, or after the examination (Nnekwu & Odochukwu, 2016). Mucheke, Maithya, and Misati (2013) describe examination irregularity as students copying from one another, with some invigilators being paid by the principal of the school to turn a blind eye when students are copying from one another. Other examination irregularities include forgery of certificates, script swapping, verbally or physically assaulting examination administrators, allowing students to discuss the examination among themselves, giraffing, bribery, leakage, and inscription among others (Shaibu et al., 2019; Onyibe et al., 2015).

Examination irregularity has become a source of concern worldwide, including in Kenya. Anzene (2014) attributes examination malpractice to a lack of physical learning resources such as libraries, laboratories, classrooms, chairs, school buildings, sports centers, canteens, medical facilities, toilet facilities, and instructional facilities such as computers, projectors, writing boards, textbooks, and chinks among others. Inadequate learning resources affect effective teaching in schools (Mucheke, Maithya & Misati, 2013). Availability of Physical learning resources according to Bizimana and Orodho (2014) creates a good learning environment which as a result acts as a motivation factor for both the student and teachers. Physical learning resources when well utilized enhance proper school functioning and create a conducive learning environment which in result gives the school the desired result.

Learning resources include human resources like teachers, Anzene (2014) indicated that teachers too, play a vital role in the learning and examination process. Teachers ensured that the learning process was effective as well as the invigilation process. To address the problem of examination irregularity this study wanted to understand how learning resources help in the management of examination irregularities.

Problem Statement

In the educational sector, examinations play a vital role. They are used to assess the quality of education provided. However, the increasing rate of examination irregularities continues to erode examination reliability and credibility. Despite KNEC's precautions, cases of examination irregularities are reported every year. For example, when the KCSE results were released in 2019, the CS of education (Prof. Magoha) stated that 1,309 candidates' results were canceled due to students engaging in examination irregularities.

The causes of increased examination irregularities must be addressed because they continue to undermine credibility. The irregularities are largely attributed to institutional factors such as human resources and learning resources availability. The lack of learning resources hampered effective teaching and learning, resulting in undesirable results for the school, which led to examination malpractices in an attempt to achieve good results (Bizimana, & Orodho) (2014). Inadequate human resources, such as teachers. It also impacts the learning process and the invigilation process. The disadvantage of good examination practices is a lack of learning resources, which, if obtained, can lead to a conducive learning environment with motivated teachers and students, resulting in desired results. Prior studies have not looked into how learning resources help in the management of examination irregularities. Thus, this study sought to determine how the availability of learning resources affects the management of KCSE irregularities in Nairobi County, Kenya.

Hypothesis of the study

H01: The availability of learning resources does not influence the management of KCSE examination irregularities in Nairobi County, Kenya.

2.0 Literature Review

The theory that was adopted in this study was the Social-learning theory. It's a theory that was formulated by Albert Bandura in 1977. The theory explains how a person's behavior can be formed by observing and learning from one another, which is known as observational learning. Observational learning occurs when a person observes the reward or penalty given for specific actions. In our case, there were examination irregularities. If a student engages in examination malpractice and is rewarded with good grades rather than canceled results, many more students are likely to follow suit. Observational learning is entirely dependent on the observer's mental state and attitude towards the model being observed, as Bandura discovered that one can learn new information without requiring any behavior change.

Attention, retention, motor reproduction, and motivation are all factors that influence observational learning. The act of paying attention entails showing interest in the model being observed. The ability to remember what was observed and retain that information in memory is referred to as retention. The ability to translate what is stored in memory into action, on the other hand, refers to motor reproduction, and for observational learning to be complete, there must be a driving force towards imitating the behavior observed in the model.

Many studies have been carried out investigating the causes of examination malpractices. However, limited studies have been carried out investigating the impact of the availability of learning resources on the management of examination irregularities. Hoplad (2013) investigated whether the availability of physical resources influenced students' performance in Norway. The study discovered that a lack of good learning resources had a negative impact on performance, resulting in learners engaging in exam irregularities to pass exams. In a separate study conducted in Turkey by Yazici et al. (2011), examination irregularities were attributed to a lack of proper invigilation and inadequate teaching facilities such as laboratories. Hoplad (2013) and Yazici et al. (2011) both stated that to reduce malpractices, the government and other stakeholders must allocate adequate funds to the school to cover learning resources and equipment.

Learning resources and equipment such as books, science laboratories, libraries, classes, and even teachers play an important role in curbing examination irregularities (Asiabaka, 2008). Their availability aids the student in his or her preparation for the national exam. Proper preparation gives students the confidence to sit for their exams, so they are less likely to engage in exam irregularities (Anzene, 2014). A good learning environment, according to David and Emunemu (2018), aided student performance. A good learning environment was achieved by providing adequate learning resources and facilities; thus, the school administration must provide adequate and well-equipped learning resources and equipment (Bizimana, & Orodho, 2014).

Examination malpractices are not uncommon in Kenyan educational systems (Naliaka et al., 2015). Ojwan'g (2019) discovered in his research that many campus students had engaged in exam cheating, either directly or indirectly. In a separate study conducted in Kisii County by Getange et al. (2015), 77 percent of secondary teachers agreed that the lack of adequate teaching facilities contributes to examination malpractice among students. Getange et al. (2015) did not discuss the impact of learning resources such as classrooms, libraries, and laboratories on the management of examination malpractices. According to Mutinda (2017), insufficient learning resources such as textbooks, enough teachers, teacher absenteeism, and

lack of enough teachers per subject can lead to students collaborating with their parents and teachers to participate in exam irregularities to achieve the desired results.

Setting up systems to deter malpractice is an effective way of dealing with irregularities. According to the current study, learning resources are critical in combating the threat. To overcome this threat, a study conducted in Makueni Sub County by Bifwoli and Momanyi (2020) highlighted the role of school administrators in ensuring that students are thoroughly prepared before sitting for national examinations. Nonetheless, Bifwoli and Momanyi's study did not mention learning resources such as classrooms, laboratories, and libraries as measures for dealing with examination malpractices.

3.0 Methodology

The descriptive survey design was used in this study. This research design was appropriate because it allowed for the description, analysis, and reporting of an existing situation. The study targeted all the 99 secondary schools in Nairobi County, using stratified random sampling to classify the schools and simple random sampling to select 80 schools. One principal, one dean of students, and one student's president from each sampled school were chosen as respondents for the study using census sampling. Data was gathered using questionnaires and interviews. Pre-testing of data collection instruments was carried out in five Kiambu County secondary schools. Cronbach's Alpha was used to calculate reliability. Data was quantitatively and qualitatively analyzed using descriptive and inferential statistics with the help of SPSS. The data was presented using tables.

4.0 Results and Discussion

Reliability Results

The reliability of the data was determined using Cronbach's Alpha coefficient. The results are shown in Table 1

Table 1: Reliability Results

Construct	Cronbach's Alpha
Availability of learning resources (X1)	0.919

Table 1 shows that the Cronbach's coefficient alpha value was greater than 0.7, indicating that the data was considered reliable, as recommended by Bryan (2014).

Response Rate

Out of 80, 66 secondary schools in Nairobi County that were sampled for the study confirmed and participated in the study. This accounted for 83 percent of the response rate, which was deemed significant and reliable for the study. According to Lewis, Thornhill, and Saunders (2009), a response rate of more than 70% is adequate.

Management of KCSE Examination Irregularities in Nairobi County

The dependent variable in this study was the management of KCSE examination irregularities in secondary school. Various sentiments regarding KCSE examination irregularities were posed to respondents to establish measures that were in place to stop exam irregularities. The results are summarized in table 2.

Table 2: Measures for addressing KCSE examination irregularities

Statements on measures for addressing KCSE examination irregularities (n = 66)	VSE(1)	SE(2)	ME(3)	LE(4)	VLE(5)	Mean	Std. Deviation	Factor loading
• Adequate preparedness of learners	2(3.0%)	4(6.1%)	2(3.0%)	27(40.9%)	31(47%)	4.23	.989	.702
• Cancellation of results	11(16.7%)	7(10.6%)	4(6.1%)	20(30.3%)	24(36.4%)	3.59	1.488	.767
• Banning of students from talking to one another during examination for a specified period	4(6.1%)	16(24.2%)	18(27.3%)	23(34.8%)	5(7.6%)	3.14	1.065	.717
• Adequacy of learning and teaching resources	16(24.2%)	7(10.6%)	11(16.7%)	23(34.8%)	9(13.6%)	3.03	1.414	.722
• Institutionalizing measures that discourage cheating in examinations	14(21.2%)	13(19.7%)	5(7.6%)	28(42.4%)	6(9.1%)	2.98	1.364	.707
Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = .792								

Table 2 displays the extent to which various measures would be useful in addressing examination irregularities. All of the suggested measures loaded extremely well, with Eigen values greater than 0.45. The Kaiser-Meyer-Olkin (KMO) value is .792, confirming that all of the suggested measures were effective in addressing KCSE examination irregularities. The top five most helpful measures in addressing KCSE examination irregularities were adequate preparedness of learners (mean =4.23), cancellation of results (mean =3.59), banning of students from taking another examination for a specified period (mean =3.14), adequacy of learning and teaching resources (mean =3.03), and institutionalizing measures that discourage cheating in examinations (mean =2.98) and a standard deviation that is around 1.

Adequate learner preparation, adequate learning, and teaching resources, and institutionalization of measures that discourage cheating in examinations are effective measures that should be implemented well before the examination. This means that when learning and teaching resources are insufficient, it contributes to exam cheating. Similarly,

learners may be tempted to engage in examination irregularities if they are not adequately prepared in terms of syllabus coverage and revision.

Availability of Learning Resources and Management of KCSE Examination Irregularities

The researcher wanted to know how learning resources affected the management of KCSE irregularities in Nairobi County. This variable focused on aspects such as learning resource availability, adequacy, and variety. The learning resources were measured as a latent variable, which means that a variety of learning resources were provided to assess it. Because it was difficult to measure learning resources in a single aspect, respondents were asked to indicate their responses on a 5-level Likert scale, with VSE (1) representing a very small extent, SE (2) representing a small extent, ME (3) representing to a moderate extent, LE (4) representing to a large extent, and VLE (5) representing to a very large extent. As shown in Table 3, the results were summarized and presented in descending order of the mean values.

Table 3: Descriptive results on availability of learning resources

Statements on availability of learning resources (N = 66)	VSE(1)	SE(2)	ME(3)	LE(4)	VLE(5)	Mean	Std. Deviation	Factor loading
a) Laboratory equipment	10(15.2%)	8(12.1%)	17(25.8%)	22(33.3%)	9(13.6%)	3.18	1.264	.816
b) Reagents	14(21.2%)	15(22.7%)	8(12.1%)	20(30.3%)	9(13.6%)	2.92	1.396	.777
c) Instructional /teaching aids	14(21.2%)	16(24.2%)	7(10.6%)	22(33.3%)	7(10.6%)	2.88	1.365	.848
d) Textbooks	15(22.7%)	12(18.2%)	14(21.2%)	17(25.8%)	8(12.1%)	2.86	1.357	.777
e) Computer lab	12(18.2%)	13(19.7%)	24(36.4%)	16(24.2%)	1(1.5%)	2.71	1.078	.661
f) School Library	19(28.8%)	10(15.2%)	14(21.2%)	20(30.3%)	3(4.5%)	2.67	1.305	.659
g) Technological resources e[-g. computer hardware and software	15(22.7%)	17(25.8%)	20(30.3%)	8(12.1%)	6(9.1%)	2.59	1.228	.671
h) Land for agriculture	16(24.2%)	16(24.2%)	21(31.8%)	10(15.2%)	3(4.5%)	2.52	1.153	.701
i) Workshops	16(24.2%)	17(25.8%)	24(36.4%)	7(10.6%)	2(3.0%)	2.42	1.068	.580

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = .844

According to the results in Table 3, all of the aspects relating to the availability of learning resources for supporting the management of KCSE examination irregularities had Eigen values greater than 0.45, and the KMO was .844. This confirmed that all of the suggested resources were sufficient in assisting in the resolution of KCSE examination irregularities. The first four learning resources with the highest frequency on 'large extent' were laboratory equipment (22.33%), reagents (20.3%), instructional/teaching aids (22.33%), and textbooks (17.3%) (25.8 percent). Another critical learning resource was the school library, which the majority of respondents (20 (30.3 percent) said had a significant impact on the management of KCSE examination irregularities. Workshops, agricultural land, and technological resources had the lowest mean values of 2.42, 2.52, and 2.59, respectively. Workshops, agricultural land, and technological resources had the lowest mean values of 2.42, 2.52, and 2.59, respectively. Many schools did not offer technical subjects due to a lack of equipment, which was attributed to the low response rate.

The student presidents interviewed agreed and emphasized the importance of ensuring that school laboratories are adequately equipped with facilities and reagents. Sufficient laboratory reagents allowed students to practice outside of scheduled sessions, increasing their preparedness. The students' leaders also stressed the importance of adequate revision materials and equipping of school libraries.

The findings back up those of Getange et al. (2015), who emphasized the importance of having adequate information and learning materials for adequate learner revision, preparation, and perusal to alleviate the lack of confidence caused by inadequate preparation. Common practices aimed at reversing the trend included government involvement in providing free educational books and professional development for teachers so that they can adequately serve the candidates.

Test hypothesis

To test the relationship between variables, a person correlation analysis was used. This aided in testing the null hypothesis, H₀: resource availability does not affect the management of KCSE examination irregularities. A univariate Pearson correlation between the independent variable X₁ (availability of learning resources) and the dependent variable Y (management of exam irregularity) was used to test this hypothesis. Table 4 displays the results.

Table 4: Correlations analysis of dependent and independent variables

		X ₁
Y	Pearson Correlation	.637**
	Sig. (2-tailed)	.000
	N	66

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

Table 4 shows a p value of x₁ and the corresponding coefficient, $r = .637^{**}$. The p value is less than 0.05. The study rejected the null hypothesis and concluded that there was a statistically significant positive relationship between the availability of learning resources and the management of KCSE examination irregularities ($r = .637$, $p = 0.05$). This implies that learners will prepare adequately if they have access to learning resources such as laboratories, workshops, libraries, work rooms, and classes; thus, they will be less tempted to engage in examination irregularities. The findings correspond with those of Getange et al. (2015) who discovered that inadequacy of laboratory equipment, sharing of chemical reagents, specimens, and relevant charts such as periodic tables lead to increased examination malpractices among form four candidates.

5.0 Conclusion

This study's findings indicate that the availability, sufficiency, and variety of learning resources have a positive impact on the management of KCSE irregularities. The study found that secondary schools in Nairobi County relied on government measures to address learning resource inadequacy, and as a result, the schools were found to be averagely equipped with laboratory equipment, instructional or teaching aids, textbooks, revision books, and an equipped school library, all of which were very useful in the management of examination irregularities. Although re-agents, computers, and microscopes to support technical subjects were missing, the study found learning resources to be weighty and statistically significant in managing KCSE examination irregularities in Nairobi County. This kind of inadequacy in stock and facilities was a major setback in Nairobi County's management of KCSE examination irregularities.

6.0 Recommendations

The study discovered that learning resource availability, adequacy, and variety had a significant impact on the management of KCSE irregularities. However, the study identified some gaps in

the management of KCSE examination irregularities in Nairobi County, Kenya, and thus recommends the Ministry of Education acquire adequate learning and teaching resources that improve learner preparedness. The Principals and BoMs of secondary schools should purchase adequate reagents, computers, microscopes, lab equipment, and revision materials to support technical subjects and adequate learner preparation. This implies that schools should commit sufficient funds for developing school infrastructure, facilities, equipment, and learning resources, pleading with the government to disburse adequate funds and material resources through the ministry of education.

References

- Anzene, 2014 Onyibe, C. O., Uma, U. U., & Ibina, E., (2015). Examination Malpractice in Nigeria: Causes and Effects on National Development. *Journal of Education and Practice*, 6(26), 12-18 www.iiste.org
- Anzene, S. J., (2014). Trends in examination malpractice in the Nigerian educational system and its effects on the socio-economic and political development of Nigeria. *Asian Journal of Humanities and Social Sciences (AJHSS)*, 2(3), 1-8. <https://ajhss.org/pdfs/Vol2Issue3/1.pdf>
- Asiabaka, I. P. (2008). The Need for Effective Facility Management in Schools in Nigeria. New York: *Science Journal* 1(2): 10-21. https://www.researchgate.net/publication/354073166_MAINTENANCE_OF_SCHOOL_FACILITIES
- Asinya, O. E. (2012). Examination malpractice in Nigerian schools: An obstacle to progress in socialization in a school environment: Causes, effects and remedy.
- Bizimana, B. & Orodho, J. A. (2014). Teaching and Learning Resource Availability and Teachers' Effective Classroom Management and Content Delivery in Secondary Schools in Huye District, Rwanda. *Journal of Education and Practice* .5 (9), 111-122. <https://www.bing.com/ck>
- Frempong, M., Arloo, E. B & Amisah, C. K. (2016). Factor analysis of issues contributing to examination malpractice in a tertiary institution in Ghana. *Mathematical Theory and Modeling*
- Getange, K. N., Nyakan, P. O., George, S. (2015) Influence of Teachers' Working Conditions on Curbing Examination Malpractices in Public Secondary Schools in Kisii County, Kenya. *International Journal of Recent Research in Social Sciences and Humanities (IJRSSH)*. 2, (4), 221-232. <https://www.paperpublications.org/upload/book/Influence%20of%20Teachers-566.pdf>
- Hopland A.O. (2013). School Facilities and Student Achievement in Industrial Countries: Evidence from the TIMSS. *International Education Studies*. 6, (3), 162-171. <https://files.eric.ed.gov/fulltext/EJ1067746.pdf>
- Mucheke, R. K., Maithya, P. M., & Misati, J. (2013). Factors related to Examination Irregularities in Secondary Schools in Meru-South District, Kenya. *The Cradle of Knowledge African Journal of Educational and Social Science Research*.1, (1), 38-45. <http://serek.or.ke/wp-content/uploads/2018/02/Factors-Related-to-Examination-Irregularities-in-Secondary-Schools-in-Meru-South-District-Kenya-Mucheke-Maithya-Misati.pdf>

- Mutinda, M. G. (2017). Factors influencing pupils' involvement in Examination malpractices in public primary schools, Kikuyu sub county Kenya. [Master thesis, University of Nairobi].
- Naliaka, P., Odera, P. & Poipoi, M. (2015). Perceived psycho-social and school factors contributing to malpractices in internal examinations among secondary school students in Kakamega-Central Sub-County: Implications for counseling. *.7(2)*, 18 - 23. <https://academicjournals.org/journal/IJPC/article-full-text/5892EA050942>
- Nnekwu, D. A., & Odochukwu, E. B. (2016). Assessment of the effectiveness of management strategies for curbing examination malpractices in secondary schools in Nigeria. *European journal of education studies*, 2(11), 47-70, www.oapub.org/edu
- Ojwan'g, M. A. (2019). Students' perspectives on examination cheating in basic education in Kenya. *European Journal of Education Studies*. 9(12), 695-700. DOI: 10.12691/education-9-12-1
- Onyema, E. M., Eucheria, A. U., Asiabaka David, N. A., Isa, A., Alsayed, A. O. & Naveed, Q. N., (2019). *The Role of Technology in Mitigation of Examination Malpractices in West Africa* International Journal of Innovative Research in Computer and Communication Engineering 7(10), 3990-4002 www.ijrcce.com
- Onyibe, C. O., Uma, U. U., & Ibina, E., (2015). Examination Malpractice in Nigeria: Causes and Effects on National Development. *Journal of Education and Practice*, 6(26), 12-18 www.iiste.org
- Shaibu, L., Ogwu, H. I., & Edegbo, C. (2019). *Innovations in curbing examination insecurity in public secondary schools in the East education zone of Kogi estate*. BSUJEM , I(2), 13-26
- Suleman, Q., Gul, R., Ambrin, S. & Kamran, F. (2015). Factors Contributing to Examination Malpractices at Secondary School Level in Kohat Division, Pakistan. *Journal of Education and Learning*, 9(2), 165-182. <https://www.researchgate.net/publication/277073420>
- Tas, Y., & Tekkaya, C. (2010). *Personal and contextual factors associated with students' cheating in Science*. The Journal of Experimental Education
- Ushie. O. S, & Ishanga. A. R. (2016). Examination malpractice: causes, effects and possible ways of curbing the menace. A case study of Cross river university of technology. *International Journal of Managerial Studies and Research (IJMSR)*, 4(1), 59-65 www.arcjournals.org
- Yambi, T. A. C. (2020). Assessment and Evaluation in Education. <https://www.bing.com/ck/a?>
- Yazici, H., Seyis, S., & Altun, F. (2011). Emotional intelligence and self-efficacy beliefs as predictors of academic achievement among high school students. *Procedia Social and Behavioral Sciences*, 15 (1) 2319–2323. <https://www.researchgate.net/publication/271564267>