

Teachers' Perceptions on Adequacy and Utilization of Physical Resources in Public and Private Primary Schools in Lurambi Sub-County, Kenya

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Abstract- *Availability, adequacy and effective utilization of educational resources are crucial in facilitating an effective teaching/ learning process for academic achievement. This comparative study investigated the effect of school resources on academic achievement of public and private primary schools in Lurambi sub-county, Kenya. Based on the study, this paper presents and discusses the findings on teachers' perceptions on adequacy and utilization of physical resources in public and private primary schools. It was hypothesized that there was no significant difference in adequacy and utilization of physical resources in public and private primary schools in Lurambi sub-county, Kenya. It targeted 4992 participants, comprising of 78 head teachers, 390 teachers and 4,426 class 8 pupils of the public and private primary schools in Lurambi sub-county of Kakamega county. Data from headteachers and teachers were obtained by use of semi-structured interview schedules and questionnaires respectively. Data was analysed by means of descriptive statistics, and thereafter a Welch's t-test used to test hypothesis. The study found that there was a significant difference in adequacy [$F(1, 96.625) = 27.727$] and utilization [$F(1, 63.509) = 23.155$] of physical resources in private and public primary schools, $p < 0.001$ at $\alpha = 0.05$. Private schools had a higher level of adequacy as well as utilization of school resources in all categories than public primary schools, except for playgrounds. The study thus recommends that the government should step up provision of resources to public schools in order to enhance performance to match private schools.*

Indexed Terms- *Adequacy, Utilization, Physical Resources, Comparative Study, Schools*

I. INTRODUCTION

Governments across the world invest in education as an avenue for social and economic development. Often, the major share of such investment goes into educational resources, due to the perception that the success of an educational institution hinges upon adequacy and utilization of resources available to it. Dangara (2016) defined resources in education as all human, material and non-material resources within the environment of the school and community that are necessary for facilitating the teaching-learning process. These educational resources may further be categorized as physical, financial, human or instructional resources (Nwabueze, 2016). For educational institutions to achieve their desired goals and objectives, adequate provision of these resources, their maximal usage and appropriate management is needful in order to better the quality of the instructional process as well as avoid wastage.

Physical resources refer to the entirety of the physical structures/ constructions/ buildings found in a school system, that can be seen and felt (Eric & Ezeugo, 2019). They include structures such as the library, the science laboratory, computer laboratory, sports facilities, classrooms, water supply, sanitation facilities, dormitories and furniture such as desks tables and chairs. These physical resources are critical enablers of effective instructional processes in school. In the African continent, research has been conducted in various nations to explore the issue of adequacy and utilization of school physical resources. In Nigeria, Edokpolor and Dumbiri (2019) investigated "the level of physical facilities adequacy and instructional resources utilization for teaching and learning effectiveness in Technical and Vocational Education and Training programmes" in southern Nigerian

universities. The study was quantitative and involved 700 participants that comprised of 85 lecturers and 615 students. The study employed questionnaires to collect data. Mathematical averages, standard deviations and t-tests were used to analyze the data. The study revealed that physical facilities were inadequate for instructional processes in TVET programs. It was also found that teaching/learning resources underused during the instructional process. The study recommended that educational managers needed to collaborate with other stakeholders so as to get funding to ensure adequate provision of physical facilities for proper instruction. While this study was done in Nigeria among universities, the current research was done among Kenyan primary schools.

Laboratory resources are important for effective pedagogy and academic achievement in science. However, many primary and secondary schools in African countries lack or have inadequately equipped science laboratories. In Nigeria, Ukoh and Amuda (2016) examined “laboratory resource factors and frequency of practical activities as correlates of secondary school students’ achievement in physics” in Oyo state. A sample of 760 students and 19 Physics teachers were involved in the study, selected from 19 schools. Data collection made use of a Lab equipment checklist, a questionnaire for frequency of practical activities, students’ interest questionnaire, and an achievement test. The findings showed that laboratory apparatus and equipment were present in schools but insufficiently provided; laboratory apparatus and equipment were rarely used; frequency of students’ practical activities positively correlated with students’ academic performance. Basing on the results, the study suggested that the school managements needed to make adequate provision of laboratory resources for schools offering science subjects. While this study was carried out in Nigerian high schools, the current researcher focused on Kenyan primary schools. Furthermore, the current researcher not only consider physical resources, but instructional resources and human resources as well.

While some researchers have found that most schools have inadequate physical facilities, other researchers have found that schools actually have enough resources, only that maintenance of the same is needed. In a study that targeted 1590 teachers from

thirty-four junior high schools in Nigeria, Eric and Ezeugo (2019) investigated the availability of physical resources and its relation to academic performance. Descriptive survey design that employed questionnaires for data collection was used, with a sample of 470 teachers involved. It was revealed that physical resources were present in a majority of schools, and the average response on the level of influence of physical resources on students’ academic achievement was also acceptable, at 3.02 for male respondents and 2.88 for female respondents. It was thus determined that physical resources were present in a majority of public schools, and that the physical resources had influence on academic performance. The study thus recommended allocation of funds for resource maintenance in schools. This study, however did not seek the opinion of school administrators, who are directly involved in procurement of school resources, and thereafter supervise utilization of the resources. The current study therefore included school head teachers in the target population so as to bridge the gap. Furthermore, private schools also be included for comparative purposes.

In Tanzania, Victorini and Wambiya (2016) looked into perceptions of teaching staff and learners on ampleness of resources and facilities for the implementation of learner centred teaching in secondary schools in Kilimanjaro region. The research targeted school inspectors, principals, teachers and learners of high schools. It adopted a mixed methods research design. The researchers used questionnaires, interview guides, observation schedules and document analysis for data collection. The investigation revealed that private schools had better adequacy and use of school resources, thus had more effective learner centred pedagogy than public schools. The physical resources were inadequate in most public schools, in spite of the government’s support. The government’s commitment in support of secondary schools was found to be below the required standards. The study thus recommended that the government needed to provide adequate physical resources for schools as well as train more teachers for effective learner centred pedagogy. The current researcher also sought to determine the comparative status of sufficiency and use of institutional resources in Kenyan context, but with a focus on academic performance. While Victorini and Wambiya (2016) considered secondary

schools, the current researcher considered both public and private primary schools.

In Kenya, increase in learner enrolment has been found to pose a threat to adequacy of physical resources in learning institutions from primary to university level. Njeru *et al.*, (2020) investigated the concern of the sufficiency of physical resources for undergraduate Medical and Nursing programs. They conducted the study in two Kenyan universities to assess the adequacy of lecture rooms, skills laboratories and library resources for proper execution of the Medicine and nursing programs in the two Kenyan universities. The study found that high student enrollment in universities had overwhelmed available education space instructional resources by both lecturers and students. Results from both institutions' lecturers indicated an apparent inadequacy of teaching/learning resources and lecture room space, and that skills labs were ill equipped.

The study concluded that there were inadequate lecture rooms, skills laboratories and library resources in public universities, which were ascribed to high enrolments and poor funding. While Njeru *et al* examined adequacy of physical resources in public universities, the current study focused on public primary schools which are equally government-financed, and a comparison then drawn with private primary schools. The use of non-probability sampling techniques (that is, convenience and purposive sampling) by Njeru *et al* limited the generalizability of their research findings. Therefore, the current study employed probability sampling techniques to enhance generalizability of the research findings.

Mwirichia, Jagero and Barchok (2017) examined the impact of expanded student enrolment on resource sufficiency in universities in Kenya, both public and private. The study used a causal- comparative design with participants being students and lecturers in 8 selected universities in Kenya. It was revealed that increased student enrolment had no difference in consequence on adequacy of resources in both public and private universities. Both types of institutions were affected by the expanded student enrolment, and the study recommended that university administrations needed to avail enough learning resources, welfare services, ICT services and human

workforce to improve the quality of learning in Kenyan universities.

In Kakamega county, Wakhisi (2020) investigated the “effect of expansion of public day secondary schools on internal efficiency in Mumias east and Mumias west Sub-Counties” between the year 2010 and 2015. The study examined effect of the growing enrolment in public-day secondary schools on use of identified physical facilities. Data were collected from 1,323 students, 164 teachers and 36 principals using questionnaires. The study revealed a statistically significant positive association between increased school enrolment and appropriation of physical facilities in public day secondary schools in Mumias East and West Sub-Counties ($r=0.599$; $P<0.005$). This showed that expansion of day secondary schools significantly increased utilization of selected school physical facilities, hence a significant predictor of internal efficiency in public day secondary schools in Mumias East and West sub-counties. It thus implies that increasing the number of students poses a greater demand on the school's physical resources. The study recommended that an increase in enrolment be accompanied with increased funding to expand school infrastructure that would accommodate increasing student numbers hence enhance internal efficiency of schools. While Wakhisi (2020) conducted his study in Mumias among secondary schools, narrowing down on libraries and laboratories, the current research was conducted in Lurambi subcounty among primary schools, and also consider instructional and human resources. Furthermore, internal efficiency is not necessarily a predictor of academic achievement. Therefore, the current researcher focused on academic performance in relation to school resources.

II. METHODS

The study was anchored on Systems Theory, and employed a causal comparative design. It targeted 4992 participants, comprising of 78 head teachers, 390 teachers and 4,426 class 8 pupils of the public and private primary schools in Lurambi sub-county of Kakamega county. Questionnaires, interview schedules and pupil achievement tests were used to collect data. Multi-stage sampling was adopted for selection of participants. The quantitative data obtained by questionnaires and document analysis

guides was analyzed by frequencies, means and percentages, while the qualitative data obtained from interview schedules was analyzed thematically. Welch’s t-test and correlation analysis were used to test the hypotheses to establish the relationship between the dependent and independent variables at $\alpha = 0.05$.

This study looked into the degree of adequacy and extent of utilization of physical resources in public and private primary schools. Concerning adequacy of resources, the teachers were asked of their perceptions on the level of sufficiency of resources in their schools on a five-point scale, that ranged from “Not available at all” to “Very adequate”. Their feedback is summarized in Table 1.

III. RESULTS

Table 1: Teachers’ Perceptions on Adequacy of Physical School Resources.

Resources	Schl Type	Not available at all	Very Inadequate	Inadequate	Adequate	Very adequate	Total	Mean	S.D
Classrooms	Private	0(0.0%)	0(0.0%)	0(0.0%)	17(58.6%)	12(41.4%)	29(100%)	4.41	0.50
	Public	0(0.0%)	5(6.6%)	15(20.0%)	55(73.3%)	0(0.0%)	75(100%)	3.69	0.57
	Total	0(0.0%)	5(4.8%)	15(14.4%)	72(69.2%)	12(11.5%)	104(100%)	3.89	0.64
Play grounds	Private	0(0.0%)	0(0.0%)	4(13.8%)	12(41.4%)	13(44.8%)	29(100%)	4.04	0.71
	Public	0(0.0%)	2(2.7%)	17(22.6%)	32(42.7%)	24(32.0%)	75(100%)	4.31	0.79
	Total	0(0.0%)	2(1.9%)	21(20.2%)	44(42.3%)	37(35.6%)	104(100%)	4.12	0.79
Toilets	Private	0(0.0%)	0(0.0%)	2(6.9%)	13(44.8%)	14(48.3%)	29(100%)	4.41	0.63
	Public	1(1.3%)	4(5.3%)	20(26.7%)	25(33.3%)	25(33.3%)	75(100%)	3.82	0.97
	Total	1(1.0%)	4(3.8%)	22(21.2%)	38(36.5%)	39(37.5%)	104(100%)	4.06	0.19
Desks	Private	0(0.0%)	0(0.0%)	0(0.0%)	8(31.0%)	21(72.4%)	29(100%)	4.72	0.46
	Public	0(0.0%)	5(6.6%)	17(22.6%)	27(36.0%)	26(34.7%)	75(100%)	3.99	0.92
	Total	0(0.0%)	5(4.8%)	17(16.3%)	35(33.7%)	47(45.2%)	104(100%)	4.19	0.88
Water	Private	0(0.0%)	0(0.0%)	0(0.0%)	11(37.9%)	18(62.1%)	29(100%)	4.62	0.49
	Public	3(4.0%)	2(2.7%)	15(20.0%)	29(38.7%)	25(33.3%)	75(100%)	3.96	1.01
	Total	3(2.9%)	2(1.9%)	15(14.4%)	40(38.5%)	43(41.3%)	104(100%)	4.15	0.94

Secondly, the level of effectiveness of utilization of school resources was examined by respondents being asked to indicate their level of agreement or disagreement on the statement that the named resources were well utilized in their schools on a five-

point scale ranging from “Strongly disagree” to “Strongly agree”. Their responses are presented in Table 2.

Table 2: Teachers’ Perceptions on Utilization of Physical Resources

Resources	School Type	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Total	Mean	S.D
Classrooms	Private	0(0.0%)	0(0.0%)	0(0.0%)	23(79.3%)	6(20.7%)	29(100%)	4.21	0.41
	Public	0(0.0%)	2(2.7%)	5(6.8%)	63(85.1%)	4(5.4%)	74(100%)	3.93	0.48
	Total	0(0.0%)	2(1.9%)	5(4.9%)	86(83.5%)	10(9.7%)	103(100%)	4.01	0.48

Playgrounds	Private	0(0.0%)	1(3.4%)	0(0.0%)	23(%)	5(79.3%)	29(100%)	4.10	0.56
	Public	0(0.0%)	1(1.3%)	8(10.7%)	66(88.0%)	0(0.0%)	75(100%)	3.87	0.38
	Total	0(0.0%)	2(1.9%)	8(7.7%)	89(85.6%)	5(4.8%)	104(100%)	3.93	0.45
Toilets	Private	0(0.0%)	0(0.0%)	0(0.0%)	22(75.9%)	7(24.1%)	29(100%)	4.24	0.44
	Public	1(1.3%)	1(1.3%)	12(16.0%)	60(80.0%)	1(1.3%)	75(100%)	3.87	0.38
	Total	1(1.0%)	1(1.0%)	12(11.5%)	82(78.8%)	8(7.7%)	104(100%)	3.93	0.45
Desks	Private	0(0.0%)	0(0.0%)	0(0.0%)	22(75.8%)	7(24.1%)	29(100%)	4.24	0.44
	Public	1(1.3%)	6(8.0%)	3(4.0%)	65(86.7%)	0(0.0%)	75(100%)	3.76	0.65
	Total	1(1.0%)	6(5.8%)	3(2.9%)	87(83.7%)	7(6.7%)	104(100%)	3.89	0.64
Water	Private	0(0.0%)	0(0.0%)	0(0.0%)	22(75.9%)	7(24.1%)	29(100%)	4.24	0.44
	Public	5(6.7%)	2(2.7%)	7(36.0%)	59(78.7%)	2(2.7%)	75(100%)	3.68	0.86
	Total	5(4.8%)	2(1.9%)	7(6.7%)	81(77.9%)	9(8.7%)	104(100%)	3.84	0.80

Furthermore, a Welch’s t-test was performed to compare adequacy and utilization of school resources of the two groups, that is, private primary schools and public primary schools. This was done under the null hypothesis that:

H₀: There is no significant difference in adequacy and utilization of physical resources in public and private primary schools in Lurambi sub-county, Kenya.

Results of the test are presented in Table 3.

Table 3: Welch’s T-test Results for Comparative Adequacy & Utilization of Physical Resources

	Welch Statistic ^a	df1	df2	Sig.
Adequacy	27.727	1	96.625	.000
Utilization	23.155	1	63.509	.000

a. Asymptotically F distributed.

The results indicated that there was a statistically significant difference in adequacy [F (1, 96.625) = 27.727] and utilization [F (1, 63.509) = 23.155] of physical resources in private and public primary schools, $p < 0.001$ at $\alpha = 0.05$. Private schools had a higher rating of adequacy and utilization of physical resources than public schools.

The study revealed that the average adequacy of physical resources in private schools was greater than in public ones at all levels except for playgrounds. This means that learners in private schools have comparatively better access to water, desks, classroom

space and toilets than those in public schools. The schools involved in the study having been in a municipality zone where the cost of land is high could possibly explain why land available for playgrounds in private schools was less than that in public schools. The study also found that the mean level of agreement on utilization of school resources in all physical resource categories was higher in private primary schools than public primary schools. This means that the available water, desks, toilets, playgrounds and classrooms are more effectively utilized in private schools than public schools.

The disparity in adequacy and utilization of physical resources agrees with the findings of Victorini and Wambiya (2016), that private schools were far better in terms of adequacy and use of school resources than public schools. It however differs with Edokpolor and Dumbiri (2019) who found that physical facilities were generally inadequate in all learning institutions, whether public or private. This however differs with Mwirichia, Jagero and Barchok (2017) whose study found no significant difference in resource adequacy in public and private universities in Kenya. While resource inadequacy in public primary schools is commonly attributed to underfunding, Njeru, Kang’ethe, Kwena and Otieno (2020) have attributed it to over-enrolment. When the number of learners exceeds the available resources, effective teaching and learning is hampered. On the other hand, private schools are commonly run as private businesses, hence the owners endeavour to equip them with the requisite facilities, and also ensure the resources are well used

in order to attract and retain clientele, unlike public schools. This implies that there is a need to enhance the levels of physical resources in public schools, where the government is the main financier.

CONCLUSION AND RECOMMENDATIONS

Based on the above results, this study concludes that there is a difference in adequacy and utilization of physical resources in public and private primary schools in Lurambi sub-county, Kenya. Private primary schools have higher levels of resource adequacy and utilization than public schools, except for playgrounds.

On the basis of the findings of this study, the researchers recommend that the government should step up providing of sufficient resources to public schools so as to enhance learning outcomes to match private schools. Secondly, in collaboration with relevant persons and institutions, the government should establish and enforce policies and frameworks that can boost effective utilization of resources in institutions of learning. Further research should look into factors that influence adequacy and effective utilization of resources in learning institutions.

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