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Influence of Instructional Resources on Pupil Academic Achievement in Public Secondary Schools: A Case of Manga Sub-County Nyamira County, Kenya

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The consistent decline in pupils' academic achievement in public Secondary schools has raised more questions to be answered by education stakeholders. Thus, the purpose of the study was to assess the influence of school resources on pupil academic achievement in Secondary schools: a case of Manga Sub-County Nyamira County, Kenya. It adopted a descriptive survey research design with a target population of 469 comprised of 434 teachers and 33 head teachers. The sample size was 214 comprised of the teachers and head teachers. The researcher collected data using questionnaires. The study also established that instructional resources, physical facilities, and human resources have an influence on a pupil's academic achievement in Secondary schools. The study recommended that; for effective learning and improved academic performance, the government should ensure that it has provided adequate instruction materials in all schools; the government and school management should ensure that there are enough physical facilities in schools including laboratories, classrooms, dormitories, library, playing fields and dining halls for effective learning and improved academic performance of the learners and that; the school management should ensure that there is effective and efficient management of human resources for the improved academic performance of the learner.

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INTRODUCTION

One question that has preoccupied researchers for decades is why some public schools consistently perform well in examinations while others consistently perform poorly (Nyagosia et al., 2013) (Nyagosia, Waweru, and Njuguna, 2013). Mupa & Chinooneka (2015), National Research Council (2015), and Rutledge et al. (2012) have demonstrated that successful schools have unique characteristics and processes which help all children to learn at high levels. Therefore, the question of whether school resources matter for student achievement has been debated for at least 30 years (Agnetta et al., 2022; Greenwald et al., 1996; Lee & Zuze, 2011; León & Valdivia, 2015; Luketero & Kangangi, 2019; Yang & Lee, 2022). Agnetta et al. (2022) and Luketero & Kangangi (2019) studies found school resources such as teachers, instructional resources, and physical facilities are influencing the academic achievement of learners.

In the United States of America, educators are faced today with a growing challenge of maintaining the nation's education facilities; therefore, academic achievement remains a concern among parents, teachers, and pupils/students, regardless of the stakeholders' efforts, and this is likely due to the quality of the school resources (National Research Council, 2015; Rutledge et al., 2012; U.S. Department of Education, 2021; World Bank, 2019). This is further shown by Gigliotti & Sorensen (2018), who also convicted school resources as factors that influence academic achievement in New York. Nigeria also faces the challenge of poor academic achievement, thus a serious educational problem calling for the government to provide adequate material resources to rural/urban locations to enhance teaching and learning processes (Owoeye & Yara, 2011).

In 1972 the government established the Kenya School Equipment Scheme (KSES), which was

charged with the procurement and distribution of textbooks. This was direct government involvement in the purchase of textbooks being increasingly produced by the private sector (Rotich, 2004). Thereafter, in 2003 the Government of Kenya introduced universal Free Primary and Secondary Education, which solved one of the most critical problems in the education sector in the country, which was access to education. However, it soon became evident that whereas Free Primary and Secondary Education increased the enrolment rates, academic performance stagnated in many schools in Kenya as a result of effective school resources (Nyakundi & Onsomu, 2023; Riechi, 2021) hence building a gap in the literature. This study therefore this study assessed the influence of school resources on pupil academic achievement in public Secondary schools: a case of Manga Sub-County Nyamira County, Kenya.

LITERATURE REVIEW

The making of a resource material is advantageous to the teacher although it is meant to benefit the pupil. Okongo et al. (2015) state whilst making the resources, the participants are developing their own practical skills through practical tasks and gaining a real understanding of designing, how things work, how they can be put together, and the problems colleagues and pupils encounter back in their schools. Schools have the necessary resource materials made but seldom do teachers use them. Mupa & Chinooneka (2015) notes that some schools may have the resources, but it is not possible to use them. They may not even know their existence. It has been a tradition in the past that resource materials were rarely used. Muttappallymyalil et al. (2016); Shabiralyani et al. (2015) lament the former thus, in the past, the only visual aid available for teachers to use in the classroom was a fixed portable blackboard. Very rarely, teachers, with the help of some brilliant students, used to prepare handwritten charts for display on the classroom

walls. Once hung in place, they were there for years, and their efficacy, purpose, and usefulness were virtually eroded.

Opata & Wesonga (2016) states that efforts made to provide resources through the Free Primary Education (FPE) program have had a positive impact on the implementation of resources in public schools. Although findings indicate that resource materials such as textbooks and other reference materials are available, concerns are raised about the quality of the recommended materials, some of which have factual errors, inconsistent information, inaccuracies, and poor or difficult language for the learner. Furthermore, the purchase, utilization, and durability of resources in schools are threatened by the absence of comprehensive monitoring and audit mechanisms. Concerning the presence and use of resource centres, Moncada (2006) notes that some teachers have repeatedly reported that their schools have computer labs that are more of a “sanctuary” than a learning resource centre for students. These resources are well-locked, and equipment is hardly used.

The development of modern teaching has revolutionized the school system at every functional level. Johnson et al. (2016) state further that the teaching activity is no more restricted to the delivery of boring facts. It has changed into a lively and inspiring means of mutual communication. To enhance effective interaction and to achieve the curriculum objectives, teachers are always on the lookout for suitable resource materials. Print media has largely remained an indispensable tool which is popularly used. Abdulrahman et al. (2020) and Howard (2016) argue that teachers today certainly do not produce all the media they use to support their teaching. It takes a commitment of time, equipment, and interest to edit videotape, create sophisticated transparencies or write a computer programme. Twoli et al. (2015) report that students’ interests and abilities are varied and that the teacher needs to select and use a wide variety of resources in teaching. Kenya Institute of Education (2010)

suggests that some new dimensions of teaching aid through the provision of necessary infrastructure as well as e-learning materials are an urgent need which should go hand in hand with adequate training of teachers in the use of ICT. This ensures that the education sector is prepared for the task of moving the country towards the attainment of the targets set forth in Vision 2030.

RESEARCH METHODOLOGY AND DESIGN

Location Of the Study

The study was carried out in public Secondary schools in Manga Sub-County. Manga Sub-County is found in Nyamira County, Kenya. The Sub-County is selected for study because for a long it has been affected by poor performance in KCSE.

Research Design

The study adopted a descriptive survey design to establish the extent to which school resources affect pupil academic achievement in public Secondary schools in Manga Sub-County. The research design is appropriate because it allowed the researcher to gather information on the actual state of school resources at the time of the study. The study targeted a population size of 469 comprising 434 teachers and 33 head teachers in 33 public Secondary schools (Manga Sub-County Enrolment Report, 2012). The above population is chosen for study because they are the key stakeholders in education and has pedagogical skills; therefore, they are equipped with knowledge of the performance of students. The sample size will be determined using the Krejcie & Morgan (1970) table. A stratified random sampling procedure will be used to categorize the target population into teachers and head teachers.

In this study, the researcher used quantitative analysis. For quantitative analysis, descriptive statistics using techniques such as frequencies and percentages were employed.

Table 1: Sample size for each category

Employee Category	Population size	$n_i = (N_i \times n)/N$	Sample size
Headteachers	33	$(33 \times 214)/467$	15
Teachers	434	$(434 \times 214)/467$	199
Total	467	$(467 \times 214)/467$	214

Source (Author, 2023)

RESEARCH FINDINGS AND DISCUSSIONS

Response Rate

The results in *Table 2* show that there was a questionnaire return rate of 200(93%), including 15 head teachers and 185 teachers.

Table 2: Response Rate

Employees	sample size	response Rate
Headteachers	15	15
Teachers	199	185
Total	214	200

Source: Data Analysis, 2023

Instructional Resources and Academic Achievement

The results in *Table 4* show that the majority of respondents agree that ICT infrastructure improves the engagement of teachers and learners

in modern forms of knowledge acquisition (mean = 4.11); textbooks and notes books make pupils excellent in academic outcomes (mean = 4.232) and that teaching aids mostly audiovisual enhances the resilience of learners to life (mean = 4.00)

Table 3: Instructional resources and academic achievement

Statements	Mean	Std. Dev
ICT infrastructure improves the engagement of teachers and learners in modern forms of knowledge acquisition	4.111	.352
Textbooks and notes books make pupils excellent in academic outcomes	4.232	.456
Teaching aids, mostly audiovisual, enhance the resilience of learners to life	4.000	.335

Key: 1=strongly Disagree, 2= Disagree, 3= Undecided, 4=Agree and 5= Strongly Agree

Source: Data Analysis, 2023

Academic Achievement

The results in *Table 4* show that the respondents agree that the number of pupils joining secondary schools had declined in the past five years (2015-2019) (mean = 4.104); there was a decrease in

KCSE mean grade in the past five years (2015-2019) (mean = 4.29); there was deterioration in school ranking in the past five years (2015-2019) (mean = 4.321) and that there has been a decline in subject mean score in the past five years (2015-2019) (mean = 4.321).

Table 4: Academic Achievement

Statements	Mean	Std. Dev
The number of pupils joining secondary schools has declined in the past five years (2015-2019)	4.104	.453
There has been a decrease in KCPE mean grade in the past five years (2015-2019)	4.29	.967
There has been a deterioration in school ranking in the past five years (2015-2019)	4.321	.098
There has been a decline in subject mean score in the past five years (2015-2019)	4.321	.685

Key: 1=strongly Disagree, 2= Disagree, 3= Undecided, 4=Agree and 5= Strongly Agree

Source: Data Analysis, 2023

DISCUSSION

These findings are in agreement with the findings and arguments of many scholars. Exploring the effects of textbooks and other factors on student achievement gain. van den Ham & Heinze (2018) found in their longitudinal data from a national sample of 40 primary schools from urban and rural areas in the German federal state of Schleswig-Holstein that textbooks may affect achievement by substituting for additional post-Secondary Mathematics education of teachers and delivering a more comprehensive curriculum.

Otieno's (2012) study found that teachers neither use the local resources materials as teaching laboratories nor refer to them in their lessons as expected. The researcher further argues that many teaching aids, mostly audiovisual, are used as the cost prohibiting schools from buying them. Teachers and pupils could prepare them; however, there are other resource materials such as dioramas, sculptures, and puppets which were not used. Most teachers use posters for teaching, but the type of posters is mostly teacher-made. Also, very few posters are supplied by the ministry or donated by other non-governmental organizations or individuals.

Murithi & Yoo (2021) argues that with modern approaches to education requiring teachers to adopt information communication technologies (ICTs) to enhance efficiency, schools can no longer ignore technology in the implementation of the curriculum. Ntumi (2016) states that the selection of teaching and learning materials is an integral part of curriculum planning and delivery in preschools and schools.

CONCLUSION AND RECOMMENDATION

The study also established that instructional resources, physical facilities, and human resources have an influence on a pupil's academic achievement in public Secondary schools. For effective learning and improved academic performance, the government should ensure that it has provided adequate instruction materials in all schools. The government and school management should ensure that there are enough physical facilities in schools including laboratories, classrooms, dormitories, libraries, playing fields and dining halls, for effective learning and improved academic performance of the learners. The school management should ensure that there is effective and efficient management of human resources for the improved academic performance of the learner.

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