

Challenges Related to the Supply of Textbooks that affect Academic Performance in Public Secondary Schools in Mbooni East Sub-County, Makueni County, Kenya

By

Japheth Mwendwa Mwisa,
Lukenya University

Email: mwisamwendwa99@gmail.com

Dr. Judith Adikinyi Wafula
Lukenya University

Email: jwafula@lukenyauniversity.ac.ke. Tel: +254722383175

&

Dr. Zephania Muniko Marwa

Email: zmuniko@yahoo.com. Tell: +254717511621

Abstract

The purpose of this study was to examine the challenges related to the supply of textbooks that affect academic performance in Mbooni East Sub-County Public secondary schools. The objectives of the study were to determine the adequacy of textbooks considering the textbook-to-learner ratios, to determine the extent of utilization of the supplied textbooks and to identify the challenges related to the supply of textbooks that affect academic performance in Mbooni East Sub-county Public Secondary Schools. The target population was all the Public Secondary Schools in the Mbooni East sub-county comprising 47 public secondary schools. The sample size was 47 respondents who were the principals. Questionnaires were used to carry out the study. Quantitative data obtained were analyzed using descriptive procedures; means, frequencies, percentages and standard deviations. The descriptive analysis found that the majority (n=33, 73.3%) of the principals disagreed that the government-supplied variety of textbooks in every subject, (n=30, 69.2%) disagreed that the government supplied textbooks every year, (n=26, 57.7%) of the respondents agreed that students were making good use the supplied textbooks. Concerning teacher textbook utilization, the majority (n=28, 62%) of the respondents agreed that teachers were making good use of the supplied textbooks. The majority of the respondents (n=28, 60.0%) disagreed that the school had a library that was manned by a librarian. A significant interaction was found ($X^2(5) = 13.85, p < 0.05$). A chi-square test of independence computed comparing the frequencies of the utilization of textbooks against students' academic performance indicated that a significant interaction ($X^2(5) = 14.30, p < 0.05$) existed. It was concluded that the drop in academics performed in secondary schools in Mbooni East is caused by, among other factors, the inadequate supply of government books. Lack of a library, excess supply in some subjects, maintaining student-book ratio in elective subjects, replacement of lost books and choice of authors are some of the challenges related to textbook supply in public secondary schools in Mbooni East Sub County. There is therefore a need for the government to increase textbooks supply to public secondary schools to improve the student-book ratio.

Keywords: Kenya, Mbooni East, Challenges, Academic Performance, Textbooks, Supply, Public Schools

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Japheth Mwendwa Mwisa, Dr. Judith Adikinyi Wafula and Dr. Zephania Muniko Marwa

1.0 Introduction

1.1 Background of the Study

Acquisition of education requires adequate and proper planning. An education programme should be well equipped with the necessary resources to facilitate it to give the best of the desired results. Education consists of inputs and outputs as its main components. The inputs of education consist of human, financial and physical resources that are channeled towards education whereas the outputs are the overall outcomes of the education process. Textbooks are essential inputs in education that enhance the efficiency of the teaching and learning process.

Textbooks are very important in the study because they contain the syllabus topics thus everything is in the textbooks. For examinations, the questions will be from the textbook and if you want to get more information about a certain topic, reference books come in handy. Therefore, it is mandatory to read textbooks to improve academic performance (Milton Sailor, 2016).

Textbooks act as a guide to learners and their teachers. According to Sam Joane, (2020), one can learn a topic completely from a textbook. The content of a textbook is accessible all the time, unlike the internet. It provides learners with several activities, experiments and questions related to the topic thus forming a central role in learner academic performance.

Textbooks are the first exposure to learners in formal education and they cannot be substituted. No other teaching aid or tool can replace the textbook. Even in times of advanced technology, textbooks remain of Primary importance. A child's first exposure to studies begins with textbooks and a child's response to studying from textbooks is more practical (Sharma, 2018). In the same vein, Chakrakodi (2013) observes that learning cannot take place in a vacuum so we need to direct our learners to specific goals and see that these goals are achieved. Textbooks help teachers and learners to achieve the specific goals of learning.

Provision of textbooks to learners is crucial and therefore, the government and other educational stakeholders worldwide should pay attention to this if educational and national goals are to be met. According to UNESCO (2014), governments should pay particular attention to the provision of textbooks to ensure that learners have equal access to quality textbooks.

Decision-makers must find a balance between textbook affordability and quality and respect the generally agreed learner-centred pedagogy. Many countries worldwide have tried to invest in education by giving capitation grants from their government revenue. In low-income nations, enhancing quality education is a priority for the worldwide human development agenda where governments and donors are spending over 100million dollars annually on education (World Bank, 2017). Education researchers in South Africa have found a positive correlation between access to textbooks and learner academic performance. According to Faranaaz, (2015), researchers are however reluctant to pinpoint a single cause of learner poor performance at

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school but many agree access to textbooks is an important contributor to improved performance. Even as African Countries work towards achieving better learning outcomes for children through systemic education reforms, affordability and availability of textbooks remain a persistent challenge across the continent. Many development partners including World Bank have provided textbooks but shortages continue to hamper learning (Fredricksen & Brar, 2015). Many African governments have embarked on the allocation of significant amounts of their revenue and other external assistance to the education sector according to Pajibo and Tamanja, (2017). In Rwanda, textbooks and other related teaching and learning materials (TLM) such as workbooks and teachers' guides were found to be key inputs to ineffective schooling. The Rwandan Education System supports by provision and distribution of textbooks to schools to enhance effective learning for learners according to Milligan, 2017.

Academic performance in private schools in Uganda is better than in Public Schools due to the better textbook's learner ratio in Private schools. According to Ngware et al. (2016), on average two learners in private schools, share a textbook as opposed to three learners per textbook in Public Schools. A case in Burundi stated that the lack of access to textbooks by University students undermined their performance. Brooks (2012) noted that access to a surplus of reading material is a foreign concept to Public University students. He noted that 400 students at the University of Burundi competed for a single textbook. He compared this to ' a bible being chained on the pulpit' hence, access was a problem.

Since independence, textbooks have been considered a key vehicle to achieving quality education in many East African Countries.

In the early 1990s, the Tanzanian government organized a gradual marketization of textbook provision, to improve academic performance (Languille, 2015). Investment in education in African Countries saw an increase in capitation grants by the Tanzanian Government by 40% according to Ngowi (2015). In the Kenyan setting, Wambugu et al (2017) noted that textbooks serve as important tools in the teaching and learning process. They act as a guide to both teachers and learners hence a good source of information that influences teacher practice and a valuable resource for students to study.

Textbooks have been expensive for most parents in Kenya to provide until the government intervened in 2018. Jena, (2018) observed that textbooks in Kenya were prohibitively expensive and often unavailable for many struggling Kenyan parents. This undermined the achievement of quality education in the country. A survey study in 2013 by service delivery survey showed that the number of textbooks per student was 1:3.

Research on performance in lower Primary Mathematics in Kenya shows that learners share a Mathematics textbook leading to a negative effect on learning outcomes. However, under the Primary Education Development Programme, textbooks have been distributed to children in grades 1, 2 and 3 in line with the government's goal of improving numeracy skills in early grades (GPE, 2018). In 2008, the Kenyan Government introduced Free Day Secondary Education intending to realize the global education for all (EFA) goals. In its funding, the tuition account was set for the acquisition of textbooks and other teaching and learning materials.

The government was spending about KES 20 billion on the purchase of textbooks by sending money to schools directly. The government was losing close to 13 billion to textbook fraud. With centralized procurement of textbooks by the government in Public Secondary

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Schools, there is a need to assess the effects the supplied textbooks have had on the general academic performance of learners.

In Makueni County, the governor Kivutha Kibwana noted that the government was not imposing taxes on textbooks so that donors can come in and assist. The Makueni County first lady Nazi Kibwana spearheaded an initiative to ensure there are enough textbooks in the county. She noted that the reading culture in most schools was poor due to limited reading material. She noted that many people were going to the internet to get information but textbooks are the best reference materials for learning in schools. With the increased supply of textbooks to learners through the government and donor funding, it evoked the need to assess the effect of their supply on the learner's academic performance in the Mbooni East Sub-county.

The government through the Ministry of Education opted for centralized direct procurement and distribution of books to Public Secondary from January 2018. This saw the scrapping of the tuition account vote head from the FDSE funding as shown in the table below.

Table 1: FDSE Funds Distribution for a student per year

S/NO	VOTEHEAD	GOK SUBSIDY (KSHS)
1.	Teaching, learning materials & exams	4144
2.	Boarding, Equipment & stores	0.00
3.	Repair, Maintenance & improvement	5000
4.	Activity fees	1500
5.	Medical & Insurance	2000
6.	SMASSE	200
7.	Other vote heads	9400
8.	TOTAL	22,244

Source: Ministry of Education 2018.

1.2 Statement of the Problem

The government of Kenya has tried to improve the quality of education for its citizens. It has resolved to provide adequate teaching and learning materials to Public Secondary Schools. Notably, the government had strived to provide textbooks to learners to achieve a textbook-learner ratio of 1:1. The initial policy of giving funds directly to schools under the tuition account for the purchase of textbooks. This initial plan failed to bring the desired results as the textbook-to-learner ratio remained below 1:3 (Agunda et. al., 2018). Schools were spending money meant for textbooks for other projects hence the government was losing close to a KES 13 billion meant for textbooks (Audit report, 2016). The government, therefore, embarked on a centralized direct procurement of textbooks to Public Secondary Schools.

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The supply of textbooks by the government has raised a general outcry with the Kenya Secondary Schools Heads Association (KESSHA) terming the programme wasteful due to oversupply of textbooks at the expense of other factors which contribute to academic performance like the building of classrooms, laboratories and recruitment of more teachers.

Another problem that arose was the choice of authors of textbooks that were not flexible. The government was seen to decide which books were to be used in schools hence teachers did not have a voice on the books of choice in teaching. Authors and booksellers also complained of the government's collusion with some partners hence disadvantaging others and booksellers wrestled out of the market.

Most schools do not have libraries and storage space for the supplied textbooks. This has created a problem in small-unestablished schools leading to the dumping of unissued textbooks in an unsafe manner. The study will investigate the issue of custody of the textbooks issued. Learners are supposed to keep the books and their safety was put in question by KESSHA leadership. There is also a lack of a proper mechanism for replacement of the textbooks given that learners are not supposed to pay for them and booksellers no longer stock the books being supplied by the government. The study, therefore, tried to find out the overall effects of the supply of government textbooks on academic performance in Mbooni East Sub-county holding the other factors that influence academic performance constantly.

2.0 Review of Related Literature

2.1 Empirical Literature

This looked at empirical studies by other researchers that related to the study variables thus guiding the researcher in what was sought to be found. This was studied under the following; the concept of textbook to learner ratio, adequacy of textbooks on academic performance, utilization of textbooks and academic performance and challenges related to textbooks supply and how they influence academic performance.

2.2 Concept of textbook to learner ratio and Academic Performance

This refers to the number of learners sharing a textbook during the teaching and learning process. Many researchers view the availability of textbooks to learners as a factor that enhances their academic achievement of the learners. According to Lenon (2015), for a large proportion of learners, having textbooks has caused huge effects on their academic achievement of learners. He indicated that 8 percent in Secondary Science of learners in England are given textbooks compared to 88 percent in South Korea and 92 percent in Taiwan. He observes that the high performance of the Asian Countries as compared to England was due to a high textbook-to-learner ratio.

Another study was conducted in the Netherlands to investigate the perspectives on educational quality focusing on the outcomes of primary and secondary (Scheerens et. al., 2011). They established that increasing the number of learning resources increases the quality of education which is measured by student academic achievement as one indicator. Consequently, the relationship between school resources such as textbooks and computers as inputs and student achievement as output is of particular interest to policy makers responsible for the allocation of school resources.

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A comparative study of Palestinian Authority, Israeli-Hebrew Schools and Israeli-Arab Schools in 2007 to establish the relationship between school resources and standard eight mathematics performance was conducted (Afana et al, 2013). The study noted that the extent to which instruction was affected by a shortage or inadequacy of Mathematics textbooks was determined using simple regression analysis. The result of the analysis between mathematics performance and availability of teaching resources indicated that schools with a high textbook-to-learner ratio performed slightly better than students in schools with inadequate textbooks. Similar to the current study, the study focused mainly on textbooks as a school resource although they differ slightly in that the current study is not comparative. While the notion of education quality often being difficult to define, some basic features are considered key to educational outcomes.

One important indicator of quality education is the availability of teaching and learning resources. Textbooks are important teaching and learning resources that promote educational performance. A study by UNESCO (2011) showed that most sub-Saharan countries have a low textbook-to-learner ratio. In some cases, learners have completely no access to textbooks. The UNESCO study shows that in Cameroon, the textbook-learner ratio is 1:11 whereas in the Central African Republic the ratio was 1:8. In Cape Verde and Mauritius, Ministries of education reported that textbooks are free and provided to learners in all grades in Primary Education. In Burkina Faso, Guinea, Madagascar, Mali, Niger and Rwanda, there are enough reading books for every pupil. However, the study does not provide information about the quality of the textbooks available.

The Government of Kenya has been implementing a Primary School textbook project with donor support to improve textbook-learner ratio since 2000 by financial decentralization of textbook procurement initially that was later centralized. According to statistics, the textbook-to-pupil ratio in Primary schools in 2008 was 1:2 for English, 1:3 for Mathematics and 1:4 for Kiswahili (Ministry of Education, 2012). The increased textbook-to-learner ratio did not portray an improvement in the academic performance of learners. This was possibly due to other effects that came up because of the Free Primary Education (FPE) mainly an upsurge of enrolment in primary schools that brought strain on other areas of school resources notably infrastructure and low teacher-learner contact (Pajibo and Tamanja, 2017).

2.3 Concept of Textbook Adequacy on Academic Performance

Adequacy refers to sufficiency. The sufficiency of textbooks is closely related to the textbook-to-learner ratio. Adequacy of textbooks does not suggest abundance, excellence or more than what is necessary as opposed to textbook-learner ratio. It simply means being able to meet the needs of an education programme. Therefore, textbook adequacy refers to the sufficiency of quality textbooks to meet educational goals. Recent World Bank publications have related the primary positive effect of textbook use, as a particularly effective measure for improving learning outcomes (Fredriksen and Brar, 2015). Fredriksen and Brar (2015:22) highlighted widespread agreement that apart from qualified and committed teachers, no other input is likely to be more cost-effective than high-quality learning materials available for all students.

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Read and Bontoux (2016) further suggest that repeated evidence for forty years has shown the overwhelmingly positive effect of textbooks on learning and academic achievement. However, they note that this is dependent on the quality of textbooks available, for teachers and learners to use and the language that is widely understood. This evidence is, however, challenged by other researchers.

Kuecken and Valfort (2013) questioned the widespread advocacy of the positive and significant correlation between textbook use and improved learner outcomes in low-income countries where textbooks are inadequate. Few empirical studies have explored textbook use in classroom situations, their mediation by teachers and how they aid or hinder learning particularly in socio-economically disadvantaged communities for all learners (Opoku-Amankwa, 2010).

The positive relationship between textbook use and learner outcomes is often discussed in a general manner without reference to the evidence or the contexts from which such evidence had been collected. For example, in the Department for International Development (DfID), 2010 guidance note; learning and teaching, materials: policy and practice for provision, the relationship between textbooks availability in schools and learner outcomes appear uncontested.

In World Bank documentation, the availability of textbooks appears as the single most positive factor in predicting educational achievement (Frederickson and Brar, 2015). This adequately supports the concept of textbook adequacy having a positive effect on the academic performance of learners.

The availability of textbooks to both teachers and learners boosts their confidence and security in the teaching-learning process. Inexperienced teachers get confidence in teaching. This raises the academic standards and efficiency of the school system and the academic performance of the learners is, therefore, enhanced (Triyoga, 2010).

Schools that are well equipped with instructional resources show better performance than those that are poorly equipped (Kombo, 2014). This supports the concept of the adequacy of textbooks having a positive effect on academic performance. In Kenya, small and medium-sized secondary schools have unfavourable teaching and learning resources. Most lack textbooks. This leads to poor syllabus coverage, and a low rate of assessment of students therefore the teaching and learning process slows down and thus poor academic performance by students (Onderi and Rono, 2014).

2.4 Utilization of Textbooks on Academic Performance

Availability of textbooks in schools may not imply utilization. Utilization is the actual use of textbooks for the teaching and learning process. Studies show that the level utilization of textbooks influences the academic performance of learners. In a study in Ghana, Opoku-Amankwa (2010) highlighted that although the national textbook policy expects a 1:1 textbook to learner ratio, classroom norms do not allow for regular textbook use. These norms include teachers' attitudes toward the textbooks policy. Large class sizes and sitting arrangements in classrooms force learners to share textbooks on one workbench.

Prescribed course textbooks have however been frequently used in education to integrate discipline knowledge and support teachers in developing students learning outcomes (Fasso et al, 2014). A study in Australia on textbook use in higher institutions of learning reported that almost all courses in Science, Mathematics, Business and education prescribed a textbook as being

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essential for student teaching (Horsley et al, 2013). Students have been encouraged to use textbooks as authoritative sources of understanding principles relevant to a discipline (Horsley & Knight, 2013).

Knight (2011) and Horsley (2013) outlined the centrality of textbook typology relating to the degree to which teachers and students use textbooks in their courses when used as a core resource, textbooks play a significant role in the structure of the course with course outlines relating to a particular section of a textbook.

Today's student is not different from those of the past. However, technology has influenced the use of textbooks by today's students. Students nowadays have constant internet access and have become dependent on a continuous flow of information. They want to use their smartphones and tablets to access and store information rather than using textbooks (Grajek, 2013).

The student of today is on his own. The teacher is no longer in control of their knowledge. They are no longer dependent on teachers to access knowledge. They have free access to a wealth of information and content online. Being digitally literate today means being able to use appropriate tools to find useful information of high quality in an efficient manner (Panto and Comas-Quinn, 2013). Online source of knowledge is gradually reducing the utilization of textbooks for learning.

A study by Knight and Horsley, (2011) showed that learners in higher institutions of learning use textbooks depending on their discipline, level of study (undergraduate or postgraduate) and level of knowledge (First year and final year student). Based on the analysis of intended use, the range of uses by respondents included core resources with textbooks essential for pre-readings and workshop activities.

Karimi (2011) noted that effective school libraries provide additional reading opportunities for students that in turn improve their reading skills, comprehension and writing, and clarity of expression that in turn support student performance in all other curriculum subjects

Ashioya (2012) in a study on factors affecting the effective utilization of libraries in Secondary Schools noted that libraries are not a priority in Secondary Schools and continued to be neglected as an integral part of the education system in Kenya. Talking about the utilization of physical and material resources in teaching and learning, it's important to know that the teacher as the facilitator of learning must have the practical knowledge on using these material resources when available and improvise when not readily available.

2.5 Challenges Related to Textbook Supply

The supply of textbooks in Public Schools in Sub-Saharan Africa is faced with a myriad of challenges that consequently affect the teaching and learning process and learner academic performance specifically. Book storage is crucial to enhance their longevity. In a school setting, a functional school library system fulfils the purposes of book storage and easy access by users (Busayo, 2011). Libraries enhance the academic growth of learners. They guide them in the choice of academic materials of study and thus enhancing their academic achievement. Acquisition of relevant books of the school curriculum from the library promotes learners' development of research skills as well. Unfortunately, in Sub-Saharan Africa, School libraries are missing or unestablished making book storage and utilization ineffective (Seniwoliba, 2013).

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Another challenge in textbook supply is the issue of quality. The government's summative evaluation of the Primary and Secondary School Education Curriculum, (2010) alleged that the Kenya Publishers Association (KPA) was producing poor-quality textbooks and accused the Kenya Institute of Curriculum Development (KICD) of sleeping on the job. The KICD is charged with the role of evaluating, vetting and approval of curriculum support to be used in Kenyan Schools to ensure quality is maintained. The quality issues of concern include general structure, content analysis, support of the learning process, graphic design etc. The quality of textbooks is not a unique problem in Kenya because continuous issues have been reported in other African Countries such as Zambia, Mozambique and Zimbabwe. Evaluation of instructional materials and a series of instructional programmes are key to the success of any instructional activity (Mahmood, 2010).

Textbook losses are a challenge in many educational institutions. A study by Cohen, (2019) on books in college libraries shows that University Libraries and the world are seeing a precipitous decline in the use of the books on the shelves. About 15 million, books in Yale University Library System failed to link the important association between education and books. The study found that there was a 64% decline in textbooks borrowed by undergraduates from the library in a period of ten years. At the University of Virginia, 238,000 copies which were on the shelves shrunk to 60,000 in ten years.

2.6 Academic Performance of Secondary Schools

Academic Performance is the measurement of student achievement across various academic subjects. Teachers and education officials use classroom performance, graduation rates and results from standardized tests, to measure it.

Performance in academics is controlled by many factors internal and external. Among them is the availability of course textbooks. Availability of textbooks and their adequate supply increases academic performance according to Adan, (2011). The research however disagrees with the availability of other facilities like laboratories, classrooms, toilets and chairs influencing academic performance. Attakumah (2015) found out that there was a significant relationship between the availability of course textbooks in English, Mathematics and Science and academic achievement in the subjects in senior high schools. Core subjects showed 80.3% variation in Public Senior High School achievement on the West African Secondary School Certificate Examinations. There was a significant difference between the academic achievement of Public Senior High Schools that had a relatively high textbook-to-learner ratio and those with a low textbook-to-learner ratio.

Information obtained on the availability of textbooks for Mathematics in Secondary Schools in research by Mbugua, Muthaa & Nkoke, (2012) showed that the availability of textbooks leads to academic performance in Mathematics with 94.1%. Therefore, textbooks are a major input for performance in Mathematics. Secondary schools in Kenya with unfavourable teaching and learning resources perform poorly in academics. They alleged that a lack of textbooks affects syllabus completion and the rate and amount of teacher assessment leading to poor academic performance.

Textbooks promote structure and order in the teaching and learning process hence considered useful and effective tools or instruments whose purpose is to facilitate the work of a

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teacher daily (SMASSE, 2011). Glennerster et al, (2011) however object that an average child does not benefit from a textbook.

2.7 Theoretical Framework

The System Resource Theory guided the study on Organizational Effectiveness by Yutchman and Seashore (1967). The theory opines that the effectiveness in organizations is the ability to secure an advantageous bargaining position in its environment and to capitalize on that position to acquire, judiciously distribute, and monitor the utilization of scarce resources. The school organization is an open system that acquires inputs and engages in a transformation process to generate outputs (Yutchman & Seashore, 1967).

Secondary Schools receive inputs from their environment and convert them into outputs and discharge the outputs to the environment afterwards from where the inputs had decreased industry that transforms given inputs into required outputs. Examinations are important to tell how learners have succeeded or tell how learners have failed. They give feedback on whether the inputs of an education process are worth it or not. Pupil's scores have been accepted internationally and are used as a proxy for academic achievement.

The Kenyan Education System is largely examination-oriented and that explains why its quality tends to be evaluated in terms of the number of students who pass the National Examination. Textbooks being key educational inputs, the ability of Public Secondary Schools to acquire and utilize them to promote the academic performance of learners is crucial. The System resources theory of organizational effectiveness is relevant to this study since the acquisition of textbooks as rare resources, effective utilization should translate to the good academic performance of students in both internal and national examinations.

The Kenyan government in the FDSE Policy has the tuition account to buy textbooks and other TLM that was decentralized. Each school received a grant to purchase textbooks under the guidance of the KICD. This was later replaced by a centralized textbook supply by the MOE in 2018. This shows that the government has put inputs into the education sector in form of textbooks. The study intended to assess the availability of the textbooks and their utilization and how they ultimately influenced students' performance in academics. This is in respect of the Yutchmans and Seashores, (1967) System Resource Theory.

2.8 Conceptual Framework

A conceptual framework builds a structure or concept of what has been learnt in a particular area of study. This study was carried out in Public Secondary Schools in Mbooni East Sub-county of Makueni County. A conceptual framework is a hypothesized model identifying the concepts under study and their relationship (Mugenda and Mugenda, 2013). The conceptual model derived from the study variables establishes the significance of the proposed relationships

The conceptual framework in Figure 2.1 shows that the adequacy of textbooks supplied by the government, extent of utilization of the supplied government textbooks and challenges related to government textbook supply are factors that are viewed as the independent variables in this study. These factors can be controlled by the government policy on the supply of textbooks hence viewed as an intervening variable by this study. These factors are likely to affect students' academic performance, which is viewed as the dependent variable in this study.

Intervening Variable

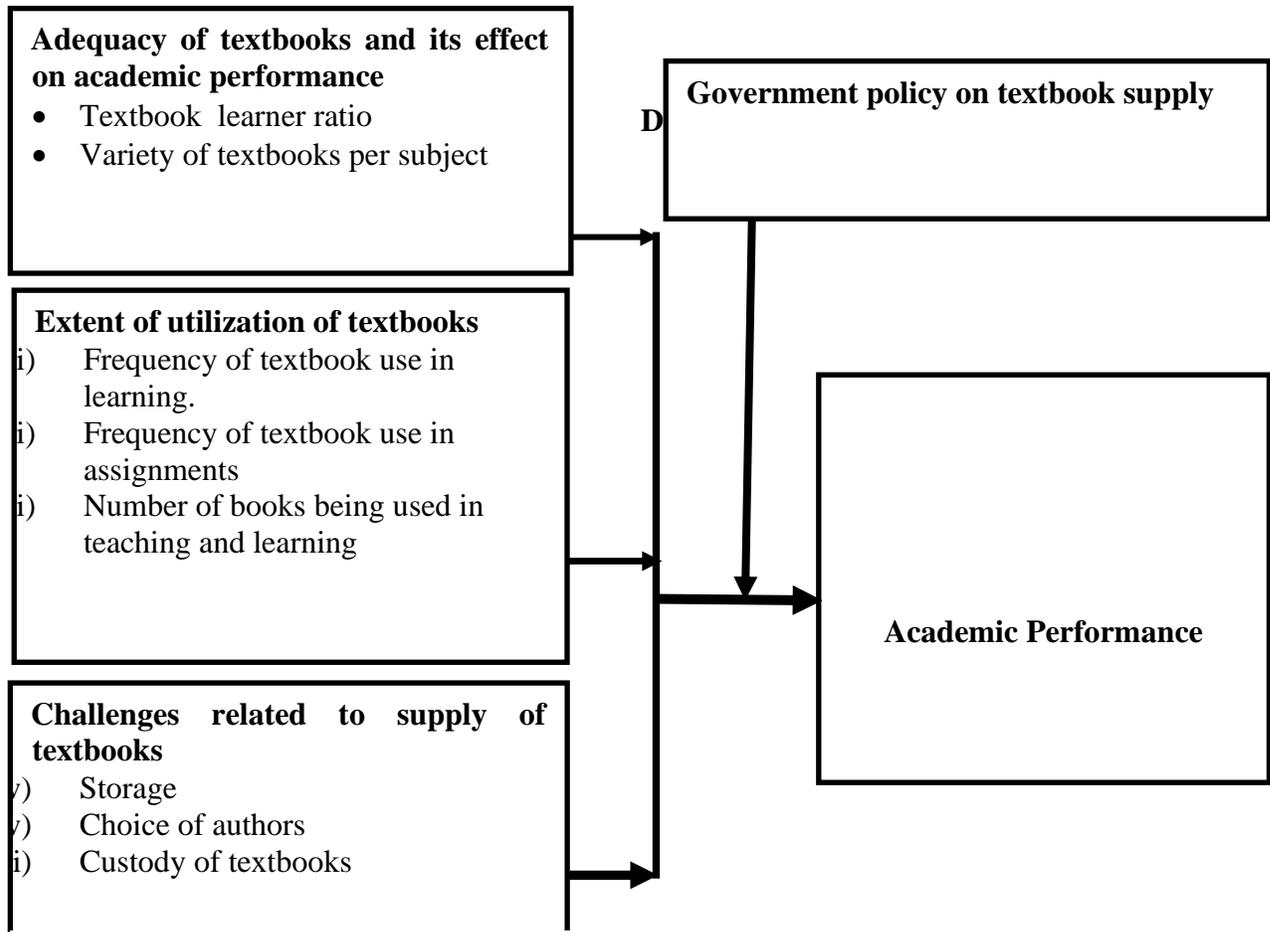


Figure 1: Conceptual framework and interaction of variables

Source: Researcher, 2022

2.9 Research Gap from Literature Review

The importance of textbooks in teaching and learning cannot be over-emphasized because of their role in the achievement of educational goals and objectives. From the above empirical literature review, studies conducted on curricular textbooks to establish their availability and effective utilization in various fields of study have established that the shortage of textbooks in turn contributes to poor learner academic performance. A study in Rwanda (Milligan et al, 2016) shows significantly better learner outcomes were recorded for Primary 4 learners regularly using supportive textbooks for four months compared to learners not exposed to the interventions. This supports the idea that the utilization of textbooks improves learners' academic performance.

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Textbook supply in Kenyan Public schools is evident through education capitation grants by the FDSE policy. According to Cohen et al, (2013) availability of textbooks and other educational resources does not matter if they are not effectively utilized for teaching and learning. UNESCO (2016) renewed calls for all learners to have access to textbooks in a timely.

However, it is good to consider how the availability and adequacy of the textbooks translate into their use. This study aimed to ascertain whether textbooks supplied are effectively being utilized and the effect of their utilization on the learner’s academic performance in Kenyan Public Secondary Schools.

3.0 Methodology

The study used a descriptive survey design to obtain data quantitatively and qualitatively. A descriptive survey design is a suitable design for evaluating education policies and programs. A descriptive research survey design is an appropriate method of evaluating educational programmes in a social context. The descriptive survey involves finding out what people are doing, and thinking and then gathering information. The descriptive design involves observing and describing the situation without manipulation of the variables. The human mind cannot obtain the full import of a huge quantity of raw data. Descriptive statistics are consequently very essential in reducing the data to a controllable form. Descriptive design was ideal for this study because it required responses directly from the respondents allowing them to give their opinion concerning the variables of the study. The descriptive survey method allowed gathering data from a large sample population and thus generate findings that are representative of the whole population hence reduction of cost.

The study was carried out in Mbooni East Sub-County. Mbooni East sub-county borders Kitui County to the East, Machakos County to the North, Mbooni west Sub County to the West and Makueni Sub County to the South. It covers an area of 686.50 square Kilometers and with a population of 97,523. It has four zones, that is, Kiteta, Kisau, Waia/Kako and Kalawa zone. The choice of this area is because the researcher is conversant with the study area hence fewer difficulties were expected during the research. It also has a good representation of all types of public secondary schools. A target population is a group or set of elements that you may want to know more information about. It is a group of individuals, every event, and several objects to which a researcher wishes to generalize the finding of the research. The target group were all the principals of public secondary schools in Mbooni East sub-county, Makueni County.

Table 2: Target Population (Source: Mbooni East SCDE Office)

ZONE	Number of public sec schools	Principals
KISAU	10	10
KITETA	9	9
KAKO-WAIA	12	12
KALAWA	16	16
Total	47	47

Source: Mbooni East SCDE Office

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Mbooni East Sub-county has 47 Public Secondary Schools. The Census technique was used to choose all the 47 public secondary schools used in the study. All the 47 principals of the 47 public secondary schools in Mbooni East Sub-County were involved in the study. This technique was used because the targeted population was small and all elements could be accessed. The researcher also obtained detailed information about the question under study. The study used questionnaires for data collection. Questionnaires are written or printed lists of questions to be answered by several people, especially as part of a survey. Questionnaires were used to gather information from the respondents because they are easy to administer to large groups of respondents. Piloting of the study instruments was performed in 8 schools chosen randomly from different localities of the area of study. The pilot study was used to find out where there were contradictions in the instruments or where there was no clarity before the main study (Lowe, 2019).

Table 3: Sample Size (Source: Researcher, 2022)

ZONE	Number of public sec schools	Sample size	Percentage %
KISAU	10	10	100
KITETA	9	9	100
KAKO-WAIA	12	12	100
KALAWA	16	16	100
Total	47	47	100

Source: Researcher, 2022

The pilot testing helped to improve the face validity and content of the instruments. The researcher sought assistance from the supervisors to help improve the content validity of the instruments.

Reliability concerns the degree to which a particular procedure gives similar results over several repeated trials. The Cronbach Alpha reliability was used. It is a measure of internal consistency where a closely related set of items correlate to 0.7 and above. A correlation of below 0.7 shows weak reliability while 1 shows perfect reliability. It is commonly used when you have multiple Likert questions in a survey that forms a scale.

The researcher got an introduction letter from Lukenya University and a research permit from National Commission for Science, Technology and Innovation (NACOSTI). After this, the researcher booked appointments for the schools to visit through the Principals. The researcher then visited the schools and administered the questionnaire to collect data. Data analysis is the process of examining data that has been collected. Quantitative data were converted to numerical codes, representing attributes or measurements of variables. The study used both qualitative and quantitative methods to analyze the data. After collecting the data, it was cleaned, coded and then entered into the Statistical Package for Social Sciences (SPSS) version 22-computer program for analysis.

Quantitative data gathered from the filled questionnaires were analyzed and counted,

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edited and tabulated to descriptive statistics for calculation of frequency, mean, sums and percentages and the results were presented in figures, tables, graphs and charts. Qualitative data gathered from the questionnaires were edited, organized, categorized and presented in form of discussion. This gave the researcher a better way of discussing findings, drawing conclusions and making recommendations. The study used the Chi square test of association to test the effect of the adequacy of textbooks on students' academic performance using the following formula:

$$\chi^2 = \sum \frac{(\text{observed} - \text{expected})^2}{\text{expected}} \quad (3.1)$$

All the research ethical considerations were observed in the course of preparing this study and collecting the data. Respondents were well informed and their consent was sought (see appendix I) before any information was collected from them. They were also assured that no information would be leaked out whatsoever and all information collected was held in confidence and was only used for the study.

4.0 Findings

4.1 Response Rate

Response return rate refers to the number of the research instruments returned after administration of the tools to the respondents given in percentage. In this study, one data tool was used as the data collection tool (i.e. the principals' questionnaire). The principals' questionnaire (Appendix B) was administered to the 47 schools from the four zones in Mbooni East sub-county, Makueni County. The results of the return rate per zone are presented in Table 4.

Table 4: Response Rate

ZONE	Number of questionnaires administered	The number of questionnaires returned	Percentage %
Kisau	10	9	90.0
Kiteta	9	9	100.0
Kako-Waia	12	11	91.7
Kalawa	16	16	100.0
Total	47	45	95.7

Source: Researcher, 2022

The overall percentage return rate for the study was 95.7%. In some cases, although, all the instruments were distributed to the respondents, some of them were not returned despite the researcher's efforts to follow up. Best and Kahn (2006) rated a response return rate of 50% to be satisfactory, 60% to be good and above 70% as being very good. Therefore, this study's response rate was considered very good as it was above the baseline postulated by Best and Khan.

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4.2 Demographic Information

This section provides descriptive statistics regarding the general information of the respondents. General information was analyzed in terms of gender, age and work experience of the respondents.

4.2.1 Gender of Respondents

The distribution of respondents by gender was analyzed and the results are presented in Table 5.

Table 5: Gender of the Respondents

Gender	Frequency	Percentage
Male	30	66.7
Female	15	33.3
Total	45	100.0

Source: Researcher, 2022

Results in Table 5 show the gender of the principals of schools from the four zones in Mbooni East sub-county, Makueni County, who took part in the study. It was found that, out of the total respondents, the majority (n=30, 67.7%) of the principals were male while 33.3% were female. This implies that heads of schools were male-dominated. These findings concurred with other related studies that indicated that most leadership positions are male-dominated. For instance, Mutinda's (2015) study in Kiamwangi Sub County, Kenya established that women did not desire to be in leadership positions due to traditional factors that overly deemed women as lacking managerial skills. This study, therefore, found out that, the issue of the gender gap in leadership positions was still bold in society.

4.2.2 Age of Respondents

The age brackets of the respondents were analyzed and the results are represented in table 6.

Table 6: Age of the Respondents

Age bracket (years)	Frequency	Percentage
20-25	0	0.0
26-30	0	0.0
31-35	7	15.6
36-40	19	42.2
41-45	4	8.9
46-50	5	11.1
Above 50	10	22.2
Total	45	100.0

Source: Researcher, 2022

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The findings shown in table 6 indicate that none of the principals was aged between 20-25 years and 26-30 years. However, 15.6% were aged between 31-35 years, the majority (n=19, 42.2%) were between 36-40 years, 8.9% were between 41-55 years, and 11.1% were aged between 46-50 years and 22.2% were above 50 years.

These research findings were similar to a research that was done by Kingi (2018) who found out that majority of principals were aged above 35 years in Kiambu, Machakos and Kajiado sub-counties. This suggested that principals with more years were experienced hence; their managerial practices influenced students' KCSE performance.

4.3 Work Experience of Respondents

The work experience of the principals who took part in the study is shown in figure 2.

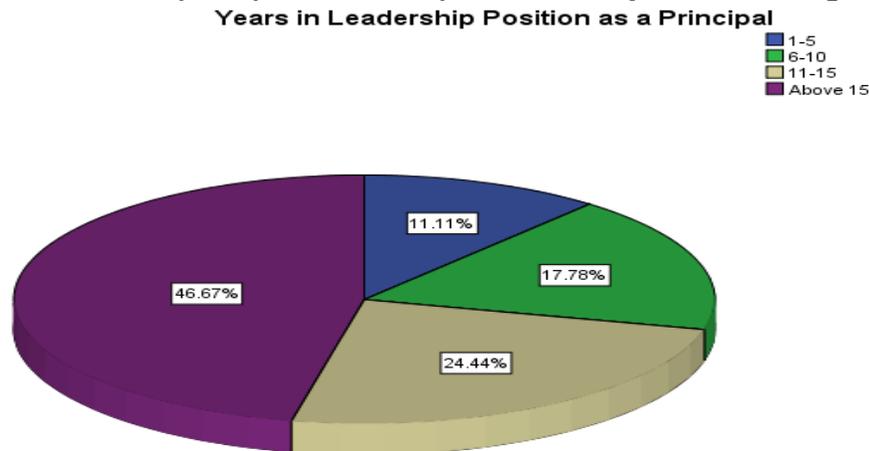


Figure 2: Work Experience for Principals (Researcher, 2022)

It was found that 11.31% of the principals had a work experience of between 1-5 years, 17.78% between 6-10 years, 24.44% between 11-15 years and the majority (46.67%) were above 15 years. This was an implication that most of the principals had a good experience in managerial practices and hence could influence students' KCSE performance. Matula, (2018) observed that the experience of a principal was very important because they were in a position to advise properly on the utilization of resources such as textbooks for better academic performance.

4.4 Educational Qualification of the Principals

Data on the educational qualification of the principals were analyzed and the results are represented in figure 3.

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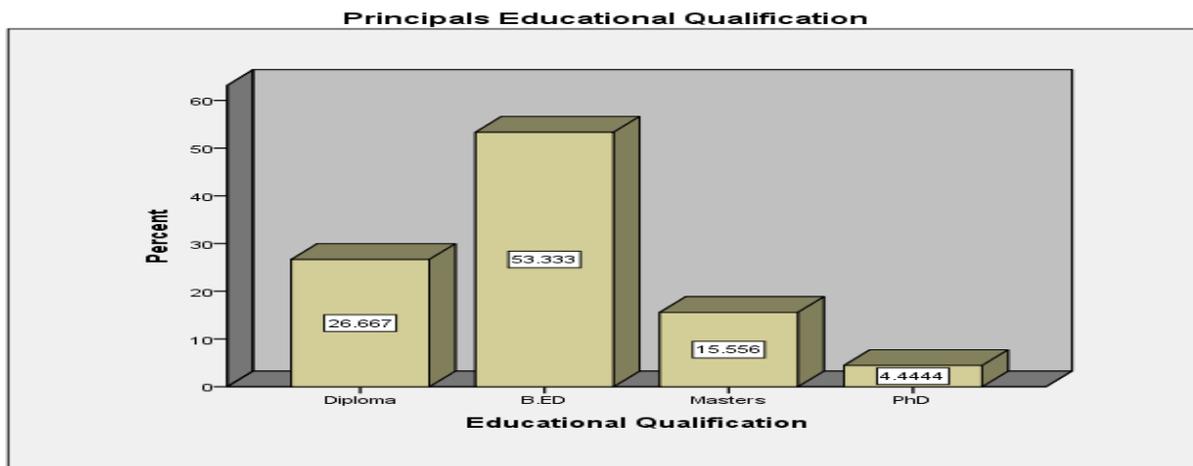


Figure 3: Educational Qualification of Principals

Source: Researcher, 2022

Figure 3 clearly shows that the majority (53.3%) of the principals had a bachelor’s degree in Education, 26.7% had a diploma, 15.6% had a master’s degree and 4.4% had a PhD. These results indicated that the requirements of TSC were adhered to since all the principals had diplomas, bachelor’s degrees and master’s degrees. This was similar to results observed by Kyalo (2018) that, the principals’ education level determined how effective he/she would be in managerial practices and by extension school academic performance.

4.5 School’s KSCE Mean Score 2018, 2019, 2020 and 2021

Principals were asked to give the mean scores for their school in the last four years that formed the dependent variable of this study. The mean scores were guided by the performance data found within the school as data was collected at school. Table 7 shows the principals’ feedback on the mean score of their schools in the year 2018, 2019, 2020 and 2021.

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Table 7:KCSE Mean Score 2018,2019,2020 and 2021

	2021	2020	2019	2018	Overall mean
Mean	3.6919	4.2840	4.0129	3.6069	3.8989
Median	3.2570	3.9500	3.7300	3.2100	3.5368
Mode	2.80	3.03 ^a	3.12 ^a	2.24 ^a	2.8
Std. Dev	1.32089	1.44471	1.54851	1.33592	1.41251
Range	5.67	6.55	6.98	5.63	6.21
Minimum	2.13	1.86	1.75	2.05	1.95
Maximum	7.80	8.41	8.73	7.68	8.16

Source: Researcher, 2022

Table 7 indicates that Mbooni East Sub-county had a mean score of 3.7 with a standard deviation of 1.3, 4.3 with a standard deviation of 1.4, 4.0 with a standard deviation of 1.5 and 3.6 with a standard deviation of 1.3 for the years 2021, 2020, 2019 and 2018 respectively. The overall mean score for the sub-county was 3.9 with a standard deviation of 1.4 in the last four years. The sub-county posted a negative deviation (-0.6) in the mean score, that is, from 4.3 in 2020 to 3.7 in 2021.

In summary, the academic performance of public secondary schools in Mbooni East Sub County would be considered poor as would either translate to a C or a C- yet the minimum university entry grade is a C+ (Kenya Universities and Colleges Central Placement Service (KUCCPS), 2022). This can be deduced to imply that majority of the students in public secondary school in Mbooni East Sub County did not meet the minimum entry requirement for university education that is deemed very crucial in the 21st Century. Related studies show that individuals who attain university degrees acquire economic and social advantages correlated with higher average earnings which lead to economic growth (Chan, 2016).

The researcher was very keen to find out whether this poor performance could be attributed to the supply of government textbooks in terms of availability, adequacy and utilization. The researcher got deeper into the issue by performing the following analysis.

4.6 Challenges related to the supply of textbooks that affect academic performance in Mbooni East sub-county Public Secondary Schools.

The study sought to identify challenges related to government textbook supply. Respondents were required to indicate if they Strongly Agreed (SA), Agreed (A), Undecided (U), Disagreed (D) or Strongly Disagreed (SD) to different statements presented to them in form of a questionnaire. Responses were analyzed and the results are summarized in Table 8.

Table 8: Challenges Related to Textbook Supply

		Frequency	Percentage
The school has a library manned by a librarian	SD	27	60.0
	D	1	2.2
	U	1	2.2
	A	16	35.6
	SA	0	0.0
Government supplies excess textbooks in some subjects	SD	1	2.2
	D	0	0.0
	U	0	0.0
	A	18	40.0
	SA	26	57.8
Maintaining student-book ratio in elective subjects is difficult	SD	0	0.0
	D	6	13.3
	U	0	0.0
	A	21	46.7
	SA	18	40.0
All lost textbooks get replaced	SD	24	53.3
	D	2	4.4
	U	1	2.2
	A	18	40.0
	SA	0	0.0
Government is sensitive to the choice of authors	SD	25	55.6
	D	3	6.7
	U	2	4.4
	A	15	33.3
	SA	0	0.0

Source: Researcher, 2022

The majority of the respondents (n=28, 60.0%) disagreed that their school had a library that was manned by a librarian. However, some 35.6% agreed that their schools had a library that was manned by a librarian. This was an indication that the lack of a well-equipped library was a major challenge to most of the public secondary schools in Mbooni East Sub County.

Concerning excess supply of textbooks in some subjects, the majority (n=44, 97.8%) of the respondents agreed that government-supplied excess textbooks in some subjects. This finding implied that the government was not keen on enrollment mostly in elective subjects. Some schools even received books on subjects that they were not offering. This could lead to undersupply of the same books may be in another school that offered such a subject.

On maintaining the student-book ratio in elective subjects, the majority of the respondents (n=39, 86.7%) agreed that it was difficult to maintain the student-book ratio in elective subjects. This could be due to the varying number of students taking a particular elective

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subject every year. It was therefore deemed a challenge to the supply of textbooks by the government.

On replacement of lost textbooks, the majority of the respondents (n=26, 57.7%) disagreed that all the lost textbooks lost were replaced. This implied that most of the government books that were lost never got replaced. The government policy is not clear on the replacement of the lost textbooks. This is because these books supplied by the government cannot be found anywhere in the market and hence it was a challenge to levy those students who got their copies lost.

Regarding the choice of authors, the majority of the respondents (n=28, 62.3%) disagreed that the government was sensitive to the choice of authors. These findings indicate that choice of authors was not consistent in every class in a particular subject. A course book would be useful if the same author is selected for the entire course work. Some of the books supplied by the government were by different authors in different classes.

These findings are in line with that of Todd and Carol (2010) whose findings reported that students who attend schools with well-equipped libraries perform better in academics. The duo concluded that quality school libraries have a positive relationship with students' academic achievement.

A study by Shannon (2012) discovered that a majority of students from quality school libraries posted higher academic performance. This is an implication that well-equipped libraries contributed significantly to better academic performance. The findings of George (2011) also revealed that the availability and utilization of school library resources assist in improving students' learning habits.

5.0 Conclusion and Recommendations

This study aimed at assessing the challenges related to the supply of government textbooks in public secondary schools in Mbooni East Sub County. It was found that several challenges related to textbook supply existed. These challenges include: most of the schools lacked a well-equipped library, government-supplied excess textbooks in some subjects, it was hard to maintain a student-book ratio in elective subjects, lost books were not replaced and the government was not sensitive to the choice of authors.

Guided by the above findings, the researcher concluded that lack of a library, excess supply in some subjects, maintaining student-book ratio in elective subjects, replacement of lost books and choice of authors were some of the challenges related to textbook supply in public secondary schools in Mbooni East Sub County.

Based on the findings of this study, the researcher made the following recommendations: there was a need for the government to increase textbooks supply to public secondary schools to improve the student-book ratio. This will then improve the academic performance of the students. Students and teachers should be advised to utilize the available textbooks well to boost their academic performance. With the guidance of the Board of Management and government, principals should plan to set up well-equipped libraries in their schools. The government should clarify the procedures for replacing the lost textbooks. Future researchers can further look into the following research ideas related to this study as this study focused on Mbooni East Sub County in Makueni County, Kenya, hence similar research can be done in other sub-counties or even

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counties in the country. This study focused on the public secondary schools, there is a need to study the same in public primary schools.

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