INFLUENCE OF TEACHING AND LEARNING MATERIALS ON ACADEMIC PERFORMANCE OF PUPILS IN UPPER PRIMARY SCHOOLS IN KARUNGA ZONE, GILGIL SUB COUNTY, KENYA

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DECLARATION AND APPROVAL

Declaration by the Student

This research report is my original work and has not been presented for a Master's degree in any other university or for any award.

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ABSTRACT

Learning can take place as a result of newly obtained perception, knowledge, new information, facts and principles. Instructional materials of different varieties can be used to reinforce learning since they motivate, stimulate and arrest the attention of the learners. Teaching and learning materials are devices and aids through which learning and teaching are done in schools. It is through education where a foundation for growth and groundwork is established and on which most of our social and economic well-being is developed. Correct learning and teaching materials must be used in the learning process to endorse active understanding and not rote learning. The specific objectives of the study were to establish the influence of teaching and learning materials availability, teaching and learning materials use, teaching and learning materials variety and teachers' professional development on the development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County. The study was anchored on the Theory of Instruction. The study adopted descriptive research design. The target population was 587 teachers of Karunga zone, Gilgil Sub County. The research study adopted stratified sampling and targeted a sample of 100 respondents. Data collection exercise was aided by use of questionnaires. The data was analyzed through descriptive and inferential statistics. Descriptive statistics comprised of frequency, mean and standard deviation. Inferential statistics comprised of correlation and multiple regression. The data was presented in form of tables and graphs. The correlation and regression between the independent variables and academic performance was as follows: Teaching and learning materials availability ($r= .652$, p .000; $\beta= .751$, p .000); Teaching and learning materials use ($r= .263$, p .000; $\beta= .295$, p .023), Teaching and learning materials variety ($r= .117$, p .321; $\beta= .068$, p .529); and Teachers' learning materials professional development ($r= .343$, p .000; $\beta= .491$, p .000). The results are important to the policy makers at the Ministry of Education regarding the influence of teaching and learning materials on the development and performance of pupils in upper primary schools. It will also guide other researchers and academia interested in the area of teaching and learning materials.

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ABBREVIATIONS AND ACRONYMS

FDPE	Free Day Primary Education
FDSE	Free Day Secondary Education
KCPE	Kenya Certificate of Primary Education
MoEST	Ministry of Education, Science and Technology
NACOSTI	National Commission for Science, Technology and Innovation
NTACT	National Technical Assistance Center on Transition
SDT	Self-Determination Theory
ST PAUL	Saint Paul
SPSS	Statistical Package for Social Science
UAE	United Arab Emirates
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Pupils' Emergency Fund
USA	United States of America
WB	World Bank

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Learning is a complex process and is described as revolutionize in nature, a moderately lasting change in performance in due course and this is brought about by knowledge. Learning can take place as a result of newly obtained facts, perception, principles, understanding, as well as new information. Learning can be reinforced with instructional materials of various types since they motivate, stimulate and arrest the attention of the learner. Teaching and learning materials are learning devices and aids via which learning and teaching are carried out in school. A foundation for development is provided through education and groundwork where most of our social well-being and economic is built. It is the key to raising social consistency and economic efficiency. Generally, it raises the intellectual flexibility and productivity of the labor force. It assists in ensuring that a nation is competitive in a world market characterized by production methods and changing technologies (Orztuk, 2016).

Instructional materials are tools used during learning activities, which consist of vigorous learning and measurement including every resource as well as any means a teacher employs for implementation of instructions and provide learners attainment of learning objectives. They help a learner in concretizing an experience in learning in order to make learning more interactive, enthusing and exciting. Examples include audio aids, visual aids, audio-visual aids, realia and lots of others. The visual materials in form of wall charts showed textbooks, pictorial materials, etc. therefore audio learning resources are those resources that employs the use of hearing sense only like audio tape recorder radio etc. an audio visual learning materials thus is a combination of materials that includes sense of seeing and hearing sense like computers,

motion pictures and television. The materials should provide learners with the essential knowledge, skills as well as ability in the growth and support of institutions and equip learners with problem solving skills and analytical critical thinking (Wachira, 2018).

In October 2019, a new target of learning was launched by the World Bank: to minimize the rate of Learning Poverty to at least half by 2030. An essential step is to change the systems of education for it to focus on learning. A critical step is to shift the education system so that it focuses on learning. Teaching and learning materials availability improves school effectiveness since they are reliable in giving out good academic performance to the learners. There is no nation that has attained continuous economic growth in absence of substantial investment in human capital. Previous studies have shown good proceeds to different types of aptitude building, learning by doing, research training, basic education and human capital accumulation. The distribution of education matters. Asymmetrical education has a propensity to have a negative impact on per capital returns in many nations.

A study by Wilson, Mulcany and Leone (2010) on ways for enhancing mathematical instructions for learners in short-term tools in Washington DC, USA, showed that learners' engagement in mathematics lessons as well as learning was affected by the classroom environment inclusiveness. An all-encompassing environment of learning enabled active participation of the learners. This meant that a variety of instructional materials was an ingredient. Use of instructional materials promoted their willingness to engage in the classroom activities. Leone et al., (2010) noted that use of instructional materials helped learners display positive attitude towards classroom activities, create learning conditions which are favorable and involve learners in the activities. It also enabled them have curiosity in this vicinity as well as enhance interest in desiring acquire more knowledge. According to Laozi, the ancient

Chinese philosopher and writer when you offer an individual a fish as well he will consume it for a day. However, when you show person how to fish and the man will feed on it for a lifetime (Patrinos, 2016).

In Africa, primary schools in Nigeria have been accredited to insufficient learning resources (Igu, 2012). Furthermore, he examines that subjects like social studies is a based activity and thus depends on learning materials utilization for productive teaching. Also, Umameh (2011) as well as Bristol and Van der Berg (2009) observed that in South Africa scarcity or availability of important school materials were associated to better educational results in mathematics. The education impact analysis supports the earnings, depicting that education quality is of more value than the years spent in school. Individuals who complete their primary education without learning get just 6% higher than individuals without schooling, whereas those who complete education and are able to read get 38% more than individuals without schooling.

According to Kalinga (2008) inadequacy of books, references and other academic resource materials are the major problems which accelerate the poor performance in many schools in Tanzania. This is because many schools in Tanzania depend much upon donors. Some other schools purchase those learning materials, but because of the cost, few schools have managed to acquire those services and others have failed to acquire them. Hence this leads to poor performance of many students in Tanzanian schools.

Stipulation as well as making use of materials is the duty of education stakeholders (National Policy on Education, 2012). The Kenyan government guarantees nationwide strategy on education implementation by providing an enabling environment. According to the Ministry of Education, Science and Technology [MoEST], (2014), Kenya's Vision 2030's goal is to change

the nation of Kenya into a global competitive and an affluent country by the year 2030. The vision is founded on the political pillars, social and economic. In the social pillar, the sector of education plays an imperative duty in providing the process of instilling knowledge, skills and attitude essential for propelling Kenya to a nationally competitive nation and gaining new knowledge systematically with an aim to enhance product and processes. Schools need to produce students who can effectively and efficiently apply the gained scientific abilities, knowledge and skills during the course for socio-economic benefit of human being and nation's industrial growth. The education sector thus has a significant role of facilitating the process of enhancing manpower essential for changing Kenya into an internationally aggressive nation.

1.2 Statement of the Problem

Appropriate teaching and learning materials should be employed in the process of learning and teaching to enhance active comprehension rather than rote learning, (Machaba, 2013). Teaching and learning materials are important for the self-discovery of both teachers and pupils as they enhance child-centered methods of teaching and learning via pupil involvement, (UNICEF, 2014). Utilization of instructional materials promotes academic achievements, (Otieno, 2010). Ashiona, Mwoma and Murungi (2018) noted that utilization of ICT during lesson delivery increased learners' participation in learning thus higher academic retention. Kariuki (2013) suggested that instructional materials make teaching more effectual; assist in getting different needs for different learners and make lesson plans richer, therefore impacting positively on pupils and the performance of the school. No matter how well staffed the school is, without appropriate teaching and learning materials, the basic goals of the school, that is, teaching and learning to realize a good performance can be seriously handicapped (Okumbe, 1999).

The Government of Kenya is of the opinion that pupils from government learning institutions fail to match the performance of their private primary school counterparts due to their disadvantaged learning environment that has been characterized by inadequate learning resources and teaching workforce (Ongaki & Musa, 2014). The overall performance in Gilgil Sub County was 230.18, 227.81, and 230.16 from 2016 to 2018 which is low compared to the national standard. Inadequate, inappropriate instructional materials lead to abstract teaching and showed passive learning and ultimately result in poor performance (Wambua & Murungi, 2018). With the developing technology and the new media of communication, efforts are on the rise in the employment of teaching and learning resources; a growth that has proven to be of benefit to learners in other regions. The study thus aimed to examine the influence of teaching and learning materials on development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County.

1.3 Objectives of the Study

i. The study sought to establish the influence of teaching and learning materials availability on the development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County.
ii. The study sought to investigate the influence of teaching and learning materials, use on the development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County.
iii. The study aimed to determine the influence of teaching and learning materials variety on the development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County.

iv. The study sought to evaluate the influence of teachers' professional development in learning materials on the development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County.

1.4 Research Hypotheses

i. The study hypothesized that teaching and learning materials availability has no significant influence on the development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County.

ii. The study hypothesized that teaching and learning materials use has no significant influence on the development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County.

iii. The study hypothesized that teaching and learning materials variety has no significant influence on the development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County.

iv. The study hypothesized that teachers' professional development in learning materials has no significant influence on the development and academic performance of pupils in upper primary schools in Karunga Zone, Gilgil Sub County.

1.5 Significance of the Study

Significance of the study is that it helps the sub county education office and other county education officers to develop appropriate strategies to improve their delivery and improve the academic performance and development of the learners.

The study is also significant to teachers in the respective schools and others will be able to understand what they do or what they might do with the training and learning resources in their

classrooms and in relation to their work. This is in order to make sure that pupils are able to acquire the most excellent out of their teaching and learning materials for the future development.

Future researchers will as well gain from the results of this study as it will provide them with relevant literature which they will use in their study. The study findings provide a deeper understanding of the influence of teaching and learning materials to researchers and academia on use on upper primary school pupils' academic performance.

1.6 Scope of the Study

This study was limited to Karunga Zone, Gilgil Sub County within Nakuru County and focused on the influence of teaching and learning materials use on development and academic performance of pupils in upper primary in the zone. Karunga Zone, Gilgil Sub County is a peri-urban area with characteristics that can be found both in urban and rural areas. As such the study results are applicable to other zones and sub counties in Kenya. The specific variables were teaching and learning materials' availability, use, variety, and teachers' professional development in the same.

1.7 Study Limitations

It would have been ideal for this study to be carried out in a statistically proportionate number of sub counties in Nakuru County. However, this was not possible due to monetary constrains and time. The study was thus confined to Karunga Zone, Gilgil Sub County within Nakuru County.

1.8 Delimitations of the Study

The study was delimited to the variables teaching and learning materials' availability, use, variety, and teachers' professional development. Academic performance and development of pupils in upper primary in the zone was the dependent variable. The study therefore did not research on other variables that might also have an influence on academic performance and development of pupils in upper primary in the zone.

1.9 Assumptions of the Study

This study held several assumptions. The study assumed that teaching and learning materials are existent in Karunga Zone, Gilgil Sub County within Nakuru County and that the study variables; teaching and learning materials' availability, use, variety, and teachers' professional development have an influence on development and academic performance of pupils in upper primary in the zone.

The study assumed that every participant would provide adequate and honest data on teaching and learning materials and their influence on academic performance and development of pupils in upper primary in the zone.

1.10 Definition of Terms

Academic Performance: The level to which a learner, institution or teacher has acquired their long-term or short-term goals of education. Educational benchmarks include achievements like attainment of a certificate or diploma.

Pupils Development: The learner's development in terms of observational skills, self-determination skills development (such as goal setting, decision making,

problem solving, and self-advocacy), personality traits, social roles, independent living skills and academic skills among the pupils.

Teacher Professional Development: Any type of continuing education effort for educators. It is one way teachers that can improve their skills and, in turn, boost student outcomes.

Teaching and Learning Materials: Any compilation of resources encompassing in animated and animated objects as well as human and non-human materials that a trainer may employ in learning and teaching environment to assist in achieving the desired objectives of learning.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter constitutes the theoretical review which involves addressing the theories that are applicable in this study. In addition, the chapter addresses the reviewed literature which constitutes studies done by other authors and lastly conceptual framework showing the connection linking dependent as well as independent variables.

2.2 Theoretical Framework

The study was anchored on two theories; the Theories of Instruction and Self Determination.

2.2.1 Theory of Instruction

Theory of Instruction was postulated by Jerome Bruner (1966). He persisted on developing autonomous students, students who independently develop knowledge. Learners schooling must come along with essential outcomes like critical thinkers and problem solvers than just equipping them with ideas and categories as per the culture. For information to be encoded and kept in the reminiscence studying is supposed to move from enactive via iconic to figurative representation of the surrounding world, Jerome Bruner (1966). In enactive representation (from 0-1 year) learning is action-based where pupils learn through materials. Pupils acquire knowledge through manipulating materials. In iconic representation (1-6 years) concepts are stored in image forms. This is early childhood learners' level. Lastly, in figurative representation (from 7 years and above) the process of acquiring knowledge is in form of symbols. Pupils of grade one learn best when all forms of depiction are used (Bruner, 1966).

The theory is applicable to this research since well-organized instructions develop right concept acquisition. Good results are attained when teaching process is well organized. He stresses that, a pupil of a very young age is in a position of acquiring any concept in learning areas if only the instructions were correctly organized. Providing the right learning materials is one of the ways of organizing instructions. Grade one learners are in iconic representation and symbolic representation this is according to Bruner's modes of representation. They acquire knowledge well by manipulating learning materials together with the use of symbols and illustrations. Teachers must provide variety of learning materials for fully participation of the pupils in learning and maximize on the acquisition of competences.

2.2.2 Self Determination Theory

Self Determination Theory was propounded by Ryan and Deci (2017). Among the most influential models in contemporary behavioral science, self-determination theory (SDT) offers a broad framework for understanding the factors that promote human motivation and psychological flourishing. In this authoritative work, SDT co-founders Richard M. Ryan and Edward L. Deci systematically review the theory's conceptual underpinnings, empirical evidence base, and practical applications across the lifespan.

Ryan with Deci reveals that supporting the basic needs of the individuals for relatedness, autonomy and competence significantly essential for nearly every individual's aspect and functioning of the society. Self-determination theory wanders from other main approaches to human inspiration as well as self-regulation. Self-determination theories six mini-theories as well postulates on individual differences, close relationships, basic needs, intrinsic motivation, goals and aspirations and internalization. Applying self-determination on adolescents and child

development, influences various educational and parenting practices, and take a fresh look at processes of identity formation and developmental psychopathology.

The theory is applicable to this research since well-organized instructions increase self-determination. Learners are able to achieve good results when the teaching process is well organized. Providing the right learning materials is one of the ways of organizing instructions and assisting learners in their quest for self-determination even as they grow.

2.3 Empirical Literature

The following constitutes reviews made by different authors.

2.3.1 Availability of Teaching and learning materials

Teaching and learning resources include charts, textbook, maps, electronic as well as audiovisual learning resources like tape recorder, radio, cassette and TV. Additional types of learning materials include writing equipment like rubbers, pens, crayon, exercise book, chalk, notebook, drawing book, ruler, pencil, workbook, slates and paper supplies and so on. (Atkinson, 2010). Adeogun (2011) revealed incredibly strong positive important connection among learning materials and academic performance. Adeogun examined that schools gifted with adequate resources were in a position to give good performance than schools endowed with less materials. This supported the study by Babayomi (2009) that schools owned by individuals had good performance as a result of enough and availability of learning and teaching resources. Mwiria (2015) as well maintains that the performance of students is affected by the amount and value of learning and teaching resources. The researcher identified that learning centers with enough facilities like textbooks are in a better position to attain good grades in examinations than school which are poorly equipped. Thus, performance that is poor can be

associated to insufficient training and learning resources and tools. The maintenance and development of corporeal amenities in learning centers by parents, sponsors as well as community must persist to be emphasized on. This is for the reason that lack of such amenities interferes with learning process (Republic of Kenya, 1988a). DFID (2015) shows the significance of school amenities in connection to quality learning. Some of the physical facilities include lecturer theatres, classrooms, administrative block, auditoriums, laboratories, playgrounds, special rooms like clinic, meeting halls, learners' hostels, employees' quarters, cafeteria, kitchen as well as toilet amongst others.

Furthermore, he states that presence of sufficient quantity and quality physical materials makes learning experiences more productive; and that school buildings which are not attractive, playing ground non-availability, crowded classrooms and environment that lacks artistic magnificence can lead to poor recital academically. Fonseca and Conboy (2012) suggest that the institution condition of the school and the physical conditions prevent building of a society of achievement. Ministry of Education Science and Technology, MoEST (2015) clarifies the significance of making sure that there are enough and correct teaching amenities for learning and teaching for effective implementation of educational programs.

Silverman, (2006) states that in mitigating the visual material roles contribution in the process of learning, tactile, auditory and visual materials assist learners in processing information. Most of the researchers agree that it is through visualization of the whole concept that most of the learners takes in new information. Employ visual learning methods has a lot of benefits. For instance, visual materials assists learners to have clear thoughts as well as information, understanding is reinforced via connections, assist learners in integrating knowledge with prior

learning and also assists the teacher in identifying misconception of learners. Visual learning as well provides ways for thinking (Foliaki, 2012).

According to Cassady (2014), visual resources are effectual in passing on concepts and content in an easy way compared to oral descriptions for visual pupils and they are significant enhancements of learning in the classroom. Course content supplemented with diagrams, videos, visual representations charts, maps, photographs and diagram, pupils absorbs it easily (Kurgatt & Omuna, 2016).

A study by Makokha & Wanyonyi (2015), examined that there is shortage on learning materials availability and that educators carry out their teaching on talk and chalk techniques in training developments of language skills. Teachers conclude that learners' poor performance in development of language skills has been as a result of inadequate learning resources. Hence it is indicative that the performance of the student is significantly influenced learning environment experiences as indicated by Onchera & Manyasi (2013) who identified that it necessitates a lot of observation of what takes place in the classroom so as to give more ideas on why learners get the results as they do.

2.3.2 Use of Teaching and learning materials

In developing nations, particularly African nations, studies depict that learning materials utilization in the process of teaching and learning has been put into place and its influence is clear. Iji, Ogbole & Uka (2013) established that as a result of utilization of correct developed instruction and learning materials, the process of acquiring mathematical concepts was improved therefore enhancing their mean attainment scores. This was as a result of teaching and learning materials development which brought about pupils' competitiveness and enlivened

learning. Guloba, Wokadala and Bategeka (2010) stated that lack of enough instruction and learning materials brought about low quality of education. Suitable instructional materials must be used in the process of training and learning to enhance active comprehension and not rote studying (Machaba, 2013). Inexistence of enough, suitable teaching and learning materials encourages passive learning. Instructional materials come with pleasure to educators and interest to pupils. Instructional materials assist both learners and individuals in self-discovery process. They enhance learning through learner participation and child centered approaches (UNICEF, 2014).

In an effort to decrease the amount of work on the working memory for improved effectiveness, employing visual materials has attested effectiveness in the other teaching and learning areas as accounted on a study that highlighted the significance of visual representation of both pupils and teachers in learning and teaching of their mathematics. Generally employing various representations is a key part of knowledge of the mathematics' teacher and they can play an essential role in explaining mathematical concepts (Leinhardt, Putnam, Stein & Baxter, 1991).

According to Foliaki (2012), the more we can engage the learner's sense and bring them into learning, the more the learning will take place. This proves why motion images are superior visual materials than motionless objects. For instance, learners learn little when we are only drawing a 'pie' on the whiteboard divided it up by drawing lines through it. The learners will learn more on fractions if you cut up a real pie and give out the pieces to your pupils. Imagine when training to ride a bicycle by just listening to a person explaining to you how to do it but never in reality getting on a bicycle.

According to World Vision International (2018), teaching and learning resources availability does not make the end of the story. Communities, parents and teachers should learn how these resources should be used in various ways to enhance the literacy skills of the pupils. This is a central part to sustainability and correct change in a society. By using locally available materials, caregivers, parents, siblings, and individual students can come up their own learning resources.

Teaching and learning experiences that take place outside of the confines of the classroom walls introduce a range of benefits for both students and instructors. When students are asked to put into practice "in the real world" what they have theorized about from behind a desk, the result is a student-centric learning experience that enhances learning and fosters personal and social development (Larsen, Walsh, Almond & Myers, 2017). In addition, learners that engage in outside classroom learning experiences have higher motivation levels, have better academic performance in class and recalls the learning materials vividly (Ryan & Deci, 2017).

Learning resources are significant because they can greatly enhance achievement of the learners through supporting their learning. For instance, a spreadsheet may create important opportunities for students to continue practicing new skills acquired in class. This process helps in learning through permitting learners to independently explore the knowledge and providing repetition. Learning resources, regardless of the type, all have roles in learning of the student. They also add significant structure to planning of the lesson and instruction delivery. Learning materials plays a guide role to both learners and the teachers and mostly in lower grades. They can offer important routines. For example, if you are a language arts coach and you teach new language words each Tuesday, having in mind that you have a vocabulary game to give the

learners to carry out concerning the new vocabularies will both take pressure off of you and offer essential practice (and fun) for your learners (Foliaki, 2012).

Furthermore, supporting learning in general, learning resources can help teachers in key professional functions: the instruction differentiation. Instruction differentiation is the tailoring of instructions and lessons to various learning methods and capacities in your learning environment. Learning resources like spreadsheets, homework assignments, group activity discussions or games all permits you to modify coursework to best activate every learner's learning style (Behrendt & Franklin, 2014).

Utilization of instructional materials in education brings out productive learning outcomes because learning materials motivates learning of the students as well as stimulating them. A method to analyze the use of instruction and learning materials this is mainly due to the expenditure of the school. School expenditure is the best method to scrutinize learning materials utilization. This has been as a result of school expenditures constituting the bulk of every material aimed to educating and are good education policy tools (Meghir, 2014). Since the beginning of FDSE guiding principle, secondary education accessibility has rose with many pupils enrolling in high school education increasing from 1.3 million in 2009 and 2.1 million learners this year, increasing the rate of transition from 64% to 77% over the period ("FDSE', 2014) caused congested classes as well as overutilization on accessible TLR (KESSP, 2010).

Kenyan schools, like other schools in Africa, embrace learning and teaching materials utilization. Utilization of instructional materials enhances academic attainments (Otieno, 2010). Ashiona, Mwoma and Murungi (2018) noted that utilization of ICT during lesson delivery increased learners' participation in learning thus higher academic retention. Okongo, Ngao,

Rop and Nyongesa (2015) established that lack of adequate, appropriate instructional materials show symbolized concrete teaching of mathematics and showed reactive learning. This would lead to performance which is very poor, (Wambua & Murungi, 2018). Kariuki (2013) stated that learning becomes effective through the use of instructional materials, preparation of lesson plans/ and assist in acquiring learners needs, therefore influencing learners positively and the performance of the school. Furthermore, he stated that the key aspect of education is crippled by in availability of instructional materials.

Kochung (2017) confirms that real materials or objects that students can, move, touch or feel develop learning initiative and as a result of this fact teachers are supposed to make use of them to make learning interesting and real. Examining instructional materials, Gagne (1976) discusses about live materials that assists the teacher to form the concept in an easy way. He further argues that real materials or object which cannot be acquire since they are unavailable or very costly can be shown using pictures diagrams or models, which requires the creativity of the teacher. It is sensible that pictures mainly contribute to an object which assists teachers in developing the desired concepts which is as well pupils' desire. In exemplification form, Gagne (1976) states displaying a deserts' picture to a learner helps in formation of a concept of a desert in an easy way than describing and telling desert features in abstract.

2.3.3 Variety of Teaching and learning materials

Various researches within African nations such as Ghana, Uganda, South Africa, Nigeria and Mauritius depicts that a range of learning materials are employed in training and learning. For example, in Ghana, Yeboah (2011) in a description on learning to teach mathematics as well as reading and its impact on teaching practice discovered that like they had been coached on, most (94.23%) of the training trainers and teachers who were only just competent perceived that use

of practical examples and concrete objects was the best method to help learners comprehend basic mathematical concepts. On the other hand, when taken to the field for teaching and practice the report was otherwise. During their observation, they didn't show a single experienced teacher teaching using any instructional materials. They employed teacher centered method to teach mathematics and reading which are not appropriate methods for teaching students. Nevertheless, when taken to the schools for teaching and practice, they reported otherwise.

Although the study was carried out between student teachers in teacher training colleges, it was not clear whether the students were to ensure they use teaching and learning materials in the classroom or they were to observe whether teachers who were experienced were using the materials to teach. In addition, the findings never indicated the level the students were mainly referring to when the study said that the experienced teachers were using teacher-centered method to edify mathematics and reading (Yeboah, 2011).

Uwezo (2011) found that, in Uganda, one out of each five (22%) of all grade three pupils couldn't answer numerically printed division mathematics of grade two appropriately. More than one out of every ten (11%) of all grade seven pupil couldn't answer numerically printed division mathematics of grade two appropriately. Some of the poor performance in arithmetic reasons given by Uwezo (2011) included the education level, feeding program existence in school kind of school attended be it private or government among others. Although the report focused on performance in mathematics among lower primary school learners, it did not have screen shots on the appearance of the classrooms to show the presence of instructional materials.

2.3.4 Teachers' Professional Development in Learning Materials

The quality of education depends on the ability, hard work and dedication of the teacher. If a teacher fails to keep himself in touch with the rapid scientific and educational development then he would become inefficient and ineffective. There are factors for shaping the quality of teaching. Among them, teacher training and professional development program are the main factor affecting the teachers' practices (Soe, 2018). Teacher professional development appears to have the strongest impact on changes in teacher learning, followed by changes in actual teacher behavior, while less of an impact was found on student learning. Teacher professional development also has a positive association with teachers self-reported increases in knowledge and skills and changes in classroom practices are: collaboration and active learning; continuity across time and activities; and differentiation (TALIS, 2013).

Professional training process and professional development process is one of the important factors in the teachers' use of classroom practices. If the teachers have sound professional background and professional knowledge, they can effectively use the various instructional practices in the classroom (Soe, 2018). Teaching and learning materials used by teachers can be grouped into those that include asking questions, providing feedback (reading) and giving information (structuring), (Rosenshine & Stevens, 1986). They noted that in giving information, success is achieved when trainers not only keenly present learning material but as well when they structure it by: a) starting with reviews or overview of learning outcomes; b) exacting the content to be taught and moving from one lesson to another; c) reviewing major concepts and d) paying attention to major ideas.

Summary reviews are as well essential because they reinforce and integrate learning of main concepts. These elements of restructuring other than facilitating information memorization they also permit apprehension as an integrated whole with identification of the associations among parts (Creemers & Kyriakides, 2016).

Farrant (2015) discovered that other teaching materials and textbooks provide opportunities and exercises for the learners to learn and in future use them in their academic progress. According to him, textbooks are important to teachers because they keep teachers informed on what to teach as well as to learners as it supplements what learners has learnt in class. Gatende (2010), found that two of the best ways for a teacher to help students use content productively (i.e., develop their skills, competencies, and dispositions in the subject matter) are to demonstrate the importance of the subject matter and to relate the course material to real-life situations which is easily done by use of instructional materials.

2.3.5 Pupils' Development and Academic Performance

According to Biesta, the first parameter of good education is qualification. This relates to learning knowledge and skills and is very much linked to learning something specific and might be considered a key purpose of education. However, there is a danger that schools often over-emphasize this element. Biesta claims that the intensity given to this element has led to what he terms 'learnification' which is an over emphasis on what is learnt and a simplistic notion of learning and learners. Sfard (2013) identifies the 'objectification' of education whereby notions of doing and being are changed to 'having'. Education thus becomes removed from the individuals and located in the product and outcomes of education. Socialization concerns how education enables individuals to become part of cultural, political and social orders or traditions. There is a particular concern to explore the ways in which education influences pupils' progress

through socialization. Subjectification concerns how education nurtures the uniqueness of each individual. In essence, it is about human subjectivity and uniqueness.

The developmental needs of children in primary schools are particularly important for career counselors to keep in mind when designing a career education program. Thus, it is essential for counselors to be familiar with children's developmental needs in order to present adequate support. According to Zunker (2006), observational learning enhances children's cognitive development as pupils learn quickly from modeled behavior. Another important developmental factor to take into consideration with primary school learners is self-concept. This consists of the learners' perceptions and unique role and perspective across many dimensions including peer groups, relationships with friends, teachers, and parents, our outlook on the future, ideas about careers, and so on. Teaching and learning materials will thus increase the learners' abilities to grasp concepts in the classroom situation.

Teaching and learning materials assist in developing personality traits, social roles, and academic skills among the pupils. The materials can also be tailored for career-building activities that focus on responsibility or how to prioritize work. Others include self-determination skills development (such as goal setting, decision making, problem solving, and self-advocacy), independent living skills development, interpersonal skills development, leisure skills development, transportation skills development, classroom behavior development and social skills development (National Technical Assistance Center on Transition, [NTACT], 2017).

2.4 Conceptual Framework

A conceptual framework is an assumption structure, rules and principles that brings collectively the concepts encompassing a wide concept.

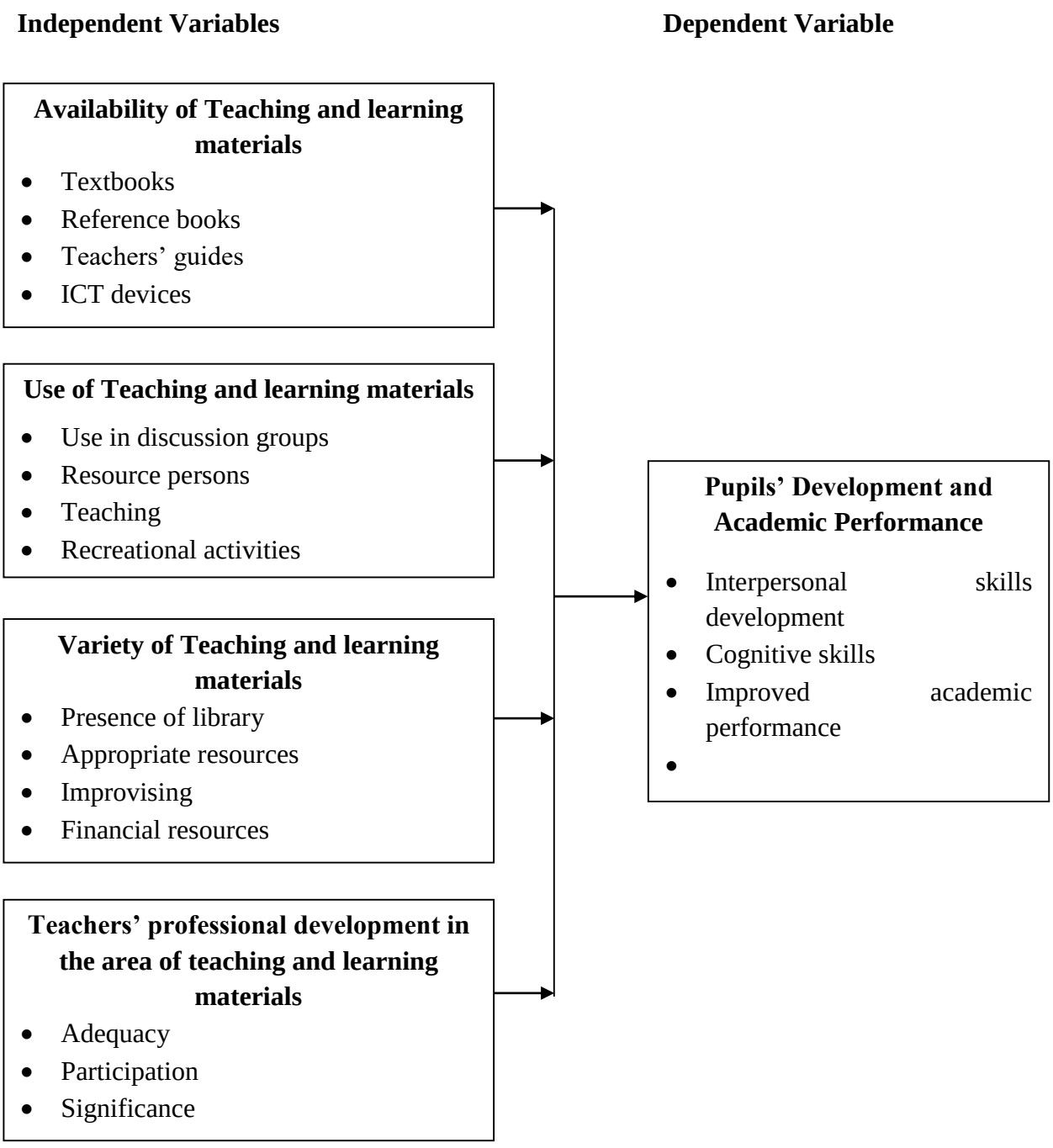


Figure 2. 1: Conceptual Framework

Source: Researcher (2020)

2.4.1 Explanation of the Variables

The conceptual framework shows that availability of teaching and learning materials will be assessed by the availability of such items as textbooks, reference books, teachers' guides, and ICT devices, among others.

Use of teaching and learning materials will be measured using factors such as their use in discussion groups, use of resource persons, their use in teaching exercises, use during recreational activities, among others.

Variety of teaching and learning materials can be established through the presence of a library in the school, availability of appropriate resources for different learning activities, ability of the teacher to improvise, and the school having sufficient financial resources to acquire the same.

Teachers' professional development in the area of teaching and learning materials can be determined through adequacy of the training, participation in training modules, the significance of the training exercise, and having sufficient resources for the same.

Pupils' development and academic performance can be gauged through improved performance of the upper primary pupils, interpersonal skills development, improved cognitive skills, among others.

2.5 Summary of Literature Review

The Theory of Instruction is applicable to this research since well-organized instructions develop right concept acquisition. Good results are attained when teaching process is well organized. He stresses that, a pupil of a very young age is in a position of acquiring any concept in learning areas if only the instructions were correctly organized. Providing the right learning

materials is one of the ways of organizing instructions. Self Determination Theory is also applicable to this research since well-organized instructions increase self-determination. Learners are able to achieve good results when the teaching process is well organized. Providing the right learning materials is one of the ways of organizing instructions and assisting learners in their quest for self-determination even as they grow.

In empirical review, the study by Otieno (2020) found that utilization of instructional materials promotes academic achievements. Ashiona, Mwoma and Murungi (2018) also noted that utilization of ICT during lesson delivery increased learners' participation in learning thus higher academic retention. Ngao, Rop, Okongo and Nyongesa (2015) stated that inadequate, appropriate IM signified theoretical training of mathematics and showed passive learning. This would lead in poor performance (Wambua & Murungi, 2018).

Conboy and Fonseca (2012) hypothesized that the organization of school equipment and physical conditions or restrain building of a civilization of achievement. Ministry of Education Science and Technology, MOEST (2015) elucidates the significance of making sure that there is enough and right teaching and learning facilities to ensure effective implementation of educational programs. Muijs and Reynolds (2010) teachers are viewed as actively representing the subject matter through the use of teaching resources. Farrant (2015) writes that reference books and other instructional materials provide opportunities and exercises for the learners to learn and later use them in their academic progress. According to Farrant, textbooks are important to teachers because teachers remain informed of what they will teach to learners, as it adds on what a learner has in class.

According to Uwezo (2011), a number of excuses provided for poor performance in mathematics were the kind of schools went to whether private or government schools,' education level, existence of school feeding program among others. Although the report focused on performance in mathematics among lower primary school learners, it did not have screen shots on the appearance of the classrooms to show the presence of instructional materials.

A report on learning to train in mathematics and reading and its effect on teaching practice by Yeboah (2011) discovered that like they had been instructed on, most of the teachers (94.23%) of them who were being trained as well as recently competent teachers had the view that employing practical examples and concrete was the best methods to assist learners comprehend basic mathematical concepts. On the other hand, when left to go to the field for teaching and practice, they accounted differently. During their scrutiny, the instructors with experience were not observed using teaching and learning materials.

The study by Foliaki (2012) found that the more we can engage the learner's sense and bring them into learning, the more the learning will take place. This proves why motion images are superior visual materials than motionless objects. For instance, learners learn little when we are only drawing a 'pie' on the whiteboard divided it up by drawing lines through it. The learners will learn more on fractions if you cut up a real pie and give out the pieces to your pupils.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprises of the instruments of research which the researcher used in the study, the research methodology, research design, study location, the target population and the method of sampling, tools for collecting data, testing of instrument reliability and validity, methods and procedures of collecting data, proposed data analysis techniques and procedures, as well as the ethical considerations undertaken.

3.2 Research Methodology

The research methodology employed in the study was a quantitative survey. A survey is a method of research whereby participants answer a number of questions or statements in an interview or questionnaire. Surveys are aimed at individuals who are the focused subjects of the study. Since the population is generally a bit big, the researcher targeted a sample to represent the whole population. Advantages of quantitative data analysis is that it facilitates for a wider study, involving a big number of subjects, and promoting the generality of the outcomes as well as allowing for superior impartiality and accurateness of the findings (Kothari, 2012).

3.3 Research Design

The study adopted a descriptive research design. Holborn with Langley (2014) describes descriptive research design as a process which includes recounting the subject behavior without affecting it in any means and it is also used as a precursor to quantitative research designs. In addition, Kothari (2015) indicated that the common impression providing some important pointers as to what variables are importance testing quantitatively. Kothari goes on stating the advantages that this descriptive research method assists the researchers to plan and conduct

descriptive researches, intended to give comprehensive descriptive data concerning people, opinions along with other occurrences.

This form of study aims to describe the characteristics and data on what is being studied. Studying frequencies and other statistical calculations and averages being the main idea behind this type of research based on determinants of academic performance. Survey research design is a well-organized technique for scientifically gathering information from a wide range of people and educational settings. The target population of this study comprised of teachers of upper primary in Karunga Zone, Gilgil Sub County.

3.4 Location of the Study

Karunga zone is one of the zones in Gilgil Sub County, Nakuru County, Kenya. Gilgil town is situated between Naivasha and Nakuru and along the Nairobi - Nakuru highway. It is to the west of the Gilgil River, which flows south to feed Lake Naivasha. Agriculture is the main local income generating activity. While Gilgil Telecommunications Industries was a famous company, it is now clogged down after it was vended by the administration. Within the outskirts of Gilgil there are some industries which include, being precise the Gilgil Diatomite Industries which is situated further to the west beside the Gilgil-Nakuru main road. It covers an area of 7,509.5 km^2 (2,899.4 square miles). The total population according to the 2019 census is 2,162,202. There are 18 primary schools with a total of 587 upper primary teachers.

3.5 Target Population

Mugenda with Mugenda (2012) defined target population as a widespread group of the study of all individuals of a set of individuals, objects or events to which the investigator wishes to generalize the findings. According to Williamson (2015), a population of research is also

referred to as collection of objects or individuals with same characteristics thus every object or individual in a certain population typically have a universal, compulsory feature or characteristic. The total population of upper primary teachers in the zone was 587.

Table 3. 1: Target Population

Category	Target Population
Nuthu	25
Twendane	33
Cura	36
Kigogo	28
Mwega	27
Ngeteti	29
Utumishi	38
Gitare	25
Komothai	34
Ngumo	48
Karunga	29
Kahuho	32
Gilgil Township	42
St. Patrick's	22
Gilgil Teachers	31
Langalanga	34
Murindat	36
Ngecho	38
Total	**587**

Source: Nakuru County Government (2020)

Apart from the teachers, head teachers of the respective schools were also sampled. An interview schedule was also developed for pupils and another one for community and opinion leaders in order to collect their views on the teaching and learning materials in the schools.

3.6 Sampling Procedures and Techniques

A sample is a diminutive group acquired from easily reached population (Trochim, Donnelly, & Kanika, 2016). Random sampling method was used by the study. A stratified random sample provides better accuracy compared with simple random sample of the similar size. Since it gives better accuracy, a stratified sample usually necessitates smaller samples, which hoard money through increased efficiency in the statistical method (Cooper & Schindler, 2014). The sample respondents participated in the study regarding the impact of teaching and learning resources on academic performance.

3.7 Sample Population

The sample was calculated and determined using the formula propounded by Nassiuma (2009).

$$n = \frac{NC^2}{C^2+(N-1)e^2} \quad \text{..... (1)}$$

Where n = sample size, N= population size C = Coefficient of variance, e=standard error of sampling.

N=Target Population = 587

c = Coefficient of variance =30%

e = Error Term = 3%

n = $587*(0.30^2) / [0.30^2 + (587 - 1)\ 0.03^2]$

n = 100

Therefore, using the formula, the sample size for the study was 100 respondents.

A stratified random sampling with chances relative to the size of each school was used to assign sample size in every division using the method in equation (2) derived from Creswell (2013) as shown in table 3.2 below:

$$n_i = \left\{\frac{n}{N}\right\} N_i \text{...} (2)$$

Where: n_i = number of individuals,

n = is the total sample size;

N = total population size,

Ni = the sample size.

The table below represents the demography of the target population for the study.

Table 3. 2: Sample Population

Category	Target Population	Sample Size
Nuthu	25	4
Twendane	33	6
Cura	36	6
Kigogo	28	5
Mwega	27	5
Ngeteti	29	5
Utumishi	38	6
Gitare	25	4
Komothai	34	6
Ngumo	48	8
Karunga	29	5
Kahuho	32	5

Gilgil Township	42	7
St. Patrick's	22	4
Gilgil Teachers	31	5
Langalanga	34	6
Murindat	36	6
Ngecho	38	6
Total	**587**	**100**

3.8 Construction of Research Instruments

A compilation of questions to which the study questions is expected to respond is referred to as a questionnaire. Mugenda and Mugenda (2012) asserted the instrument can be given orally as the person carrying out the study records the response to every item independently. In the study, the researcher outlined a number of questions in the questionnaires. They were divided into closed ended or structured questions giving options to answers being looked for. The design of the questionnaires was based on a multiple-item measurement scale. The questionnaire was separated into five parts. Section A which contains the background information and parts B, C, D, and E which contain the variables of the study. These were given to the teachers who thereafter gave back the required data and particulars.

Williamson (2015) posited that the benefit of employing this method includes: it is not expensive since from the onset the questionnaires are issued to respondents who are willing; the researcher will have to wait for the participants to issue information back in their own time. Some participants may give the responses immediately; it will also enable the researcher to make general inquiries generated from the questionnaires and participants who may not be reached could easily be contacted.

An interview schedule was also developed for pupils and another one for community and opinion leaders.

3.9 Testing for Validity and Reliability

The following discussions address how the questionnaires were pilot tested.

3.9.1 Validity Test

According to Trochim, et. al. (2016) validity is the extent to which a test evaluates what it is required to measure. It is unusual, if almost not possible, that a tool be one hundred percent valid, therefore validity is normally measured in degrees. As a method, validation entails gathering and scrutinizing data to evaluate the correctness of a tool. The research assistant and the researcher's supervisor confirmed on the quality of questionnaire construction and the question contents. The formulated questionnaire was presented to the supervisor for appraisal and direction. The assistant of the researcher was as well involved in directing on questions simplification for simple comprehension by the participants.

3.9.2 Reliability Test

The measure to which the research instruments gives similar findings on repetitive trials basis is referred to as reliability. Thus, reliability should be determined since an excellent deal in finding consistency of a different research tool at diverse times exist (Lyon, 2015). For consistency confirmation the research adopted Cronbach's alpha formula. In his approach, Cronbach's alpha gives a helpful lower bound on consistency. Cronbach's alpha will usually rise when the connections among the items rises. As a result, the coefficient measures the interior reliability of the test. Its utmost value is 1, and generally its least amount is 0, though it can be negative.

Holborn with Langley (2014) posited that a commonly-accepted rule of thumb is that an alpha of 0.7 shows suitable consistency and 0.8 or higher shows better consistency. Very high consistency (0.95 or higher) is unnecessarily advantageous, since this show that the objects may be totally superfluous. These are just guiding principles and the definite value of Cronbach's alpha will be based on a lot of things like the amount of items rises. Cronbach's alpha tends to rise as well still with no any rise in internal reliability. The aim in designing a consistent tool is for scores on same items to be associated (internally reliable), but for every to give some exceptional information too.

Table 3. 3: Reliability Test Results

Variable	No. of Test Items	Cronbach Alpha
Teaching and learning materials availability	7	.726
Teaching and learning materials use	7	.705
Teaching and learning materials variety	7	.714
Teachers' learning materials professional development	7	.788
Academic performance	7	.812

The consistency test on the pilot data depicted that Teaching and learning materials availability had a Cronbach's Alpha score of 0.726; Teaching and learning materials use had a Cronbach Alpha of 0.705; Teaching and learning materials variety had a Cronbach's Alpha of 0.714; Teachers' learning materials professional development had a Cronbach Alpha of 0.788; and Academic performance had a Cronbach's Alpha of 0.812. This meant that the data was consistent given that the Cronbach's Alpha scores were all greater than 0.7 and the data could be used for further analysis and interpretation.

3.10 Data Collection Methods and Procedures

The researcher endeavored to clearly phrase each question so as to give clear dimensions along which answers will be analyzed. The study started after acquiring a permit of research from the National Commission for Science Technology and Innovation (NACOSTI) through the Director School of Postgraduate Studies, St. Paul's University. The researcher gave out the questionnaire personally to every participants of the study with the aid of an assistant. Care and control was exercised by the researcher to make sure all questionnaires given to the participants are well received and to attain this, the study upheld questionnaires register, which was sent and received. The questionnaire was issued using a drop and pick later method.

3.11 Data Analysis Techniques and Procedures

Data acquired from the questionnaires was first cleaned and edited prior to coding as well as subjected to more analysis. Descriptive numerical analysis was carried out using, percentages, means and frequencies to illustrate the basic data characteristics. Likert scale items can be combined to describe a personality trait or attitude by use of means and standard deviations (Carifio & Perla, 2007). Inferential data analysis was done using the Pearson's Product-Moment Correlation Coefficient and Multiple Regression. The multiple regression model was assumed to hold under the equation;

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y= Performance of pupils in upper primary Schools in Karunga Zone, Gilgil County.

a = Constant

X_1 = Teaching and learning materials availability.

X_2 = Use of teaching and learning materials.

X_3 = Teaching and learning materials variety.

X_4 = Teachers' learning materials professional development.

$\beta_{i,}$ are the coefficients of the variables determine by the model

e = the estimated error of the regression mode.

3.11 Data Analysis Techniques and Procedures

Data acquired from the questionnaires was first cleaned and edited prior o coding and subjected to further analysis. Descriptive numerical analysis was carried out using, percentages, means and frequencies to illustrate the basic characteristics of the data. Likert scale items can be combined to depict a personality characteristic or attitude by use of means and standard deviations (Carifio & Perla, 2007). Inferential data analysis was carried out using the Pearson's Product-Moment Correlation Coefficient and Multiple Regression.

3.12 Ethical Considerations

Ethical considerations were observed in the study. This included acquiring necessary consent from both the university administrators and the management of Teachers Service Commission at Nakuru County Government. A letter of authority was also acquired from the National Commission for Science, Technology and Innovation (NACOSTI). The permissions once obtained were helpful in making sure that the research study was undertaken successfully so that the results collected in the resultant stages don't violate the set of laws and regulations to be followed when carrying out this research work.

The researcher sought the respondent's attention through recognizing those that were willing to take part in the study. Informed permission as a moral value means that potential study respondent will be informed fully on the risks and procedures included in the study and should

give their permission to take part in. Moral standards were upheld in the current study by necessitating that the investigators do not expose respondents in a condition where they may be at danger of harm as a result of their involvement.

The participants were guaranteed that the data identified will not be disclosed to any person not taking part directly in the study. Thus, the researcher undertook to keep the agreements and promises; act with honesty; strive for reliability of consideration and action. The researcher avoided slipshod negligence and errors; critically and carefully study the report work and the peers work. The researcher strove to ensure honesty in every scientific communication. Honestly report data, findings, procedures and methods and status of publication. Data was not fabricated, misrepresented or falsified. The research sponsors, colleagues, or the public were also not misled.

The respondents were assured of their anonymity in case they participated in the study. This is because some of the participants were apprehensive to share information regarding the teaching and learning materials in their learning institutions for fear of being victimized later on. Since they were assured of their anonymity, such respondents agreed to take part in the study fully and with no any fear of repercussions.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter contains the analysis of the data collected with regard to the study variables namely; teaching and learning materials' availability, use, variety, and teachers' professional development and their influence on academic performance of upper primary pupils in Karunga Zone, Gilgil County.

4.2 Response Rate

The researcher gave out a total of 100 questionnaires to teachers of upper primary in Karunga Zone, Gilgil County. Seventy-four were returned duly done representing a response rate of 74%. All the 74 duly returned questionnaires were found to have been accurately filled. For the head teachers, out of the 18 schools targeted 14 duly returned the same giving a response rate of 78%.

Table 4. 1: Response Rate

	Issued	Returned	Percent
Head Teachers	18	14	78
Teachers	100	74	74

Data acquired from the questionnaires was cleaned and edited first before being recorded and subjected to further analysis. The Likert scales in closed ended questions in the questionnaires were converted to numerical codes and be scored on 1-5-point scale in order of size of the construct being measured. They were then keyed in into the Statistical Package for Social Sciences (SPSS) version 24.0 computer program.

4.2.1 Data Cleaning and Treatment

Scale transformation was done so as to express the Likert data in an easily understandable way. Mean scale scores were developed by scheming a composite score (sum or mean) by adding all individual response scores and dividing by the total. This composite score for Likert scales was now suitable for analysis at the interval measurement scale.

4.3 Responses from the Head Teachers

4.3.1 Gender of the Head Teachers

The study sought to know the head teacher's gender involved in the study.

Table 4. 2: Gender of the Head Teachers

	Frequency	Percent
Male	8	57.1
Female	6	42.9
Total	**14**	**100.0**

4.3.2 Period as a Head Teacher in the School

The study sought to know the length that the respondent has been a head teacher in the school. The findings are as follows in the table below:

Table 4. 3: Period as a Head Teacher in the School

	Frequency	Percent
Under one year	3	21.4
1 – 3 years	6	42.9
4 – 6 years	5	35.7
Total	**14**	**100.0**

The results show that those who have been in the same school for less than one year were 3 (21.4%), those who have been in the school for between 1 – 3 years were 6 (42.9%), while 5 (35.7%) have been there for 4 – 6 years.

4.3.3 Highest Academic Qualification

The study sought to find out the uppermost academic qualification of the head teachers.

Table 4. 4: Highest Academic Qualification

	Frequency	Percent
M. Ed	3	21.4
B. Ed	8	57.3
B. Sc	1	7.1
Other	2	14.2
Total	**14**	**100.0**

The results show that 3 (21.4%) have a Masters in Education, 8 (57.3%) have a Bachelor in Education, 1 (7.1%) has a Bachelor of Science, while 2 (14.2%) have other qualifications. Thus the respondents are suitably qualified to answer the questions regarding the study.

4.3.4 Number of Streams in the School

The study sought to find out the number of streams in the schools.

Table 4. 5: Number of Streams in the School

	Frequency	Percent
4 – 6 streams	9	64.3
Over 6 streams	5	35.7
Total	**14**	**100.0**

The results on number of streams show that 9 (42. %) of the head teachers indicated that their schools have 4 to 6 streams while 5 (35.7%) indicated they have over 6 streams. Thus, all the schools have high number of streams necessitating the large streams.

4.3.6 Number of Teachers in the School

The study sought to find out the number of teachers in the schools.

Table 4. 6: Number of Teachers in the School

Category	Number	Frequency	Percent
TSC Teachers	Less than 20	3	21.4
	Over 20	11	78.6
Volunteers	1 – 5	5	35.7
BOM Teachers	1 – 5	4	28.6
	6 – 10	3	21.4

Three (21.4%) of the schools have less than 20 TSC teachers while 11 (78.6%) have over 20 TSC teachers. Five (35.7%) of the schools have 1 - 5 volunteer teachers, 4 (28.6%) have 1 – 5 BOM teachers, and 3 (21.4%) have 6 – 10 BOM teachers.

4.3.7 Average Number of Lessons Allocated per Week

The study sought to know the number of lessons allocated to a teacher for every week.

Table 4. 7: Number of Lessons Allocated per Week

	Frequency	Percent
19 – 24 lessons	4	28.6
25 – 30 lessons	10	71.4

Total	**14**	**100.0**

In 4 (28.6%) of the schools, the number of lessons allocated to a teacher for every week is 19 – 24, while in 10 (71.4%) of the schools the average number of lessons allocated for every week is 25 – 30. Thus, majority of the schools allocate 25 – 30 lessons per week to each teacher.

4.3.8 Availability of Resources in the Schools

Table 4. 8: Availability of Resources in the Schools

	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	SD
The number of reference books in the school are adequate	2(14.3%)	6(42.9%)	3(21.4%)	3(21.4%)	0(0%)	3.50	1.019
The number of teachers guides are adequate	6(42.9%)	2(14.3%)	3(21.4%)	2(14.3%)	1(7.1%)	3.71	1.383
Books and storage of equipment and facilities in the school are enough	1(7.1%)	2(14.3%)	3(21.4%)	3(21.4%)	5(35.7%)	2.36	1.336
Pupils have adequate number of text books	2(14.3%)	3(21.4%)	2(14.3%)	4(28.6%)	3(21.4%)	2.79	1.424
Use of ICT devices in learning and teaching	0(0%)	1(7.1%)	5(35.7%)	4(28.6%)	4(28.6%)	2.21	.975
Use of field trips/ excursions in the school is frequent	3(21.4%)	3(21.4%)	4(28.6%)	2(14.3%)	2(14.3%)	3.21	1.369
Use of resource person in the school is regular	3(21.4%)	3(21.4%)	4(28.6%)	2(14.3%)	2(14.3%)	3.21	1.369
Teaching materials such as manilas, chalk, dusters, models and charts are sufficient.	5(35.7%)	5(35.7%)	2(14.3%)	2(14.3%)	0(0%)	3.93	1.072
Overall mean						**3.12**	**1.243**

The number of reference books in the school are sufficient had 2(14.3%) of the respondents strongly agreeing, 6(42.9%) agreeing, 3(21.4%) being neutral, and 3(21.4%) disagreeing. The

number of teachers guides are adequate had 6(42.9%) of the participants strongly agreeing, 2(14.3%) agreeing, 3(21.4%) being neutral, 2(14.3%) disagreeing, and 1(7.1%) strongly disagreeing. Books and storage of equipment and facilities in the school are enough had 1(7.1%) of the participants strongly agreeing, 2(14.3%) agreeing, 3(21.4%) being neutral, 3(21.4%) disagreeing, and 5(35.7%) strongly disagreeing. Pupils have adequate number of text books with 2(14.3%) of the respondents strongly agreeing, 3(21.4%) agreeing, 2(14.3%) being neutral, 4(28.6%) disagreeing, and 3(21.4%) strongly disagreeing. Use of ICT devices in learning and teaching had 1(7.1%) of the respondents agreeing, 5(35.7%) being neutral, 4(28.6%) disagreeing, and 4(28.6%) strongly disagreeing. Use of excursions/ field trips in the school is common had 3(21.4%) of the participants strongly agreeing, 3(21.4%) agreeing, 4(28.6%) being neutral, 2(14.3%) disagreeing, and 2(14.3%) strongly disagreeing. Use of resource person in the school is regular had 3(21.4%) of the participants strongly agreeing, 3(21.4%) agreeing, 4(28.6%) being neutral, 2(14.3%) disagreeing, and 2(14.3%) strongly disagreeing. Teaching materials such as manilas, chalk, dusters, models and charts are sufficient had 5(35.7%) of the participants strongly agreeing, 5(35.7%) agreeing, 2(14.3%) being neutral, and 2(14.3%) disagreeing. The overall mean was 3.12; with standard deviation 1.243 implying that the head teachers agreed with the statements on availability of teaching and learning resources in their schools.

The results agree with those of Foliaki (2012), who found that the more we can engage the learner's sense and bring them into learning, the more the learning will take place. This proves why motion images are superior visual materials than motionless objects. For instance, learners learn little when we are only drawing a 'pie' on the whiteboard divided it up by drawing lines

through it. The learners will learn more on fractions if you cut up a real pie and give out the pieces to your pupils.

4.3.9 Textbook/Pupils Ratios

Table 4. 9: Textbook/Pupils Ratios

Subject	Number of pupils per text book
Mathematics	5:1
English	3:1
Kiswahili	6:1

The textbook/pupils ratio shows that 5 pupils share one textbook in Mathematics, 3 pupils share one textbook in English, and 6 pupils share one textbook in Kiswahili.

4.3.10 Normal Number of Pupils per Class

Table 4. 10: Normal Number of Pupils per Class

	Frequency	Percent
41-50 pupils	3	21.4
Above 50 pupils	11	78.6
Total	**14**	**100.0**

Three (21.4%) of the head teachers showed that the classes in their schools have an average of 41-50 pupils each while 11 (78.6%) indicated their schools normally have more than 50 pupils per class.

4.3.11 Whether Government Disburses Free Primary Education (FPE) Funds in Time

Table 4. 11: Whether Government Disburses Free Primary Education (FPE) Funds in Time

	Frequency	Percent
Yes	2	14.3
No	12	85.7
Total	**14**	**100.0**

On whether the government disburses Free Primary Education (FPE) funds in time, 2 (14.3%) of the head teachers said that it did while 12 (85.7%) said that it did not. According to the head teachers, this negatively affects the provision of teaching and learning materials as they sometimes cannot be provided at the required time. All the head teachers (100%) agreed that FPE policy has had an impact on enough stipulation of learning and teaching resources. They indicated that the provision of FPE has led to rise in stipulation of learning and teaching resources. According to the head teachers, accessibility of learning and teaching materials (TLM) has led to improved performance of the pupils in upper primary classes in the schools. These results agree with those of the World Bank (2019), which found that teaching and learning materials availability improves school effectiveness since they are reliable in giving out good academic performance to the learners.

4.4 Teachers' Responses

The demographic information presented is on the respondent's gender, respondents' age highest level of education and the duration they have been working as teachers.

4.4.1 Gender of the Respondents

The participants were asked to indicate their gender. The findings are shown in Table 4.1.

Table 4. 12: Gender of the Respondents

	Frequency	Percent
Male	32	43.2
Female	42	56.8
Total	**74**	**100.0**

The results on respondent's gender show that 32 (43.2%) were male while 42 (56.8%) were female. Thus, the respondents were fairly distributed among the two genders and the answers would then be balanced.

4.4.2 Respondents' Teaching Subjects

Table 4. 13: Respondents' Teaching Subjects

Subjects	Frequency	Percent
Languages	34	45.9
Technical	12	16.2
Humanities	20	27.0
Sciences	8	10.8
Total	**74**	**100.0**

The results on teaching subjects show that 34 (45.9%) of the respondents were teachers of languages, 12 (16.2%) taught technical subjects, 20 (27%) taught humanity subjects, and 8 (10.8%) taught science subjects.

4.4.3 Education Level

Table 4. 14: Education Level

	Frequency	Percent
M Ed	6	8.1
B Ed	37	50.0
B Sc	15	20.3
Dip Ed	16	21.6
Total	**74**	**100.0**

The results of the education level show that 6 (8.1%) have a Masters in Education, 37 (50%) have a Bachelor in Education, 15 (20.3%) have a Bachelor of Science, and 16 (21.6%) have a Diploma in Education. Thus majority (50%) have a Bachelor of Education.

4.4.4 Respondents' Level of Experience

Table 4. 15: Respondents' Level of Experience

	Frequency	**Percent**
0 - 5years	14	18.9
6 - 10years	42	56.8
11 - 15years	18	24.3
Total	**74**	**100.0**

Fourteen (18.9%) of the respondents have experience of 0 – 5 years, while 42 (56.8%) have experience of 6 – 10 years, and 18 (24.3%) had experience of 11 - 15years.

4.4.5 Respondents'' Weekly Workload

Table 4. 16: Respondents'' Weekly Workload

	Frequency	Percent
19 - 24 lessons	54	73.0
25 - 30 lessons	20	27.0
Total	**74**	**100.0**

The results on the weekly workload show that 54 (73%) of the respondents have a weekly workload of 19-24 lessons while 20 (27%) have a weekly workload of 25 – 30 lessons. Thus majority of the teachers have a weekly workload of 19-24 lessons.

4.5 Availability of Teaching and learning materials and Pupils' Development and Academic Performance

The composite interval scale items were used to calculate the mean as a measure of central tendency and standard deviations as a measure of inconsistency. The scores were thus suitable for additional data analysis procedures. These are correlation analysis to find out the degree of connection among the independent variables and the dependent variable and regression analysis to find out the impact of the independent variables on the dependent variable.

Linearity was tested using Pearson's product moment correlation coefficient to show that independent variables provide significant predictions which were considered prerequisite for running regression analysis.

Table 4. 17: Availability of Teaching and learning materials

	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	SD
The school has sufficient reference books	2(2.7%)	36(48.6%)	27(36.5%)	9(12.2%)	0(0%)	3.42	.740
There is a sufficient number of equipment and books	6(8.1%)	24(32.4%)	37(50.0%)	7(9.5%)	0(0%)	3.39	.773
Set of the resource persons in the school is sufficient	2(2.7%)	36(48.6%)	22(29.7%)	14(18.9%)	0(0%)	3.35	.818
Teaching resources such as chalk, duster, manilas, charts, models, calculators are available and sufficient	26(35.1%)	16(21.6%)	22(29.7%)	10(13.5%)	0(0%)	3.78	1.076
Teachers' guides are available in the school	0(0%)	16(21.6%)	53(71.6%)	4(5.4%)	1(1.4%)	3.14	.557
ICT devices for use in teaching and learning are available	0(0%)	34(45.9%)	24(32.4%)	16(21.6%)	0(0%)	3.24	.791
Field trips/excursions in the school can be done	4(5.4%)	33(44.6%)	22(29.7%)	12(16.2%)	3(4.1%)	3.31	.950
Overall mean						**3.38**	**.815**

The school has sufficient reference books had 2(2.7%) of the respondents strongly agreeing, 36(48.6%) agreeing, 27(36.5%) being neutral, and 9(12.2%) disagreeing. There is a sufficient number of equipment and books had 6(8.1%) of the respondents strongly agreeing, 24(32.4%) agreeing, 37(50.0%) being neutral, and 7(9.5%) disagreeing. Set of the resource persons in the school is sufficient had 2(2.7%) of the respondents strongly agreeing, 36(48.6%) agreeing, 22(29.7%) being neutral, and 14(18.9%) disagreeing. Teaching resources like chalk, duster,

manilas, charts, models, calculators are available and sufficient had 26(35.1%) of the participant strongly agreeing, 16(21.6%) agreeing, 22(29.7%) being neutral, and 10(13.5%) disagreeing. Teachers' guides are available in the school had 16(21.6%) of the respondents agreeing, 53(71.6%) agreeing, 4(5.4%) being neutral, and 1(1.4%) disagreeing. ICT devices for use in teaching and learning are available had 34(45.9%) of the participants agreeing, 24(32.4%) agreeing, and 16(21.6%) being neutral. Field trips/excursions in the school can be done had 4(5.4%) of the participants strongly agreeing, 33(44.6%) agreeing, 22(29.7%) being neutral, 12(16.2%) disagreeing, and 3(4.1%) strongly disagreeing. The calculated overall mean was 3.38; with standard deviation .815 implying that the teachers agreed that teaching learning resources were accessible in their schools.

The results agree with those of the World Bank (2019), which found that teaching and learning materials availability improves school effectiveness since they are reliable in giving out good academic performance to the learners. The results agree with those of Babayomi (2009) who found that schools that have a good performance is as a result of accessibility and sufficiency of learning and teaching resources. They also agree with those of Mwiria (2015) who found that the performance of students is influenced by the quantity and quality of learning and teaching resources.

Table 4. 18: Correlation between teaching and learning materials availability and pupils' development and academic performance

		Teaching and learning materials availability
Pupils' Development and Academic Performance	Pearson Corr.	.652*
	Sig. (2-tailed)	.000

The composite mean 3.38 for teaching and learning materials availability obtained from the Likert data was used to determine the correlation among teaching and learning resources availability as well as academic performance. At the 0.05 significance level ($r=0.652$, $p = .000 < 0.05$), it was found that there is a statistically important relationship among Teaching learning resources availability and Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. It is thus inferred that Teaching and learning materials availability predicate Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

Teaching and learning materials availability has an affirmative connection with Development and Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

Table 4. 19: Regression Model Summary TLM Availability and Pupils' Development Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.794[a]	.631	.626	.29072

a. Predictors: (Constant), Availability

The model shows a goodness of fit as indicated by the adjusted R^2 value of 0.626 implying that the variations in the independent variable, teaching and learning materials availability, explains sixty-two point six (62.6%) of the variation in Development and Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. Thus, there are other factors that cater for the outstanding 37.4% in the variation in the Pupils' Development and Academic performance that are not covered in the model.

Table 4.20: ANOVA Results TLM Availability and Pupils' Development and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.578	1	6.578	79.253	.000[b]
	Residual	5.960	72	.083		
	Total	12.538	73			

a. Dependent Variable: Pupils' Development and Academic Performance

b. Predictors: (Constant), Availability

The $F_{calculated}$ value of 79.253 is greater than F_{table} of 4.00 (df. 1, 60) and the p value = .000 < 0.05, thus confirming that there is a significant variation among means of the independent variable and the actual Development and Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

Table 4.21: Regression Results TLM Availability and Pupils' Development and Academic Performance

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.862	.254		11.279	.000
	Availability	.751	.074	.794	9.094	.000

a. Dependent Variable: Performance

The study findings indicate that there exists an affirmative and significant impact of Teaching learning resources availability on Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County (β=0.751, p<*.05*. Null Hypothesis One is therefore rejected. Study's results consequently imply that a single increase in teaching and learning materials availability will lead to 0.751-unit increase in Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. The results agree with those of Adeogun (2011) revealed incredibly strong positive important connection among learning materials and academic performance. Adeogun established that schools gifted with extra resources were in a position to give good performance than schools endowed with less teaching and learning materials.

4.6 Utilization of Teaching and learning materials on Pupils' Academic Performance.

Table 4. 22: Utilization of teaching and learning materials

	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	SD
I make use of reference books/teachers' guide in teaching	6(8.1%)	27(36.5%)	29(39.2%)	9(13.2%)	4(4.1%)	3.32	.938
I make use of the discussion groups/resource person in teaching	6(8.1%)	37(50%)	13(17.6%)	16(21.6%)	2(2.7%)	3.39	1.004
I make use of recreational facilities to entertain pupils	14(18.9%)	25(33.8%)	10(13.5%)	25(33.8%)	0(0%)	3.38	1.143
I make use of the models/charts in teaching	9(12.2%)	27(36.5%)	32(43.2%)	1(1.4%)	5(6.8%)	3.46	.968
I make use of internet in teaching	2(2.7%)	26(35.1%)	37(50%)	9(12.2%)	0(0%)	3.28	.712
I make use of calculators in teaching	4(5.4%)	35(47.3%)	22(29.7%)	13(17.6%)	0(0%)	3.41	.843
I make use of excursions/field trips in teaching	0(0%)	40(54.1%)	20(27.0%)	12(16.2%)	2(2.7%)	3.32	.846
Overall mean						**3.37**	**.922**

I make use of reference books/teachers' guide in teaching had 6(8.1%) of the respondents strongly agreeing, 27(36.5%) agreeing, 29(39.2%) being neutral, 9(13.2%) disagreeing and 4(4.1%) strongly disagreeing. I make use of the discussion groups/resource person in teaching had 6(8.1%) of the respondents strongly agreeing, 37(50%) agreeing, 13(17.6%) being neutral, 16(21.6%) disagreeing, and 2(2.7%) strongly disagreeing. I make use of recreational facilities to entertain pupils had 14(18.9%) of the respondents strongly agreeing, 25(33.8%) agreeing, 10(13.5%) being neutral, and 25(33.8%) disagreeing. I make use of the models/charts in

teaching had 9(12.2%) of the respondents strongly agreeing, 27(36.5%) agreeing, 32(43.2%) being neutral, 1(1.4%) disagreeing, and 5(6.8%) strongly disagreeing. I make use of internet in teaching had 2(2.7%) of the respondents strongly agreeing, 26(35.1%) agreeing, 37(50%) being neutral, and 9(12.2%) disagreeing. I make use of calculators in teaching had 4(5.4%) of the respondents strongly agreeing, 35(47.3%) agreeing, 22(29.7%) being neutral, 13(17.6%) and disagreeing. I make use of excursions/field trips in teaching had 40(54.1%) of the respondents agreeing, 20(27.0%) being neutral, 12(16.2%) disagreeing, and 2(2.7%) strongly disagreeing. The overall mean was 3.37; with standard deviation .922 implying that the teachers agreed that teaching and learning materials are used in their respective schools.

The results agree with those of Kariuki (2013) that stated learning becomes effective through the use of instructional materials, preparation of lesson plans/ and support in acquiring learners needs, therefore influencing learners positively and the performance of the school. The results also agree with those of Ashiona et al., (2018) noted that utilization of ICT during lesson delivery increased learners' participation in learning thus higher academic retention.

Table 4. 23: Correlation between TLR utilization and Pupils' Development and Academic performance

		Teaching and learning materials use
Academic Performance	Pearson Corr.	.263*
	Sig. (2-tailed)	.000

The composite mean 3.37 for teaching and learning materials utilization obtained from the Likert data was used to determine the correlation between teaching and learning materials utilization and academic performance. The analysis also indicates that Teaching and learning materials utilization has a positive relationship with Development and Academic performance

of upper primary pupils in Karunga Zone, Gilgil Sub County (r=0.263, p = .000 < 0.05). This implies that Teaching and learning materials utilization is significant in contributing to Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

The results agree with those of Foliaki (2012), who found that the more we can engage the learner's sense and bring them into learning, the more the learning will take place. This proves why motion images are superior visual materials than motionless objects. For instance, learners learn little when we are only drawing a 'pie' on the whiteboard divided it up by drawing lines through it. The learners will learn more on fractions if you cut up a real pie and give out the pieces to your pupils.

Table 4. 24: Regression Model Summary TLM Utilization and Pupils' Development Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.387[a]	.150	.105	.40666

a. Predictors: (Constant), Utilization

The model shows a goodness of fit as indicated by the adjusted R^2 value of 0.105 implying that the variations in the independent variable, teaching and learning materials utilization, explains ten point five (10.5%) of the variation in Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. Thus, there are other factors that account for the remaining 89.5% in the variation in Academic performance that are not covered in the model.

Table 4.25: ANOVA Results TLM Utilization and Pupils' Development and Academic Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.332	1	1.332	8.538	.023[b]
	Residual	11.206	72	.156		
	Total	12.538	73			

a. Dependent Variable: Performance
b. Predictors: (Constant), Utilization

The $F_{calculated}$ value of 8.538 is greater than F_{table} of 4.00 (df. 1, 60) and the p value = .023 < 0.05, thus confirming that there is a significant difference between means of the independent variable and the actual Development and Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

Table 4.26: Regression Results TLM Utilization and Academic Performance

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.097	.332		9.313	.000
	Utilization	.295	.112	.314	1.994	.023

a. Dependent Variable: Pupils' Development and Academic Performance

The study results indicate that there exists a positive and significant effect of Teaching and learning materials use on Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County (β=0.295, p .023 <.05). We therefore reject Null Hypothesis Two. The study thus concludes that increase in teaching and learning materials use will lead to increase in Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. The result agrees with that of Otieno (2010), who found that instructional materials promote academic achievements. They also agree with those of Ashiona, et. al. (2018) noted that utilization of ICT during lesson delivery increased learners' participation in learning thus higher academic retention. The results agree with those of Foliaki (2012), who found that the more we can engage the learner's sense and bring them into learning, the more the learning will take place. This proves why motion images are superior visual materials than motionless objects. For instance, learners learn little when we are only drawing a 'pie' on the whiteboard divided it up

by drawing lines through it. The learners will learn more on fractions if you cut up a real pie and give out the pieces to your pupils.

4.7 Variety of teaching and learning materials on Academic Performance

Table 4. 27: Results on Variety of Teaching and learning materials

	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	SD
There is a variety of reference books for teaching and learning in the school	0(0%)	32(43.2%)	22(29.7%)	20(27.0%)	0(0%)	3.16	.828
There are enough recreational facilities in the school	2(2.7%)	18(24.3)	32(43.2%)	16(21.6	6(8.1%)	2.92	.947
As a teacher, I am able to use excursions/field trips in teaching	8(10.8%)	4(5.4%)	36(48.6%)	18(24.3%)	8(10.8%)	2.81	1.069
The library in the school is well equipped with books and other learning materials	8(10.8%)	18(24.3%)	22(29.7%)	24(32.4%)	2(2.7%)	3.08	1.057
There are enough teachers' guides in the school	6(8.1%)	18(24.3%)	30(54.1%)	10(13.5%)	0(0%)	3.27	.896
The school is always able to provide required teaching and learning materials on demand	6(8.1%)	14(18.9%)	30(40.5%)	16(21.6%)	8(10.8%)	3.73	.833
I am always able to improvise and get appropriate teaching and learning materials are needed	4(5.4%)	26(35.1%)	34(45.9%)	6(8.1%)	4(5.4%)	3.57	.795
Overall mean						**3.22**	**.917**

There is a variety of reference books for teaching and learning in the school had 32(43.2%) of the respondents agreeing, 22(29.7%) being neutral, and 20(27.0%) disagreeing. There are enough recreational facilities in the school had 2(2.7%) of the respondents strongly agreeing, 18(24.3) agreeing, 32(43.2%) being neutral, 16(21.6%) disagreeing, and 6(8.1%) strongly disagreeing. As a teacher, I am able to use excursions/field trips in teaching had 8(10.8%) of the respondents strongly agreeing, 4(5.4%) agreeing, 36(48.6%) being neutral, 18(24.3%) disagreeing, and 8(10.8%) strongly disagreeing. The library in the school is well equipped with books and other learning materials had (10.8%) of the respondents strongly agreeing, 18(24.3%) agreeing, 22(29.7%) being neutral, 24(32.4%) disagreeing, and 2(2.7%) strongly disagreeing. There are enough teachers' guides in the school had 6(8.1%) of the respondents strongly agreeing, 18(24.3%) agreeing, 30(54.1%) being neutral, and 10(13.5%) disagreeing. The school is always able to provide required teaching and learning materials on demand had 6(8.1%) of the respondents strongly agreeing, 14(18.9%) agreeing, 30(40.5%) being neutral, 16(21.6%) disagreeing, and 8(10.8%) strongly disagreeing. I am always able to improvise and get appropriate teaching and learning materials are needed had 4(5.4%) of the respondents strongly agreeing, 26(35.1%) agreeing, 34(45.9%) being neutral, 6(8.1%) and 4(5.4%) disagreeing. The overall mean was 3.22; with standard deviation .917 implying that the teachers agreed that there was variety of teaching and learning materials in their schools but on a lower scale.

The results agree with those of MoEST (2015) who clarified the significance of making sure that there are enough and correct teaching facilities for learning and teaching for effective implementation of educational programs. Also, Yeboah (2011) found that use of practical

examples and concrete objects was the best method to help learners comprehend basic mathematical concepts. The results agree with those of Foliaki (2012), who found that the more we can engage the learner's sense and bring them into learning, the more the learning will take place. Thus, learners will learn more on fractions if you cut up a real pie and give out the pieces to your pupils.

Table 4. 28: Correlation between TLM variety and pupils' development and academic performance

		Teaching learning materials variety
Pupils' Development Academic Performance	Pearson Corr.	.117
	Sig. (2-tailed)	.321

The composite mean 3.22 for teaching and learning materials variety obtained from the Likert data was used to determine the correlation between teaching and learning materials variety and pupils' development and academic performance. The analysis further indicated that Teaching and learning materials variety had a positive relationship with development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County (r= .117, p .321 > 0.05). Since the p value is greater than 0.05, this implies that Teaching and learning materials variety does not significantly contribute to Development and Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

Table 4. 29: Regression Model Summary TLM Variety and Pupils' Development and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.202[a]	.041	.031	.46648

a. Predictors: (Constant), Variety

The model shows a goodness of fit as indicated by the adjusted R^2 value of 0.031 implying that the variations in the independent variable, teaching and learning materials variety, explains three point one (3.1%) of the variation in development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. Thus, there are other factors that account for the remaining 96.9% in the variation in Development and Academic performance that are not covered in the model.

Table 4.30: ANOVA Results TLM Variety and Pupils' Development and Academic Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.50	1	.050	.286	.594[b]
	Residual	12.489	72	.173		
	Total	12.538	73			

a. Dependent Variable: Performance

b. Predictors: (Constant), Variety

The $F_{calculated}$ value of .286 is less than F_{table} of 4.00 (df. 1, 60) and the p value = .594 > 0.05, thus confirming that there is no significant difference between means of the independent variable and the actual development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

Table 4.31: Regression Results TLM Variety and Pupils' Development and Academic Performance

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.861	.230		16.765	.000
	Variety	.068	.077	.063	.535	.594

a. Dependent Variable: Pupils' Development and Academic Performance

The study results indicate that there exists a positive but insignificant effect of Teaching and learning materials variety on Development and Academic performance of upper primary pupils

in Karunga Zone, Gilgil Sub County (β= 0.068, p .594 > .05). Since the p value is greater than α = .05, the study therefore fails to reject Null Hypothesis Three. The study consequently concludes that increase in teaching and learning materials variety has no significant influence on Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

4.8 Teachers' Professional Development and Pupils' Development and Academic Performance

Table 4. 32: Results on Teachers' Professional Development

	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	SD
I have participated in in-service training program in the past two years	10(13.5%)	42(56.8%)	14(18.9%)	8(10.8%)	0(0%)	3.78	.880
The training I underwent in the past two years was significant to my profession	6(8.1%)	38(51.4%)	22(29.7%)	8(10.8%)	0(0%)	3.57	.795
The training I underwent in the past two years was significant in the field of teaching and learning materials	18(24.3%)	26(35.1%)	26(35.1%)	4(5.4%)	0(0%)	3.78	.880
Resources in the school for teachers' professional development are sufficient	20(27.0%)	28(37.8%)	22(29.7%)	4(5.4%)	0(0%)	3.86	.881
The number of teachers guides in the school for each subject are adequate	8(10.8%)	48(64.9%)	12(16.2%)	6(8.1%)	0(0%)	3.78	.745
There are enough ICT resources for teachers' professional development in teaching and learning materials	16(31.6%)	22(29.7%)	36(48.6%)	0(0%)	0(0%)	3.73	.799
I am allowed to go for advanced professional courses	18(24.3%)	26(35.1%)	18(24.3%)	12(16.2%)	0(0%0	3.68	1.022
Overall mean						**3.74**	**.857**

I have participated in in-service training program in the past two years had 10(13.5%) of the respondents strongly agreeing, 42(56.8%) agreeing, 14(18.9%) being neutral, and 8(10.8%) disagreeing. The training I underwent in the past two years was significant to my profession had 6(8.1%) of the respondents strongly agreeing, 38(51.4%) agreeing, 22(29.7%) being neutral, and 8(10.8%) disagreeing. The training I underwent in the past two years was significant in the field of teaching and learning materials had 18(24.3%) of the respondents strongly agreeing, 26(35.1%) agreeing, 26(35.1%) being neutral, and 4(5.4%) disagreeing. Resources in the school for teachers' professional development are sufficient had 20(27.0%) of the respondents strongly agreeing, 28(37.8%) agreeing, 22(29.7%) being neutral, and 4(5.4%) disagreeing. The number of teachers guides in the school for each subject are adequate had 8(10.8%) of the respondents strongly agreeing, 48(64.9%) agreeing, 12(16.2%) being neutral, and 6(8.1%) disagreeing. There are enough ICT resources for teachers' professional development in teaching and learning materials had 16(31.6%) of the respondents strongly agreeing, 22(29.7%) agreeing, and 36(48.6%) being neutral. I am allowed to go for advanced professional courses without any problem had 18(24.3%) of the respondents strongly agreeing, 26(35.1%) agreeing, 18(24.3%) being neutral, and 12(16.2%) disagreeing. The overall mean was 3.74; with standard deviation .857 implying that the teachers agreed that there is professional development in the area of teaching and learning materials.

The results agree with those of Creemers & Kyriakides (2016) who found that training on summary reviews is essential because they reinforce and integrate learning of main concepts. These elements of restructuring other than facilitating information memorization they also permit apprehension as an integrated whole with identification of the associations among parts.

Table 4. 33: Correlation between TLM professional development and academic performance

		Teachers' learning materials professional development
Pupils' Development and Academic Performance	Pearson Corr.	.343**
	Sig. (2-tailed)	.003

The composite mean 3.74 for teachers' learning materials professional development obtained from the Likert data was used to determine the correlation between teachers' learning materials professional development and academic performance. The analysis indicated that Teachers' learning materials professional development had a positive relationship with Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County (r=0.343, p .003<0.05). This could also imply that Teachers' learning materials professional development contributed to Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County whereby if Teachers' learning materials professional development were improved Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County would as well improve at a strong positive relationship.

Table 4. 34: Regression Model Summary Training in Learning Materials and Development and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.558[a]	.311	.301	.34639

a. Predictors: (Constant), Training

The model shows a goodness of fit as indicated by the adjusted R^2 value of 0.301 implying that the variations in the independent variable, teaching and learning materials availability, explains thirty point one (30.1%) of the variation in Development and Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. Thus, there are other factors that account

for the remaining 69.5% in the variation in Development and Academic performance that are not covered in the model.

Table 4.35: ANOVA Results Training in Learning Materials and Pupils' Development and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.899	1	3.899	32.499	.000[b]
	Residual	8.639	72	.120		
	Total	12.538	73			

a. Dependent Variable: Performance

b. Predictors: (Constant), Training

The $F_{calculated}$ value of 32.499 is greater than F_{table} of 4.00 (df. 1, 60) and the p value = .000 < 0.05, thus confirming that there is a significant difference between means of the independent variable and the actual Development and Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

Table 4.36: Regression Results Training in Learning Materials and Pupils' Development and Academic Performance

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.527	.316		17.495	.000
	Training	.491	.086	.558	5.701	.000

a. Dependent Variable: Pupils' Development and Academic Performance

The study results indicate that there exists a positive and significant effect of Teachers' learning materials professional development on development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County (β=0.491, p .000 <.*05*. Null Hypothesis Four is therefore rejected. The study results consequently imply that a single increase in

Teachers' learning materials professional development will lead to 0.491-unit increase in development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

4.9 Results on Pupils' Development and Academic Performance

Table 4. 37 Results on Development and Academic Performance

	Strongly Agreed	Agreed	Neutral	Disagreed	Strongly Disagreed	Mean	SD
Accessibility of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary	4(5.4%)	36(48.6%)	32(43.2%)	2(2.7%)	0(0%)	3.57	.643
Use of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary	4(5.4%)	42(56.8%)	26(35.1%)	2(2.7%)	0(0%)	3.65	.629
Variety of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary	8(10.8%)	40(54.1%)	25(33.8%)	1(1.4%)	0(0%)	3.74	.663
Pupils learn better with teaching and learning materials	12(16.2%)	36(48.6%)	22(29.7%)	4(5.4%)	0(0%)	3.76	.791
Teaching and learning materials improve academic performance of the slow learners	4(5.4%)	46(62.2%)	20(27.0%)	4(5.4%)	0(0%)	3.68	.664
FDPE policy has contributed to sufficient stipulation of learning and	14(18.9%)	27(36.1%)	31(41.9%)	2(2.7%)	0(0%)	3.72	.803

teaching materials in the school							
Provision of FDPE led to rise in provision of learning and teaching materials	12(16.2%)	36(48.6%)	24(32.4%)	2(2.7%)	0(0%)	3.78	.745
Overall mean						**3.70**	**.705**

Accessibility of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary had 4(5.4%) of the respondents strongly agreeing, 36(48.6%) agreeing, 32(43.2%) being neutral, and 2(2.7%) disagreeing. Use of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary had 4(5.4%) of the respondents strongly agreeing, 42(56.8%) agreeing, 26(35.1%) being neutral, and 2(2.7%) disagreeing. Variety of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary had 8(10.8%) of the respondents strongly agreeing, 40(54.1%) agreeing, 25(33.8%) being neutral, and (1.4%) disagreeing. Pupils learn better with teaching and learning materials had 12(16.2%) of the respondents strongly agreeing, 36(48.6%) agreeing, 22(29.7%) being neutral, and 4(5.4%) disagreeing. Teaching and learning materials improves academic performance of the slow learners had 4(5.4%) of the respondents strongly agreeing, 46(62.2%) agreeing, 20(27.0%) being neutral, and 4(5.4%) disagreeing. FDPE policy has contributed to sufficient stipulation of learning and teaching materials in the school had 14(18.9%) of the respondents strongly agreeing, 27(36.1%) agreeing, 31(41.9%) being neutral, and 2(2.7%) disagreeing. Provision of FDPE led to rise in provision of learning and teaching materials had 12(16.2%) of the respondents strongly agreeing, 36(48.6%) agreeing, 24(32.4%) being neutral, and 2(2.7%) disagreeing.

The results agree with those of Wachira (2018) who found that materials provide learners with the essential knowledge, skills as well as ability in the growth and support of institutions and equip learners with problem solving skills and analytical critical thinking. They also agree with those of NTACT (2017), that found teaching and learning materials assist in developing personality traits, social roles, and academic skills, self-determination skills development (such as goal setting, decision making, problem solving, and self-advocacy), independent living skills development, interpersonal skills development, leisure skills development, transportation skills development, classroom behavior development and social skills development.

4.10 Results of the Pupils' Interviews

A total of 15 pupils were interviewed of which 4 were in Class 6, 7 in Class 7, and 4 in Class 8. Six of the pupils were girls while nine were boys. All the pupils said they were aware of the teaching and learning materials in their respective schools. The description of the materials ranged from black boards, duster, chalk, charts, maps, and mathematical set. Three of the pupils said they have equipment whereby one said the school has a digital compass and two said they have a radio set each.

The pupils agreed that the teaching and learning materials have helped them in their learning and development. Ten of the pupils said this is because the materials make learning easy during classes while three said it makes learning fun. Two of the pupils said it makes learning interesting.

All the pupils said that the teaching and learning materials in their class are not adequate. This is because the classes have many pupils and they have to share while learning using the

materials. They appealed to their head teachers to increase the number and variety of teaching and learning materials available in their respective classes.

4.11 Results of Community and Opinion Leaders Interviews

A total of six community opinion leaders were approached and agreed to give their views on the influence of teaching and learning materials on the development and academic performance of Upper Primary Pupils in Karunga Zone, Gilgil Sub County. These are individuals with experience interacting with the schools for a period ranging from 3 years to 15 years.

The community and opinion leaders said they are familiar with the teaching and learning materials available in the schools within their locality. The examples of the teaching and learning materials were described as black boards, duster, charts, and maps. However, all the community and opinion leaders said that the teaching and learning materials in the schools within their locality are not adequate. This is because the classes have many pupils and they have to share while learning using the materials.

Five of the community and opinion leaders said they have heard the head teachers speaking about the need to increase the teaching and learning materials in their respective schools. They appealed to the government through MoEST to increase the allocation of funds to schools geared towards increasing the number and variety of teaching and learning materials.

4.10 Observation Chart Results

Table 4. 38: Observation Chart Results

Type of TLM	Textbooks			Board/Chalk/Duster			Reference Books			Library			Charts			Maps		
Name of School	Availability	Variety	Use	Availability	Variety	Use	Availability	Variety	Use	Availability	Variety	Use	Availability	Variety	Use	Availability	Variety	Use
Ngeteti Primary School	√	√	√	√	√	√							√		√			
Karunga Primary School	√	√	√	√	√	√	√						√		√	√		√
Utumishi	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√		√
Gilgil	√	√	√	√	√	√	√		√				√		√	√		√
Kahuho	√	√	√	√	√	√	√		√				√	√	√	√		√
Murindat	√	√	√	√	√	√	√		√				√		√	√		√
Komothai	√	√	√	√	√	√	√		√				√		√	√		√
Gitare	√	√	√	√	√	√				√		√	√	√	√	√		√
Twendane	√	√	√	√	√	√							√		√			
Ngumo	√	√	√	√	√	√							√		√	√		√
Langalanga	√	√	√	√	√	√							√	√	√	√		√
St. Patrick's	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√		
Gilgil Teachers	√	√	√	√	√	√	√	√	√	√		√	√		√	√		√
Ngecho	√	√	√	√	√	√							√	√	√	√		√
Total	14	14	14	14	14	14	8	3	7	4		4	14	6	14	12		11
Percentage	100 %	100 %	100 %	100 %	100 %	100 %	57.1 %	21.4 %	50 %	28.6 %	0 %	28. 6%	100 %	42.9 %	100 %	85.7 %		78.6 %

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the findings' summary, recommendations as well as conclusions of the study based on the objectives of the research. The chapter as well gives suggestions at the end for further research. Research implications are also discussed and suggestions on areas for further research have been made on. Significant recommendations for every stakeholder are proposed by this research at the end of the chapter to enable as well as enlighten them to craft practical resolutions with regard to the statement of the problem based on the findings of the research.

5.2 Summary of the Findings

The major study findings are summarized in this section. It outlines the summary of the findings in line with the objectives of the study.

5.2.1 Teaching and learning materials availability and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County

The results on teaching and learning materials availability showed that according to the respondents, the schools have sufficient reference materials, there exist sufficient equipment and books, resource persons in the schools are mostly sufficient, teaching resources such as teachers' guides, chalk, duster, manilas, charts, models, calculators are available and sufficient, and ICT devices for use in teaching and learning are available while school excursions/ field trips can be done.

Correlation analysis on Teaching learning resources availability and Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County showed that Academic performance was strongly and positively correlated with teaching and learning materials availability by a correlation coefficient of 0.652. From the model generated by the study, teaching and learning

materials availability had a coefficient of 0.751 hence raise in teaching and learning resources availability contributes to Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County by a margin of 0.751.

5.2.2 Teaching and learning materials utilization and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County

The study results on Teaching and learning materials use showed that the teachers ensure that they use reference books/teachers' guides in teaching, they employ discussion groups/resource person in teaching, they make use of recreational facilities to entertain pupils, and make use of the models/charts in teaching. Other results show that the teachers make use of internet, calculators, and excursions/field trips in teaching.

The study found Teaching and learning materials use had a correlation with Academic performance of 0.263 (p .000 > 0.05). In the model, teaching and learning materials use had a coefficient of .006 meaning that Teaching and learning materials use influences Academic performance by a coefficient of .295 (p .023 < .05). This finding shows that Teaching and learning materials use is not significant for Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

5.2.3 Teaching and learning materials variety and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County

According to the respondents, there is a variety of reference books for training and learning in the schools, there are enough recreational facilities in the school, the teachers are able to use excursions/field trips in teaching, the library in the school is outfitted well with books and other learning resources, there are enough teachers' guides in the school, the school is always able to offer required teaching and learning resources on demand, and they are always able to improvise and get appropriate teaching and learning resources are needed.

The study discovered that learning and Teaching resources variety influences Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County as teaching and learning materials variety are negatively correlated with Academic performance as indicated by a coefficient of .117. It also has a coefficient of .068 (p .594 > .05) in the model, meaning that a unit raise in Teaching and learning resources variety leads to an increase of Academic performance by a margin of 0.068. Thus, the study finds that variety of Teaching and learning resources influence on the Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County is not significant.

5.2.4 Teachers' learning materials professional development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County

The results on teachers' learning materials professional development showed that some of the teachers participated in in-service training program in the past two years. This training was significant to their profession and for some the training was significant in the teaching and learning resources field. Some of the respondents agreed that resources in the school for teachers' professional development are sufficient and that the numbers of teachers' guides in the school for each subject are adequate. Majority of the teachers said the ICT resources are not enough for teachers' professional development in teaching and learning materials but agreed that they are allowed to go for advanced professional courses without any problem.

The study found that Teachers' learning materials professional development influences Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County as Teachers' learning materials professional development is strongly and positively correlated with Academic performance as pointed out by a coefficient of 0.343. It also has a coefficient of 0.391 in the model, meaning that a unit change in Teachers' learning materials professional development leads to increase of Academic performance by a margin of 0.391. Therefore, the

research finds that Teachers' learning materials professional growth positively influences the Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

5.2.5 Development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County

The respondents said that accessibility of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary, use of learning and teaching resources (TLR) influences the development and performance of pupils in upper primary, and variety of learning and teaching resources (TLR) influences the development and performance of pupils in upper primary. According to the respondents, pupils learn better with teaching and learning resources and the teaching and learning resources improves academic performance of the slow learners. Regarding the management of the education sector, the respondents agreed that FDPE policy has contributed to sufficient stipulation of learning and teaching materials in the school and provision of FDPE has led to rise in stipulation of teaching and learning materials in their respective schools.

5.3 Conclusions

From the research findings, the study concludes that availability of Teaching and learning materials contributes to increase in development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. Correlation analysis on Teaching and learning materials availability and development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County showed that development and academic performance was strongly and positively correlated with teaching and learning materials availability by a correlation coefficient of 0.652. In the model, teaching and learning materials availability had a coefficient of 0.751 hence rise in teaching learning resources availability contributes to Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County by a margin of 0.751.

The study also concludes that Teaching and learning materials use influences development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. The study found Teaching and learning materials use had a correlation with development and academic performance of 0.263. In the model, teaching and learning materials use had a coefficient of .295 meaning that Teaching and learning materials use influences development and academic performance by a coefficient of .295. This finding asserts that Teaching and learning materials use is not very important for Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

The study also concludes that teaching and learning materials variety influences the development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. The study found that teaching and learning materials variety positively but insignificantly influences development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County as Teaching and learning materials variety is negatively correlated with Academic performance as indicated by a coefficient of .117. It also has a coefficient of .068 in the model, meaning that a unit change in teaching and learning resources variety leads to decrease of academic performance by a margin of .068. Thus, the study finds that teaching and learning materials variety negatively influences the Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

Finally, the study also concludes that Teachers' learning materials professional development influences the development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County. The study found that Teachers' learning materials professional development influences development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County as Teachers' learning materials professional development is strongly and positively correlated with development and academic performance as shown by a coefficient of 0.343. It also has a coefficient of 0.391 in the model, meaning that a unit change

in Teachers' learning materials professional advance leads to increase of Academic performance by a margin of 0.391. Thus, the study finds that Teachers' learning materials professional advance influences the Academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County.

5.4 Recommendations from the Study

In this study, some recommendations have been made to increase the development and academic performance of upper primary pupils in Karunga Zone, Gilgil Sub County and in other counties within the Republic of Kenya. The study recommends the following.

Teaching and learning materials availability is very important and it brings positive change in the performance of the pupils academically. Effective Teaching and learning materials availability makes the teachers and pupils have an easy learning interaction both in and outside the classroom.

Teaching and learning materials variety should also be given priority in the zone and in other zones and Sub Counties so that both teachers and learners are exposed to same as a view of enhancing the pupils' development and academic performance.

Teachers should be facilitated to get current information and skills in developments within the teaching and learning materials field. Those willing to go for further studies should also be supported as much as possible as this go a long way in improving the learning atmosphere that the pupils are exposed to.

The study recommends that the Government of Kenya, via the Ministry of Education reflect on reviewing its guiding principle and laying structure in place to make sure that public or municipal primary school head teachers are able to raise the teaching and learning resources in their schools so as to enhance the pupils' performance. .

5.5 Suggestions for Further Research

The investigator suggested that further studies should be carried out on the influence of teachers on development and academic performance.

Future research should focus on case studies in other locations, since this study was in only one zone.

A comparative study can be done between private as well as public primary schools to distinguish the differences in approach and subsequent performance from the same.

A further study can also be done to establish specific aspects of the Teaching and learning materials use that influence development and Academic performance.

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APPENDICES

Appendix I: Letter of introduction to respondents

Monicah Naisianoi

St. Paul's University

NAKURU

Dear Respondents,

RE: RESEARCH REPORT FOR A POSTGRADUATE DEGREE IN DEVELOPMENT STUDIES.

I am a post graduate student taking a Master's Degree in Development studies at St. Paul's University. I am carrying out a research for my final year project, which is a necessity of the degree programme.

This questionnaire is formed to collect information on **The Influence of Teaching and Learning Materials on the Development and Performance of Upper Primary Pupils in Karunga Zone, Gilgil Sub County.** Your school has been chosen to take part in my study sample. Kindly give information to every questionnaire items.

All information will be treated with highest confidentiality. For this reason, please do not write your name on this questionnaire.

Thanks in advance.

Yours Sincerely,

Monicah Naisianoi

Appendix II: Questionnaire for Head Teachers

The information provided in this questionnaire will be treated with strict privacy.

Instructions

Please tick appropriately in box [ ] corresponding to your choices for structured questions.

Write the answers to the open ended questions in the spaces provided.

Please tick [ ] the response that most closely approximates your opinion about the statements for questions consisting of statements scaling 1 to 5 as below.

5 Strongly Agree 4 Agree 3 Neutral 2 Disagree 1 Strongly Disagree

Section A: Background information

1. Indicate your gender Male [ ] Female [ ]

2. For how long have you served as a head teacher in this school?

Under one year [ ] 1-3 years [ ] 4-6 years [ ] 7-9 years [ ] Over 9 [ ]

3. What is your highest academic qualification?

Ph. D [ ] M. Ed [ ] B. Ed [ ]

B. Sc [ ] Dip. Ed [] Any other, please specify _____

4. Indicate the number of streams in your school

1 [ ] 2 [ ] 3 [ ] above 3 [ ]

5. Give the number of teachers in your school as follows

TSC _____ Volunteers _____ B.O.M _____

6. What is the average number of lessons that a teacher in your school is allocated per week?

Below 18 [ ] 19-24 [ ] 25-30 [ ] above 30 [ ]

Section B: Availability of Resources & School mean score

7. Use (5 Strongly Agree 4 Agree 3 Neutral 2 Disagree 1 Strongly Disagree)

		5	4	3	2	1
1.	The number of reference books in the school are adequate					
2.	The number of teachers guides are adequate					
3.	Books and storage of equipment and facilities in the school are enough					
4.	Pupils have adequate number of text books					
5.	Use of ICT devices in learning and teaching					
6.	Use of field trips/ excursions in the school is frequent					
7.	Use of resource person in the school is regular					
8.	Teaching materials such as manilas, chalk, dusters, models and charts are sufficient.					

8. What are the textbook/pupils ratios for every of the following subjects in your school?

Subject	Number of pupils per text book
Mathematics	
English	
Kiswahili	

Concept of Free Primary Education

9. a) Does the government disburse Free Primary Education (FPE) funds in time?

Yes [ ] No [ ]

b) If Yes, how has it impacted your school? .....

10. Do you consider FPE policy to have an impact to enough provision of learning and teaching materials? Yes [ ] No [ ]

11. a) Has the provision of FPE led to rise in provision of learning and teaching materials?

Yes [ ] No [ ] b) If yes, to what extent? ……

12. What is the normal number of pupils per class in your school?

30-40 [ ] 41-50 [ ] above 50 [ ]

13. Do you have any idea on the provision of Teaching and learning materials?

.....……

14. Do you think accessibility of learning and teaching materials (TLM) affects the performance of pupils in upper primary? Yes [ ] No [ ]

(b) If Yes, how……

Appendix III: Questionnaire for Teachers

The information provided in this questionnaire will be treated with strict confidentiality.

Instructions

Kindly tick correctly in box [ ] matching to your selection for structured questions.

Write your responses to the open ended questions in the spaces provided.

Please tick [ ] the answer that most intimately approximates your view on the statements for questions consisting of statements scaling 1 to 5 as below.

5 Strongly Agree 4 Agree 3 Neutral 2 Disagree 1 Strongly Disagree

SECTION A: Background Information, Teacher's Qualifications and workload Information

1. What is your sexual characteristic?

Male [ ] Female [ ]

2. Which subjects do you teach? Languages

Technical [ ] Humanities [ ] Sciences [ ]

3. What is your highest level of education?

M.Ed. [ ] B.Ed. [ ] B. Sc [ ] Dip. Ed [ ] others (specify)……

4. How many years have you taught?

0 – 5 years [ ] 6 – 10 years [ ] 11 – 15 years [ ] Over 15 years [ ]

5. How many lessons do you teach per week?

Below 18 [ ] 19-24 [ ] 25-30 [ ] above 30 [ ]

SECTION B: Availability of Resources

6. **Use (5 Strongly Agree 4 Agree 3 Neutral 2 Disagree 1 Strongly Disagree)**

	Teaching and learning materials	**5**	**4**	**3**	**2**	**1**
1	The school has sufficient reference books					
2	There is a sufficient number of equipment and books					
3	Set of the resource persons in the school is sufficient					
4	Teaching resources such as chalk, duster, manilas, charts, models, calculators are available and sufficient					
5	Teachers' guides are available in the school					
6	ICT devices for use in teaching and learning are available					
7	Field trips/excursions in the school can be done					

Extent of Resource Utilization

7. **Use (5 Strongly Agree 4 Agree 3 Neutral 2 Disagree 1 Strongly Disagree)**

		5	**4**	**3**	**2**	**1**
1.	I make use of reference books/teachers' guide in teaching					
2.	I make use of the discussion groups/resource person in teaching					
3.	I make use of recreational facilities to entertain pupils					
4.	I make use of the models/charts in teaching					
5.	I make use of internet in teaching					
6.	I make use of calculators in teaching					
7.	I make use of excursions/field trips in teaching					

Variety of Teaching and learning materials

8. **Use (5 Strongly Agree 4 Agree 3 Neutral 2 Disagree 1 Strongly Disagree)**

		5	4	3	2	1
1.	There is a variety of reference books for teaching and learning in the school					
2.	There are enough recreational facilities in the school					
3.	As a teacher, I am able to use excursions/field trips in teaching					
4.	The library in the school is well equipped with books and other learning materials					
5.	There are enough teachers' guides in the school					
6.	The school is always able to provide required teaching and learning materials on demand					
7.	I am always able to improvise and get appropriate teaching and learning materials are needed					

Teachers Professional Training and Development

9.

	Teachers Professional Training and Development	**5**	**4**	**3**	**2**	**1**
1	I have participated in in-service training program in the past two years					
2	The training I underwent in the past two years was significant to my profession					
3	The training I underwent in the past two years was significant in the field of teaching and learning materials					
4	Resources in the school for teachers' professional development are sufficient					
5	The number of teachers guides in the school for each subject are adequate					
6	There are enough ICT resources for teachers' professional development in teaching and learning materials					
7	I am allowed to go for advanced professional courses without any problem					

Development and Academic Performance of Upper Primary Pupils

10.

	Teachers Professional Training and Development	**5**	**4**	**3**	**2**	**1**
1	Accessibility of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary					
2	Use of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary					
3	Variety of learning and teaching resources (TLR) affects the development and performance of pupils in upper primary					
4	Pupils learn better with teaching and learning materials					
5	Teaching and learning materials improves academic performance of the slow learners					
6	FDPE policy has contributed to sufficient stipulation of learning and teaching materials in the school					
7	Provision of FDPE has led to rise in provision of learning and teaching materials in schools					

Thank you for your cooperation

Appendix IV: Interview Schedule for Pupils

Good Morning/Afternoon

Thank you for accepting to participate in this interview. The purpose of this study is to determine the influence of Teaching and Learning Materials on the Development and Academic Performance of Upper Primary Pupils in Karunga Zone, Gilgil Sub County.

1. In which class are you? _____

2. Are you familiar with the teaching and learning materials available in your school?

---

3. Kindly describe the teaching and learning materials available in your school.

---

4. In what way have the teaching and learning materials helped you in your learning and development?

---

5. Do you think the teaching and learning materials in your class are adequate?

Appendix V: Interview Schedule for Community and Opinion Leaders

Good Morning/Afternoon

Thank you for accepting to participate in this interview. The purpose of this study is to determine the influence of Teaching and Learning Materials on the Development and Academic Performance of Upper Primary Pupils in Karunga Zone, Gilgil Sub County.

1. How long have been a board member/interacted with the school? _____

2. Are you familiar with the teaching and learning materials available in the schools within your community?

---

3. Kindly describe the teaching and learning materials available in the school(s) within your area.

---

4. In what way have the teaching and learning materials helped you in your learning and development?

---

5. Do you think the teaching and learning materials in your class are adequate?

---

6. What measures can be instituted to increase the provision of teaching and learning materials in the schools?

Appendix VI: Observation Schedule

This will capture the availability, variety and use of teaching and learning materials in the schools.

	Name of School			
No.	**Type of Teaching Learning Material**	**Availability**	**Variety**	**Use**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Appendix VII: Time Schedule

	2019				2020				
Activity	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**
Selecting title and approval									
Proposal writing									
Proposal defense									
Data collection (administration of questionnaires) and Analysis									
Report writing/ Defense									
Publication									
Submission of final report									

Appendix VIII: Letter of Introduction from St. Paul University

ST. PAUL'S UNIVERSITY

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19th March 2020

National Commission for Science and Technology,
P.O. BOX 30623-00100,
Nairobi.

Dear Sir/Madam,

RE: RECOMMENDATION FOR MONICAH NASIANOI- MDSNKR301917 TO CONDUCT RESEARCH

This letter confirms the above named person is a student of the Masters of Development Studies at St. Paul's University.

The second year consists of a major research work leading to a dissertation. The student's selected topic is *'Influence of teaching learning materials on academic performance of children in upper primary schools in Karunga zone, Gilgil sub-County'*

Kindly grant this student the required permit.

Yours Faithfully,

Dr. Sammy Githuku
Director, Postgraduate Studies

Appendix VII: Research Permit from NACOSTI

