

**TEACHERS' USE OF INSTRUCTIONAL MATERIALS INFLUENCE ON
LEARNING OUTCOMES OF LEARNERS IN PUBLIC LOWER PRIMARY
SCHOOLS IN KILIFI NORTH SUB-COUNTY, KENYA**

SAMSON NGALA ZIRO



**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF EDUCATION
DEGREE IN EARLY CHILDHOOD STUDIES OF
MOUNT KENYA UNIVERSITY**

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DECLARATION AND APPROVAL

DECLARATION AND APPROVAL

Declaration by the Student

This project is my original work and has not been presented for a degree in any other University or for any other award.

Signature.....

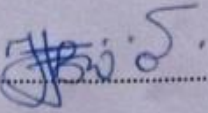
Date.....06/11/2024.....

SAMSON NGALA ZIRO

MECS/2019/45501

Approval by the Supervisors

I confirm that the work reported in this research project has been prepared by the candidate under my supervision.

Signature.....

Date.....06/11/2024.....

DR. TERESA OGETANGE

School of Education

Mount Kenya University

DEDICATION

This work is dedicated to my wife Maria Kalama, my daughter Eliora Mupa Ngala and to my Parents Ziro Yaa and Mlaa Dzombo.



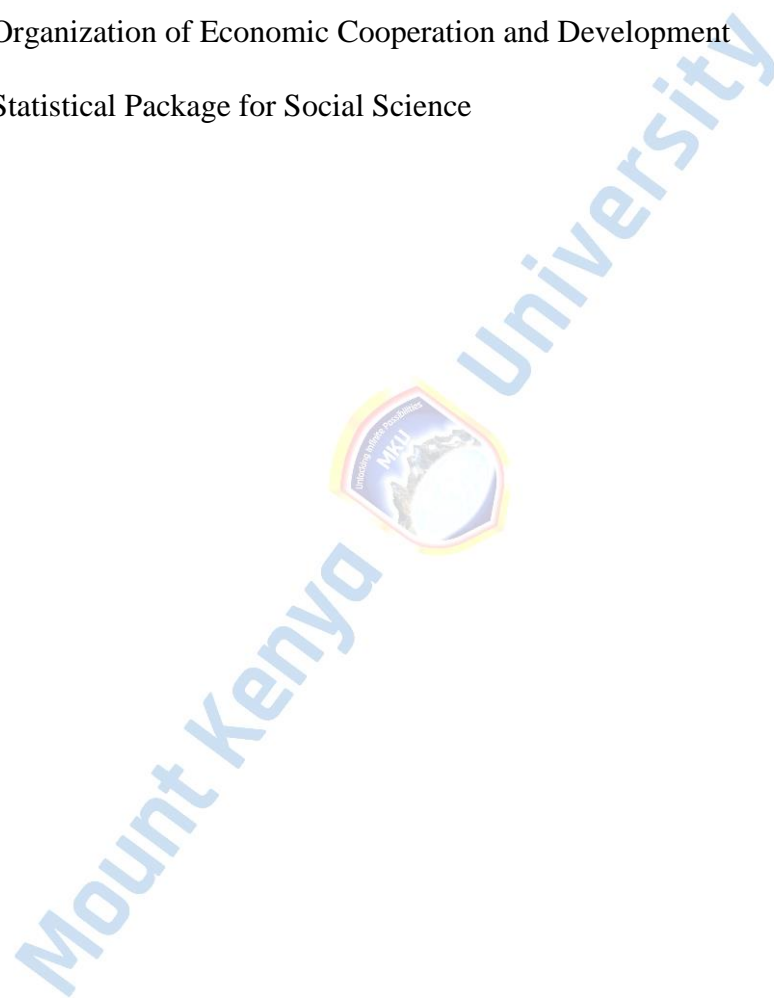
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LIST OF ABBREVIATIONS AND ACRONYMS

APEL	Assessment of Prior Experiential Learning
CDs	Compact Discs
DVDs	Digital Versatile Discs
KNBS	Kenya National Bureau of Statistics
NACOSTI	National Commission for Science, Technology and Innovation
OECD	Organization of Economic Cooperation and Development
SPSS	Statistical Package for Social Science



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ABSTRACT

The purpose of the research was to establish Teachers' use of instructional materials as determinants of learning outcomes of learners in public lower primary schools in Kilifi North Sub-County, Kilifi County, Kenya. This is because use of instructional materials has not been fully explored by many lower primary teachers as a viable option of enhancing learners' learning outcomes. However, in Kilifi North Sub- County, learning outcomes of grade one learners in public primary schools is still low. In addition, objectives guiding the study included; to assess levels of learning outcomes, to examine teachers' use of audio-visuals, improvised materials, graphic materials and print media materials determines learning outcomes of lower primary learners in public primary schools. The study was guided by The Cognitive Theory of Multimedia Learning and Skills Acquisition Theory. The study adopted a mixed methodology and concurrent triangulation research design involving implementation of quantitative and qualitative methods. The target population was 5282 respondents comprising 87 head teachers, 317 lower primary teachers and 4878 lower primary learners from which a sample of 371 respondents was calculated using Yamane's Formula. Stratified sampling was applied to create seven strata based on the number of zones in Kilifi North Sub- County. From each zone, three (3) head teachers and 30 lower primary teachers were selected using purposive sampling. However, from each zone, 20 lower primary learners were selected using simple random sampling to avoid bias. Consequently, a sample of 21 head teachers, 210 lower primary teachers and 140 learners was obtained. Questionnaires were used to collect quantitative data from lower primary teachers, interviews to collect qualitative data from Head-teachers. Observation checklist for learners were used. Piloting was conducted among 38 respondents from Kilifi South Sub- County to establish validity, reliability, credibility and dependability. Validity was ascertained through expert judgment. But for reliability was determined using split-half technique and reliability coefficient, $r \geq 0.75$, was obtained using Cronbach's Alpha Method which indicated high internal reliability. Credibility was ascertained by involving multiple analysts whereas dependability by reporting of data gathered in detail. Thematic analysis was used for qualitative information as per objectives of research then presented in narration forms whereas quantitative analysis was achieved descriptively using frequencies, percentages, mean as well as standard deviation and inferentially using Pearson's Product Moment Correlation Analysis with the aid of Statistical Packages for Social Science (SPSS 23) and presented using tables and charts. The study found that only about a third of the pupils were able to perform basic operations on numbers while a paltry 15% of the pupils were able to recognize number values, its apparent that learning outcomes for lower primary pupils in Kilifi North sub-county was low. Further, electronic materials like slides were rarely used with less than 10% of the teachers indicating that they used them in instruction. However, the study recommends that ministry of education together with other education stakeholders to ensure adequate provision of audio visual, graphics and print media resources in lower primary public schools.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter encompasses background of the study, statement of problem, purpose, objectives, research questions, rationale, significance, scope and delimitations, limitations and assumptions. Likewise, delivers a list of operational definitions of key terms.

1.1 Background of the Study

Education consists of two-fold constituents which are categorized as inputs and outputs. In keeping with Cramer and Castle (2017) inputs comprising of human and materials and outputs are the objectives and results of educational process. Cramer and Castle (2017) additionally, posit that inputs and outputs together forms a dynamic organic whole and if a person wishes to examine and measure the educational system in view to modify its performance, influence of one constituent on the other need to be scrutinized. These teaching and learning materials which are educational inputs are of a paramount significance to the instructional curriculum in primary schools. These teaching and learning instructional materials include audio-visuals, improvised materials, graphic materials and print media. In line with these assertions, Baker (2018) asserted that instructional materials influence the content and the processes of academic outcomes such as observation, recording, experimentation and predictions. The choosing of deductive versus inductive learning, the work of remembrance, utilization of creativeness and problem solving, production versus reception and the manner in which number work lessons are offered are entirely impacted through the application of instructional resources. Baker and Wales (2018) pointed out that the usage of instructional materials makes discovery of number work facts cemented firmly in the minds of pupils. In Netherlands, Alderman (2019)

proposes a list of valuable visual learning materials that are suitable for instruction for instance images, post cards, drawings, maps, filmstrips and replicas.

Alderman (2019) suggested that choice of resources that are relevant to the rudimentary components of a program or a lesson, aids thorough grasping of such a content by the learners making the lesson interesting thus capturing their responsiveness and encouraging children to study. The utilization of regalia, models, dioramas and pictures assist pupils by arresting their thoughts and emotions. Further, pictures are utilized as substitutes for actual substances when it is difficult to display to children the actual item and these resources assist successfully in learning number work activities. Similarly, it is important to obtain appropriate and enough manpower in such as teacher qualifications for instruction of the entire aspects of the school program. With the educators as implementers, the aims of number work instruction could be successfully attained. In keeping with these assertions, Foorman (2019) posits that, in Czech Republic, organized and clear number work instruction leads to better skills attainment in comparison to other approaches and that those exposed to methodical and straight instruction attain measurable achievements during the progression of the school year. Learning curriculums which comprise a concrete, clear, logical objectives of conventional number work instruction have been proved to bring along more learners at risk than those that do not. Effective use of instructional materials enhances language acquisition skills among grade one learners.

According to Ahmed, Clark-Jeavous and Oldknow (2020), mathematics' tutoring comprises of five imperative aspects that is, pupils, a teacher, resources, teaching approaches, and evaluation and is also applicable in language coaching and acquisition. This view is supported by Allwright (2020) who contends that materials are to help learners to learn include print or reference books for concepts and tasks for instruction, and that

would direct instructors' rationale for teaching. Likewise, Allwright's (2020) posited that, print media such as textbooks are excessively inflexible in being utilized directly as teaching resources. However, O'Neill (2019) reported that print media and materials could be appropriate for children's needs, as much as they aren't intended precisely for them that textbooks make it probable for learners to revise and make their number work lessons permit for alterations and creativeness. Allwright (2020) highlights that print media direct acquisition of knowledge and coaching. That is, in most situations teachers and learners depend more on textbooks which determine the content and approaches of learning thereby controlling the content, approaches and processes of acquiring knowledge. Pupils' read materials in the textbook and the manner the textbook portrays these materials is the way children study it. The educational viewpoint of the textbook does influence learners and the number work learning procedure. Therefore, in many cases, instructional resources are the focus of instruction and unique significant influence on what happens in the classroom. Ideally, skilled teachers can impart language minus a textbook.

In Nigeria, for example, for one to attain a reasonable and democratic civilization as stipulated in the Nigerian National Policy of Education (2021), learning institutions must be well and evenly furnished to stimulate all-encompassing and actual instruction. Appropriate print media like textbooks, competent teachers, libraries that are sufficient must at the same be provided for in learning institutions. Shortage of these, Cramer and Castle (2017), restricts learning structure from responding adequately to new anxieties. Satisfactory to promote the value of learning, its effectiveness and efficiency, enriched instructional resources are desirable. Coffield and Ecclestone (2017) also emphasized the significance of employing suitable workforce plan and sufficient physical amenities to sustain educational effort. Kenya is not an exception and the usage of teaching and learning resources in academic result has been embraced, though it has been confronted with myriad

of challenges. For instance, a study done by Mwaniki (2021) in Maragwa Sub- County revealed that lack of effective resource centers with well-equipped materials to supplement classroom instruction is one of the principal challenges.

In Kilifi North Sub- County, Ngumbao (2017) opines that many lower primary learners' manifest poor learning results and capabilities in numeracy along with literacy education programs. According to Ngumbao (2017), regardless the institution of initiatives like Tusome Literacy Project, most of grade one pupils show inability to undertake basic numeracy, poor communicative competency, lack of creativity and poor manifestation of essential environmental skills. Likewise, in their needs assessment primary school findings report, Uwezo (2016) established that in Kilifi North, most pupils in lower primary school level of education showed minimal skills in elementary math, language and indispensable life skills for instance team building with age groups and leadership skills. Likewise, Uwezo (2016) established that merely 26.92% of the pupils exhibit enhanced literacy and communicative capabilities in English and Kiswahili, 18.74% could perform basic numeracy and number work activities whereas merely 20.8% had grasped necessary life skills like team building and leadership abilities. To alleviate these challenges, educators have embraced the usage of instructional media. According to Uwezo (2016), efficient use of instructional materials, to entirely attain the pedagogical goals of early education and a well-organized and creative usage of visual material in number work lessons, help a lot to eject apathy, supplement shortage of books in addition to stimulating children's curiosity by giving them something practical to see and do, and simultaneously assisting to train them to reason things out by themselves. However, much still needs to be done to interrogate how teachers' use of instructional materials determine learning outcomes of grade one children in public primary schools; thus, the necessity to carry out this research.

1.2 Statement of the Problem

Initial acquaintance and proper application of instructional resources prepares grade one beginners for number work, language, creativity and essential environmental skills subsequently pupils obtain knowledge by interacting with acquainted materials in the surroundings. It is similarly clear that when teaching and learning resources are efficiently used, grade one learners are inspired to learn and capable of comprehending the number work, language, creativity and essential environmental skills being taught. Conversely, in Kilifi North Sub- County, the state of affairs is somewhat different with learning outcomes of lower primary learners in public primary schools in Kilifi North being meager. As indicated in the background, Ngumbao (2017) noted that quite a number of grade one learners manifest low learning outcomes and competencies. According to Ngumbao (2017), majority of the grade one learners show inability to undertake basic numeracy, poor communicative competency, lack of creativity and poor manifestation of essential environmental skills. Further, Uwezo (2016) indicated that, in Kilifi North Sub- County, most grade one pupils demonstrate little abilities in elementary number work, language and crucial life skills like group constructing with peers and headship aptitudes. Similarly, Uwezo (2016) further established that merely 26.92% of the pupils exhibit improved language skills, 18.74% could carry out basic number work activities whereas only a paltry 20.8% had grasped crucial life skills like as team building and headship abilities. In spite of these indicators, insufficient empirical studies have probed the magnitude to which teachers' application of instructional materials determine the learning outcomes of grade one learners in public primary schools.

1.3 Purpose of the study

To assess influence of teachers' use of instructional materials on learning outcomes of lower primary learners in public primary schools in Kilifi North Sub- County, Kilifi County, Kenya.

1.4 Objectives of the Study

The investigation sought to address the following objectives:

1. To establish influence of teachers' use of audio-visuals materials on learning outcomes of lower primary learners in public primary schools in Kilifi North Sub- County, Kilifi County, Kenya.
2. To examine influence of teachers' use of improvised materials on learning outcomes of lower primary learners in public primary schools in Kilifi North Sub- County, Kilifi County, Kenya.
3. To establish influence of teachers' use of graphic materials on learning outcomes of lower primary learners in public primary schools in Kilifi North Sub- County, Kilifi County, Kenya.
4. To determine influence of teachers' use of print media on learning outcomes of lower primary learners in public primary schools in Kilifi North Sub- County, Kilifi County, Kenya.

1.5 Research questions

1. Does teachers' use of audio-visuals materials influence on learning outcomes of lower primary learners in public primary schools in Kilifi North Sub- County, Kilifi County, Kenya?
2. How does teachers' use of improvised media materials influence learning outcomes of lower primary learners in public primary schools in Kilifi North Sub- County, Kilifi County, Kenya?

3. To what extent does teachers' use of graphic materials influence learning outcomes of lower primary learners in public primary schools in Kilifi North Sub- County, Kilifi County, Kenya?
4. How does teachers' use of print media influence learning outcomes of lower primary learners in public primary schools in Kilifi North Sub- County, Kilifi County, Kenya?

1.6 Justification of the Study

As indicated in statement of the problem, in Kilifi North public primary schools, learning outcomes of lower primary learners in public primary schools in Kilifi North have been poor. This is because, Ngumbao (2017) noted that many lower primary learners manifest low learning outcomes and competencies. They show inability to undertake basic numeracy, poor communicative competency and lack of creativity and poor manifestation of essential environmental skills. This was further supported by a report Uwezo (2016) which revealed that many lower primary learners demonstrate little abilities in elementary number work, language and crucial lifetime skills like team building with fellow learners and management abilities. However, not many studies have completely considered how teachers' application of instructional materials influence educational learning outcomes of lower primary learners in public primary institutions, thus, the need to carry out this investigation.

1.7 Significance of the Study

Teachers together with curriculum planners benefited from the findings of this study by informing them on the best approaches of teaching number work, language, creativity and essential environmental skills in early years of education by maximizing on the effective usage of instructional materials. Furthermore, the research provoked lower primary teachers to adopt critical pedagogies in their approach to teaching number work, language, creativity and essential environmental skills to lower primary learners. The Ministry of Education through Kenya Institute of Curriculum Development (KICD) gained from the

outcomes of the research in formulating relevant policy on enforcement of use of instructional materials for effective learning outcomes. The researchers and academicians benefit from this research as it lay down a secure basis for persons who might intent in carrying out research studies in other related areas.

1.8 Scope of the Study

The research was done in lower public primary schools in Kilifi North Sub- County. This investigation engrossed on educators' use of instructional materials and their influence on learning outcomes of lower primary learners in public primary schools. Mixed methodology was adopted and therefore concurrent triangulation research design was used. The researcher gathered quantitative information from lower primary teachers by use of questionnaires, quantitative information from Headteachers by use of an interview guide, lower primary teachers and used observation checklists for learners in lower primary schools. The investigation was conducted between June and September 2024.

1.9 Limitations of the Study

This research came across the following limitations;

i. Potential participants biasness

The nature of research seemed to evaluate the working of Headteachers together with teachers therefore researcher had foreseen potential biasness of respondents while giving out their responses. However, researcher overcame this by explaining to participants the purpose of research and for all information given was handled with a lot of confidentiality and privacy.

ii. Participants non-responsiveness.

Certain respondents, particularly educators, might have not been willing to offer accurate data on their use of instructional materials fearing of victimization. However, researcher had to explain to them that investigation was aimed at supplementing their

struggles to promote learning outcomes of lower primary learners in primary public schools.

iii. Oversimplification

Researcher had foreseen oversimplification of complex data in quantitative findings when participants gave their responses. However, inclusion of qualitative data ensured that there is nullification of any over simplification of quantitative findings to ensure objective results.

1.10 Delimitations of the Study

The research was grounded on the following delimitations;

- i. Headteachers, grade one teachers and grade one learners in primary school situations formed the group of respondents as other educational stakeholders were not subject of the study.
- ii. The study focused on teachers' use of audio-visuals, improvisation of materials, use of graphic and print media materials as determinants of learning outcomes of lower primary learners in public primary schools as other areas of management were not a salient feature for the study.

1.11 Assumptions of the Study

- i. That participants gave an honest and truthful opinion on influence of instructional materials on learning outcomes among pupils in lower primary public schools.
- ii. That lower primary teachers voluntarily participated in research without fear of victimization as research targeted to evaluate their performance on instructional materials and influence it has on learning outcomes on lower primary pupils in public primary schools.
- iii. That chosen category of respondents was responsive hence appropriate and adequate for the study to yield reliable outcomes.



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1.12 Operational Definition of Key Terms

Audio-visuals: Refers to instructional materials such as radios, videos, concept videos and televisions among others which are used by teachers to teach grade one learners.

Graphic Materials: Refers to diagrams with learning concepts which helps the teaching process including charts, pictures, PowerPoint and drawings

Improvised Materials: Refers to non-commercial instructional materials which teachers create to impart number work, language, creativity and essential environmental skills that include; heat-producing, sound, measurement and movement materials.

Instructional Materials: Refer to a rich variety of instructional materials designed to support early childhood education learners' acquisition of number work skill that include; audio-visuals, improvised materials, graphic materials and print media.

Learning Outcomes: Refer to the level of attainment or outcomes in different academic tasks in terms of the ability of learners to perform basic number activities, language and creativity activities and manifest essential environmental skills.

Lower primary learners: Refers to pupils in grade one in public primary schools.

Print Media Materials: Refers to textbooks, newspapers, posters, encyclopedia and teachers' guides or any other printed material which teachers use to teach number work, language, creativity and essential environmental skills.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section looks at related literature on instructional materials, learning outcomes of lower primary pupils, audio-visual resources, improvised materials, graphics materials and teachers use of print media. In addition, theoretical framework, conceptual framework, research gaps and summary of literature review was addressed.

2.1.1 Instructional Materials

Teaching learning resources are very important. Without teachers' usage of instructional resources in class, none of learning theories or principles could be fulfilled. It would take a lot of exertion to reach a good teaching communication without application of teaching media. Choosing the right channel or medium of communication enhances the impact of the presentation and message (Kimamo, 2021). But before any media can be used for instructional purposes, the instructor has to know his or her subject matter well and should have a clear sense of what he or she wants to teach. Ogogo (2019) gives guidelines about effective usage of media for teaching and learning purpose by commenting that obtaining abundant materials for improving human performance and promoting learning requires a broad knowledge of different media, a broad knowledge on different methods of designing different educations and a broad knowledge of factors affecting learning and media use. Instructional materials can be used in many different settings for different purposes (Ogogo, 2019). The purpose of media selection process is to determine the best media for a given educational situation. To establish the utmost suitable media for their needs, teachers need to assess the aims, the *content* and the student. Here, the teacher must make proper use of relevant materials that are suitable, for both the learner and the lesson objectives.

A well-prepared education could be destroyed by non-availability or improper utilization of learning materials by the teacher. According to Ogogo (2019), since instructional materials is only a distribution system for delivering various messages and representations to learners, each of the above is important to consider when choosing media. But most importantly, the teacher should understand the principle of instructional materials. This is because learning is not a simple act. It involves a complex interrelated series of cognitive processes, including attention, perception and memory which are based on cognitive psychology, the number work of how learners process information. Ogogo (2019) posits that the principle of educational design can help the teacher to create or choose teaching and training materials that are consent with the way people learn. Once the teacher has concluded that using instructional materials will help to achieve his or her educational objectives, it is beneficial to apply elementary stages in the educational progress process to select and make use of suitable media. These assertions' opinion to the point that, if media is appropriately considered, skillfully created and efficiently used, it has boundless impact on teaching and learning process for it impacts of saving time, increasing interest, holding attention, clarity of concepts, reinforcing concepts, adding tone, verifying a fact and remembrance. Regrettably educational materials in teaching in most cases are limited or completely lacking which leads to the inefficient performance on the part of the teacher. Again, the few available ones are sometimes not utilized and this leads to or makes teaching and learning process to become ineffective.

2.1.2 Learning Outcomes

Academic performance of grade one children in public primary schools have attained a high standing supported by numerous numbers of orientations in seminars, authorized pamphlets and communiqués. Agreeing with Smilansky and Shefatya (2015), this is in complete disbelief of the meager level of understanding related to them and their

comparatively infrequent real application through the whole world. Exhaustive understanding of educational results is actually restricted to fair a number of nations equally at the institutional and national echelons. Learning result demonstrate in lower grades is one of the indispensable building blocks for apparent higher education systems and qualifications (Rubin & Coplan, 2015). They have a standing as relatively extensive instruments, nevertheless forming the elementary foundation role that makes them very important. Educational results -based approaches have consequences on curriculum design, instruction, knowledge and valuation, in addition to quality assurance. Smith, Dalgleish & Herzmark (2016) declare that educational results are anticipated to make a substantial share of twenty-first century means to higher education and the alteration of such vibrant queries as to what, who, how, where and when we teach and assess. The exact environment and part of schooling is being interrogated, currently than ever formerly, and educational results is a vital measure in expounding the outcomes of education for the grade one children, parents, managers and educators. As regards to curriculum design and development academic results, determine the instructional changes in early childhood programs.

Academic results indicate a major adjustment in highlighting from instruction to studying characterized by what is referred to as the embracing of learner-centered methods compared to customary teacher-centered perspective (Smith et al, 2016). Learner-centered approach attracts prominence on the instruction, learning and assessment connection and the eventual connotations among the design, delivery and measurement of learning. Smith et al (2016) further state that academic results are not only tools at the early education curriculum design, but equally characterize a practice that displays a substantial role in a significant wider background that encompasses: the blending of the valuation of preceding experiential learning (APEL) and the growth of lifetime studying experiences structures. Bandura (2007) accentuated the definite documentation and measurement of education and the

necessity of yielding noticeable and quantifiable results. The educational results methodology amid initial childhood learners was afterward additionally advanced by educational authorities in Australia, New Zealand, South Africa, United Kingdom and more lately by Denmark, Sweden, Ireland and other parts of Europe. Starting with initial stages, the prominence on educational results has progressed to incorporate all subject areas and has progressed from the vocational education and training fields through to higher education (Rubin & Coplan, 2015). Educational results are declarations of everything a pupil is likely to be acquainted with, comprehend and or being capable to show by the completion of a study program. Educational outcomes are clear reports of the results of education. Learning outcomes are customarily comprised of knowledge, skills, abilities, attitudes and understanding which individuals will accomplish resulting from their effective involvement in a specific set of higher education proficiencies.

The educational grades methodology reveals a conceptual shift in the direction of making studying more significant and actual. According to Smith et al (2016), for various comprehensible motives, most grade one learners approach education has isolated intellectual workforce somewhat something that is decent for them, thus, learning that improves their exists. Making education more important for these grade one learners necessitates that they gain a sense of the educational project to enable them to lead a better-off and more endowed life compared to tasks carried out basically to gratify the requirement of others. By openly building scholarly proficiencies grounded on what grade one children ought to be capable of performing with their understanding, the study outcomes approach aids the education stakeholders comprehend the stage of the action.

2.2 Teachers' Use of Instructional Materials and Learning Outcomes of Learners in Lower Primary Public Schools

Audio-visual instruction is organizing, planning, and usage of apparatus and resources that comprise seeing, hearing, or both, for learning intentions is paramount. Clark and Foster (2016) posit that among the devices used are still and motion pictures, filmstrips, television, transparencies, audiotapes, records, teaching machines, computers, and videodiscs. The growth of audio-visual education has reflected developments in both technology and learning theory. The significance usage of audio visual (AV) technology in learning ought not to be Undervalue. According to Clark and Foster (2016), noted that learning by the use of audio-visuals creates an inspiring and collaborative atmosphere which favors learning. In a study conducted in Australia, Littlejohn and Windeatt (2017) likewise noted that, a well-thought-out and creative usage of pictorial aids in a lesson ought to do a lot in banishing apathy, enhancement insufficiency of books in addition to arousing children's' attention by offering them something concrete to see and touch, and simultaneously aiding to train them to reason ideas out themselves.

The usage of videos and DVDs showing rhymes and children's books on tape or CD ought to help a lot banishing boredom, complement shortage of books and same time stimulate pupils' curiosity by offering them somewhat concrete to see and touch, and simultaneously aiding to train them to contemplate ideas by themselves (Littlejohn & Windeatt, 2017). According to the authors, learners acquire knowledge inversely and audio-visual apparatus provide teachers with an opportunity to motivate each child's learning manner coupled with a mixture of images, sounds and attention-grabbing media. Singh (2020) in India, assert that audio visual aids are imperative in schooling structure as they influence the teaching learning procedure making it simple and exciting for learners to grasp number work, language, creativity and essential environmental skills. Audio -visual devices rank highly

in effective teaching and learning and are most influential in instructional of number work knowledge. Singh (2020) noted that the current error of digitalization, internet and hypermedia, likewise offer a varied variety of visual instructional approaches that can be used to improve academic results of grade one children in public primary schools. This study outcomes hence affirms the point that, in understanding the practical characteristics of visual media, someone shouldn't, beneath the impression that it is less imperative, lose sight of the specific types of desire they produce, for this is demonstrative of how they purpose more generally.

Films likewise have a great impact on learning outcomes since they involve more senses and the fact that they address them instantaneously Among lower primary schools in Kuala Lumpur, Burke (2020) posits that use of digital video has become a more flexible and applicable tool for number work instruction since different number work concepts are presented in an audio-visual form for a better understanding of different number work, language, creativity and essential environmental for instance as counting, ordering, number recognition, manipulation and performance of basic operations. In a number of nations in Sub-Saharan Africa, Audio-visual technology in form of Television and Video players' use is evident in learning intuitions for many years (Adams, Bobby & Engelmann, 2018). For instance, in a study done in Ghana, O'Reilly and Claadsey-Rusch (2019) posit that learner's acquire more knowledge when observing and imitating the actions of grownups. It is thus apparent that acquisition of knowledge is highly enhanced whenever sensory capabilities are roused. O'Reilly and Claadsey-Rusch (2019) noted that grade one learners who are exposed to audio-visuals in number work lessons register impressive performance in observation, recording, experimentation and predictions.

In Kenya and Kilifi North Sub- County to be precise, audio-visual technology has been adopted by most early years of education, albeit to a small extent, in teaching can improve

number work instruction and enhance learner understanding (Shepard, 2017). According to Shepard (2017), AV technology has offered many possibilities for the grade one teachers to make the most of a new generation of multimedia presentations to enhance learning among pupils. The researcher contends that multi-sensory activities feature strongly in high-quality number work instruction and often encompass visual, auditory, tactile and kinesthetic activities. However, such a contention needs further interrogation since Shepard (2017) failed to indicate how different forms of audio-visuals enhance learning outcomes among grade one learners.

2.3 Teachers' Utilization of Improvised Resources and Learning Outcomes of Learners in Lower Primary Public Schools

Improvisation during early years of education is a component of creativeness and imagination. It is the application of native materials in our surrounding environs to shape, build, and mold or make instructional teaching-learning resources which may contribute to the smooth dissemination and transmission of information from educators to students or instructors to competitors. American Association for the Advancement of Literacy Work (2019) posits that the outcomes of improvisation during early childhood education need to be practical and meet societal and practical applications in classroom pedagogy. Research done out in the Netherlands, Anyakoha (2019) found that improvisation during early education discloses that there are prospects of substitutes to instructional resources. Anyakoha (2019) further indicated that improvisation of teaching materials is an action of manipulating an imitation of typical apparatus to perform the part it is chosen for. That is to say, it is an action of applying substitute resources to enable instructions for learning when there is shortage of exact first-hand instructional resources. They promote abilities in the intellectual, emotional and psychomotor fields and has developed a vital in teaching

and learning due to the financial condition which makes the price of amenities and apparatus go up within declining or near shortage of buying power.

Acquainted of these statements, Conezio and French (2018) indicated that even if facilities and equipment are obtainable, the swelling of registration of pupils into learning institutions and growing number of game lovers within stagnant or declining facilities and equipment still pose the difficult of inadequacy of facilities and equipment. Therefore, Conezio and French (2018) suggests that improvisation in math, language, creativity and crucial environmental abilities is a solution to the difficult related with storing, restoration, replacement, renewal of replaceable constituents of commercially obtainable teaching and learning provisions and likewise answers to the difficult of rigorous drilling of educators and pupils who will apply the facilities and apparatus. In Nigeria, Dogara and Ahmadu (2018) exposed that the merits of improvisation during early education comprise of innovations or creativity and full of imaginings that are convertible to actualities. Dogara and Ahmadu (2018) found that locally available tools are molded again and utilized to gratify the goal for understanding in learning institutions. These outcomes confirm the point that improvisation of teaching and learning resources is similar to the adoptive skill of an inventive teacher to make facilities and equipment in the vicinity at less cost for teaching-learning developments.

Similarly, Horne (2019) also noted that in physical education and sports teaching, various kinds of apparatus and materials such as the balls, devices, nets and regular tools are desired individual for the behavior of and team sports likewise for additional physical activities, taking into account the rising number of registration and at the same time the surge in the number of game lovers of game programs utilize materials and devices which are costly. Such resources are important to the well-being and security of contestants, to decent

playing situation and to morals resulting from the program. Likewise, Higgins and Spitulnik (2021), in research done in Tanzania, proposed that it is of great significance, that substitute technique of improvisation in number work, language, creativity and essential environmental skills need to be in use be able to realize that physical education and sports programs have the amenities, apparatus and materials required to carry out excellence programs. These none commercial supplies and apparatus need be properly prepared, cautiously established, adequate, and properly applied in relation to the sporting activity requirement at a specific era. Such approaches as repairing in effect plants, retrofitting and adapting current constructions and introducing numerous uses of existing amenities are means that will in a way account see to performance of excellence sporting programs. In many early childhood education centers in Kenya, the situation is alike with many of the aspects on logical work and improvisations in number work, language, creativity and essential environmental skills stress on aptitudes. In an investigation done in Kisumu East Sub- County, Burnett (2021) established that improvisation is a component of resourcefulness.

Burnett (2021) exposed that utilization of locally available materials in our surroundings to shape, create, mold or making teaching learning resources that could help in the quick distribution and transmission of information from educators to pupils. Burnett (2021) further established that improvisation of ethnical resources for teaching has made marvelous improvement of lesson delivery. This is credited to the fact that such improvised materials just like any teaching aids, are real or bodily substances which provide sound, visual or both to the sense organs during a lesson. Peterson (2019) noted that the use of none commercial resources for teaching math attracts sufficient attention of the three domains, that is, Cognitive, Affective and Psychomotor in that way lessening the abstractness of the number work concepts for grade one children. Further, when educators

make up number work educational resources like sound and heat production, dimension, movement and building, it empowers grade one pupils to improve intellectual abilities or thoughts like language, reasoning, creativity and problem solving. In Kilifi North Sub-County, the significance of using improvised resources may not be undervalued. For instance, media communicates data efficiently, encourage the acquirement and longer retaining of information, when they are methodically planned, replicated, utilized and evaluated (Mwangi, 2021). Further, the notion of improvisation that includes obtaining, choosing, constructing, making, replacing, and availing local media and resources gotten from within the school environs in the lack of the novel ones have not been completely encompassed by majority grade one educators, an aspect that is expected to have added to children losing curiosity and leading to low achievement in numeracy subject in Kilifi North. Mwangi (2021) didn't voice diverse improvised resources influencing learning results of grade one children in public primary learning institutions, therefore necessitating this research.

2.4 Teachers' Utilization of Graphic Materials and Learning Outcomes of Learners in Lower Primary Public Schools

Graphics are pictorial imageries or intentions on certain surface, for example a wall, canvas, screen, paper, or stone to notify, demonstrate or amuse. Martin (2018) posits that, in modern use it comprises of: pictorial representation of facts, as in computer-aided design and manufacture, in typesetting and the graphic arts, and in educational and recreational software. Martin (2018) asserts that graphic design may consist of the deliberate selection, creation, or arrangement of typography alone, as in a brochure, flyer, poster, web site, or book besides any other component. Precision or effective communiqué may be the impartial, connected with further traditional components may be search for, or simply, the formation of a distinctive style. In research carried out study France, Kilpatrick, Swafford

and Findell (2018) observed that graphic resources like charts and motion pictures attribute efficiently to outcomes in early childhood education.

Kilpatrick et al (2018) noted that, for effectiveness pictures need to be implicit for so that Children can develop the skill to perceive, designate and draw conclusion. The researcher further found that pictures are likewise one of the greatest essential practices in teaching new vocabulary. The researcher further established that pictures including blackboard drawings, wall pictures, charts, flash cards and the image of pictures arouses the pupils' thoughts which inspire them to speak their minds, attitudes. Many activities can be created by use of pictures. In Britain, a study carried out by Adams, Alexander, Drummond and Moyles (2018) established a substantial connotation between the usage of controlled instructional apparatus and pupils' attainment in the mathematics classroom. Learning theorists have suggested for some time that children's' concepts evolve through direct interaction with the environment, and materials provide a vehicle through which this can happen. Similarly, a study conducted in India by Noor (2019) noted that effective utilization of instructional resources in classrooms had shown improvement of test-scores in basic arithmetic. The study further revealed that children who are exposed to sufficient teaching and learning resources have developed intellectual and cognitive capabilities to acquire the number systems. For instance, these graphic materials assist pupils understand their world outside school and helps them construct a firm basis for achievement in school. Since the 1970s a chain of evaluations of conducted among grade one learners in Morocco, Riordan (2019) indicate an overall level of scientific ability that is well lower than what is anticipated and required.

In recent years these challenges have been addressed with new standards and other materials to advance education results in primary school and improvement is being

observed at the rudimentary and middle school grades, and particularly in schools which have embraced and implemented the use of charts and motion pictures. In Kenya and Kilifi North Sub- County, children are unsurprisingly visual and are able to make connections between numbers and a symbolized article and that utilizing symbols or pictures to explaining an association is making the usage of arithmetic actual to a youngster's mind (Mwangi, 2021). For instance, knowledge the fundamentals of counting can use pictures of mangoes or favorite fruits to assistance learners identify that the numerals represent the things depicted. Giving instructions by means of symbol or pictures allows pupils to identify relationships concerning the actual world and the math which are important for better learning outcomes. Not being able to make associations between life and graphics, pupils may be tangled about the lessons delivered in a classroom. However, the role of graphic materials in the learning outcomes still needs further exploration. For a study conducted by Mwangi (2021), and others, in addition to appreciating the starring role of graphics, hasn't been voiced how various types of graphic materials act as determinants of learning outcomes of grade one learners in primary schools.

2.5 Teachers' Use of Print Media and Learning Outcomes of Learners in Lower Primary Public Schools

Print materials are usually known as reading resources and are used to enflame common class deliberations or arouse topics for thorough class examination. These include, textbooks, newspapers, magazines, posters, teaching guides and fliers among others (Bruer, 2017). In research carried out in Germany, Dick and Savory (2018) established that the most important benefit of print media is tangibility. In other words, among the reasons why many scholars prefer print media since it has to do with the feel of the paper, having it in their hands means that the content is real, it exists (Dick & Savory, 2018). The researchers further revealed that, in early years of education where print media is adopted, learners

register impressive grades in number work, language, creativity and essential environmental skills. This is credited to the point that print media is unique in its capability to trigger a number of senses; of course, the feeling of paper, the smell of the ink or of an added scent, paper can be eaten or even listened to. They further reported that the class textbook is an elementary substance for the number work class. These study outcomes thus confirm the fact that the grade one instructors must expose the pupils to print resources such as encyclopedia, new magazines, pamphlets, poems and supplementary readers.

In utilizing them, grade one teachers must not make the class into a reading period as much as the development reading skills is imperative. These resources ought to be applied to offer structured number work concepts for children to advance the number work, language, creativity and essential environmental skills of identifying needed information on a variety of issues person and processes, solve identified group problems to suggest rational solutions, enhance and stimulate scientific thinking and interest. To achieve these objectives, Mautone and Mayer (2019), in research done in Mexico, suggested that the lower primary school instructor need to certify that the content of such materials is dependable and precise, appropriate to the children and ethnic environs, free from distortions and bias. Mautone and Mayer (2019) further suggested that print resources ought to be scrutinized for decent graphics, perfect prints and toughness and the educators must bring together the application of scientific resources with other kinds of materials to practically show and exhibit procedures.

In most Sub-Saharan Africa, Mukwa (2019) indicates that lower primary schools have embraced use of print media. For example, Walkin (2020), in an investigation at KwaZulu Natal Province in South Africa, found that print materials such as textbooks are provisions that are intricate for the teaching and learning of different skills. Walkin (2020) revealed

that the textbook is structured in a manner that it arranges concepts in an expressive and reasonable way and thus offers the starting point of educational grades. This implies that print materials help grade one learner develop the ability of detecting desired information on a variety of problems, persons and processes as well as stimulating pupils' thinking and interest. Kenya and Kilifi North Sub-County are no exception. For instance, in a study steered in Maragua Sub-County, Mwaniki (2021) showed that print media are easy to carry and use; easy to generate, produce, modify and update; cheap, especially if the media are black and white and more familiar to learners. Mwaniki (2021) found that one significant feature of any class is assisting the learner to draw meaning of the much of material and ideas in a field and this can be achieved by demonstrating to them the manner in which to organize information in a meaningful hierarchy of associated main and petty concepts. Proper identification of print media aid grade one learners comprehend how facts and ideas can be systematized (Mwaniki, 2021). However, Mwaniki (2021) has not articulated how different and specific forms of print media determine learning outcomes of grade one learners in primary schools.

2.6 Theoretical Framework

This scholarly work was grounded on the following theoretical underpinnings; The Cognitive Theory of Multimedia Learning and Skill Acquisition Theory.

2.6.1 The Cognitive Theory of Multimedia Learning

This instigation was founded on Cognitive Theory of Multimedia Learning developed by Mayer (2007), that is grounded on three core assumptions that, there are two distinct networks for processing data (audio and visual), there is a narrow channel ability and that learning is a lively procedure of cleaning, choosing, consolidating, and incorporating data. The theory is based on the impression that, a person's memory has two sub-components that work in parallel (visual and verbal/acoustic) and that studying can be further effective

if both of them can be applied simultaneously. This theory proposes that students build significant association amid words and representations and that, they acquire knowledge more acutely than they might do through words or representations single-handedly. Words can be verbal or written and the pictures can be any form of graphical imaginations comprising of artworks, photos, animation, real objects or video. Therefore, multimedia is a mixture of text and pictures, and suggests that multimedia learning takes place once the learner builds intellectual representations from these words and pictures. The children's part is to understanding of the existing resources as a dynamic partaker, eventually creating new information.

Wittich and Schuller (2016) reinforces this by commenting that, the use of audio-visual materials makes it possible to improve learning efficiency by choosing for classroom instructions audio-visual experiences which reinforce one another. They further comment that, when a variety of media is carefully coordinated, the learning that consequences can be considerably be better than the sum of individual parts. Since there is an inadequate ability for the learners to obtain the data through, the media selected has to be the best for any given instructional situation, in order for the learners to get from it the desired learning outcome.

Thus, the application of this theory in this scholarly work is that it accentuates the fact that, to identify the best applicable media for their prerequisites, teachers need consequently to appraise the aims, the content and the child. It underscores the vitality of the provision of the easy-to-understand materials showing exactly what a learning process is and that, media is an inseparable element of the learning outcomes process. This means that, this theory recognizes of the fact that, to be effective in tutorial room, aids need complement the

instructor's effort and ought to be malleable in their utilization. Therefore, for academic outcomes to take place, learning resources have to be given to pupils to interact with.

2.6.2 Skill Acquisition Theory

This scholarly work was also grounded on the Skill Acquisition Theory proposed by DeKeyser (2007). This model underpins that learning of various skills demonstrate an astonishing connection in development from original representation of knowledge through early changes in behavior to ultimate fluent, spontaneous, largely effortless, and greatly skillful behavior, and that this set of phenomena comes to be considered for by a set of elementary principles common to the attainment of all abilities. In this perspective, the scientific pedigrees of skill acquisition theory are found in diverse branches of psychology, which ranges from behaviorism to cognitivist and connectionism (Dekeyser, 2007). Its emphases on learning and learning outcomes as a manner of human learning. According to this theory, numeracy skill acquisition is regarded as a particular procedure of education, where learning is viewed as the representation of facts in memory about some ecological or intellectual event. In this study number work, language, creativity and essential environmental skills acquisition is guided by the use of teaching and learning resources. Consequently, the rationale of applying this theory in this research is that acquisition of numeracy skills, language, creativity and essential environmental skills involves the application of declarative knowledge followed by procedural knowledge, with the latter's automatization. To be precise, conscious knowledge of facts, number work concepts or ideas that can be stored as propositions.

2.7 Conceptual Framework

In this piece of work, the conceptual framework is grounded on instructional materials mirrored through usage of audio-visuais, improvised, graphic and print materials which

constituted the independent variables whereas learning outcomes were the dependent variable as shown in Figure 1 below.

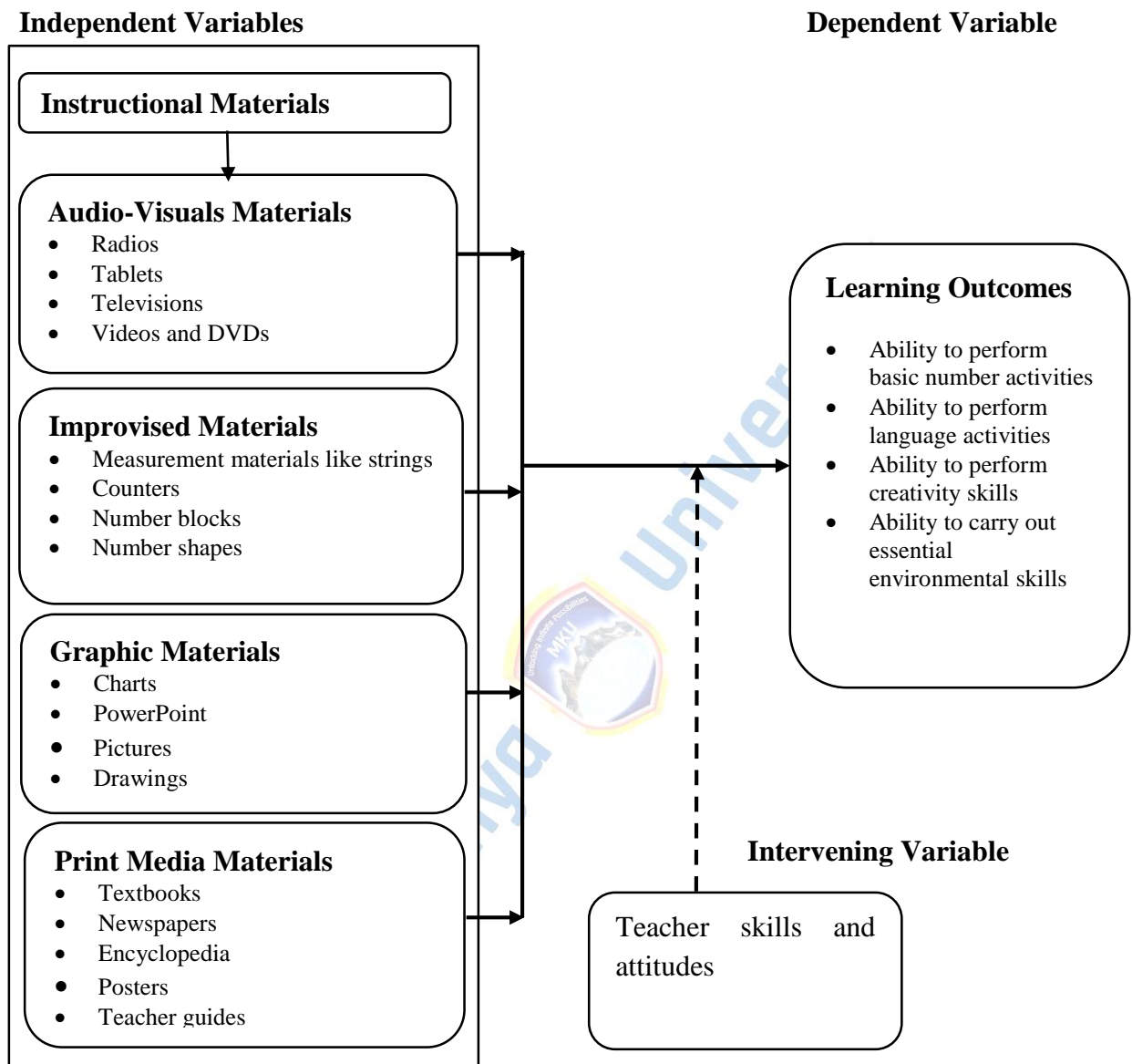


Figure 1 *Conceptual Framework*

Teachers' instructional materials as grounded in theory of cognitive theory of multimedia learning (Mayer, 2007) was indicated by audio-visual materials, improvised materials, graphic materials and print media materials. Audio-visual materials indicated by radios, tablets, televisions, videos as well as DVDs. On the other hand, improvised materials indicators included measurement materials like strings, counters, number blocks as well as number shapes. Moreover, graphic materials indicators included charts, PowerPoint,

pictures and drawings. Finally, print media materials indicators were text books, newspapers, encyclopedia, posters as well as teachers guides. The dependent variable learning outcomes indicators as grounded by Skill Acquisition Theory (DeKeyser, 2007) were considered as ability to perform basic number activities, language activities, creativity skills and ability to carry out essential environmental skills. However, for intervening variable included teacher skills and attitudes.

2.8 Research Gaps

The literature examination has uncovered several research and knowledge gaps. For instance, concerning audio-visuals and learning outcomes, a study by Shepard (2017) and many other studied empirical writings have not probed how teachers' use of specific forms of audio-visuals influence learning outcomes of lower primary learners in public primary schools. On improvised materials and learning outcomes, a study by Mwangi (2021) as did other reviewed investigations have not enunciated how teachers' use of various improvised materials impact learning outcomes of lower primary learners in public primary schools. On graphic materials and learning outcomes, a study by Mwangi (2021), as well as other studies, besides appreciating the role of graphics in teaching, have not articulated how teachers' use of different types of graphic materials influence learning outcomes of lower primary learners in public primary schools. On print media materials and learning outcomes, Mwaniki (2021) has not articulated how teachers' use of different and specific forms of print media influence learning outcomes of lower primary pupils in public primary schools hence the need for the study on teachers' use of instructional materials on learning outcomes in lower primary public schools in Kilifi North Sub-County, Kenya.

2.9 Summary of Literature Review

Out of this literature review, it is apparent that there are various forms of instructional materials which teachers can use in classroom pedagogy. Among those addressed include; audio-visuals, improvised materials, graphic materials and print media materials which

contribute to learning outcomes of lower primary learners in public primary schools. This review has demonstrated that lower primary learners have poorly developed cognitive abilities occasioned by theoretical approaches of teaching. However, the Cognitive Theory of Multimedia Learning and Skill Acquisition Theory formed theoretical framework where much still needs to be done since the review has not established how teachers' use of specific forms of instructional materials act as determinants of learning outcomes of grade one learners in public primary schools. Also addressed is conceptual framework as well as research gaps.



CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.0 Introduction

In this section, mixed methodology which the study adopted was outlined. However, design employed has been discussed, location where the study took place, population targeted by research, sample size of population of participants, sampling techniques, tools for data collection, testing of validity as well as reliability of research instruments, credibility testing, dependability testing of tools, research procedure that was followed for analysis techniques that was used in conducting the study together with ethical issues considered for the research.

3.1 Research Methodology

In this study, mixed methodology was embraced which presented an enhanced understanding of the study problem compared to a sole approach method. This methodology was appropriate since research comprised gathering and examination of both quantitative and qualitative information. In quantitative method, measurable information from a huge number of respondents was gathered and analyzed in an impartial objective way (Creswell, 2014). Quantitative information was gathered by use of structured questionnaires from lower primary teachers while for qualitative information, the researcher depended on the views of lower primary learners in public primary schools which was gathered through use of observation checklist and interview guide from headteachers. Use of mixed methodology was appropriate in that it enabled to avoid errors that would occur when using only one methodology (Creswell, 2024).

3.2 Research Design

The researcher applied a concurrent triangulation design comprising of quantitative as well as qualitative methods at the same time but with the same weight. This approach normally encompasses simultaneous but distinct, gathering and examination of quantitative and

qualitative information so that the researcher may better comprehend the study problem (Creswell, 2014). The researcher compounded outcomes from the two data groups for interpretation

3.3 Location of the Study

The study was conducted in Kilifi North Sub- County in Kilifi County. This locality had an estimated population of 178, 824 in an area of 264.4 km², explicitly, with a population density of 676 persons per square kilometer (KNBS, 2019). The core profitable activities in this Kilifi North comprise of subsistence farming and business activities. Conversely, as pointed prior, in Kilifi North Sub- County, quite a many of lower primary learners manifest low learning outcomes and competencies. According to Ngumbao (2017), majority of the grade one learner's manifest inability to undertake basic numeracy, poor communicative competency, lack of creativity and poor manifestation of essential environmental skills. Uwezo (2016) also reported that many lower primary learners show low aptitudes in basic numeracy, language and essential life skills such as team building with peers and leadership skills. Further, Uwezo (2016) noted that about 26.92% of the pupils exhibit improved language skills, 18.74% could perform basic number work while only a paltry 20.8% showed mastery of indispensable life skills for instance group building and leadership skills. It is on these grounds that the researcher was prompted to choose Kilifi North Sub- County as his study area.

3.4 Target population

The Targeted population for this investigation totaled 5282 partakers encompassing 87 head teachers, 317 lower primary teachers and 4878 lower primary learners as presented in Table below.

Table 1 Target Population of the Study

Categories	Target Population
Head teachers	87
Lower primary Teachers	317
Lower primary Learners	4878
Total	5282

Source: Kilifi North Sub- County Education Office, 2024

3.5 Sampling Procedures and Sample Size

Yamane's Formula was employed to ascertain the sample size. The formula is as follows:

$$N_0 = \frac{N}{1 + N(e)^2}$$

Where, N_0 = desired sample size at 95% confidence interval

N = Target Population

e = Confidence level of 5% (decimal equivalent is 0.05)

Thus, desired sample was:

$$N_0 = \frac{5282}{1 + 5282(0.05)^2}$$

$$N_0 = \mathbf{371 \text{ respondents}}$$

Stratified sampling was applied in creating seven (7) strata centered on the number of zones that is; Tezo, Sokoni, Kibarani, Dabasao, Matsangoni, Watamu and Mnarani in Kilifi North Sub- County. Three (3) head teachers and 30 lower primary teachers were designated from each zone applying purposive sampling making an allowance for primary schools which have had low competencies among lower primary learners. Conversely, 30 lower primary pupils were chosen through simple random sampling to circumvent partiality.

Table 2 *Sample Size Grid*

Categories	Target Population	Sample Size	Sampling Techniques
Headteachers	87	21	Purposive sampling
Lower primary Teachers	317	210	Purposive sampling
Lower primary Learners	4878	140	Simple random
Total	5282	371	

Source: Researcher, 2024

This process allowed the researcher to come up with a sample of 21 Headteachers, 210 lower primary teachers and 140 lower primary learners as presented in Table 2 above.

3.6.0 Research Instruments

Research Instruments are apparatuses that are employed to gather data on the explicit established fixed themes of research objectives. In regard to this study, these instruments comprised of questionnaire for grade one teachers, interview guide for head teachers and observation checklist for grade one children.

3.6.1 Questionnaire for Teachers

Questionnaires were employed to assemble facts from educators. This scholarly work made use of self-developed questions with closed-ended quizzes to gather quantitative information from lower primary instructors. Morse (2010) noted that a questionnaire as a research tool comprises a series of queries as well as other prompts for the goal of collecting statistics among participants and is frequently intended for data analysis of the replies. The questionnaire had six segments intended to obtain data on the various objectives of the study. Part A of the questionnaire collected demographic data on participants' sexual characteristics and their academic levels. Sections B, C, D, E and F of the questionnaires of comprised test items obtained from the research objectives. The test items encompassed a 5-point Likert type of questions founded on the study objectives as pointed by Creswell

(2014). Likert scale demonstrates a measure with hypothetically equivalent interval answers.

3.6.2 Interview Guide for Headteachers

The study employed structured interviews with open-ended questions to assemble qualitative statistics from heads of schools. Structured interview was imperative for this research because, as regards to Kothari (2005), it allowed the investigator to ask inquisitive and additional queries and create a noble rapport with the participants and a goal-driven effort by the investigator to acquire dependable and valid answers in form of verbal replies from or more candidates.

3.6.3 Observation checklist for Lower Primary Learners

The scholar, used observation checklist for gathering data on the accessibility of diverse categories of teaching learning resources in appraised public primary schools. It also involved assessing levels of competencies and learning results amongst grade one children in public primary schools. That is to say, the researcher undertook to observe learners' ability to perform basic tasks to show their levels of competencies in basic numeracy, language and creativity as well as manifestation of essential environmental competencies. This was conducted for 30 days in each of the sampled primary schools.

3.7.0 Piloting of Research Instruments

Piloting of tools for research was done among 37 participants from sampled public primary schools in Kilifi South Sub- County which is of similar traits to KILIFI North Sub-County. According to Kothari (2005), pilot sample ought to be 10% of the study population which 10.0% of 371 making up 37 participants. The main objective of the piloting was to pre-test the research tools in order to ascertain, credibility, reliability, validity and dependability of instruments for research. Similarly, piloting was necessary in identifying problems likely to occur when obtaining information from participants hence researcher was able to prepare adequately. However, time management for the data gathering was well set out. The

interview schedules and observation checklist were also experimented to warrant that questions are undoubtedly worded and attract suitable range of replies which helped the researcher to pinpoint areas of adjustment.

3.7.1 Testing for Validity

For testing of validity, items were analyzed to check for content validity where the scholar with the support of professionals in early childhood studies went through each item and the replies obtained to found if the items would generate the necessary evidence. Test items that would not be suitable in terms of producing the needed facts were dropped and replaced by options that were suitable in producing the information. Creswell (2014) states that academicians appraise content validity by holding a panel of professionals and have them ascertain if the questions are valid. According to Creswell (2014), validity means that the individual's scores from an instrument make sense, are meaningful and enable the researcher to draw good conclusions from the sample being studied to the population.

3.7.2 Testing for Reliability

Split-half technique was applied to find reliability of the test items. In this case, the test items were given formerly to a group of participants and the outcomes were divided into two categories called halves. Reliability coefficient (r) between the two 'halves' was obtained using Cronbach Alpha Method. If a reliability coefficient of $r \geq 0.75$ is obtained, then it indicates high internal reliability.

3.7.3 Testing for Credibility

The credibility is involved in finding that the outcomes of the study are credible and depending more on the fruitfulness of the data collected, rather than the amount of data gathered. The researcher established the credibility of qualitative data by data triangulation through multiple analysts or experts. Creswell (2009) argues that ensuring credibility is one of most important factors in establishing trustworthiness. The following provisions were

made by researcher to promote confidence that they have accurately accorded the phenomenon under scrutiny.

3.7.4 Testing for Dependability

Rationale for testing for dependability was to ensure there is existence of consistent results on a repeat of a similar study (Bland, 2010). Therefore, so that similar results can be obtained every item in research was recorded into detail to improve on dependability of research outcomes. To enable the reader of the research report to develop a thorough understanding of the methods and their effectiveness the text included the research design and its implementation describing what was planned and executed on a strategic level.

3.8 Data Collection Procedures

Prior to data collection researcher was provided with an introduction letter to NACOSTI to fast-track provision of research license by school of post graduate. Also sought for were authorization Letters from education office in Kilifi County, County government office in Kilifi County, County Commissioner and Research Permit from National Commission for Science, Technology and Innovation (NACOSTI). These letters helped to introduce researcher to different respondents sampled in public primary schools to carry out the study in Kilifi North Sub- County. After obtaining the requisite letters of authorization and permits, the researcher embarked on data collection process. The researcher visited every primary school which was sampled to seek for permission and book appointments from the participants to carry out the research and familiarize himself with the participants before the actual study. The researcher administered questionnaires to grade one teachers. At the same time, the researcher conducted interviews among the headteachers and undertook observation schedules among grade one learners.

3.9 Data Analysis Procedures

Analysis of data involved both descriptive and inferential analysis. For qualitative data obtained from interview schedules from Headteachers as well as observation schedules for lower primary school learners in public primary schools, analysis was done thematically based on objectives of the study then presented in form of narration. On the other hand, quantitative data obtained from questionnaires for teachers was analyzed by use of frequency tables, figures or charts and inferentially using Karl Pearson Product Correlation Coefficient and Statistical Packages for Social Sciences (SPSS) version 23. The range of values for Karl Pearson was positive one to negative one. Where the value was close to positive one means there is a strong positive relationship between teachers' use of instructional materials and learning outcomes but if the value was close to negative one that means a strong negative relationship. However, if the value of Karl Pearson is close to zero means that there is a weak positive or negative relationship between the teachers' use of instructional materials and learning outcomes among lower primary pupils in public primary schools.

3.10 Ethical considerations

Several Ethical considerations were put into considerations that included:

(i) Confidentiality and Privacy

Researcher not only assured respondents for the confidentiality and privacy of their information but also ensured that all information given by participants has been utilized with a lot of caution to prevent any linkage to unauthorized persons. In addition, all information gathered by researcher was only used for the sole purpose of the research.

(ii) Anonymity

All research tools lacked options for identifications such as school names and participants names and participants were also highly advised not to indicate any form of information

that can identify them as they had the right to remain anonymous therefore no personal information was recorded on research tools.

(iii) Informed Consent

Researcher introduced self-introduction letter to participants that informed them on the purpose of research and duration it would take place. Also, participants were also informed that the kind of investigation being conducted is for academic use only therefore respondents were made aware that no benefits participants would derive for participation. Also, respondents were informed that they have the right to withdraw from participation without explanations and no course of action can be taken for them for refusing to take part in research.

(iv) Storage of Data Collected

All data gathered from the field was safely stored under key and lock to ensure there is no other person who was in a position to access it apart from researcher. This ensured that all data obtained is safe and secure.

(v) Voluntary participation

All participants had the freedom to choose whether to participate in the research or not. However, researcher explained to respondents on the importance of participating in the study for academic work growth and also information obtained from research work would be beneficial to Ministry of Education in developing policies in order to improve learning outcomes in lower primary public primary schools. In addition, participants were also given room for withdrawal during investigation if they felt uncomfortable for participation without any fear of victimization.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.0 Introduction

This section looks at research outcomes based on four objectives of the study on teachers' use of audio-visual materials, improvised materials, graphic materials and use of print media materials influence on learning outcomes of learners in lower primary public schools. However, general demographic information of respondents was also taken into considerations.

4.1.0 Reporting on Socio- Demographic Characteristics of Participants

4.1.1 Response Rate

Two hundred questionnaires (200) out of two hundred and ten (210) questionnaires were administered to grade one teachers and returned constituting a 95.24%. According to Creswell (2009), a response rate of above 75.0% is satisfactory hence therefore of appropriate generality of the results to a specified target population in a social study. Massey and Tourangeau (2013) warn that little response rates indicate partiality and subsequently undependable outcomes. The response rate was (200) 95.24% therefore considered excellent and hence they allowed dependable generalization of the information acquired from research.

4.1.2 Gender of Teachers

Information on gender of Headteachers and teachers was obtained and recorded as shown as demonstrated in table below.

Table 3 Report on Gender of Headteachers and Teachers

Gender of participant		Headteachers	Teachers
Male	Frequency	14	79
	Percentage	66.70	37.62
Female	Frequency	7	131
	Percentage	33.30	62.38
Total frequency		21	210

Source; Researcher, 2024

From the study, 66.7% (14) of the head educators sampled were men while 33% (7) were women. Results also show that 62% (131) of grade one educators who took part in the study were women while 38% (79) were men. An indication that teaching of grade one pupils in the study area is dominated by female teachers. Teachers' gender impacts the outcomes of the pupil. Eccles and Wigfield (2002) opined that teachers' gender has a significant part to play in modelling a learner's capability on self-concepts thus impelling their educational accomplishment revealing a assured relationship between teacher's gender and pupils performance. Likewise, Laird (2011) established that lady teachers exhibited a lot of support, presented an exceedingly encouraging classroom atmosphere, and applied learner-centred teaching strategies of greater prominence on the implication of motivation. Further, Swarnalatha (2016) found that that 21 percent of female teachers had great work obligation while only 2 percent of male educators had the same. The low learning outcomes among the grade one pupils in Kilifi was therefore due to other factors other than teachers' gender since more than 62% of grade one teachers in the study area were female.

4.1.3 Age of Teachers

The teacher's age was established and findings shown below

Table 4 *Report on Age of Teachers*

Age	Frequency	Percentage
Between 20 and 29	57	27.1
Between 30 and 39	83	39.5
Between 40 and 49	42	20.0
Above 50	28	13.3
Total	210	100.0

Source; Researcher, 2024

The outcomes in table above demonstration that a higher number 83 (39.5%) of grade one teachers stood at 30 and 39 years, those amid 20 and 29 years represented 57 (27.1%) of the teachers while those between 40 and 49 years were 42 (20%) of the sampled teachers. Teachers who were above 50 years of age constituted only 13.3% (28) of the sampled teachers. In a study done by Swarnalatha (2016) on work obligation of secondary school instructors as rears to age, gender, experience and subject proficiency, the outcomes exposed that (10%) of secondary school teachers aged between 30-40 years had regular work assurance, only 5.3% of instructors showed high work commitment. Within age group 41-50 years 18% had average and 14 percent low work commitment. For age group of beyond 50 years 14% were average and 13% had stumpy work commitment. The study concluded that middle age teachers were more committed than aged and youth teachers. In this study, the middle age teachers constituted the largest percentage among teachers sampled meaning that the low learner outcomes were due to other factors other than teachers' age.

4.1.4 Teaching Experience

This study established teaching experience among grade one instructors in Kilifi North sub-county. The results are presented below.

Table 5 Report on Teachers Teaching Experience

Number of years	Frequency	Percentage
Less than 5 years	11	5.2
Between 5 and 10 years	67	31.9
Between 10 and 15	101	48.1
More then 15	31	14.8
Total	210	100.0

Source; Researcher, 2024

The study established that a greater number at 101 (48%) of the grade one educators 67 (31.9) had an instruction experience between 5 and 10 years, 11 (5.2%) had less than 5 years of teaching experience while those who had above 15 years represented 31 (14.8) %.

A study done by Vieira (2020) on pedagogy of experience in teacher education for learner and teacher autonomy showed that number of years one has taught influences the agency to handle mainstream practices and discover learner-centered teaching, theorem improving professional independence in pursuance to stimulate learner independence. Similarly, Abu and Fabunmi (2009) investigated the extent to which teacher’s level of education age, practice and teacher-learners ratio interrelate with mature students’ academic outcomes in the part-time sub-degree program of the University of Ibadan in Nigeria. Findings revealed that these variables had an important and positive association with academic performance.

4.1.5 Teachers Level of Education

Information gathered on level of education of teachers’ and Headteachers’ report was recorded as demonstrated in the table below.

Table 6 Report on Teachers’ and Headteachers’ Level of Education

Level of Education		Headteachers	Teachers
Certificate	Frequency	0	59
	Percentage (%)	0	28.1
Diploma	Frequency	6	129
	Percentage (%)	28.6	61.4
Degree	Frequency	13	18
	Percentage (%)	61.9	8.6
Post-graduate	Frequency	2	4
	Percentage	9.5	1.9
Total		21	210

Source; Researcher, 2024

The findings indicated that a large number at 13 (61.9%) of the Headteachers had a degree whereas 6 (28.6%) had a diploma 6 (28.6 %) had post graduate degree and no one had certificate in education. The study further showed that 2 (9.5%) had a post graduate degree in education. Further, 18 (8.6%) of the teachers had a bachelor's degree and 129 (61.4%) had a diploma in education and only 4 (91.9%) had a post graduate degree. In Kenyan education system, educators at the primary school level are supposed to be holders of a certificate in education at a minimum. The findings agree with those of Ndirangu (2013) who found out that 90 percent of the teachers had achieved a minimum certification. Ndirangu (2013) observed that an effective teacher must be able to understand the content and have knowledge of the subject content. These results therefore suggest that grade one teachers in Kilifi North sub-county schools were well trained to handle grade one pupils. Hence, the low performance in learner outcomes was likely because of other reasons other than teachers' academic qualifications.

4.2 Report on Influence of Teachers' Use of Audio-Visual on Learning Outcomes of Lower Primary Learners in Public Primary Schools

Report majored on audio-visual present in public lower primary schools, usage of audio-visual among lower primary learners and influence of audio visual on learning outcomes.

4.2.1 Audio-Visual Present in Public Lower Primary Schools

Findings indicated that 118 (56.19%) of the teachers showed that they had radios in the school while 19 (9.05%) of teachers indicated that they had a television in school that they used for instruction. The study also showed that 4 (1.90%) of the teachers indicated that their schools had tablets for instructions while none of the teachers indicated that they had DVDs for use as audio-visuales in schools for instruction. However, a great number of teachers at 160 (76.19%) of the teachers indicated that they did not have any kind of audio-visual in school.

However, when headteachers were interviewed on the kind of audio-visuals available in their respective schools one of the participants observed that,

“We have most of the audio-visuals in the classes while individual teachers still make more improvised media for use in instruction. We have a television, charts, pictures and posters in all the classes”

Yet another Headteacher noted;

“The school is young and therefore most of the items are not available. We don’t have a television in the school, nor video tapes, computers or iPad. However, charts and posters are adequately provided in grade one class”.

Yet a third Headteacher participant observed that;

“Some of the audio-visuals required by all learners are still and motion pictures like filmstrips, television, audiotapes, teaching machines, computers, and videodiscs. However, because of budgetary constraints we have few or none of these essential aids” head teacher H.

4.2.2 Use of Audio-Visual in Instruction among Lower Primary Learners in Public Primary Schools

The study sought to establish how often grade one teacher’s used audio-visual in instruction. This data was collected from the headteachers. Figure below presents the results.

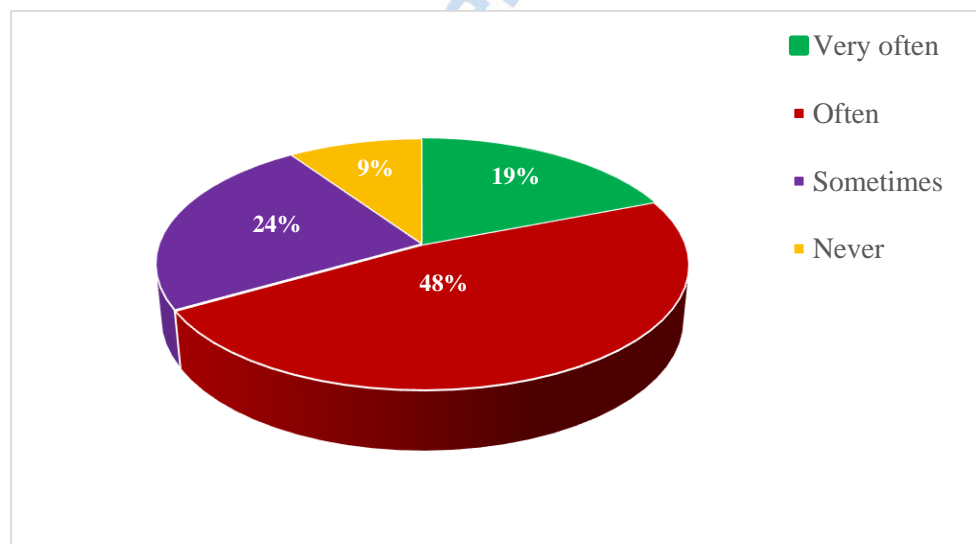


Figure 2 Use of Audio-Visual as Viewed by Headteachers

The researcher established that 48% (10) of the head teachers demonstrated that lower primary teachers often used audio-visuals in instruction among grade one pupils. Further, 19% (4) of the Headteachers indicated that audio-visuals were used by grade one teachers in instruction. Nine percent of the Headteachers showed that grade one teachers never used audio-visuals while 24% (5) indicated that grade one teachers sometimes used audio-visuals in instruction.

4.2.3 Influence of Audio-Visual on Learning Outcomes among Lower Primary Learners in Public Primary Schools

This researcher sought the effect of the presence of audio visual on educational outcomes among the pupils. Table below displays the outcomes.

Table 7 *Effect of Audio-Visual on Learning Outcomes among Lower Primary Learners in Public Primary Schools*

Key; F- frequency, %- Percentage, EE- Exceeded Expectation, ME- Meeting Expectation, BE- Below Expectation

		Crosstab					
		Learning Outcomes					
			EE	ME	BE	U	Total
Presence of Audio-visuals	Present	F	47	2	1	0	50
		%	94.0	4.0	2.0	0.0	100.0
	absent	F	11	46	94	9	160
		%	6.9	28.8	58.8	5.6	100.0

Source; Researcher, 2024

Findings showed that 94% (47) of the teachers who point out that they had audio-visuals in their respective classrooms also specified that their Children's' learning outcomes were Exceeding Expectations. The results further indicated that only 6.9% (11) of the teachers who indicated that their schools had no audio-visuals noted an improvement in learning outcomes to have Exceeded Expectations. While only 2% (1) of the teachers who had

audio-visuals indicated Meeting Expectations to competence activities among their children. In addition, teachers were requested to rate the degree to which they would agree with the statements on how usage of audio-visuals has determined learning outcomes of lower primary learners and results tabulated as shown below.

Table 8 *How Audio-Visual Influence Learning Outcomes Among Lower Primary School Learners*

Key; SA-Strongly Agree A-Agree U-Undecided D-Disagree SD--Strongly Disagree, F-frequency, %- Percentage

Particulars		SA	A	U	D	SD	Total
I use radios in improving number work, language, creativity and essential environmental skills among learners	f	63	107	23	11	6	210
	%	30.0	51.0	11.0	5.2	2.9	100.0
Using televisions has improved number work, language, creativity and essential environmental skills among learners	f	30	137	30	9	4	210
	%	14.3	65.2	14.3	4.3	1.9	100.0
Using tablets has improved number work, language, creativity and essential environmental skills among learners	f	1	54	153	0	2	210
	%	0.5	25.7	72.9	0.0	1.0	100.0
Concept videos has improved number work, language, creativity and essential environmental skills among learners	f	65	107	35	2	1	210
	%	31.0	51.0	16.7	1.0	0.5	100.0
Using DVDs has improved number work, language, creativity and essential environmental skills among learners	f	0	59	98	49	4	210
	%	0.0	28.1	46.7	23.3	1.9	100.0

Source; Researcher, 2024

Use radios in improving number work, language, creativity and essential environmental skills among learners, 30% (63) of teachers strongly agreed, 51% (107) who were the majority agreed, 11.0% (23) remained undecided, 5.2% (11) disagreed while 2.9% (6) strongly disagreed. Using televisions has improved number work, language, creativity and essential environmental skills among learners 14.3% (30) strongly agreed, 65.2% (137) which was slightly more than half of teachers agreed, 14.3% (30) were undecided, 4.3% (9) disagreed while those who strongly disagreed were 1.9% (4). Using tablets has improved number work, language, creativity and essential environmental skills among learners 0.5% (1) strongly agreed, 25.7% (54) agreed, 72.9% (153) who were the majority of teachers remained undecided, 1.0% (2) strongly disagreed. Concept videos has improved number work, language, creativity and essential environmental skills among learners attracted 31.0% (65) of teachers who strongly agreed, half of teachers at 51.0% (107) agreed, 16.7% (35) were undecided, 1.0% (2) disagreed while 0.5% (1) strongly disagreed. Using DVDs has improved number work, language, creativity and essential environmental skills among learners none of the teachers who strongly agreed, 28.1% (59) agreed, 46.7% (98) were undecided, 23.3% (49) disagreed and 1.9% (2) strongly disagreed.

However, Headteachers were asked on how the usage of audio-visual influenced study outcomes amongst lower primary learners. One of the head teachers observed that;

Audio-visuals are an integral part of teaching and they help teachers pass information across to learners in a more effective way hence improving learning outcomes among learners.

Yet another head teacher retorted:

“Audio-visual are been shown to aid teachers in expressing ideas that would otherwise look challenging to learners in a manner well understood by the learners. Their availability and use must be encouraged”

These results corroborate findings by Foster (2016), who asserted that learning via audio-visuals creates a stimulating and interactive environment which is more

conducive to learning. Similarly, these findings agree with Singh (2020) who assert that audio visual devices are imperative in education system and encourage teaching learning procedure and make it simple and motivating for learners to acquire number work, language, creativity and essential environmental skills.

4.3.0 Influence of Improvised Materials on Learning Outcomes among Lower Primary Learners in Public Primary Schools

The second goal of this research was to examine the degree to which teachers' use of non-commercial Aids determine learning outcomes of lower primary learners in public primary schools in Kilifi North. Data on the extent to which teachers use improvised materials in instruction among grade one learners was collected by the teachers' questionnaires and the head teachers' interviews.

4.3.1 Use of Improvised Materials in Instruction

This research sought to find effect of using improvised materials in instruction of lower primary pupils. Table below present the results of teachers' opinions on the use of improvised materials in instruction

Table 9 *Use of Improvised Materials in Instructions*

SA-Strongly Agree A-Agree U-Undecided D-Disagree SD--Strongly Disagree F-Frequency, %-Percentage

Test Items		SA	A	U	D	SD	Total
I always improvise measurement materials like strings to teach number work, language, creativity and essential environmental skills	F	47	99	7	38	19	210
	%	22.4	47.1	3.3	18.1	9.0	100.0
I seldom improvise materials when teaching number work, language, creativity and essential environmental skills	F	15	22	13	149	11	210
	%	7.1	10.5	6.2	71.0	5.2	100.0
I use improvised number blocks when teaching number work, language, creativity and essential environmental skills	F	9	141	30	25	5	210
	%	4.3	67.1	14.3	11.9	2.4	100.0
Usage of improvised number shapes do improve number work, language, creativity and essential environmental skills	f	16	143	16	32	3	210
	%	7.6	68.1	7.6	15.2	1.4	100.0
Improvisation has helped me to improve number work, language, creativity and essential environmental skills	f	11	131	24	44	0	210
	%	5.2	62.4	11.4	21.0	0.0	100.0

Source: Researcher, 2024

On the first statement that teachers always improvise measurement materials like strings to teach number work, language, creativity and essential environmental skills 22.4% (47) strongly agreed, 47.71% (99) agreed, 3.3% (7) were undecided, 18.1% (38) disagreed while those who strongly disagreed comprised 9.0% (19). On second statement 7.1% (15) strongly agreed that they seldom improvise materials when teaching number work,

language, creativity and essential environmental skills, 10.5% (22) agreed they do improvise materials, 6.2% (13) were undecided, 71.0% (149) who were super majority while 5.2% (11) strongly disagreed. On use of improvised number blocks when teaching number work, language, creativity and essential environmental skills, 4.3% (9) strongly agreed, more than half at 67.1% (141) agreed, 14.3% (30) were undecided, 11.9% (25) disagreed and only 2.4% (5) strongly disagreed. On the other hand, 7.6% (16) strongly agreed that usage of improvised number shapes do improve number work, language, creativity and essential environmental skills, more than half at 68.1% (143) agreed, 7.6% (16) remained undecided, 15.2% (32) disagreed while 1.4% (3) strongly disagreed. Finally on improvisation has helped me to improve number work, language, creativity and essential environmental skills 5.2% (11) strongly agreed, 62.4% (131) agreed, 11.4% (24) were undecided, 21.0% (44) disagreed while none of the teachers strongly disagreed with that statement.

4.3.2 Improvising Materials for Instruction

Head teachers were requested to indicate how frequently teachers in their schools improvised materials for use in instruction in grade one.

“It’s important that improvised materials are often used in teaching. However, sometimes, it becomes difficult to prepare these materials particularly where such materials are not readily available in school” Head teacher C

Yet another head teacher noted;

“My teachers are dedicated to giving our learners the best and therefore, improvised materials are key in ensuring that our objectives are met. Therefore, teachers often make the improvised materials for instruction” Head teacher F.

4.3.3 Type of Materials Improvised by Grade One Teachers

The researcher pursued to find the type of materials that were improvised by teachers for use in instruction in grade one. One head teacher remarked that;

“Diagrams and charts drawn on cardboards and computer keyboard made of wood. Storytelling, song, theater and stand-up comedy are some of the types of

improvisation made in school that have great impact on learners” Head teacher E.

Another head teacher said;

“Teachers in my school are encouraged to start any concept from simple exercise that focus on listening, responding and staying in the moment, building on the basic, encourage learner collaboration in a way that can help them to reflect then teacher do the debriefing” Head teacher N.

4.3.4 Influence of Improvised Materials on Learning Outcomes

The researcher sought to find out the influence of improvised materials in instruction amongst grade one pupils in Kilifi North. Data on this variable was obtained from the interview schedules to the head teachers. The head teachers were asked; How does teachers’ use of improvised materials influence learning outcomes of grade one learners in public primary schools in your school?

One headteacher said;

“Improvised materials are meant to make learning interesting, practical, appealing and realistic.” Head teacher E.”

Yet another head teacher noted;

“We have noted that improvised materials enable both learners and teachers to actively and effectively participate in a lesson. Most importantly, it is expected that when pupils participate in improvisation, they get a chance to acquire abilities and information and develop confidence and actualization” Head teacher G.

4.4.0 Influence of Graphic Materials on Learning Outcomes among Lower Primary Learners in Public Primary Schools

The fourth objective of this study was to establish the degree to which teachers’ application of graphic materials determine the learning outcomes of grade one learners in public primary schools in Kilifi North. Use of graphic materials by teachers in instruction was determined from teachers’ questionnaire.

4.4.1 Availability of the Graphic Materials as Viewed by Teachers

The participants were requested to show which type of graphic materials available in their respective schools. From the results, all the teachers showed that they had charts in their school and they used them in instruction in lower primary. But Only 7.6% (16) of the teachers indicated that they had and used power point slides in instruction of lower primary pupils in their respective schools. Further, 62% (130) indicated that they had and used pictures and drawings respectively in their schools among lower primary pupils.

4.4.2 Availability of Graphic Materials as Viewed by Head teachers

This research sought to find out from head teachers, which type of graphic materials available in school from grade one pupils. The question was formulated as Which graphic materials are available in your school? One of the head teachers commended;

“Graphic materials used in school include chalkboard drawings, wall charts and sometimes flash cards”

Another head teachers also noted as follows;

“The only graphic materials we have in school are those that can be locally sourced like charts and maps. However, there are notable instances where individual teachers go their way to organize video presentation on laptops and projectors in their respective classes”.

From the results, schools did not store nor used graphic materials required for instruction. While some schools indicated to have had the graphic materials, the majority of the head teachers noted that these materials were either available in small and insufficient quantities or completely unavailable. This must have been the reasons for low learning outcomes. While Mwangi (2021) was unable to explain ways through which different graphic materials determinants learning outcomes of grade one learners, Kilpatrick et al. (2018) on the other hand noted that graphic materials contribute effectively to learning outcomes in early childhood education.

4.4.3 Use of Graphic Materials in Instructions

This study sought to establish from the school head teachers how often grade one teacher used graphic materials in teaching number work. When faced with this question, one of the head teachers answered;

“Considering the amount of time available, use of graphic materials is minimized. The use of the graphic materials is limited to the type of subject and the availability of the graphic materials”.

Another head teacher noted;

“Teachers in my school do their best to ensure that unless it’s practically impossible, graphic materials are always used to ensure effective delivery of content”

From the results, it’s evident that not all schools used graphic materials in instruction of grade one pupils. While some head teachers indicated willingness to have most of the graphic material in schools, other variables like time availability, availability of the materials were at play in ensuring that grade one teachers used graphic materials in instruction of grade one pupils.

4.4.4 Influence of Use of Graphic Materials on Learning Outcomes

The researcher as set to find the influence of the using of graphic materials in instructions on learning outcomes among grade one pupils. Table below shows the outcomes

Table 10 *Influence of Using Graphic Materials on Learning Outcomes*

SA-Strongly Agree A-Agree U-Undecided D-Disagree SD--Strongly Disagree, F- frequency, %- Percentage

Particulars		SA	A	U	D	SD	Total
I use charts to enhance number work, language, creativity and essential environmental skills	f	98	87	1	21	3	210
	%	46.7	41.4	0.5	10.0	1.4	100.0
Using Power Points has enhanced number work, language, creativity and essential environmental skills	f	77	86	9	31	7	210
	%	36.7	41.0	4.3	14.8	3.3	100.0
I always use pictures to help my grade one learners improve their number work, language, creativity and essential environmental skills	f	109	98	0	2	1	210
	%	51.9	46.7	0.0	1.0	0.5	100.0
Use of drawings has enabled my grade one learners improve their number work, language, creativity and essential environmental skills	f	26	172	5	7	0	210
	%	12.4	81.9	2.4	3.3	0.0	100.0
Use of graphics in classroom help grade one learner to master their number work, language, creativity and essential environmental skills	f	94	100	2	11	3	210
	%	44.8	47.6	1.0	5.2	1.4	100.0

Source; Researcher, 2024

On use of charts to enhance number work, language, creativity and essential environmental skills 46.7% (98) strongly agreed it enhances learning outcomes among learners in lower primary schools, 41.4% (87) agreed, 0.5% (1) undecided, 10.0% (21) disagreed while 1.4% (3) strongly disagreed. However, Using Power Points has enhanced number work, language, creativity and essential environmental skills 36.7% (77) strongly felt that it influences learning outcomes among lower primary learners, 41.0% (86) agreed, 4.3% (9)

were undecided, 14.8% (31) disagreed while only 3.3% (7) strongly disagreed. Use of pictures to help lower primary learners improve their number work, language, creativity and essential environmental skills attracted half of teachers at 51.9% (109) to strongly agree that it has an influence on learning outcomes, 46.7% (98) agreed, none of teachers were undecided but 1.0% (2) disagreed and 0.5% (1) strongly disagreed with the statement. The other statement was that use of drawings has enabled my grade one learners improve their number work, language, creativity and essential environmental skills where only 12.4% (26) strongly agreed it has influence on learning outcomes of pupils in lower primary schools, 81.9% (172) comprising of the majority of teachers agreed, 2.4% (5) were undecided, 3.3% (7) disagreed and none of the teachers who strongly disagreed. Finally, on use of graphics in classroom help grade one learner to master their number work, language, creativity and essential environmental skills 44.8% (94) strongly agreed, 47.6% (100) agreed, 1.0% (2) were undecided, 5.2% (11) disagreed and 1.4% (3) strongly disagreed.

4.5.0 Influence of Print Media on Learning Outcomes among Lower Primary Learners in Public Primary Schools

The fifth objective of this research was established how teachers' use of print media influenced learning outcomes of grade one learners in public primary schools in Kilifi North.

4.5.1 Availability of Print Media for Instruction as Viewed by Teachers

Teachers were enquired to indicate the presence of print media in their classrooms. Results showed that all (100%) of the respondents confirmed that they had text books in the school for use by grade one pupils. The research also established that 9% (19) of the teachers indicated that they had newspapers in their schools that aided in instruction of grade one pupils. From the findings, 34% (71) of the participants showed that they had and used encyclopedia in instruction in grade one. Seventy one percent of the teachers indicated to

have used posters while all teachers (100%) used teachers' guides while teaching in grade one.

4.5.2 Availability of Print Media Materials in Schools as Viewed by Head teachers

The researcher sought to find out from head teachers, the availability of print media materials for instruction in schools. The head teachers had this to say;

“The schools had a number of print media starting from the most common ones like the textbooks and teaching guides. The school also has newspapers, magazines, posters, fliers, encyclopedia, news magazines, pamphlets, poems and supplementary readers though in small quantities” (Head teacher I)

Another head teacher posited;

“It is challenging to have all the necessary print media materials in schools due to financial issues experienced in most public schools. We however have the very basic like textbooks for various areas of study”.

These findings indicate that print media materials were not readily available to learners in all schools. There were schools that had the print material while other schools didn't.

4.5.3 Use of Print Media Materials in Instruction

The researcher sought to find answers to this question; How often do grade one teachers in your school use print media materials to teach grade one learners? The responses of the head teachers were computed and results shown in table below

Table 11 *Use of print Media Materials by Teachers*

SA-Strongly Agree **A**-Agree **U**-Undecided **D**-Disagree **SD**--Strongly Disagree, F- frequency, %- Percentage

Particulars		SA	A	U	D	SD	Total
I use textbooks to enhance number work, language, creativity and essential environmental skills	F	112	89	0	8	1	210
	%	53.3	42.4	0.0	3.8	0.5	100.0
Using newspapers to teach has enhanced number work, language, creativity and essential environmental skills	f	66	81	31	32	0	210
	%	31.4	38.6	14.8	15.2	0.0	100.0
I always use encyclopedia to help learners acquire number work, language, creativity and essential environmental skills	f	49	55	11	75	20	210
	%	23.3	26.2	5.2	35.7	9.5	100.0
Use of posters in teaching has enabled learners acquire number work, language, creativity and essential environmental skills	f	26	172	5	7	0	210
	%	12.4	81.9	2.4	3.3	0.0	100.0
Use of teachers' guides has enabled learners acquire number work, language, creativity and essential environmental skills	f	138	59	1	9	3	210
	%	65.7	28.1	0.5	4.3	1.4	100.0

Source; Researcher, 2024

On the statement whether use of textbooks to enhance number work, language, creativity and essential environmental skills influences learning outcomes 53.3% (112) of teachers strongly agreed, 42.4% (89) agreed, none of the teachers remained undecided but 3.8% (8) disagreed and 0.5% (1) strongly disagreed. Using newspapers to teach has enhanced number work, language, creativity and essential environmental skills 31.4% (66) of

teachers strongly agreed that it would influence learning outcomes of lower primary pupils, 38.6% (81) agreed, 14.8% (31) were undecided, 15.2% (32) disagreed and none of the teacher participants who strongly disagreed. The third statement was on use encyclopedia to help learners acquire number work, language, creativity and essential environmental skills where 23.3% (49) strongly agreed, 26.2% (55) agreed, 5.2% (11) were undecided, 35.7% (75) disagreed and 9.5% (20) strongly disagreed with that statement. However, on use of posters in teaching has enabled learners acquire number work, language, creativity and essential environmental skills a total of 12.4% (26) teachers who participated strongly agreed that it influences learning outcomes among lower primary school learners in public schools, 81.9% (172) agreed, 2.4% (5) were undecided, 3.3% (7) disagreed and none of the teacher respondents who strongly disagreed. Consequently, on use of teachers' guides has enabled learners acquire number work, language, creativity and essential environmental skills a good majority of teachers at 65.7% (138) strongly agreed that it has an influence on learning outcomes of public primary lower primary learners, 28.1% (59) agreed, 0.5% (1) remained undecided, 4.3% (9) disagreed and 1.4% (3) strongly disagreed.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

Section five comprises the summary of research findings based on objectives of the study, conclusions, recommendations for practice as well as recommendations for further investigations.

5.1 Summary of Research Findings

The study results show that 52% (73) of the pupils could not recognize numbers. The study also showed that 53.6% of the pupils were able to count and sequence numbers while only 45.7% were able to perform rote counting. The majority of the pupils at 65% (91) had no reading skills like awareness, phonetics, vocabulary and picture reading. Whereas more than half of the pupils had no writing abilities like forming words, joining syllable to make words and sentence construction only 42.9% (69) of them had oral skills such as storytelling and news telling. Seventy percent of the learners were able to do coloring while 47% (66) were able to do pattern writing while 63.6% (89) of them were unable to do crayon and pencil etching. The findings showed that big number 52% (11) of the head teachers showed that learning outcomes for grade one pupils was average while 33% (7) of the head teachers indicated high. The findings indicated that 76% (160) of the teachers noted that pupils were capable to undertake language tasks like reading, writing and oral activities to a less extend while only 4.3% (9) of the teachers showed that the pupils had improved competencies in creativity to a greater extend.

5.2.1 Teachers' use of Audio-Visual and learning outcomes of lower primary learners

The study established that 76% (160) of the teachers indicated that they did not have most kinds of audio-visual in school. The researcher likewise found out that 48% (10) of the

head teachers indicated that grade one teachers often used audio-visuals in instruction among grade one learners while 19% (4) of the head teachers indicated that audio-visuals were used by grade one teachers in instruction. Nine percent (2) of the head teachers showed that grade one teachers never used audio-visuals while 24% (5) indicated that grade one teachers sometimes used audio-visuals in instruction. Only 7% (15) of the teachers who indicated that their schools had no audio-visuals noted an improvement in learning outcomes to a greater extent.

5.2.2 Teachers' use of Improvised Materials and learning outcomes of lower primary learners

The majority of educators at 47% (99) agreed they always improvised measurement materials like strings while teaching number work, language, creativity and essential environmental skills amongst grade one learners. Findings further showed that 22% (46) of the educators strongly acknowledged to the assertion that they always improvised measurement materials like charts in teaching number work, language, creativity and essential environmental skills. The researcher established that 62% (130) of the educators agreed that improvisation had helped them to improve number work, language, creativity and essential environmental skills among grade one pupils in their schools. Conversely, 71% (149) of the teachers disagreed that they rarely improvised materials during teaching to improve number work, language, creativity and essential environmental skills

5.2.3 Teachers' use of Graphic Materials and learning outcomes of lower primary learners

All sampled teachers showed that they had charts in their school and they used them in instruction in grade one while 7.6% (16) of the teachers indicated that they had and used power point slides in instruction of grade one pupils in their respective schools. The study showed 62% (146) had and used pictures and drawings respectively in their schools among grade one pupils.

5.2.4 Teachers' Use of Print Media Materials and learning outcomes of lower primary learners

Findings showed that all educators indicated that they had text books in the school for use by grade one pupils and they all used teachers' guides while teaching in grade one. The research further established that 9% of the teachers agreed that they had newspapers in their schools that aided in instruction of grade one pupils. From the study, 42% (88) of the educators acknowledged that use of textbooks enhanced number work, language, creativity and essential environmental skills.

5.3 Conclusions of the study

From the findings, the researcher concluded the following;

1. That majority of the pupils had performed poorly in basic numeracy, language skills, creativity and essential environmental skills. Noting that Only about a third of the pupils were able to perform basic operations on numbers while a paltry 15% (21) of the pupils were able to recognize number values, its apparent that learning outcomes for grade one pupils in Kilifi North was low. From the study findings, both teachers and head teachers noted that learning outcomes in their respective schools among grade one learners was very low with less than 10% (14) alluding to the fact that learning outcomes were high in their schools.
2. The research established that most of the schools did not have sufficient audio-visual materials for instruction. For instance, less than 10% of the schools had a television in school that would help grade one teacher in instruction of grade one learners. This means that the poor learning outcomes experienced among grade one learners in Kilifi North was as a result that teachers neither had nor used the audio-visual materials in instruction. However, for those who indicated that they had the audio-visuals, an improvement in learning outcomes was noted.

3. Use of improvised materials have been reported to impact positively on learning outcomes among grade one pupils. However, less than half of the teachers in public primary schools reported to have used improvised materials in instruction of grade one pupils. This is a strong pointer of the reason for low learning outcome among grade one pupils in public primary schools in the study area. This study concludes that there is still low intake and use of improvised materials in instruction of grade one pupils.
4. Most of the teachers showed that they had graphic materials were available and were also used in instruction of grade one learners in public primary schools. The most common and notable graphic material were charts and were used across most of the schools. The study however noted that electronic materials like slides were rarely used with less than 10% of the teachers indicating that they used them in instruction. The study therefore concludes lack of use of the entire spectrum of graphic materials in teaching of grade one pupils could be the reason for low learning outcomes experienced among grade one pupils in the study area. The most common print media used by teachers was textbooks and teaching guides. The study concludes that a range of print media materials were necessary for improved learning outcomes among learners in public primary schools in the study area. Limiting the use of print media to text books and the teaching guides disadvantages learners who in turn record a low learning outcome

5.4 Recommendations

Both recommendation for practice as well as for further studies were addressed

5.4.1 Recommendations for Practice

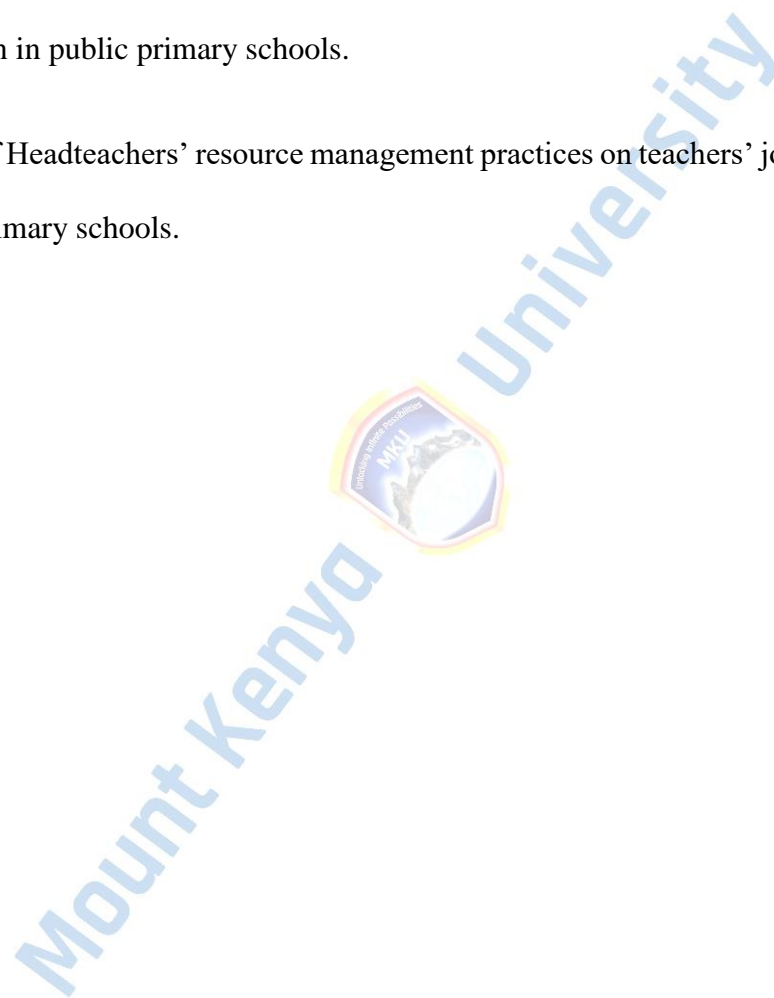
It is necessary for concerted efforts from all stakeholders to ensure that learning outcomes are greatly improved in schools not only in Kilifi North, but to the entire county and the country therefore the study recommends that;

1. Using of audio-visual is vital in teaching. This study indicates a close correlation between the use of audio-visual and learning results among learners. Deliberate efforts should be made by the schools in conjunction with school management boards, parents and the government to ensure that audio-visual materials are adequately supplied to schools.
2. Improvised materials are very important in cases where other materials are in short supply. Teachers are encouraged to improvise for better instructional experience. The study recommends that teachers should attend workshops and training to ensure improvisation and use of these materials in teaching.
3. The study noted that a large number of the educators did not use graphic materials in instruction. The study established that the most common graphic materials used were charts. However, the researcher also recommends that educators should be inducted on most of the graphic materials needed in instruction especially digital materials like slides which are more reliable.
4. Teachers' use of print media materials was not as diverse as required. The study noted that most teachers used text books and teachers' guides. The researcher recommends that schools should warrant that other key print media materials are available for use in instruction of grade one pupils.

5.4.2 Recommendations for Further Research

Research may be carried out in the following areas;

1. Headteachers' human relations practices influence on learning outcomes of learners in primary public schools.
2. Investigation of headteachers management strategies on learners' access and participation in public primary schools.
3. Influence of Headteachers' resource management practices on teachers' job satisfaction in public primary schools.



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Mount Kenya University

Appendix I Self Introductory Letter

Dear Sir/Madam,

RE: SELF INTRODUCTORY LETTER

I am a student undertaking a course in Master of Education in Early Childhood Studies at Mount Kenya University. My research topic is: *Teachers' Use of Instructional Materials as Determinants of Learning Outcomes of Grade One Learners in Public Primary Schools in Kilifi North Sub- County, Kilifi County, Kenya*. To achieve this, you have been selected to participate in the study. I kindly request the head teachers and grade one teachers to, fully, participate in the study. This information will be used purely for academic purpose and your name will not be mentioned in the report. Findings of the study, shall upon request, be availed to you.

Your assistance and cooperation will be highly appreciated.

Thank you in advance.

Yours faithfully,

Samson Ngala Ziro

Appendix IV Questionnaire for Teachers

Dear respondent,

The researcher is a student undertaking a degree course in Master of Education in Early Childhood Studies in Mount Kenya University carrying out research on *Teachers' Use of Instructional Materials as Determinants of Learning Outcomes of Grade One Learners in Public Primary Schools in Kilifi North Sub- County, Kilifi County, Kenya*. The information you provide will be treated with confidentiality and entirely used for purposes of this study.

Section A: Demographic Information

Instruction: Please tick against your most appropriate answer and fill the spaces provided.

1. Gender: Male [] Female []
2. Highest qualification
Certificate [] Diploma [] Degree [] Post-graduate []

Section B: Learning Outcomes of Grade One Learners in Public Primary Schools

1. In a scale of 1-5, rate the levels of learning outcomes of your grade one learners in your school

No.	Test Items	Great Extent	Fair	Low Extent	Not Sure
		5	4	3	2
1	Improved learner competencies in number work skills				
2	Learners are able to undertake language tasks such as reading, writing and oral activities				
3	Improved competencies in creativity among learners				
4	Learners are able to undertake tasks in environmental activities				

Section C: Teachers' Use of Audio-Visuals and Learning Outcomes of Grade One Learners

2. Tick audio-visual materials available in your primary school

Radios [] Television [] Tablets []

Videos [] DVDs [] Others specify

1. Please, rate the extent to which you agree with the following statements on how use of audio-visuals has determined learning outcomes of your grade one learners

Key: **SA**-Strongly Agree **A**-Agree **U**-Undecided **D**-Disagree **SD**—Strongly Disagree

No	Test item	SA 5	A 4	U 3	D 2	SD 1
1	I use radios to improve number work, language, creativity and essential environmental skills among my grade one learners					
2	Using televisions has improved number work, language, creativity and essential environmental skills among my grade one learners					
3	Using tablets has improved number work, language, creativity and essential environmental skills among my grade one learners					
4	Using concept videos has improved number work, language, creativity and essential environmental skills among my grade one learners					
5	Using DVDs has improved number work, language, creativity and essential environmental skills among my grade one learners					

SECTION D Teachers' Use of Improvised Materials and Learning Outcomes of Grade on Learners

1. Please, rate the extent to which you agree with the following statements on influence of use of improvised materials on learning outcomes of your grade one learners

Key: **SA**-Strongly Agree **A**-Agree **U**-Undecided **D**-Disagree **SD**--Strongly Disagree

No	Test Item	SA 5	A 4	U 3	D 2	SD 1
1	I always improvise measurement materials such as strings while teaching to improve number work, language, creativity and essential environmental skills among my grade one learners					
2	I rarely improvise materials during teaching to improve number work, language, creativity and essential environmental skills among my grade one learners					
3	I use improvised number blocks to teach and improve number work, language, creativity and essential environmental skills among my grade one learners					
4	Using improvised number shapes has improved number work, language, creativity and essential environmental skills among my grade one learners					
5	Improvisation has not helped me to improve number work, language, creativity and essential environmental skills among my grade one learners					

Section E: Teachers’ Use of Graphic Materials and Learning Outcomes of Grade One Learners

1. Tick graphic materials available to your school

Charts [] PowerPoints[]

Pictures[] Drawings []

2. Please, rate the extent to which you agree with the following statements on influence of use of graphic materials on learning outcomes of your grade one learners

Key: **SA**-Strongly Agree **A**-Agree **U**-Undecided **D**-Disagree **SD**--Strongly Disagree

No	Test Item	SA 5	A 4	U 3	D 2	SD 1
1	I use charts to enhance number work, language, creativity and essential environmental skills among my grade one learners					
2	Using Power Points has enhanced number work, language, creativity and essential environmental skills among my grade one learners					
3	I always use pictures to help my grade one learners improve their number work, language, creativity and essential environmental skills					
4	Use of drawings has enabled my grade one learners improve their number work, language, creativity and essential environmental skills					
5	Use of graphics in classroom help grade one learner to master their number work, language, creativity and essential environmental skills					

SECTION F Teachers use of print media materials and learning outcomes of grade one learners

1. Tick print media available to your school

Text books[] News papers [] Encyclopedia[]

Posters[]

Teachers guide []

2. Please, rate the extent to which you agree with the following statements on influence of print media on learning outcomes among your grade one learners

Key: **SA**-Strongly Agree **A**-Agree **U**-Undecided **D**-Disagree **SD**--Strongly Disagree

No	Test Item	SA 5	A 4	U 3	D 2	SD 1
1	I use textbooks to enhance number work, language, creativity and essential environmental skills among my grade one learners					
2	Using newspapers to teach has enhanced number work, language, creativity and essential environmental skills among my grade one learners					
3	I always use encyclopedia to help my grade one learners acquire number work, language, creativity and essential environmental skills					
4	Use of posters in teaching has enabled my grade one learners acquire number work, language, creativity and essential environmental skills					
5	Use of teachers' guides has enabled my grade one learners acquire number work, language, creativity and essential environmental skills					

Thanks, you for your participation

Samson Ngala Ziro

Appendix V Interview Guide for Headteachers

Dear respondent,

The researcher is a student undertaking a degree course in Master of Education in Early Childhood Studies in Mount Kenya University carrying out research on *Teachers' Use of Instructional Materials as Determinants of Learning Outcomes of Grade One Learners in Public Primary Schools in Kilifi North Sub- County, Kilifi County, Kenya*. The information you provide will be treated with confidentiality and entirely used for purposes of this study.

Section A: Demographic Information

1. Gender.....
2. What is your highest level of education?.....

Section B: Learning Outcomes of Grade One Learners in Public Primary Schools

1. What is the level of learning outcomes of grade one learners in public primary schools in your primary school (tick one)
 Very low Low r Average High Very high

Section C: Teachers' Use of Audio-Visuals and Learning Outcomes of Grade One Learners

1. What are the audio-visual materials available in your primary school?
2. How often do your grade one teachers use the audio-visuals in teaching?
3. How does use of audio-visuals influence learning outcomes of grade one learners in public primary schools in your school?

Section D: Teachers' Use of Improvised Materials and Learning Outcomes of Grade One Learners

1. How often do grade one teachers in your school improvise instructional materials?
2. Which types of materials do grade one teacher in your school improvise while teaching?

3. How does teachers' use of improvised materials influence learning outcomes of grade one learners in public primary schools in your school?

Section E: Teachers' Use of Graphic Materials and Learning Outcomes of Grade One Learners

1. Which graphic materials are available in your school?
2. How often do grade one teachers in your school use graphic materials in teaching number work?
3. How does use of graphic materials influence learning outcomes among your grade one learners?

Section F: Teachers' Use of Print Media Materials and Learning Outcomes of Grade One Learners

1. Which print media are available in your primary school?
2. How often do grade one teachers in your school use print media materials to teach grade one learners?
3. How does use of print media influence learning outcomes of grade one learners in public primary schools in your primary school?

Appendix VI Observation Checklist for Grade One Learners

Instructional Materials	Available	Not Available
Audio-Visuals <ul style="list-style-type: none"> • Radios • Televisions • Tablets • Videos and DVDs 		
Improvised Materials <ul style="list-style-type: none"> • Measurement materials such as stings • Counters • Number blocks • Number shapes 		
Graphic Materials <ul style="list-style-type: none"> • Charts • Power Points • Pictures • Drawings 		
Print Media Materials <ul style="list-style-type: none"> • Textbooks • Newspapers • Encyclopedia • Posters • Teacher guides 		

LEARNING OUTCOMES OF GRADE ONE LEARNERS

Basic Numeracy Skills

Aspects of Basic Numeracy Skills	Observation	
	Meeting expectations	Below expectations
Number recognition		
Counting and sequencing		
Rote counting		
Basic operations		
Number value		

A. Language Skills

Aspects of Language Skills	Observation	
	Meeting expectations	Below expectations
Reading skills such as phoneme awareness, phonetics, vocabulary, picture reading or recognition		
Writing skills such as forming words, joining syllable to make words and sentence construction		
Oral skills such as storytelling, news telling		

A. Creativity Skills

Aspects of Creativity Skills	Observation	
	Meeting expectations	Below expectations
Coloring		
Pattern writing		
Drawing and tracing		
Printing, e.g. hand, leaf and potato printing		
Crayon and pencil etching		

C. Essential Environmental Skills

Aspects of Essential Environmental Skills	Observation	
	Meeting expectations	Below expectations
Ability to tell their names for identity		
Identify their sex for self-awareness		
Identify their body parts (heads, hands, legs etc.)		
Identify objects within their environment (home and school)		

Thank you

Samson Ngala Ziro

Appendix VII Research Authorization from Kilifi County



MINISTRY OF EDUCATION
State Department for Basic Education
KILIFI COUNTY

Telephone 041-7522432
EMAIL: edekilifcounty@yahoo.com
Fax no. 7522432
When replying/telephoning quote
Ref: **KLF/CDE/G.10/4/15**

County Education Office
P O Box 42 -80108
KILIFI

16th May, 2024

Sub County Director of Education
KILIFI NORTH

RE: RESEARCH AUTHORIZATION
SAMSON NGALA ZIRO – LICENSE NO: NACOSTI/P/24/33473

The above named student has been authorized to carry out research on “*Teachers use of Instructional Materials as determinants of learning outcomes of grade one learners in public primary schools*” for a period of one year.

The Research study will be conducted in Kilifi North Sub County, starting on 27th February 2024 to 27th February 2025

Any assistance accorded will be highly appreciated.

VERONICAH KALUNGU
COUNTY DIRECTOR OF EDUCATION

KILIFI

Copy to:
Regional Director of Education – **COAST**

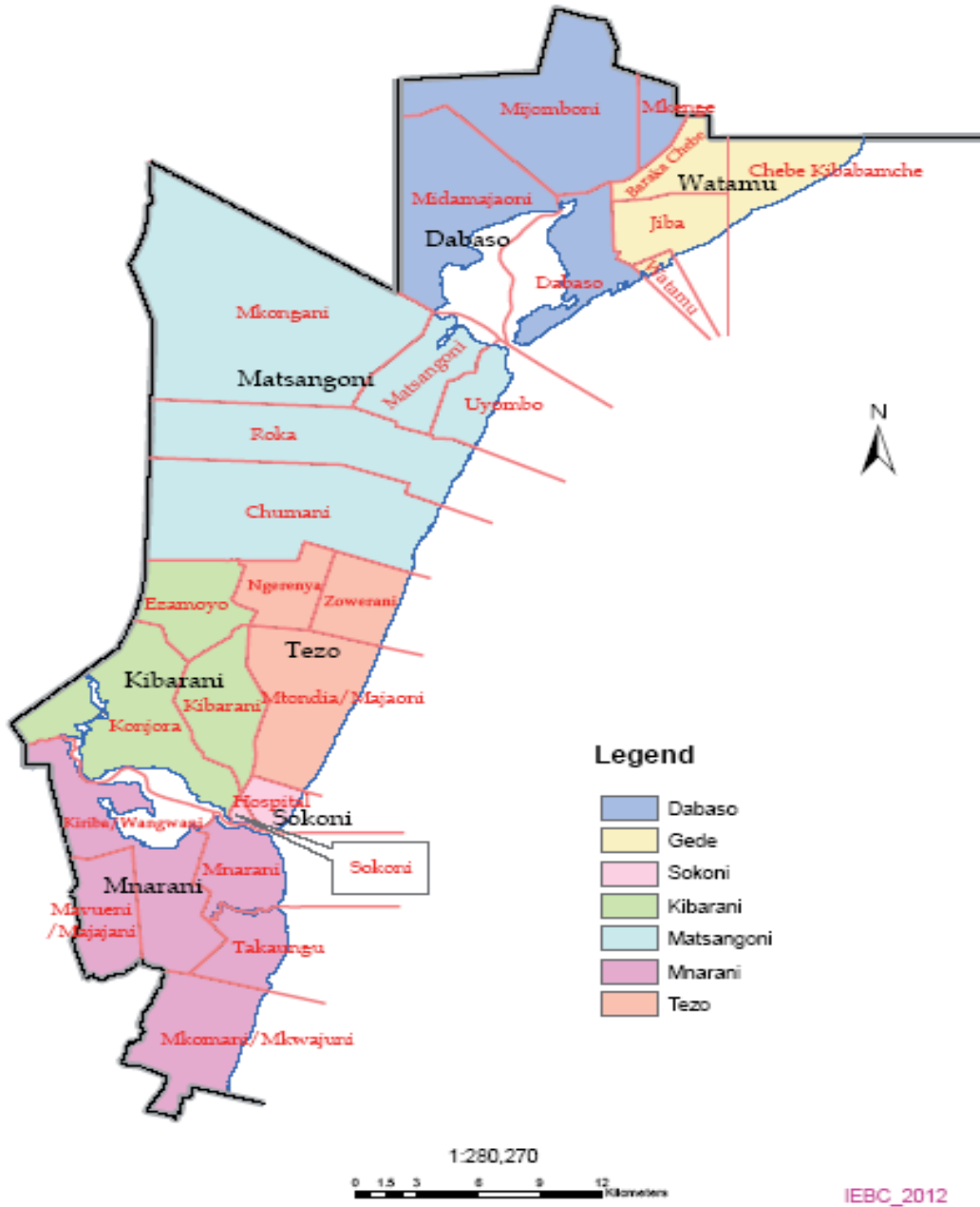
Executive Secretary
National Council of Science & Technology
NAIROBI

Dr Alfred Owino, PhD
Chairman, Mount Kenya University ISERC
THIKA

Samson N. Ziro



Appendix VIII Map of Kilifi North Constituency Showing Kilifi North Sub-County



Appendix IX Authorization from Kilifi County Commissioner



OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND NATIONAL ADMINISTRATION
STATE DEPARTMENT OF INTERNAL SECURITY AND NATIONAL ADMINISTRATION

Telephone:
Fax:
Email: cckilificoordination@gmail.com
When replying please quote

County Commissioner
Kilifi County
P. O. Box 29 - 80108
KILIFI

REF: No. **EDUC.12/7/VOL.10/12**

And Date: **26th MARCH, 2024**

➤ Deputy County Commissioner
KILIFI NORTH SUB COUNTY

RE: RESEARCH AUTHORIZATION
SAMSON NGALA ZIRO LICENSE NO.NACOSTI/P/24/33473

The above-named student has been authorized to carry out research on
***“Teacher’s Use of Instructional Materials as Determinants of Learning
Outcomes of Grade1 learners in Public Primary School.”***

The research study will be conducted in **Kilifi North Sub- County** starting
27th February, 2024 to 27th February, 2025.

Any assistance accorded will be highly appreciated.

Thank you.


PRECIOUS D. RANDU
FOR: COUNTY COMMISSIONER
KILIFI COUNTY

COUNTY COMMISSIONER
KILIFI COUNTY
P. O. Box 29 - 80108
KILIFI






C.C.

County Director of Education
KILIFI COUNTY

The Executive Secretary
National Council of Science and Technology
P.O Box 30623-00100
NAIROBI KENYA

Dr. Alfred Owino, PhD
Chairman Mount Kenya University ISERC
THIKA

Appendix X Authorization Letter and Research Permit (NACOSTI)

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 727555	Date of Issue: 27/February/2024
RESEARCH LICENSE	
	
<p>This is to Certify that Mr.. samson Ngala Ziro of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kilifi on the topic: Teacher's Use of Instructional Materials as Determinants of Learning Outcomes of Grade One Learners in Public Primary Schools in Kilifi North Sub-County, Kilifi County, Kenya for the period ending : 27/February/2025.</p>	
License No: NACOSTI/P/24/33473	
727555 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
<p>NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.</p>	
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THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way:
 - i. Endanger national security
 - ii. Adversely affect the lives of Kenyans
 - iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
 - iv. Result in exploitation of intellectual property rights of communities in Kenya
 - v. Adversely affect the environment
 - vi. Adversely affect the rights of communities
 - vii. Endanger public safety and national cohesion
 - viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license and any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and
Innovation(NACOSTI),
Off Waiyaki Way, Upper Kabete,
P. O. Box 30623 - 00100 Nairobi, KENYA
Telephone: 020 4007000, 0713788787, 0735404245
E-mail: dg@nacosti.go.ke
Website: www.nacosti.go.ke

Appendix XI Ethical Review Certificate from Mount Kenya University



REF: MKU/ISERC/3456
TO: SAMSON NGALA ZIRO

Date: 14 February 2024

REG: MECS/2019/45501

Dear Sir/Madam,

RE: TEACHERS' USE OF INSTRUCTIONAL MATERIALS AS DETERMINANTS OF LEARNING OUTCOMES OF GRADE ONE LEARNERS IN PUBLIC PRIMARY SCHOOLS IN KILIFI NORTH SUB-COUNTY, KILIFI COUNTY, KENYA

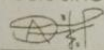
This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2500**. The approval period is **14/02/2024 - 13/02/2025**.

This approval is subject to compliance with the following requirements;

- i. Only approved documents including informed consents, study instruments, MTA will be used
- ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
- vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely,



Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

✓ The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.
Cell: +254 709 153 000 / +254 709 153 200
Email: info@mku.ac.ke, Web: www.mku.ac.ke
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Unlocking Infinite Possibilities



DIRECTORATE OF GRADUATE STUDIES

MECS/2019/45501

15th February, 2024

*National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki, Upper Kabete
P.O Box 30623- 00100
NAIROBI, KENYA*

Dear Sir/Madam,

RE: SAMSON NGALA ZIRO- REGISTRATION NO. MECS/2019/45501

The purpose of this letter is to introduce the above named student who is pursuing **Master of Education in Early Child Studies** in the **Department Educational Management** in the **School of Education**.

The title of the research is "**Teachers' Use of Instructional Materials as Determinants of Learning Outcomes of Grade One Learners in Public Primary Schools in Kilifi North Sub-County, Kilifi County, Kenya.**" It been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **February, 2024 and April, 2024.**

Any assistance accorded to the student will be highly appreciated.

Thank you
Mount Kenya University
P. O. Box 342 - 01000, THIKA
Office of the Director
Graduate Studies
Dr. Samuel M. Karenga, Ph.D
Director, Graduate Studies

Enc.

Appendix XIII Similarity Index Report



SAMSON NGALA ZIRO

TEACHERS' USE OF INSTRUCTIONAL MATERIALS INFLUENCE ON LEARNING OUTCOMES OF LEARNERS IN PUBLIC LOWER ...

PROJECTS

PROJECT

Mount Kenya University

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