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FREQUENCY OF USE OF INSTRUCTIONAL MEDIA AND ACQUISITION OF NUMERACY SKILLS AMONG PRE-PRIMARY SCHOOL CHILDREN IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

The purpose of this study was to establish the frequency of the use of instructional media in the acquisition of numeracy skills among pre-primary school children. The study was guided by Kolb's Experiential Learning Theory, which emphasizes experience with instructional media as the basis on which concepts are developed. The study targeted a population of 204, comprising 136 pre-primary school teachers and 68 head teachers in Kasarani Sub-County. A sample size of 61participants, comprising 20 head teachers, and 41 pre-primary school teachers were sampled from 20 pre-primary schools. Data was collected using a questionnaire, interview schedule, and observation checklist. To ensure the validity and reliability of the study instruments, content validity and split-half technique were used respectively. The study employed a descriptive research design and analyzed qualitative data thematically and the responses were captured in the analysis. Quantitative data were analyzed using frequencies, percentages, means, and standard deviation. The analysis process was facilitated by SPSS software Version 26.0. Qualitative data was analyzed thematically based on the study objectives. The results showed that the frequencies in which they used the materials varied among schools. The majority of the respondents used the instructional media in numeracy lessons once a week as indicated by the majority (53.6%) who used sticks weekly, stones (53.6%), bottles (34.1%, bottle tops (53.6%), water (46.2), blocks (60.9%) and empty containers (43.9%). once a week. The study concluded that the majority of the pre-primary school teachers used the instructional media in numeracy lessons only once a week which was not effective enough for learners to acquire the basic numeracy skills. The study recommended that pre-primary school teachers should enroll in short courses which can equip them with skills in improvising instructional media from locally available resources. The study recommended that the school head teachers should pair teachers up to develop an interdisciplinary teaching activity using various instructional resources.

Keywords: *Instructional Media, Frequency of use, Acquisition of Numeracy Skills, and Pre-Primary School Children*

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INTRODUCTION

Numeracy is an integral ingredient of science and technology-based subjects that are taught in Early Childhood Education (ECE) (Capuno et al., 2019). As a complex concept, numeracy skills in pre-primary school cannot be successfully taught without the use of relevant instructional media (IM). In Georgia, USA, Edenfield (2010) reported that all elementary mathematics textbooks have complementary teaching resources to support the acquisition of numeracy concepts such as number recognition and number value. Numeracy skills cannot be taught effectively without the use of instructional media. A study conducted by Kim (2017) found that to support active teaching and learning of numeracy skills, the teacher should provide the learner with a conducive environment characterized by a variety of instructional media that are relevant and developmentally appropriate.

Visual media encourages memorization and retention of learned concepts. Studies conducted by Krushelnicki (2016) and Jepketer (2017) argued that the use of instructional media during numeracy instruction encourages knowledge retention, retrieval, and application of numeracy skills in real-life situations such as shopping. Similarly, Banerji and Chavan (2016) posited that the majority of elementary school teachers in India combine teaching experience with the use of instructional media to encourage mastery of numeracy skills. Failing to use instructional media during instruction in pre-primary classes impairs pupils' understanding and mastery of the concepts being taught (Ngure, 2014). According to Otubula (2010), inadequate instructional media negatively affects the implementation of pre-primary curriculum activities. This means that effective teaching of numeracy skills occurs when instructional media are used. Pre-primary school teachers should, therefore, make efforts to use relevant instructional media during numeracy instruction. A report by Uwezo (2016) indicated that class six children were unable to successfully solve class three mathematics problems, although they were chronologically and mentally older than class three pupils. This means that children in class six may not have mastered class three numeracy curriculum content. Mmasa and Anney (2016) revealed that teachers' inadequate teaching skills contributed to pupils' poor numeracy and literacy skills in Tanzanian lower primary schools. Therefore, teacher factors such as perception influence their use of instructional media during numeracy instruction.

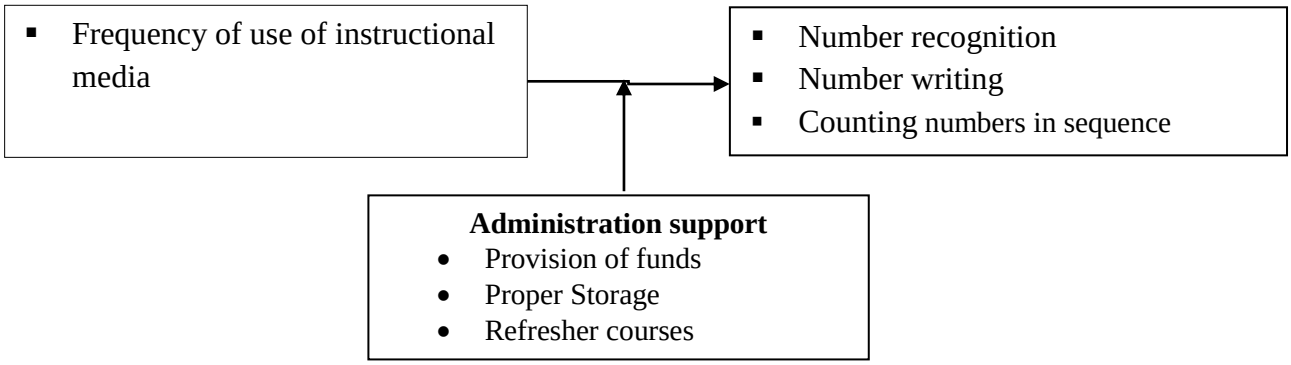
Mafa (2013) opined that teacher perception of the teaching process influences learning outcomes and pupils' mastery of numeracy skills. The availability of instructional media that is not used during instruction does not support learning in and of itself. Therefore, the frequency of use of instructional media is an important component of teaching numeracy skills. According to Waigera (2013), there was a high frequency of use of culturally relevant instructional materials in pre-primary schools in all activity areas in Nyeri County. Generally, there is a decreasing trend in the acquisition of numeracy skills in Kenya from 2000 to 2010 (Waigera, Mweru & Ngige, 2020). Therefore, it is important to establish how instructional media influences the acquisition of numeracy skills.

Data on numeracy skills in the global scene shows an upward trend showing an increase in the level of acquisition of numeracy skills with an increase in the use of instructional media. The same trend is observed when considering the majority of countries in Sub-Saharan Africa. Even though that is the case, the Kenyan situation is different since the level of numeracy skills acquisition is on a downward trend. The downward trend of numeracy skill acquisition in the country, coupled with the lack of adequate empirical data on the use of instruction media in the acquisition of numeracy skills in Kasarani Sub-County, prompted this study to be carried out in the same area. The purpose of this study, therefore, was to establish the utilization of instructional media in the acquisition of numeracy skills among children in Kasarani Sub County, Kenya.

Purpose of the Study

The purpose of this study was to establish the frequency of use of instructional media on the acquisition of numeracy skills among pre-primary school children in Kasarani Sub-County, Nairobi County, Kenya.

Conceptual Framework



Independent Variables **Dependent Variable**

Figure 1: Conceptual Framework

LITERATURE REVIEW

This section discusses the theoretical framework and the literature related to the study topic.

Theoretical Framework

This study was guided by the experiential learning theory by David Kolb. The theory emphasizes experience with instructional media as the basis on which concepts are developed (Kolb, 1984). According to Kolb (1984), the theory is subdivided into four linear stages that support concept formation: concrete experience, reflective observation, abstract conceptualization, and active experimenting. Concrete experience is an important step in the use of instructional media to teach numeracy skills. Through the process of interacting with instructional media, pupils manipulate real objects related to the number of concepts being learned. Therefore, teachers who use instructional media make it possible for pupils to have first-hand experience with the number of concepts being taught.

During interaction with the instructional media, pupils get an opportunity to observe and reflect on the concept being taught, which Kolb referred to as reflective observation. It gives the child an opportunity to integrate other senses into the process of learning. This strengthens pupils' thinking processes, which helps the learner to build abstract ideas on numeracy skills. On internalizing developmentally appropriate numeracy skills, pupils can manipulate numbers with the use of concrete instructional media. Hence, the use of instructional media during instruction not only supports learning but also creates room for learners to experiment. Planning their numeracy initiatives through experiments helps learners to improve their numeracy skills and mastery.

Frequency of use of Instructional Media and Acquisition of Numeracy Skills

The availability and use of instructional media in a pre-primary classroom are important if the teacher is to achieve the set objectives. In the United States of America, Miller (2018) conducted a study to measure the impact of interactive technology in the form of mathematical applications delivered to kindergarten children's learning of number sense in a play-based learning environment. The study reported that small gains were noted between the control and intervention groups, but they were not significant. In Tanzania, a study conducted by Mosha (2014) indicated that to improve the quality of education in schools. The use of computer programs such as PowerPoint enhances vocabulary, word recognition, alphabetical awareness, and phonological mastery (Parette, 2008). However, Kadzera (2006) reported that schools without infrastructural support such as electricity are unable to effectively use visual aids such as computers and television even though they are instrumental in numeracy instruction.

According to Olangunju and Abiola (2008) and Waigera (2013), culturally relevant instructional media are more objective as teaching aids because children have a connection with them and they are not foreign to their cultural environment. Similar sentiments are expressed by Otubula (2010) who reported that the availability of adequate culturally relevant instructional materials develops pupils' discovery, imagination, creativity, and ability to manipulate during instructions. Mwaniki (2020) showed that preschools have different types of instructional resources; concrete (79%), visual (62%), audio (4%), and audio-visual materials (2%). The study indicated that 71.4% of preschool teachers had taught for 8-15 years and teaching experience assisted the preschool teachers to be conversant with the problems encountered during learners' participation in several work lessons.

Mueni (2016) established that few grade-one teachers in public schools utilized instructional materials during mathematics instruction. Furthermore, Mutua (2019) reported that Kiswahili teachers who used a variety of teaching aids regularly improved comprehension and performance scores among the students. If pre-primary school children are provided with numeracy instructional media regularly, their numeracy skills are likely to improve. These studies show that regular use of instructional media during numeracy instruction enhances pupils' motivation and concentration. The present study is interested in establishing how the regularity of the use of various numeracy instructional media in pre-primary schools influences the acquisition of numeracy skills among children in pre-primary schools in Kasarani Sub-county.

METHODOLOGY

Research Design and Target Population: This study employed a descriptive survey design to establish and describe how participants utilized instructional media to teach numeracy skills. A descriptive survey design allows the researcher to observe and describe phenomena in a natural environment without manipulating the variables (Orodho, 2015). The approach aims at collecting data without manipulating the research variables or respondents. The study targeted all 68 schools in the Kasarani Sub-County, 68 head teachers and 136 pre-primary school teachers, all comprising 204 participants.

Sampling Technique and Sample Size: The study employed a simple random sampling technique to sample the participants. The researcher coded the schools from one to 68. Pieces of paper were written from one to 68 to represent the schools. They put them in a box, then shuffled them and picked 20 papers randomly to represent 20 schools, which is 30% of the target population. The head teachers of the sampled schools constitute the sample size of head teachers, which will be 20. Pre-primary school teachers were sampled from each ward. To ensure that each ward was represented, a sample size of 30% of the target population in each ward was used. The sample size of 61 participants was comprised of 20 head teachers and 41 pre-primary school teachers.

Research Instruments: The study used questionnaires, an observation checklist for indoor materials, and an interview schedule to collect data. The questionnaires were utilized for collecting data from pre-primary school teachers. An observation checklist was used to confirm the availability and use of numeracy instructional media in the preschool. The researcher used an interview schedule to collect information from the headteachers.

Pilot Study: The research instruments were piloted in two schools, one private pre-primary school and one public pre-primary school in Kasarani Sub-county. A total of 10 respondents were involved in the pilot study. Validity was therefore achieved in this study through the examination of the already existing literature to identify the conceptual dimensions as well as appraisals regarding the instrument with the help of the supervisor. Construct validity was ensured by expert judgment; subject experts ensured that the items in the tools were adequate, relevant, precise, and clear. For reliability, the instruments were tested using a test-retest method, and a Cronbach coefficient was used to calculate the coefficient Cronbach alpha of 0.802 was obtained which showed that there is high reliability of data.

Data Collection Procedure: The researcher was received by the school head teacher, who introduced her to the pre-primary school teachers and explained the purpose of the visit. The researcher observed the availability and frequency of the use of instructional materials in numeracy lessons. The collected information was documented in the observation checklists. After making observations, the questionnaires were administered to pre-primary school teachers. Teachers were guided on how to fill out the questionnaires and were given a one-day window period within which they filled out the questionnaire. After the agreed period elapsed, the researcher went back to the schools to pick up the questionnaires. After administering the questionnaire, the researcher conducted interviews with the head teachers. In addition, the information given during the interviews was recorded on paper. A tape recorder was used to ensure that all the data was captured correctly.

Data Processing and Analysis: Data processing was done before carrying out data analysis. This involved detection of errors or omissions through data editing and the classification of data into various categories. The quantitative data was coded and fed into the Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics such as percentages, frequencies, and means were used to analyze the data. The data was presented in graphs, tables, and charts. Further, qualitative data was categorized under themes according to the study objectives and presented in narrative form in the analysis. The responses from the participants were captured in the analysis to help expound on the quantitative data.

STUDY RESULTS

Demographic Information

In terms of demographic data, the study determined the distribution of the participants by gender, age, and professional qualifications as shown in Table 1.

Table 1: Demographic Information of the Participants

Gender	**Frequency**	**Percentage**
Female	40	97.0%
Male	1	3.0%
Total	**41**	**100.0**
Years	**Frequency**	**Percentage**
20 – 30	9	21.9
31 – 40	12	29.3
41 – 50	15	36.6
50 and above	5	12.2
Total	**41**	**100**
Certificate Level	**Frequency**	**Percentage**
ECD certificate	31	75.6
ECD Diploma	10	24.4
Total	**41**	**100**

The results show that the majority (97%) of the preprimary school teachers were female, while a minority (3%) were male. the pre-primary school teachers' ages ranging between 41 to 50 years accounted for 36.6%, those who had their ages ranging between 31 to 40 were represented by 29.3%, whereas 21.9% were aged between 20 to 30 and 12.2% accounted for those teachers who were aged above 50 years. the majority (75.6%) of the respondents had professional certificates in ECD, followed by those who had a Diploma in ECD 24.4%. This is an indicator that the majority of the teachers who are employed to teach in both public and private pre-primary schools in Kasarani Sub-County are trained as ECD teachers.

Frequency of Use of Instructional Media by Teachers for Acquisition of Numeracy Skills

The main purpose of this study was to establish the frequency of the use of instructional media in teaching numeracy skills. the participants were given a questionnaire that provided a list of instructional media, and they were asked to indicate which media was available and how frequently they used them in teaching numeracy skills such as number writing, number recognition, and number counting. The frequency of use is indicated in Table 2.

Table 2: Frequency of use of Instructional Media for Acquisition of Number Recognition

Instructional Media	Frequency of Use									
	Daily	**%**	**Weekly**	**%**	**Monthly**	**%**	**Termly**	**%**	**Not at all**	**%**
Number charts	31	75.6	9	21.9	1	2.4	0	0.0	0	0.0
Sticks	15	36.6	22	53.6	3	7.3	1	2.4	0	0.0
Stones	14	34.1	22	53.6	3	7.3	2	4.3	0	0.0
Bottles	11	26.8	14	34.1	10	24.3	6	14.7	0	0.0
Bottle tops	15	36.6	22	53.6	3	7.3	1	2.4	0	0.0
Tape measure	0	0.0	5	12.1	19	46.3	14	34.1	3	7.3
Ruler	8	19.5	11	26.8	20	48.7	2	4.8	0	0.0
Blocks	15	3.6	25	60.9	1	2.4	0	0.0	0	0.0
Empty Containers	4	9.7	18	43.9	17	41.5	2	4.8	0	0.0
Clock/watches	0	0.0	5	12.1	19	46.3	14	34.1	3	7.3
Printed paper money	0	0.0	5	12.1	10	24.3	22	53.7	4	9.7
Variety of coins	8	19.5	11	26.8	20	48.8	2	4.8	0	0.0
Moulding plasticine	38	92.7	3	7.3	0	0.0	0	0.0	0	0.0
Maize seeds	22	53.6	17	41.7	2	4.8	0	0.0	0	0.0
Beans	22	53.6	17	41.7	2	4.8	0	0.0	0	0.0
Number flashcards	31	75.6	9	21.4	1	2.4	0	0.0	0	0.0

The results in table 2 show that the majority indicated that they used instructional media in teaching number recognition once a week. This is evident whereby out of the 41 teachers, 25(60.9%) indicated that they used blocks once a week, 22(53.6%) used sticks once a week, 22(53.6%) used stones once a week, 22(53.6%) used bottle tops once in a week and 18(43.9%) used empty containers once in a week. This implies that the majority of teachers often teach number recognition without instructional media and this may hinder learners from developing number recognition skills. Similar sentiments were shared by the head teachers during interviews as reported.

> *"There are learning materials in preschool classrooms which the teachers use to help learners acquire numeracy skills such as flashcards, charts, and others collected locally by the teachers. However, the materials are not enough for the learners to develop the various competencies outlined in the Competency-Based Curriculum (CBC). There is a need for the County Government to provide preschool teachers with more instructional resources."* **Headteacher 1**

> *"Yes, they have instructional materials which they use in numeracy lessons, though not enough. Again, the teachers may not be in a position of using the material in each lesson given that they are teaching many learners. There is a need to employ more teachers to ease the workload so that the teachers can teach effectively"* ***Headteacher 2***

The above findings indicate that the majority of the teachers often teach number recognition without instructional media, and this may contribute to poor performance in numeracy. The findings are in agreement with the findings reported by Uwezo (2016), which indicated that most of the schools in Kenya did not have adequate teaching-learning resources. Similarly, the findings agree with Binsari and Murungi (2018), who reported that the majority of pupils in Kenyan primary schools have low levels of numeracy and literacy skills. In the same breath, the findings concur with the findings reported by Kim (2017) who observed that teachers in Kenyan primary schools cannot effectively improvise and teach using instructional resources. Additionally, the findings disagree with the findings from Makokha (2017) who revealed a high frequency of use of improvised science instructional materials among preschool teachers in Bungoma County-Kenya.

Frequency of Use of Instructional Media for Acquisition of Number Writing Skills

The study established how frequently pre-primary school teachers used instructional media in teaching number writing. The results are presented in table 3.

Table 3: Frequency of Use of Instructional Media for Acquisition of Number Writing Skills

Instructional Media	Frequency of Use									
	Daily	%	Weekly	%	Monthly	%	Termly	%	Not at all	%
Number charts	31	75.6	9	21.9	1	2.4	0	0.0	0	0.0
Sticks	15	36.6	22	53.6	3	7.3	1	2.4	0	0.0
Stones	14	34.1	22	53.6	3	7.3	2	4.3	0	0.0
Bottle tops	15	36.6	22	53.6	3	7.3	1	2.4	0	0.0
Sand	4	9.7	17	41.4	18	43.9	2	4.3	0	0.0
Blocks	15	3.6	25	60.9	1	2.4	0	0.0	0	0.0
Printed paper money	0	0.0	5	12.1	10	24.3	22	53.7	4	9.7
Variety of coins	8	19.5	11	26.8	20	48.8	2	4.8	0	0.0
Moulding plasticine	38	92.7	3	7.3	0	0.0	0	0.0	0	0.0
Maize seeds	17	41.7	22	53.6	2	4.8	0	0.0	0	0.0
Beans	17	41.7	22	53.6	2	4.8	0	0.0	0	0.0
Number flashcards	31	75.6	9	21.4	1	2.4	0	0.0	0	0.0

The results in table 3 show that the instructional media that were most commonly used daily were; moulding plasticine at 92.7 %, number flashcards and number charts at 75.6%, and maize and bean seeds at 41.7%. The media that were least used daily were blocks at 3.6%, sand at 9.7 %, and coins at 19.5%. and printed paper money which was not used at all. Weekly, the instructional media that were highly used were: blocks as indicated by the majority (60.9%) of the teachers, followed by 22(53.6%) who used sticks stones, bottle tops, maize seeds, and beans. Every month, the instructional media that were mostly used were coins as indicated by 48.8% of the teachers, followed by sand at 43.9%, and printed paper money at 24.3%. On a termly basis, the instructional media that were mostly used were printed paper money as indicated by 53.7% of the teachers. This implies that the majority of the teachers were teaching number writing often without instructional media and this could hinder learners from acquiring number writing skills. This was also echoed during the interviews as reported by the head teachers:

> "*The preschool teachers try their best to use the available resources to help the learner master number work. But again, we must acknowledge the high number of pupils in our streams versus the few materials available. The teachers are overwhelmed and sometimes*

*they might not be able to use materials in all lessons as required or recommended" **(Headteacher 3)***

*"Sometimes they teach without materials, they are not to blame, because the County Government has not provided them with adequate instructional resources, yet the Competency-Based Curriculum requires that children be involved in hands-on activities." **(Headteacher 4)***

The reports from head teachers show that the teachers sometimes teach without instructional materials. This is due to the lack of adequate materials in the schools. Further, from the observations, it was noted that few instructional media were available in the classrooms. As a result, some teachers taught lessons without instructional materials. The findings are in agreement with the findings reported by Uwezo (2016) which indicated that most of the schools in Kenya did not have adequate teaching-learning resources. As such, the majority of the teachers were using blackboard and chalk. Similarly, the findings concur with the findings reported by Kim (2017) who observed that teachers in Kenyan primary schools cannot effectively improvise and teach using instructional resources. On the other hand, the findings from this study disagree with the findings reported by Waigera (2013), who indicated a high frequency of use of culturally relevant instructional materials in pre-primary schools in all activity areas in Nyeri County. Additionally, the findings disagree with the findings from Makokha (2017), who revealed a high frequency of use of improvised science instructional materials among preschool teachers in Bungoma County, Kenya.

Frequency of use of Instructional Media for Acquisition of skills in Counting Numbers in Sequence

The study aimed to find out how frequently pre-primary school teachers used the instructional media in teaching rote counting of numbers one to 20. The results are presented in table 4.

Table 4: Frequency of Use of Instructional Media for Acquisition of Counting Numbers in Sequence Skills

Instructional Media	Frequency of Use									
	Daily	%	Weekly	%	Monthly	%	Termly	%	Not at all	%
Number charts	31	75.6	9	21.9	1	2.4	0	0.0	0	0.0
Sticks	15	36.6	22	53.6	3	7.3	1	2.4	0	0.0
Stones	14	34.1	22	53.6	3	7.3	2	4.3	0	0.0
Bottles	11	26.8	14	34.1	10	24.3	6	14.7	0	0.0
Bottle tops	15	36.6	22	53.6	3	7.3	1	2.4	0	0.0
Tape measure	0	0.0	5	12.1	19	46.3	14	34.1	3	7.3
Ruler	8	19.5	11	26.8	20	48.7	2	4.8	0	0.0
Blocks	15	3.6	25	60.9	1	2.4	0	0.0	0	0.0
Empty Containers	4	9.7	18	43.9	17	41.5	2	4.8	0	0.0
Clock/watches	0	0.0	5	12.1	19	46.3	14	34.1	3	7.3
Variety of coins	8	19.5	11	26.8	20	48.8	2	4.8	0	0.0
Moulding plasticine	38	92.7	3	7.3	0	0.0	0	0.0	0	0.0
Maize seeds	22	53.6	17	41.7	2	4.8	0	0.0	0	0.0
Beans	22	53.6	17	41.7	2	4.8	0	0.0	0	0.0
Number flashcards	31	75.6	9	21.4	1	2.4	0	0.0	0	0.0

The results in table 4 indicate that the instructional media that were most commonly used daily were; number charts as indicated by the majority (75.6%) of the teachers, followed by moulding plasticine at 92.7%, maize seeds, and beans at 53.6%. The instructional media that was last used daily was number flashcards at 7.6%. Every week, the instructional media that were highly used were: blocks as indicated by the majority of 25(60.9%) of the teachers, followed by sticks, bottle tops, and stones at 53.6%, empty containers at 43.9%, maize seeds and beans at 41.7%. Monthly, the instructional media that were mostly used were; the variety of coins at 48.8%, Rulers at 48.7%, tape measure and clock/watches at 46.3%, and empty containers at 41.5%. On a termly basis, the instructional media that were mostly used were tape measures and clocks/watches at 34.1% and bottles at 14.7%. The instructional media that were least used on a termly basis included; sticks and bottle tops at 2.4%, stones, rulers, a variety of coins, bottle tops, and empty containers at 4.8%. Based on the results, it is evident that most of the pre-primary school teachers used instructional media to teach number writing skills once a week. This is evident that most of the pre-primary school teachers used most of the instructional media every week compared to those that were used daily. This may imply that there are some lessons in which the teachers teach rote counting without instructional media and this may hinder learners from grasping numeric concepts. This was also mentioned by the headteachers during the interviews.

> *"They use teaching and learning materials, remember that they are handling young children and instruction cannot be abstract. However, I am certain that they lack enough resources therefore some lessons might be done without materials because not all learning areas have materials. So yeah, some concepts may be taught without the instructional resources" (***Headteacher 5)**
>
> *"They utilize the available resources when teaching though not in all lessons because the materials are not enough and the enrolment is quite high in this grades"* **(Headteacher 6)**

The responses from the head teachers affirm the observations made that the pre-primary schools lack adequate instructional media. This means that some lessons are taught without materials, and this will hinder the acquisition of numeracy skills among pre-primary school learners. The findings are in agreement with the findings reported by Uwezo (2016) which indicated that most of the schools in Kenya did not have an adequate teaching-learning resource, as such, the majority of the teachers were using blackboard and chalk. Similarly, the findings concur with the findings reported by Kim (2017) who observed that teachers in Kenyan primary schools cannot effectively improvise and teach using instructional resources. This shows that there is a need to sensitize teachers on the importance of using instructional media in teaching and learning, especially when dealing with preschool children. Lack of numeracy skills could be due to inappropriate teaching-learning methods which do not encourage memorization and retention of learned concepts. This is echoed by Krushelnicki (2016) and Jepketer (2017) who argued that the use of instructional media during numeracy instructions encourages knowledge retention, retrieval, and application of numeracy skills in a real-life situation. In the same breath, Ngure (2014) opined that failing to use instructional media during instruction in pre-primary classes impairs pupils' understanding and mastery of the concepts being taught. This shows that instructional media are paramount in encouraging the acquisition of numeracy skills. Pre-primary school teachers in Kasarani Sub-County should therefore frequently utilize instructional media during numeracy instructions.

CONCLUSION AND RECOMMENDATIONS

The results indicated that the pre-primary school teachers were using various instructional media in teaching numeracy activities. However, the frequencies in which they used the materials varied among schools. It can be concluded that the majority of the pre-primary school teachers used the instructional media in numeracy lessons only once a week which was not effective enough for learners to acquire basic numeracy skills.

The study recommended that pre-primary school teachers should enroll in short courses which can equip them with skills in improvising instructional media from locally available resources. Improvisation of instructional resources will help in addressing the issue of inadequate teaching-learning resources in pre-primary schools in Kasarani Sub-County.

The study recommended that the school head teachers should pair teachers up to develop an interdisciplinary teaching activity using various instructional resources. This will lead to the development of teacher competence, confidence, and positive perceptions toward the use of instructional media when teaching numeracy activities.

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