The Influence of Instructional Resources in Child's Early Learning Outcome in Uasin Gishu County, Kenya

Dr. Esther Chepkorir Bitok

Kisii University, Kenya

Email: estherbitok2006@gmail.com

Abstract: Children's early development and learning are influenced by various systems that including the micro system (e.g., school financial capability), meso system (e.g., Government-school partnership), exo system (e.g., community type, early education policies), and macro system (e.g., school culture). Given the need of early education studies, the study focused on choice of instructional resources by the teacher's in the short term and in the long term, the study determined the influence of teachers in children's early learning outcome, with a particular focus on teachers' perceptions on availability of instructional resources. Based on data collected using self-administered questionnaires from 341 Early Child Development Education (ECDE) teachers, the findings indicated that teachers had no access to overhead projectors, television and radio, DVDs and CDs, internet, computers, online databases and mobile phones instructional technologies. The implication for policy the government should prescribe the minimum resources available for use by preschool teachers in ECDE centers countrywide to ensure that all preschool children are afforded a quality start to education.

1. Introduction

Early Childhood Development Education (ECDE) is a foundation on which Education for all (EFA) and especially basic education should be founded (Nyamwange, 2012). Therefore, ECDE is the education given to younger children before the age of entering primary education (6 years) (Obiweluozor, 2015). According to Smith, (2000) Early Childhood Development Education (ECDE) is a comprehensive approach to policies and programmes for children from birth to eight years of age with the active participation of their parents and caregivers. However, the objective of early childhood education is to provide developmental support and care for children in their formative years so that they can acquire the skills necessary for future learning and academic performance in school (Agbenyega & Klibthong, 2015). Early childhood education promotes positive developmental experiences and independence while also optimizing learning and development. In addition, ECDE serves the vital role of preparing the young children for preceding levels of education. Instructional resources are the supply that is needed by an

institution to improve their productivity. The use of variety and adequate instructional resources in pre-school classrooms arouses children's attention and sustains their interest (Kabiru and Njenga, 2007). However the improvement in academic performance is preceded through ensuring that learners get the best education as per the national goals of education.

The important of ECDE is not just in setting the foundations for cognitive, social, emotional, physical, and language development of children. It is often essential in terms of the detection of impediments to quality learning in public schools which if not addressed could affect country's national goals of education, bill of rights, education for all objectives and vision 2030 social pillar goal. The prerequisite of quality education is the goals identified in the new United Nations Sustainable Development Goals (SDGs) (UN, 2015). In order to achieve quality education, learning environment is an important variable. Quality environment is defined by availability of facilities, infrastructure and resources. Therefore adequate instructional resources also make learners to develop a optimistic attitude towards number work at an early stage. In addition the instructional

resources should be plenty so that every child in the classroom can choose what to interact with. The use of variety of resources is important so that all the children can be involved and no child is left idle during number work lessons. The availability of instructional resources (human, materials and finance) is critical to the successful realization of any educational programme. This is because resources are needed to provide a conducive teaching and learning environment. The quantity and quality of resources available for any educational programme would therefore determine school's systems capacity for the implementation of the type of educational programme. Physical facilities are land mark for school existence. As a matter of fact, preschool environments, classrooms, provisions of infrastructural materials are essential for meaningful interaction. The education environment should be favorable enough to facilitate children interaction with their environment which will enables them to put up experience.

According to Omaiyo, (2013) a good instructional resource stimulate ideas and demand active response from the children. Therefore learners must be provided with different types of instructional materials so as to improve learning to enable them to recognize number, symbols, shapes and their value (Kate, 2006). Therefore, the stakeholders have been enthralled by the potential of instructional materials to enhance teaching and learning, teachers lag behind in using instructional materials, and especially in teaching of number work (Kibe, 2011). Though instructional materials facilitate learning process in the classrooms, only a few instructional resources are provided to pre-schools and some pre-school teachers are not adequately trained to use instructional resources. Therefore, quality education remains a key factor towards learners' acquisition of competencies relating to reading, writing and even speaking. Okebukola (2005) defines quality as fitness of purpose. Further, Sattar (2013) considered quality as appropriateness of resources available to education. Hence, quality is a baseline standard in education that can be measured on a scale of reference. In addition, quality education is determined by the inputs from the curriculum content, instructional materials and equipment, quality assurance, school culture, teacher pupil ratio, costs and guiding policies, learning duration and above all the quality of the teachers and management functions (Odhiambo, 2008). However quality education can be achieved if the instructional materials and equipments have to be provided. Since independence, the Government of Kenya has made efforts to ensure provision of quality education to children from lower to upper levels of education. This was because; education was seen as the primary means of economic and social mobility, national cohesion and economic development (RoK, 2012).

However, research studies conducted by various scholars have shown significant challenges influencing the development of ECDE in Kenya. Mabatuk (2016) report from Tiaty Sub County, Baringo County Kenya found out that primary school children were learning outside in the open due to lack of adequate classrooms. Pre-school facilities are mostly semi-permanent, local or church halls or any other building that the local communities accept as suitable (Jepleting, 2013). In addition, few premises have been inspected and the consensus view is that many pre-primary premises fail to meet minimum education standards (Mabatuk, 2016). The eminence of school amenities seems to have an indirect effect on learning. It is in line with this that this matter and factors concerning provision of quality education in the country that the researcher sought to determine whether Instructional Resources Influence Children's Early Learning Outcome in Uasin-Gishu County, Kenya.

1.1 Purpose of the Research

The purpose of the study was to examine how the availability of instructional resources impact children's early learning outcome in Uasin-Gishu County, Kenya.

1.2 Research Question

The study investigated the following research questions;

1. What are some of the available ECED centers in Uasin-Gishu County, Kenya?
2. What is the relationship between the availability of instructional resources and children's early learning outcome in Uasin-Gishu County, Kenya?

2. Literature Review

2.1 Instructional Resources in Pre Schools

Availability of instructional resources depend on storage (Abdelrahim, 2008). The quality of education and training on participation given to pre-schools children depends on the accessibility and sufficiency of instructional resources for classroom learning. Institutional teaching should aim at equipping learners with useful skills and to improve their knowledge and capabilities in their performance in number work (National Policy on Education, 2004). Instructional resources are vital in helping learners acquire concepts and skills among pre-school children since it encourages learning by doing. Children learn better by manipulating available materials. However, some educators have been enthralled by the potential of instructional materials to enhance teaching and learning, however some teachers lag behind in using instructional materials, especially teaching young children (Kibe, 2011). Even though instructional materials facilitate

learning process in the classrooms, only a few instructional resources are provided to pre-schools and some pre-school teachers are not trained to use instructional resources. The pre-school curriculum therefore has to be designed to include instructional resources in learning, since it has emerged the best to a learner is at the pre-school age (Omaiyo, 2013).

The utilization of instructional resources is an essential aspect in instruction in Pre Schools. Even though some of the resources are readily available yet they are not used in teaching. However, the instructors only use instructional resource when they are made available and carefully selected to help the teacher realize his/her instructional objectives. Instructional resources are gathered and prepared ahead of time as pre-school children cannot be expected to sit diligently while waiting for the teacher to prepare the materials and collect activity supplies for lessons. learners actively construct their knowledge depending on the type of resources used; see, hear or do in relation to what they know thus, children should be exposed to different types of resources so that they can construct their knowledge better (Omaiyo, 2013). Adequate instructional resources enable learners to acquire number work skills considering that they interact with instructional resources, they learn classification skills which help them in counting, matching, modeling and tracing numbers among others. All this learning is done in safe environment where the parents should provide instructional resources and coordinate with pre –school teachers so that the environments can enable children learn by doing, manipulating, observing, exploring and experiment with a variety of instructional resources guided by the teacher (MoE, 2008). Even though Most ECD centers in Kenya give little or no time for children to interact freely with instructional resources during number work lessons (Waithaka, 2005). The pre-school classroom environment provides welcoming, safe, warm and stimulating areas to promote the development of the whole child expand and deepen learning. Many pre-schools avail learning centers in which their children can read books, build with blocks and use other stimulating materials. The pre-school learning environment as well as the resources used by pre-school children is essential to their development (Librera, Bryant, Gantwerk and Tkach, 2004).

Adequate learning resources and models assume a critical role in helping children learn number work throughout their preschool education (Mwangi, 2009). Therefore Teachers should use different models when teaching a particular concept. Children should be exposed to adequate instructional resources since they acquire knowledge by constructing it through their interactions with the environment to explore. Even though providing opportunities and material for children to classify, sort and group objects using various criteria like; color, shape, size, texture or use, help children to symbolize and use differed imitation and enhance their mental abilities (Omaiyo,

2013). However the type of instructional recourse required in number work largely depends on the specific content area being covered and the age group being taught. Sometimes different age groups require different materials and the same happens for different content areas. Therefore the availability and adequacy of the instructional resources in learning improves the children achievement since every learner is involved in the activity given (Oginni; Awobodu; Alaka & Saibu, 2013). According to Piaget (1973) the ECDE materials are divided into four categories: The first one is Audio-visual which is materials that produce sound and pictures like Television, Films and Digital Versatile Discs (DVDs); followed by Audio which is materials that produce sound like Radio, Radio Cassettes, Compact Discs (CDS), Walkman and iPod; then Visual whis is materials that need the sense of sight only like flash card, cut-outs charts picture books, picture cuttings, magazines and calendars among others and lastly concrete which is materials that can be manipulated for example, blocks, stones, dolls, beads, a toy car, fruits, sticks among others.

The ECE curriculum developed by Kenya Institute of Curriculum Development (KICD) has provision for children to have adequate instructional resources to interact with but most children in ECD however do not interact with a variety of instructional resources. This is because most ECD teachers do not care and teach number work without adequate resources, hence learners fail to develop some number work concepts. Even though the Curriculum cannot be full effective implemented without adequate instructional resources. If instruction has to be effective and meaningful, there is need for adequate relevant instructional resources to be made available. The teachers and learners could use such instructional materials when needed. These materials include textbooks, models, charts, pictures films and other relevant instructional resources. Moreover, relevant instructional materials should be made available for effective teaching and learning. The learning environment plays a critical role for the children to learning, therefore the richer the environment the more concrete opportunities are for children to learn and interacting with instructional resources. Hence, the teacher's role is to create an environment that invites children to observe, experiment, therefore instructional resources support the teacher in delivery of knowledge or help to emphasize specific knowledge (MacCallum and Morcom, 2008). Teachers should use different models when teaching a particular concept. Instructional resources enable preschool children to perform well in learning activities. Instructional resources stimulate and sustain interest in learning by providing firsthand experience with the realities of the physical and social environment. Hence adequate manipulative resources and models assume a critical role in helping children learn (Mwangi, 2009). Therefore the quality of education and training on participation given to pre-schools children depends on the availability and adequacy of instructional resources for classroom

learning. Institutional teaching should aim at equipping learners with useful skills and to improve their knowledge and capabilities in their performance in class (National Policy on Education, 2004).

2.2　Learning Outcome

Learning outcome is the particular knowledge, skill or behavior that learners are expected to exhibit after a period of study or sometimes referred to as objectives. Based on positive outcomes, (cognitive, learning dispositions, and social emotional) of early childhood education (ECE) participation for learners in the short and long term. These are most evident in centers rated as good quality in respect to responsive and stimulating adult–child interactions and rich learning environments, and in centers employing qualified teachers, with adult: child ratios and group sizes that enabled teachers to work with small groups of children or interact one on one with individual children (Schuh and Upcraft, 2001). However, the assessment of learning outcome requires the collaboration between early childhood professionals and a common acknowledgement of expertise and varying professional approaches to creating and using assessment for learning and development (Ashton *et al.,* 2008). Early Childhood Education (ECE) participation can enable parents to learn more about parenting, develop social and community networks, and build greater confidence; and participate in paid employment. These gains can be thought as empowering. They also interact with those found for children, and each contributes to family and societal functioning.

Therefore Learning outcomes are designed to help support student learning and are based on an input-environment-outcome (IEO) framework. This framework suggests that both a student's background as well as the institutional environment have an effect on their learning. By assessing the effect of the institution on students' learning, the institution can shape their offerings (services, programs, and experiences) to enhance student learning. The assessment of student learning outcomes has come to serve as a strong basis for supporting and documenting learning experiences. Learning outcomes assessment projects can be helpful in determining to what degree respondents area achieving key learning goals in education. Measuring learning outcomes provide information on what particular knowledge (cognitive), skill or behavior (affective) learners have gained after instruction is complete. Measurement and evaluation as used in education practice refer to the process used in the assessment of the learning –teaching process of gathering and providing information on the learner's performance on a learning task through observing, recording, and evaluating performance. This has been echoed by Sifuna and Omulando (1992) who assert that assessment will show whether there has been a change in a learner's behavior.

2.3　Examining How Instructional Resources Availability Influence Children's Early Learning Outcome

Instructional resources are the material, staff and finance available to realize the goal of early childhood education. Educational resource is the sum of everything that goes into the educational system. This includes human capital, infrastructure and finances (Ukala, 2012). Early childhood education is capital intensive which is required to be adequately equipped with vital input in order to achieve its goal. Therefore for an educational programme to achieve its goals, it must be supported with adequate Instructional resources. Therefore inadequate teaching, lack of properly ventilated classrooms, furniture suitable for children, kitchen, safe clean water, playground, toilets and play material have a negative effect on the implementation of ECDE programmes (Offenheiser and Holcombe, 2008). Similar same views have been posed by a study carried out by International Association for the Education of Young Children, (2011). Learners actively construct their knowledge depending on the type of resources used; see, hear or do in relation to what they know thus, children should be exposed to different types of resources so that they can construct their knowledge better (Omaiyo, 2013).

The availability and sufficiency of instructional resources improves children achievement because every learner is involved in the activity given (Alaka and Saibu, 2013). Adequate instructional resources enable learners to acquire skills. As they interact with instructional resources, they learn classification skills which help them in counting, matching, modeling and tracing numbers among others. All this learning is done in a safe environment where the parents should provide instructional resources and coordinate with pre –school teachers so that the environments can enable children learn by doing, manipulating, observing, exploring and experiment with a variety of instructional resources guided by the teacher (MoE, 2008). The Government of Kenya has recognize that early childhood development and education interventions are significant to the social and economic development of the country as it will provide children with a fairer and better start in life.

The Kenya government has come up with the Session Paper No. 1 of the Ministry of Education (2005) which acknowledges the attainment of EFA by 2015 as a major goal commitment of the National Following promulgation of the constitution in 2010, ECDE in Kenya was devolved to the County level where service delivery is managed and funded in particular in ECD and TVET (Cheserek and Mugalavai, 2012). The management of ECD in the county level is not currently well-spelt out. Much still needs to be done to further improve quality in service delivery and the rapid scaling-up of Kenya's ECD programme especially in the current devolved system. According to Kabiru and

Njenga (2007) the use of variety and adequate instructional resources in pre-school classrooms arouses children's attention and sustains their interest. Learners become motivated and stay focused in class activities. Adequate instructional resources also make learners to develop a positive attitude towards learning in early stage. Instructional resources should be plenty so that every child in the classroom can choose what to interact with. Use of variety of resources is important so that all children can be involved and no child is left idle during number work lessons. A study by Kibe (2011) stated that there is a good relationship between effective teachings and use of instructional materials.

2.4   Theoretical Framework

The study was underpinned by Albert Bandura's Social Learning Theory (SLT). This theory came into existence in the 1960s and it was later developed into the Social Cognitive Theory (SCT) in 1986. The SCT posits that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behaviour. Social-learning theory (Rotter, 1954) postulates that, "the theory is social in nature because it stresses the fact that the major basic modes of behaving are learned in social situations and are inextricably fused with needs requiring for their satisfaction the mediation of other person". It is through these theoretical frame works; affective knowledge can well be practiced by appreciating oneself values while adapting and accommodating different views of others. The Social Cognitive Theory explains how people regulate their behavior through control and reinforcement to achieve goal-directed behavior that can be maintained over time. With the implementation of external and internal factors, people regulate their behavior from a combination of both cognitive processes and environmental manipulation.

The theory presents four factors that affect observation learning and these are: attention, retention, production and motivation. If past reinforcements have led someone to pay attention to a model, then future reinforcements would selectively engage in a behavior that was observed and finally repeat it over and over. Therefore if the learners are presented with any social environment, which in this study is friendly learning environment, they would analyze it then model by paying attention to those aspects that provide the friendliness. When the school, which forms the learning environment, is safe, caters for all categories of learners, is gender-responsive, is health providing and has a community that supports its activities, the learners will deem it conducive for their learning. These aspects make the children motivated and are therefore likely to develop affection for the school and all other service providers in school leading to better retention. This in turn leads to the achievement of the third millennium goal which is advocating for Education for All.

Therefore the children learn in their environment as they interact and observe those living in that same environment (Kabiru and Njenga, 2009). The unique feature of SCT is the emphasis on social influence and its emphasis on external and internal social reinforcement. The SCT considers the unique way in which individuals acquire and maintain behavior, while also considering the social environment in which individuals perform the behavior. The theory considers a person's past experiences, which factor into whether behavioral action will occur. These past experiences influence reinforcements, expectations, and expectancies, all of which shape whether a person will engage in a specific behavior and the reasons why a person engages in that behavior.

3. Methodology

3.1 Research Design

The study utilized a descriptive design since the focus was to provide information about naturally occurring status, behavior, attitudes and/or other characteristics of a particular group on the impact of availability of Instructional Resources on Children's Early Learning Outcomes in Uasin Gishu County, Kenya.

3.2 Population and Sample Size

The research was conducted in Uasin-Gishu County. The county is one of the 47 counties of Kenya. The target populations were all the head teachers and teachers in all the public ECDE centers in Uasin-Gishu County. The county has 775 public ECDE centers with 775 head teachers and 2330 teachers who were form the target population of this study. The children in the ECDE centers were not included in the study population because they can't provide information about the teaching strategies used in the centers including different classroom assessment strategies. Taro Yamane (1973) sample size formula and modified by Kent (2008) was used to select a sample size of 341 teachers. Out of the 775 public ECDE centers in Uasin-Gishu County, the study sampled 20 centers from each of the six administrative divisions (sub-county administrative). Therefore 120 ECDE centers were selected using simple random. The study adopted a stratified sampling technique to select the 20 public ECDE centers from each of the six administrative divisions in Uasin-Gishu County. To sample the ECDE teachers, the study used systematic random sampling technique to select 241 teachers from the 120 centers. While all the head teachers in the selected 120 ECDE centers were purposefully selected.

3.3 Data Collection Instruments, Processing and Analysis

The study adopted a mixed method approach to collect data from the respondents. In this case, data collection was done using a combination of questionnaires, interviews and checklists. Two set of questionnaires were designed; a questionnaire for the ECDE teachers and a questionnaire for the ECDE center head-teachers. The study used a structured checklist to record data on the availability of teaching and learning resources in the centers. The checklist amassed information on the status of the outdoor play environment. The questionnaires were pre-tested by administering it to 20 ECDE teachers in two ECDE centers in neighboring Nandi County.

The centers were purposively selected for the study. The data collected were used to estimate the reliability of the instrument. Pilot test also enabled the researcher to curb unnecessary items which could have arisen issues in the actual research. The pilot study was conducted in the same manner as the main study. The data collected were coded and entered in SPSS V20 for data analysis. Descriptive statistics was done to identify characteristics of demographic data of respondents. Face validity was assessed by getting friends and students in the department of early childhood education to test-run the instrument to see if the questions were relevant, clear and unambiguous in line with the recommendation of Rubin and Rubin, (2011). Further content validity was done by the help of panel of experts (lecturers in the department of early childhood education) to evaluate the content validity of questionnaire and the questionnaires conformed to the theoretical expectations which have been indicated in the theoretical framework.

3.4 Preliminary Analysis

To ensure the reliability of the data collection instrument, Cronbach's alpha was used as echoed by Nunally, (1978).

The threshold reliability value is .60 and above will be considered (Hair, Anderson, Tatham & Black, 2006), and so the results of this study are reliable because all the study variables had Cronbach's alpha of more than 0.7. Before data collection, the researcher first sought permission from National Council of Science, Research and Innovation (NACOSTI). The researcher pre-visited the 120 sampled early childhood education centers to seek permission for data collection from the school principals. The researcher gave the respondents sufficient time to accurately fill in the copies of the questionnaire the required information after which the documents were collected for data extraction and analysis. Principal's interviews were also conducted after they fill the questionnaire. The data collected were coded and entered in a computer for analysis using the Statistical Package for Social Sciences (SPSS). In this case, frequency distribution and measures of central tendency including mean as well as measure of dispersion including percentages, range and standard deviation were used. Data was also presented using tables, pie charts and graphs. Qualitative data from the interviews were recorded and analyzed thematically through non-parametric analysis. The results were then be interpreted by attaching significance to the themes and the patterns observed.

4. Results and Discussion

The objective of the study was to establish the availability of instructional resources and its influence on children's early learning outcome in public early childhood education centers in Kenya. In this section, the researcher sought to determine the availability and adequacy of instructional materials. Table 1 below summarizes the study finding on the response rate of the study. The study finding reveled that out of 341 questionnaires distributed to the respondents, all 341 questionnaires were filled and completed accurately and were used for analysis with a response rate of approximately 100.00%. The response rate was, therefore, accepted as adequately sufficient for the intended purpose (Oso and Onen, 2005).

Table1: Study Response Rate

Category	No of Respondent	Percentage
Sample Size	341	100.00
Response	341	100.00
Non-Response	000	0.00

Source: Survey Data (2020)

Descriptive statistics among the technological instructional resource study variables are reported in Table 2 below. The respondents were requested to establish the Technological resources available for use by teachers in public early childhood education centers in Kenya. The result revealed that majority of the ECED teachers acknowledge the lack of availability of overhead projectors 263 (76.9%) have no access to overhead projectors and only 78 (23.1%) had access to overhead

projectors which can be attributed to the low funding of the schools by the county and central government. The results, further showed that majority of the teachers 268 (78.59%) do not have television and radio and only 73 (21.41%) had access to television and radio and they use

the resource in teaching, basically it was attributed to low connectivity of electricity among the public ECED centers. In addition the results showed that 287 (84.16%) of the teachers do not have access to DVDs and CDs as well as video conferences instructional technologies while only 15.84% had access and they utilized DVDs and CDs as well as video conferences instructional technologies.

Table 2: Instructional Technologies Used in ECD Centres

	Yes		No	
	Freq	**%**	**Freq**	**%**
Overhead projectors	79	23.1	263	76.9
Television & radio	74	21.5	268	78.5
DVDS & CDS	55	16.2	287	83.8
Video conferences	55	16.2	287	83.8
Internet	39	11.5	303	88.5
Computers	29	08.5	313	91.5
Online databases	16	04.6	326	95.4
Mobile phones	108	31.5	234	68.5

Source: Survey Data (2020)

Similarly, the result revealed that most of the teachers 303 (88.5%) dint have access to internet connectivity, while 38 (11.5%) had access to internet connectivity. This was attributed by the low connectivity of internet in the country. In addition majority of the teachers/schools centers had no computers 313 (91.5%) to use, while only 28 (8.5%) had access to the computers which is an indication of low uptake of use of computers in ECD Centers in Uasin-Gishu County. Similarly, the result revealed that the online databases were not used by 326 (95.4%) of the teachers had no access to online data base due to low connectivity of internet in the country. Finally the results showed that a smaller fraction of ECD teachers 108 (31.5%) had access and used mobile phones resources in teaching, even though a significantly higher number 243 (68.5%) could not access and use mobile phones in the class rooms. The study present the descriptive statistics of non-technological instructional resource available in are reported in Table 3 below.

The respondents were requested to establish the availability of non-technological resources available for use public early childhood education centers in Kenya by teachers. The results revealed that majority of the ECED teachers 239 (70%) acknowledge that they didn't have access to general purpose teaching rooms and only 103 (30%) said they had access to general purpose teaching rooms were available. This is also attributed to lack of capacity by the ECED to build due to lack of funds. The results, further showed that Majority of the teachers 263(76.9%) had no access to course materials systems, while only 79 (23.1%) used and had access of the course materials resource. This was also attributed to low funding of financial recourses by the county governments. In addition, Majority of the ECED teachers 232 (67.7%) of the teachers had no access to white and black board and only 110 (32.3%) had the access of the resource, this was mostly attributed to the lack of access to the general purpose teaching rooms as a result of low funding by the county and central government.

Table 3: Non-Technological Infrastructure resources available in ECDE centers

	Yes		No	
	Freq	**%**	**Freq**	**%**
General purpose teaching rooms	103	30.0	239	70.0
Course materials systems	79	23.1	263	76.9
White and blackboard	110	32.3	232	67.7
Specialized teaching facilities	66	19.2	276	80.8
Diverse play items	84	24.6	258	75.4

Source: Survey Data (2020)

Similarly, the result revealed that most of the teachers 276 (80.8%) do not have specialized teaching facilities and only 66 (19.2%) used the specialized teaching facilities. The lack specialized teaching facility is also attributed to low financial capabilities by the public ECED centers. Finally the results showed that a smaller fraction of ECD teachers 84 (24.6%) had access diverse play items, while majority of the teachers 258 (75.4%) did not have diverse play items in their centers. This might be attributed to low

financing by the county and central governments to enhance and facilitate the operations of ECD centers in Uasin-Gishu County. Generally from the findings it was established that majority of the teachers in Uasin-Gishu County do not have access to overhead projectors, television and radio, DVDs and CDs, internet connectivity, computers, online databases and mobile phones instructional technologies. In a nutshell, the result in table 2 above showed that the ECD centers have

different types of instructional resources and the utilization level varies due to the low uptake by the teachers and county governments. The low uptake is attributed to lack of goodwill from the current governments in provision of recourses to enable the adoption and use of such technologies. The most attributing factor was inadequate financial support from the county and central governments and low connectivity of electricity which is the most important source of energy. The findings of the study were in line to those of Kabiru and Njenga (2007).

4.1 The availability of Instructional Resources and Children's Early Learning Outcome

The objective was to establish the effect of availability of instructional resources relatively to the current situations on children's early learning outcome in public early childhood education centers in Kenya. The result in table 4, revealed that majority of the ECED teachers acknowledge learning output could much better if the availability DVDS & CDS were much available than the current situation 152 (44.6%), with 79 (23.1%) as better, 42 (12.3%) worse and 68 (20%) to be much worse. This indicates that the DVDS & CDS availability enhances learning outcome in ECDE centers. The results, further showed that majority of the teachers 168 (49.2%) rated that learning outcome would be much better when video conferences was enhanced in learning, while 118 (34.6%) ascertained better, 18 (5.4%) worse and 37(10.8%) to be much worse than the current situation. This indicates that the Video conferences availability and use should be promoted so as to improve learning outcome in ECDE centers. In addition the results showed that 139 (40.8%) teachers rated the internet could influence the learning outcome much better than the current position, with 100 (29.2%) as better, 73 (21.5%) worse and 29 (8.5%) to be much worse than the current position. This indicates that if the internet availability was sufficient for teaching learners in ECDE centers it could have improved learning outcomes.

Table 4: Learning outcome estimate in relation to the Availability and adequacy of technological instructional resources in teaching learners in ECDE centres

	Much worse		Worse		Better		Much Better	
	Freq	%	Freq	%	Freq	%	Freq	%
Overhead projectors	31	09.2	13	03.8	186	54.6	110	32.3
Television & radio	26	07.7	31	09.2	199	58.5	084	24.6
DVDS & CDS	42	12.3	68	20.0	152	44.6	079	23.1
Video conferences	18	5.4	37	10.8	168	49.2	118	34.6
Internet	73	21.5	29	8.5	139	40.8	100	29.2
Computers	89	26.2	45	13.1	60	17.7	147	43.1
Online databases	60	17.7	47	13.8	131	38.5	102	30.0
Mobile phones	84	24.6	71	20.8	136	40.0	050	14.6

Source: Survey Data (2020)

Similarly, the result revealed that most of the teachers 147(43.1%) rated the computers would have much better improved learning outcome, with 60 (17.1%) as better, 89 (26.2%) worse and 45(13.1%) to be much worse. This indicates that the computers availability would have improved learning outcome of learners in ECDE centers. The results, further showed that Majority of the teachers 131(38.5%) rated online databases to much better improve learners learning outcome, with 102 (30%) as better, 60 (17.7%) worse and 47(13.8%) to be much worse. This indicates that the online databases were available and would be sufficient for improving learner's outcome in ECDE centers. Finally the results showed that a bigger fraction of ECD teachers 136 (40%) rated the mobile phones usage will much better improve learning outcomes, with 50 (14.6%) as better, 84 (24.6%) worse and 71 (20.8%) to be much worse.

This indicates that the mobile phones might be useful in improving learning outcome and at the same time it might not sufficiently improve the learning outcome of the

learners in ECDE centers. From findings indicated that the overhead projectors, television and radio, DVDs and CDs, internet, computers, online databases and mobile phones instructional technologies were available and not sufficient for teaching learners in ECDE centres in Uasin-Gishu County. The study showed that instructional materials are used during class lessons. This information collaborates with findings by Mwangi (2009) who reported that adequate manipulative (concrete) resources and models help children learn throughout their preschool education. This further collaborates study by Omaiyo (2013) who asserted that learners actively construct their knowledge depending on the type of resources used; they see, hear or do in relation to what they know, learners to be exposed to different types of resources so that they can

construct their knowledge better. It concurs with Nabwire (1998) that visual aids introduce variety in the lesson and thus stimulate learning. The use of instructional media results in greater acquisition of knowledge and ensures longer retention of information gained.

These findings were also justified by most of the ECDE head teachers, in their responses when they indicated that in most cases, parents, teachers and community members provided teaching and learning materials for the ECDE centers. These findings are in line with Magoma, (2013) who observed that lack of practical approaches to inform the parents and lack of the Ministry of Education's funding and implementation initiatives further complicates the provision of ECDE. These findings were also justified in one of the observations made by the researcher, who found that in most of the ECDE centers, instructional materials were inadequate, impeding proper implementation of the ECDE syllabus. In one of the head teachers said "We normally share most of the teaching and learning materials because they are not enough and this makes some of us find difficulty in learning". Similarly, based on the observation of the checklist, the study found that almost all the ECDE centers had teaching and learning materials save for the essentials such as teachers guide, ECDE syllabus, cut-outs, flash cards and abacus. In the same vein, majority of the head teachers indicated that they had assortment of teaching and learning materials albeit most of them were locally made, which could also compromise learning given that some of them were substandard. These findings corroborated with that of Ready, (2010) who also found that ECDE is currently facing an array of challenges such as funding, policy formulation, low participation rates of target age groups including special learners, lack of curriculum content informed by research-based data, inadequate qualified educators, lack of schemes of service for educators, rising number of orphans, conflict in medium of instruction among others.

5. Conclusion and Recommendations

5.1. Conclusion

References

Abdelrahim, R. (2008). An evaluation of Intel program "Intel Teach to the future" from the point of view of Intel trained primary stage teachers in the 4th District Education. *Unpublished MA thesis, University of Jordan, Amman, Jordan.*

Cheserek, G.J. and V.K. Mugalavai. (2012). Challenges and reforms facing Kenyan education system in the 21st century: integrating the principles of

The paper concludes that teachers in Uasin Gishu County do not have access to overhead projectors, television and radio, DVDs and CDs, internet, computers, online databases and mobile phones instructional technologies. Teachers in Uasin Gishu County do not have access to overhead projectors, television and radio, DVDs and CDs, internet, computers, online databases and mobile phones instructional technologies. Teachers should provide enough relevant books to use in the pre-schools class. This will enable them to be flexible in selecting relevant themes and learning activities which are interesting to the learners.

The limitations of materials cause poor performance and understanding. Teachers should use real objects and real situations within the child's own social setting. Teaching materials are used to aid and facilitate teaching process for better understanding of concepts. The access and availability of these learning resources for ECDE centres proved to be the major bottleneck for the teachers in terms of quality service delivery. This is because most of the teachers were unable to access learning facilities such as overhead projectors, internet and computers among others. Thus, it is upon schools to have teachers comfortably access and work with appropriate technology tools and to pass on that knowledge and skills to the learners.

5.2   Recommendations

i.   County government should also ensure that early childhood centers are equipped with the right technological tools to enhance the classroom experience.
ii. Preschools should have adequate concrete, visual, audio and visual audio instructional resources for teaching. The preschool teachers and parents should attend workshops where they are trained on improvisation of relevant instructional resources.
iii. The government should prescribe the minimum resources available for use by preschool teachers in ECDE centers countrywide to ensure that all preschool children are afforded a quality start to education.

vision 2030 and Constitution 2010. *Journal of Emerging Trends in Educational Research and Policy Studies*, 3(4): 471-478.

Cirignotta, F., S. Mondini, A. Santoro, G. Ferrari, R. Gerardi and G. Buzzi. (2002). Reliability of a questionnaire screening restless legs syndrome in patients on chronic dialysis. *American Journal of Kidney Diseases*, 40(2): 302-306.

Desu, M.M. (2012). Sample size methodology. *Elsevier.*

Gatuma J.C, (2010). *Head teachers' tasks in the implementation of pre-school curriculum in Kenya public pre-schools*; Unpublished D.Phil thesis, university of Nairobi, Kenya. Ife Psychologia, from international.Mq.edu.au/distance

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, 8(4): 597-606.

Johnson, B. and L. Christensen. (2008). Educational research: *Quantitative, qualitative, and mixed approaches*. Sage.

Kabiru, M and Njenga, A (2007). Child Development. *Focus publishers Ltd.*

Kabiru, M. and A. Njenga. (2009). Foundation of Early Childhood Development and Education and Curriculum Development. Nairobi: *Focus Publishers.*

Kate, W (2006). The Education Flatline: Causes and Solutions. National Council on Teacher Quality. *Washington D.C, USA.*

Keengwe, J. and G. Onchwari. (2009). Technology and early childhood education: A technology integration professional development model for practicing teachers. *Early Childhood Education Journal*, 37(3): 209-218.

Kibe, J (2011). *Cyber Psychology*, Behavior and Social Networking.

Krauss, S.E. (2005). Research paradigms and meaning making: A primer. *The qualitative report,* 10(4): 758-770.

Krejcie, V and Morgan, W (1970). Determining Sample Size for Research Activities. *Educational and psychological measurement*. 30.p. 607-610.

Librera, W. L., Bryant, I., Gantwerk, B., and Tkach, B. (2004). Autism Program Quality Indicators: A Self-Review and Quality Improvement Guide for Programs Serving Young Students with Autism Spectrum Disorder. *New Jersey Department of Education, Office of Special Education Programs, Trenton, New Jersey.*

LoBiondo-Wood, G. and J. Haber. (2014). Nursing research: Methods and critical appraisal for evidence-based practice. *Elsevier Health Sciences*.

MacCallum, J and Morcom, V (2008). Making Classroom Social Practices Explicit: Developing Motivation through Participation in Collaborative Leadership Opportunities, In: Teaching and Learning: *International Best Practice, Information Age Publishing,* pages 191 - 222.

Matthews, B., & Ross, L. (2014). *Research methods*. Pearson Higher Ed.

Ministry of Education (2005), *Quality Education for Development, Universal Primary Education (UPE) by 2005 and Education for All (EFA) by 2015* http://www.education.go.ke/2011 64

Mochama, F. (2015). *Nursery Children to Sit National Exams.* Accessed from http://www.kenyans.co.ke/news/nursery-children-sit-national-exams.

Mwangi, C. (2009). Literacy and Hegemony: Critical Pedagogy Vis-à-vis Contending Paradigms. *Bowling Green State University, Ohio, USA.*

Nabwire, V.K (1998). *The Survey of the Availability and Utilization of Non- projected media resources for teaching of Geography in the Secondary Schools in Uasin Gishu District of Kenya*: M.Phil Thesis. Eldoret: Moi University Faculty of Education. (Unpublished).

National Policy on Education, (2004).

Offenheiser, R. & S. Holcombe (2003). Challenges and opportunities in implementing a rights-based approach to development: an Oxfam America perspective. *Nonprofit and Voluntary Sector Quarterly* 32(2): 268

Oginni, A. M., Awobodu, V. Y., Alaka, M. O., & Saibu, S. O. (2013). School factors as correlates of students' achievement in Chemistry. *International Journal for Cross-Disciplinary Subjects in Education*, *3*(3), 1516-1523.

Omaiyo, J (2013). Effect of Instructional Resources on Children's Number Work Performance in Pre-Schools in Isibania Zone, Migori, County. *University of Nairobi, Nairobi, Kenya.*

Piaget, J (1973) "Piaget's theory" In Mussen, P.H. (Ed) Handbook of Child Psychology (4th Ed) Kessen, W. (Ed), History, *Theory and Methods 1: 103-128. John Wiley.*

Polit, D.F. and C.T. Beck. (2013). *Essentials of nursing research: Appraising evidence for nursing practice*. Lippincott Williams & Wilkins.

Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research

paradigms and philosophy of science. *Journal of counseling psychology*, *52*(2), 126.

Ready, D. D. (2010). Socioeconomic disadvantage, school attendance, and early cognitive development: The differential effects of school exposure. *Sociology of Education*, *83*(4), 271-286.

Rotter, J. B. (1954). *Social learning and clinical psychology*.

Rubin, H.J. and I.S. Rubin. (2011). *Qualitative interviewing*: The art of hearing data. Sage.

Smith JT (2000). Early Childhood Development: A Multicultural Perspective. 2nd Edition. Ohio: Prentice Hall.

Ukala, C. C. (2012). Resource capacity for the implementation of early childhood Education in Public and private school in Rivers State. *Unpublished Ph. D. Dissertation, Faculty of Education, University of Port Harcourt*.

Waithaka, E (2005). Play and Social Emotional Development in young children. *Kenyatta University, Nairobi, Kenya.*