International Journal of Multidisciplinary Research Updates

Journal homepage: https://orionjournals.com/ijmru/

ISSN: 2783-0179 (Online)

(RESEARCH ARTICLE)

Relationship between pre-primary centres' implementation of the policy guidelines on the provision of infrastructural facilities and the acquisition of basic competencies among pre-primary learners in Kenya

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International Journal of Multidisciplinary Research Updates, 2024, 08(01), 048–057

Publication history: Received on 15 February 2024; revised on 07 July 2024; accepted on 09 July 2024

Article DOI: https://doi.org/10.53430/ijmru.2024.8.1.0023

Abstract

The study examined the relationship between pre-primary centres' implementation of the policy guidelines on the provision of infrastructural facilities and the acquisition of basic competencies among pre-primary learners in Kenya. The study target population consisted of 37 primary head teachers and 111 pre-primary teachers, one County Director of early childhood and 2 Quality Assurance Officers in Early Childhood in Kisii Central Sub- County. Saturated technique was used to select the whole population as sample size. The face, construct, and content validity of the instruments was determined through the expert judgement of university supervisors. Reliability of the research instruments was determined by test-retest method and a reliability coefficient of 0.734 was reported. Questionnaires, interview schedule, and document analysis was administered to collect data. Quantitative data was analysed using descriptive statistics such as frequencies and percentages and inferential statistics such as Pearson correlation coefficient. Qualitative data was analysed using thematic analysis. The study findings established those overall combined infrastructural facilities ahad statistically significant positive, but moderate correlation (r=.569, p=.000) with acquisition of core basic competencies among the learners in ECD centres. The Ministry of Education in collaboration with the parents and other education stakeholders should ensure that ECDE infrastructural facilities, including spacious and well-tendered classrooms, playground, toilets, and furniture are available in adequate amount and also in good condition.

Keywords: Pre-Primary centres; Implementation; Policy guidelines; Infrastructural facilities; Basic Competences.

1 Introduction

Globally, many countries recognize Early Childhood Development and Education as an important pillar for accelerating the attainment of Education For All (EFA) and the Sustainable Development Goals (UNESCO, 2014). To ensure quality Education and learning environment during a child's formative years, EFA's first goal stipulates that it is the responsibility of every Government to expand and enhance comprehensive Early Childhood Education. To achieve this in the 21st century, many developing and developed nations have been developing and implementing policies that are perceived to improve the state of early childhood education in various countries. This has galvanized many countries, especially in sub-Saharan Africa (SSA), into confronting their historically low access to quality early childhood education which is perceived to hinder children's acquisition of basic completeness. However, the 2014 UNESCO report indicate that the quality and management of preschool education is not satisfactory in many countries in sub-Saharan Africa counties, Kenya inclusive.

Despite the challenges facing Early Childhood Education in many parts of the world, the early years of a child's life are globally accepted as the most critical years for the lifelong development of a child. In this regard, there is an evidence of

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a positive correlation between the child's quality of early childhood nurturing, health, environment, learning and future holistic development and academic achievement in subsequent grades in primary, secondary schools and colleges. This fact has been emphasized by most founders of Early Childhood Development and Education (ECDE), especially Johann Froebel, Heinrich Pestalozzi and John Dewey among others who consistently indicated that early childhood is a crucial stage of life in terms of a child's physical, intellectual, emotional and social development which lead to acquisition of core competencies (Monda, 2012). To address the problems inherent in preschool education in Kenya, the Constitution of Kenya (2010) establishes a system of governance where by pre-school education and administration become a devolved functions of the county governments. However with the devolution of ECE to county government, there are still challenges in the implementation of pre-primary national policy guidelines. Currently there are disparities in the 47 counties on their priorities related to the Implementation of Early childhood education policy guidelines whereby there are great disparities in provision of in infrastructural facilities, teachers, Service Providers Suitability, food, health and safety (Omariba, 2012). This has resulted in diversity of practices by various county government and stakeholders compromising the quality of service and education offered by ECDE centres (Wanjau, 2013).

Kenya's Vision 2030 blueprint for development was formed to ensure that learners at all levels acquire competencies to meet the human resource aspirations (Republic of Kenya, 2012). This made the Basic Education Curriculum Framework (BECF) to adopt the Competency Based Curriculum (KICD, 2017; RoK, 2017a). The Framework provides opportunities for schools to empower parents to contribute to the basic their children's learning outcomes (UNESCO, 2017). Sessional Paper No. 1 of 2019 on a Policy Framework for Reforming Education and Training for Sustainable Development in Kenya support parental engagement in the learning of their children and this parental engagement is a critical component in the implementation of competency-based curriculum (RoK, 2019). The desired core competencies to be developed so that all Kenyans can thrive in the 21st century are citizenship, communication and collaboration, creativity and imagination, critical thinking and problem solving, digital literacy, learning to learn and self-efficacy (RoK, 2017).

In Kisii County, due to low quality preschool education which is associated to a lack of adequate skills related to reading and numeracy and some other children went to class one without necessary going through preschool education, the percentage of class three pupils who could read and do class one numeracy levels sums were 68.7% while class three pupils who could read a Kiswahili paragraph were 59.2% and 61.4% in 2011and 2012 respectively, the class pupils who could read a paragraph were 53.5% and 51.5% in 2011 and 2012 respectively and, lastly, class three who could do subtraction were 73.1% and 54.9% in 2011 and 2012 respectively (Uwezo, 2012). Still in Kisii County, class three pupils in the rural who could do class two work were 27. 4%, while class three pupils who could do class two work in the urban were 29.2% and it was only 64.2% of pupils aged between 6 and 16 years who were able to do every day mathematics (Uwezo, 2016). These results have remained stagnant over the years, and this sixth round is no different. This raises concern on the quality of pre-primary education offered in Kisii County.

2 Literature Review

Children need a physical setting both indoors and outdoors where they can play, explore, and learn safely. The learning environment needs to include developmentally appropriate materials and arranged to promote exploration based on children's different stages of development (Workman & Ullrich, 2017). A high-functioning operating environment is an essential element of a quality early childhood programme. Cate, Diefendorf, McCullough, Peters, & Whaley (2010) did a project of a compilation of selected resources in 2009 in North Carolina. The available resources and indicators of high quality inclusive practices were presented sources of data for this compilation. The project found that there are several areas of focus and many elements that contribute to program quality, including the organization of physical space, appropriate and adequate supply of materials, teacher qualifications, programming variables, instructional strategies, collaboration among team members and families, as well as individualization and adaptations within daily routines. Unlike Cate et al (2010) project was based on document analysis the present study collected data from a sample questionnaires, teacher interview schedules, document analyses.

Yacan, (2014) study in Turkey focused of the element of daylight in preschools and its social and cognitive effects on pre-schoolers. Participants were 69 children (30 boys and 39 girls), aged from four to five, who enrolled in two different early childhood facilities in Van in Turkey. Results revealed that there was a crucial correlation between preschool students' social behaviour and cognitive skills and daylight in preschool classrooms. The results showed that there was a significant correlation between students' social behaviours and preschools' classrooms daylight conditions. Furthermore, students' cognitive skills were also crucially correlated with classrooms' daylight conditions in preschools. The study differs with the current one because it collected data on elements of daylight only while the current study was based on implementation of infrastructure facilities policy. The study in 2014 in Akaki Kality Sub City of Addis Ababa ultimate purpose was to advance knowledge on the sector and convey this understanding to

practitioners and policy makers in order to take timely corrective measures. The study was guided by interpretivist paradigm employing qualitative research approach. Study included preschool teachers, principals, experts, and parents who were interviewed. The schools settings were observed and relevant documents analysed. The study found that Classrooms were furnished with child sized chairs and tables. The walls and ceilings of the rooms were decorated with letters, words, and numbers but the rooms were not standard sized for classroom purposes as they were built for other purposes. The study differs with the current one because it was guided by interpretive paradigm employing qualitative research approach hence it lacked quantitative findings which this study brought on board.

The Rwanda Education Quality Standards of 2008 issued by Ministry of Education (MINEDUC) sets out the quality standards in promoting improvements to education. It highlights issues of organization, teaching and learning, schools infrastructure, school equipment, curriculum, evaluation, school governance, certification and values. This document is entitled the child friendly schools infrastructure standards and guidelines. The standards adopted four clauses relevant to infrastructure and equipment from the (Rwanda Education Quality Standards 2008). The document offers clarification and guidelines on how to achieve the standards. The four standards include Standard on appropriate, sufficient and secure buildings"; Standard on healthy, clean, secure and learner protecting environment."; Standard on child-friendly, barrier free environment which promotes inclusive access and equal rights of every child" and Standard on adequate and appropriate equipment that support the level of education. In Monduli district in Arusha region Tanzania Enos & Francis (2016) did a study focused on exploring issues in the provision of pre-primary education. The study used both qualitative and quantitative approaches in data collection and analysis. Data were collected from the participants through interviews, questionnaire and documentary review. The findings from the study showed that Head Teachers faced multiple challenges in managing pre-primary education, including shortage of classrooms, shortage of qualified teachers and lack of teaching and learning materials. The study concluded that only few schools in Monduli district provided pre-primary education due to some challenges including inadequate classrooms, inadequate teaching and learning materials, absence of qualified teachers, long distance from schools to home and readiness of parents to enrol students. Although the reviewed study was conducted amongst pre-primary schools it differs with the current study in that it was more focused on challenges provision of pre-primary education.

Study conducted in public ECDE centres in West Pokot North rift region of Kenya by Chepkonga (2017) aimed at investigating the influence of learning facilities on provision of quality education. The study used mixed method research methodology. The respondents consisted of ECDE officers, head teachers and teachers. The date was collected using questionnaire, checklists and interview guide. Data was analysed using descriptive and inferential statistics. The research found out that there was significant relationship between learning facilities and provision of quality ECDE in West Pokot County. Majority of public ECDE centres were found not to have enough classes, desks, water, kitchen stores among other facilities. The lack of adequate learning facilities influenced negatively provision of quality education. Although, Chepnga's study was a mixed design the study differs with the current one because it was investigating the influence of learning facilities while the current study is evaluating the implementation of ECDE policy.

Shinali, Githui, and Thinguri, (2014) study looked at the assessment of the Early Childhood Development capitation grant on ECDE centres in Narok south Sub County. Descriptive survey design was used. Qualitative and quantitative techniques were used. The instruments used were questionnaires, observation checklist and structured interview. Purposive sampling was used in the selection of the population where 50 respondents from 20 ECDE centres were selected for the study. The researcher established that the ECD capitation grant has led to an increase in the enrolment of learners in ECDE centres, there was adequacy of the teaching and learning materials and this in turn has enhanced learning. The study differs with the current one because it was descriptive survey design while the current study is mixed method design. Kweyu (2008) established that there is an increasing requirement for outdoor recreational activities, particularly in urban centres where life has happened to be increasingly sedentary, therefore necessitating the need for outdoor activities to enhance pupils' physical activity performance levels. Ngecha, (2011) argues that despite an increase in the number of pre-school centres in Kenya, little has been done to initiate a rich outdoor environment in many centres. In addition, majority of pre-school teachers rarely participated in children's play, let alone guiding play activities. This scenario calls for a study to be carried in Kisii Central Sub-County to assess the ECDE Policy implementation.

Wanjau, (2013) study in Mirangine District, Nyandarua County study was to investigate influence of immediate environment on implementation of the curriculum in public preschools. Further the research investigated the role of infrastructure in the curriculum implementation. The study methodology was survey design with a sample of twenty parents and twenty teachers' respondents through cluster and simple random sampling technique. The study instruments were written questionnaires for teacher respondents, interview schedule for parent respondents and observational schedule. It was also established that number of toilets in preschools were inadequate and need to be increased wanjau study differs with current study because it was based on survey design hence the current study was

based on embedded research design. Mahindu (2011) found out that public pre-schools have many children learning indoors without playful experiences outdoors because some of the pre-schools are located in residential plots and rooms turned into classrooms hence children stay indoors most hours of school day. Mahindu also found that many pre-schools do not have play items for their pupils. In addition, in case pupils are playing or learning outside, they are left to play and learn on their own without teachers' supervision and guidance. Due to this circumstance, we need to be concerned about the provision of quality environment to pre-school children in Kisii Central Sub-County as per policy provisions.

Monda (2012) who did a study in Borabu Sub-county among pre-school pupils sought to find the provision of teaching and learning resources. The study was based on general provision of resources in ECDE centres indoors but the current study was concerned with the outdoor environment and its implication on pupils' physical activity level and learning. In addition, Borabu Sub-County Education School Assessment Report (2013) found that 31 public schools perform poorly in classroom interactions with teachers. In essence the study was based on provision of teaching and learning resources while the current study is on evaluating the pre-primary policy on infrastructure. Ayaga's 2016 study examined the implication of outdoor environment on children's physical activity performance levels and learning in public pre-schools in Borabu Sub-County. The target population was 50 public pre-schools, 50 primary school head teachers, 50 pre-school lead teachers, and 1603 final pre-school class pupils in Borabu Sub-county. The study employed cluster, purposive, and simple random sampling designs. The study comprised of 44 pre-schools, 44 primary school head teachers, 44 pre-school lead teachers, and 309 final pre-school class pupils. Data collection instruments used was questionnaires, an interview schedule, document analyses and observation. The study found that; the general state of outdoor environment component was unsatisfactory; there was a relatively weak relationship between availability, adequacy, effectiveness, and location of various components of outdoor environment in ECDE centres, and the ability of pre-school children's ability to performing various loco-motor activities and rhythmic movement activities. Ayaga's study was only based on implication of the outdoor environment. The current study was based on the implementation of the ECDE policy.

2.1 The Present Study

The study examined the relationship between pre-primary centres' implementation of the Policy Guidelines on the provision of infrastructural facilities and the acquisition of basic competencies among pre-primary learners in Kenya.

3 Methods

3.1 Research Design

The study was based on embedded research design. In embedded research design, a small amount of either qualitative data or quantitative data are included within a larger qualitative or quantitative study. The current research included open-ended questions in an interview to collect qualitative data while a larger quantitative data was collected using questionnaires. According to Creswell and Plano (2007) there are three ways in which mixing can happen. Data can be merged or converged, two data sets can be connected or two data sets can be embedded into each other. In embedded research design one data set has supportive role to another and it is considered that the single data set itself is not adequate (Creswell and Plano Clark 2007). In this study qualitative data was embedded in quantitative data which play more important role.

3.2 Study participants

The current study employed saturated and simple random sampling technique. Saturated sampling technique was used to sample out 37 primary head teachers since they were the only ones in charge of the administration of the ECDE Programmes in the two divisions for interview schedule of Kisii Central Sub-County. The researcher involved 2 Quality Assurance Officers and 1 Sub-County Director ECDE. Mason (2010) recommends that for interviews you may sample 10 to 50 respondents. According to Mason (2010), it is more likely PhD students using qualitative interviews stopped sampling when the number of samples is a multiple of ten rather than when saturation has occurred with 25-30 being a typical recommendation. In saturated sampling is a non-sampling technique in which all (100%) members of the target population are selected because they are too few to make a sample out of them (Borg & Gall, 2007). The study also employed saturation technique to select the whole of 111 preschool teachers representing 100% of the study population.

3.3 Research Instruments

The research instruments consisted of questionnaire, interview schedules. The teacher's questionnaire; the Head teachers, Sub-County Director ECDE, and the Quality Assurance Standards Officer interview schedules. The questionnaires was constructed based on the study objectives and the questions. The questionnaire consisted of background and four parts. The background information included ECD Centre Number, Type of pre-School, Year of Establishment, Registration Status, Enrolment and number of teachers. Part A consist collection of data on Learning Structure (Building, Toilets, Furniture, Physical/Psychomotor Materials/Equipment, and Playground). Part B included information on Suitability of Registered Providers, Pre-primary teachers and Other Staff Members; Part C was about Health and Nutrition, Centre Feeding Program and Safety Guidelines. Part D covered information on Teacher Child Ratio. This included a likert scale where 1= (Strongly Disagree) 2 = (Disagree) 3= (Undecided) 4 = (Agree) and 5 = (Strongly Agree). This study preferred to use interview schedule because an interview schedule provides a free environment for the respondents to express themselves and even give rise to additional information, which could not be catered for in the questionnaires.

3.4 Procedure

Before the collection of any data from the sample, an authorization letter was sought from the Director of Post Graduate Studies of Jaramogi Oginga Odinga University of Science and Technology. The letter enabled the researcher to acquire a research permit from the National Commission for Science, Technology and Innovation. This permit enabled the researcher to get permission from the County Commissioner and the Director of Education Kisii County and Kisii Central Sub-County Education Officer to carry out the study in the in the pre-schools. Respondents was informed on the importance of the study and was assured verbally of confidential treatment of information provided. Letters notifying various institutions and persons whom the intended study target was dispatched two weeks before the researcher visit the respondents. For effective administration of head teachers' questionnaires, personal visit was made, by giving them relevant instructions on how to fill in the questionnaires. The questionnaire were then collected on the very day it is administered this ensured that they are not lost. During the period of administration questionnaires to the head teachers the very particular day would be used for interviewing ECDE teachers.

3.5 Data analysis

Data was analyzed both quantitatively and qualitatively. Quantitative Data from questionnaires was analysed using inferential statistics by the help of SPSS version 22. Inferential statistics consists of procedures used to make inferences about the population characteristics from information contained in the sample. Qualitative Data was analyzed by the principles of thematic analysis as proposed by Braun and Clarke, (2006). According to Braun and Clarke (2006) thematic analysis is a method for identifying and analysing patterns (themes) contained by data. It simply organizes and describes data set in details. Furthermore, thematic analysis interprets various aspects of research. Thematic analysis was appropriate for this study because it is not grounded in any theoretical framework and can hence be applied across a broad range of qualitative approaches, making it flexible. The study adapted all the phases of thematic analysis.

4 Results

4.1 Relationship between Infrastructural Facilities in ECD centres and Acquisition of Basic Core Competencies among ECD learners

The study investigated the relationship between infrastructural facilities in ECD centres and acquisition of basic core competencies among ECD learners. The investigation was done using Pearson Product Moment Correlation analysis to establish the magnitude and direction of the relationships between the individual aspects of infrastructural facilities in ECD centres and acquisition of core basic competencies among the learners. Accordingly, the means of each aspect of infrastructural facilities were correlated with the level of acquisition of core basic competencies among ECD learners. The significance value was set at 0.05, implying that a p-value less than 0.05 would lead to conclusion that there is statistically significant relationship between the variables, while p-value greater than 0.05 would lead to conclusion that the correlation is not statistically significant. The correlation results are summarized in Table 4.16.

Table 1 Correlation of infrastructural facilities and Acquisition of Basic Core Competencies

Aspect of infrastructural facilities	**N**	***r***	***p-value***
Status of Learning Structures/Buildings	93	0.259	0.012
Status of Toilets in ECD Centres	93	0 .223	0.032
Status of the Furniture in ECD Centres	93	0.337	0.001
Status of the Physical/Psychomotor Materials/Equipment in ECD Centres	93	0.437	0.000
Status of Playground in ECD Centres	93	0.504	0.000
Overall rating of Infrastructural Facilities	93	0.569	0.000

Source: Survey Data (2023).

It is evident that although the five aspects of infrastructural facilities exhibited positive correlation with acquisition of basic core competencies, the magnitude of correlations varied though with all of them being statistically significant. It emerged that Status of Playground in ECD Centres recorded the strongest correlations at r=.504, followed by the Status of the Physical/Psychomotor Materials/Equipment in ECD Centres at r=.437. Both of them had statistically significant relationship with acquisition of basic core competencies at p=.000. On the other hand, status of toilets in ECD centres (r=.223, p=.032) and status of learning structures/buildings (r=.259, p=.012) which also had statistically significant positive correlation with acquisition of core basic competencies had the lowest correlation coefficients. Likewise, the results of the study established that the status of furniture in ECD Centres also has statistically significant correlation (r=.337; p=.001) with acquisition of core basic competencies among the learners in ECD centres. In agreement, Cate, et al., (2010) found that there are several areas of focus and many elements that contribute to program quality, including the organization of physical space, appropriate and adequate supply of materials, teacher qualifications, programming variables, instructional strategies, collaboration among team members and families, as well as individualization and adaptations within daily routines.

Finally, the finding of the study established those overall combined infrastructural facilities had statistically significant positive, but moderate correlation *(r*=.569, *p*=.000) with acquisition of core basic competencies among the learners in ECD centres. Thus, an improvement in infrastructural facilities is likely to improve the level of acquisition of core basic competencies among the learners in ECD centres and vice versa. The findings of the study are consistent with those of Chepkonga (2017) which established that there was significant relationship between learning facilities and provision of quality ECDE in West Pokot County. The lack of adequate learning facilities was found to influence negatively provision of quality education. Similarly, Yacan, (2014) study in Turkey showed that there was a significant correlation between students' social behaviours and preschools' classrooms daylight conditions. Furthermore, students' cognitive skills were also crucially correlated with classrooms' daylight conditions in preschools. The study differs with the current one because it collected data on elements of daylight only while the current study was based on implementation of infrastructure facilities policy.

In order to establish the influence of infrastructural facilities on acquisition of core basic competencies among the learners in ECD centres, the research data was further subjected to multiple regression analysis as in Table 4.17.

4.2 The Influence of Infrastructural Facilities on Acquisition of Core Basic Competencies among the Learners in ECD Centres

$H_0$1: Provision of infrastructural facilities has no influence on acquisition of basic competencies among learners in ECD centres.

To establish the influence of infrastructural facilities on acquisition of basic competencies among learners in ECD centres, the null hypothesis that "provision of infrastructural facilities has no influence on acquisition of basic competencies among learners in ECD centres" was tested. Infrastructural facilities was measured using five aspects, namely: Status of Learning Structures/Buildings, Status of Toilets in ECD Centres, Status of the Furniture in ECD Centres, Status of the Physical/Psychomotor Materials/Equipment in ECD Centres and Status of Playground in ECD Centres. Mean response across a set of Likert-type scale responses in each item was computed to create an approximately continuous variable within an open interval of 1 to 5, as determined to be suitable for the use of parametric data by Johnson and Creech (1983), Carifio and Perla (2008) and Sullivan and Artino (2013) among others. High scale rating was interpreted to imply a corresponding high provision of infrastructural facilities that would positively influence acquisition of basic competencies.

The study adopted multiple regression analysis with the investigated null hypothesis being H_0: $\beta_1=\beta_2=\beta_3=\beta_4=\beta_5=0$ and the corresponding alternative hypothesis being H_1: at least one $\beta_i \neq 0$. If the null hypothesis is true, then from $E(Y) = \beta_0 + \beta_{i=1-5} X_{i=1-5}$ the population mean of Y is β_i for every X_i value which indicates that X (Provision of Infrastructural Facilities) has no influence on Y (Acquisition of Core Basic Competencies in ECD centres) and the alternative being that X (Provision of Infrastructural Facilities) influences Y (Acquisition of Core Basic Competencies in ECD centres). The priori significance level was set at 0.05, such that if the p-value was less than 0.05 then the null hypothesis would be rejected and a conclusion reached that a significant difference exists. On the other hand, if the p-value was greater than 0.05, then it would be concluded that a significant difference does not exist. Table 17 shows the results of the regression model summary.

Table 2 Regression Model on Infrastructural Facilities on Acquisition of Core Basic Competencies

Variable	B	SE	Beta	T	Sig.	95% CI	Part corr.
Constant	0.764	0.549		1.392	0.167	(-.292, 1.862)	
Status of Learning Structures/Buildings	0.361	0.323	0.374	1.117	0.267	(-0.282, 992	0.096
Status of Toilets in ECD Centres	0.054	0.106	0.072	0.513	0.609	(.009, 323)	0.036
Status of the Furniture in ECD Centres	0.108	0.048	0.117	2.250	0.014	(.061, 196)	0.101
Status of the Physical/Psychomotor Materials/Equipment in ECD Centres	0.454	0.160	0.472	2.832	0.006	.376, .512;	0.385
Status of Playground in ECD Centres	0.488	0.155	0.493	3.148	0.001	.277, .699	0.443

R=.584, Adjusted R^2=.304, F(5, 87)= 9.029, p=.000

$$Y = \alpha + \beta X_1 + \beta X_2 + \beta X_3 + \beta X_4 + \beta X_5 + \mathcal{E},$$

where

Y= Acquisition of Core Competencies; X_{1-5} = Five Aspects of Infrastructural Facilities and ε is the error term. ;

$$Y = .764 + 0.361X_1 + 0.054X_2 + 0.108X_3 + 0.454X_4 + 0.488X_5 + \varepsilon.$$

The model reveals that Infrastructural Facilities, as measured by the five sub-scales, accounted for 30.4% (Adjusted R^2=.304) of the variation in acquisition of core basic competencies among the learners in ECD centres. This reveals that about 30% of variation in the acquisition of core basic competencies among learners in ECD centres is explained by the composite change of the five aspects of infrastructural facilities. Furthermore, the five aspects of infrastructural facilities exhibited a fairly high degree of joint correlation (R=.584) with acquisition of core basic competencies among learners in ECD centres. It is also evident in the ANOVA output results that Infrastructural Facilities, as measured by the five aspects, is indeed a significant predictor of acquisition of core basic competencies among learners in ECD centres, F (5, 87)=9.029, p=.000. The fairly low value of F suggests that the variability within each of the variables was generally smaller than variation between the variables, implying that the difference in acquisition of core basic competencies among learners in ECD centres is not by chance but as a result of difference in Infrastructural Facilities within the ECD centres. Consequently, the knowledge on the level of each aspect of Infrastructural Facilities in ECD centres can be used to significantly predict the level of acquisition of core basic competencies among learners therein.

The analysis further reveals that the five aspects of infrastructural facilities had varying influence on the acquisition of core basic competencies among the learners in the ECD centres. For instance, whereas three of the aspects had significant positive un-standardized coefficients, some other two had insignificant un-standardized coefficients. For example, Status of the Furniture in ECD Centres had a un-standardized coefficient value of 0.108 within a 95% C.I *(.061, 196)*; status of the physical/psycho-motor materials/equipment in ECD centres had a un-standardized coefficient value of 0.454 within a 95% C.I (.376, .512) and Status of Playground in ECD Centres with coefficient value of .488 at 95% CI (.277, 699) which were all significant. On the other hand, the coefficients values for Status of Learning Structures/Buildings (B=-0.361; t=-0.117, p=0.267) and Status of Toilets in ECD Centres (B=0.054; t=0.513, p=0.609) were insignificant. In agreement, Enos and Francis (2016) showed that Head Teachers faced multiple challenges in managing pre-primary education, including shortage of classrooms, shortage of qualified teachers and lack of teaching and learning materials. The study concluded that only few schools in Monduli district provided pre-primary education

due to some challenges including inadequate classrooms, inadequate teaching and learning materials, absence of qualified teachers, long distance from schools to home and readiness of parents to enrol students.

However, given that the three of the aspects had significant un-standardized co-efficient values, there is a sufficient evidence to reject the null hypothesis (H_0: $\beta_1=\beta_2=\beta_3=\beta_4=\beta_5=0$). Therefore, the alternative hypothesis was supported with the conclusion that provision of infrastructural facilities has statistically significant influence on acquisition of core basic competencies among learners in ECD centres. Further exploration of multiple regression results, reveal that status of playground in ECD Centres had the greatest influence on learners' acquisition of core basic competencies in ECD centres. A unit improvement in status of playground in ECD centres would result in improvement in learners' acquisition of core basic competencies by .488 units, when other factors are held constant. On the same note, when the status of playground in ECD centres improves by one standard deviation, the level of learners' acquisition of core basic competencies would improve by .493 standard deviations. The second aspect of infrastructural facilities in terms of influence was Status of the Physical/Psycho-motor Materials/Equipment in ECD Centres which had an un-standardized coefficient value of .454, implying that for one unit improvement in this aspect, there is a corresponding improvement in the level of learners' acquisition of core basic competencies by .454 units, when other factors are held constant. Similarly, one unit improvement in status of the furniture in ECD centres results in a corresponding improvement in the level of learners' acquisition of core basic competencies by.108 units. On the flip flop, the effects of both status of learning structures/buildings and status of toilets in ECD Centres were not statistically significant ($p>.05$) in the regression model. Moreover, Chepkonga (2017) found out that there was significant relationship between learning facilities and provision of quality ECDE in West Pokot County. Majority of public ECDE centres were found not to have enough classes, desks, water, kitchen stores among other facilities. The lack of adequate learning facilities influenced negatively provision of quality education.

Equally important is the part correlation coefficients, which indicate the contribution of each aspect of infrastructural facilities to the total R squared. For example, the results show that status of playground in ECD Centres had a part correlation coefficient of .443, Status of the Physical/Psycho-motor Materials/Equipment in ECD Centres of .385 and status of toilets in ECD centres of .036. Squaring these values depict how much of the total variance in the level of acquisition of core basic competencies is uniquely explained by each variable and how much *R* squared would drop if it were not included in the model. In agreement, Shinali, Githui, and Thinguri, (2014) study established that the ECD capitation grant has led to an increase in the enrolment of learners in ECDE centres, there was adequacy of the teaching and learning materials and this in turn has enhanced learning. The study differs with the current one because it was descriptive survey design while the current study is mixed method design. Kweyu (2008) established that there is an increasing requirement for outdoor recreational activities, particularly in urban centres where life has happened to be increasingly sedentary, therefore necessitating the need for outdoor activities to enhance pupils' physical activity performance levels. Ngecha, (2011) argues that despite an increase in the number of pre-school centres in Kenya, little has been done to initiate a rich outdoor environment in many centres. In addition, majority of pre-school teachers rarely participated in children's play, let alone guiding play activities. This scenario calls for a study to be carried in Kisii Central Sub-County to assess the ECDE Policy implementation.

Thus, status of playground in ECD centres which had the greatest contribution to the model uniquely explains 19.6% of the variance in acquisition of core basic competencies among learners in ECD centres and status of the physical/psycho-motor materials/equipment in ECD Centres uniquely explains 14.8% of variance. However, both status of learning structures/buildings and status of toilets in ECD Centres each only accounted for a negligible amount (<1%) of the variance in the acquisition of core basic competencies among the ECD learners. It is worth mentioning that total *R Sq*uared value for the model (0.304 or 30.4 % explained variance) was not equal to the sum total of all the squared part correlation values because of the fact that overlaps or shared variance were removed. Nonetheless, it was concluded that infrastructural facilities in regression model was adequate in predicting acquisition of core basic competencies of learners in ECD centres. The model was statistically significant at F (5, 87) = 9.029, $p=.000$, accounting for 30.4% (Adjusted R^2=.304) of the variation in the level of acquisition of core basic competencies among the learners in ECD centres within Kisii Central Sub-County. Wanjau, (2013) study established that number of toilets in preschools were inadequate and need to be increased wanjau study differs with current study because it was based on survey design hence the current study was based on embedded research design.

This shows that playgrounds were only adequate in less than half of the ECD centres within the sub-county. Similarly, during the interview with the head teachers, one of them had this to say;

The playground in our ECD centre is not adequate for all our children. Moreover, we modern equipment for outdoor activities designed for child development. However, our children are able to take part in regular activities based on improvisation of what is available within our environment. [Interview: Head-Teacher 3, 26th May, 2021]

Equally, it emerged that the available playgrounds were not well maintained (Mean = 2.5; SD=1.1).

This shows that majority (61.3%) of the ECD centres had children suitable chairs while a few (35.5%) did not have such chairs. Similarly, in one of the interview with the head teachers, one of them had this to say;

Most of our learners fin difficulty in learning due to inadequate suitable and comfortable chairs or furniture. So most of the children share their chairs which is against the recommendations of the national policy guidelines for preschools. We therefore encourage the education stakeholders to assist us with finance for us to fill this gap [Interview: Head-Teacher 4, 22nd May, 2021]

In the same vein, the general condition of the furniture were found not to be good. On average, the participants disagreed with the statement that furniture was in good condition (Mean = 2.7; SD = 1.2). In agreement, Mahindu (2011) found out that public pre-schools have many children learning indoors without playful experiences outdoors because some of the pre-schools are located in residential plots and rooms turned into classrooms hence children stay indoors most hours of school day. Mahindu also found that many pre-schools do not have play items for their pupils. In addition, in case pupils are playing or learning outside, they are left to play and learn on their own without teachers' supervision and guidance. Moreover, Monda (2012) found that; the general state of outdoor environment component was unsatisfactory; there was a relatively weak relationship between availability, adequacy, effectiveness, and location of various components of outdoor environment in ECDE centres, and the ability of pre-school children's ability to performing various loco-motor activities and rhythmic movement activities.

5 Conclusion and Recommendation

The study examined the relationship between pre-primary centres' implementation of the Policy Guidelines on the provision of infrastructural facilities and the acquisition of basic competencies among pre-primary learners in Kenya. The study concludes that Status of Playground in ECD Centres recorded the strongest correlations, followed by the Status of the Physical/Psychomotor Materials/Equipment in ECD Centres. Moreover, about 30% of variation in the acquisition of core basic competencies among learners in ECD centres is explained by the composite change of the five aspects of infrastructural facilities. The Ministry of Education in collaboration with the parents and other education stakeholders should ensure that ECDE infrastructural facilities, including spacious and well-tendered classrooms, playground, toilets, and furniture are available in adequate amount and also in good condition.

Compliance with ethical standards

Disclosure of conflict of interest

There is no conflict of interest.

Statement of ethical approval

Before the collection of any data from the sample, an authorization letter was sought from the Director of Post Graduate Studies of Jaramogi Oginga Odinga University of Science and Technology. The letter enabled the researcher to acquire a research permit from the National Commission for Science, Technology and Innovation.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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