# Teacher Factors in the Management of Early Childhood Development and Education for Quality Education in Kenya.

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**Abstract**

*Appropriate Early Childhood Development and Education (ECDE) programmes as well as quality outcomes are directly correlated with better educated and trained teachers. In Kenya, the management of ECDE programe has been devolved to the 47 counties across the country since 2013. However, limited information is available with regard to teachers' professional qualifications and staffing levels in public preschools. The purpose of this study therefore, was to investigate the status of quality of ECDE teaching and learning in public pre-schools in four Counties in Kenya. The study was guided by Hawe's and Stephen's (1990) Theory of Goals, Context and Agency which stipulates that quality is interpreted under the lenses of efficiency in meeting set goals; relevance to human and environmental needs and conditions; and pursuit of excellence and human betterment. Census method was used to select 12 officials from the four counties and 27 sub county administrators. Document analysis was used for collecting data on teachers' professional qualifications and teacher to learner ratios. Thematic analysis was used to analyse qualitative data. Although the findings revealed that the counties did not have properly kept ECDE records, the concerned teachers in the public preschools had good level of training. The study also revealed that the quality of education at this level was compromised by high teacher to learner ratio. It was recommended that the counties employ more teachers so as to improve the teacher to learner ratio to desired international standards. Additionally, the study recommends that further research be done on strategies to improve record keeping with regard to ECDE activities in public pre-schools.*

***Key Words*: *County Governments; ECDE; Public preschools; Teacher qualifications*; *Teacher to learner ratio***

## 1. Introduction

Children develop and learn through their interactions with adults and peers more than in any other environment during early childhood (Naudeau, Kataoka, Valerio, Neuman & Elder, 2011). Evidence points to the importance of adult-child interactions for young children's development and learning (Aga Khan Foundation [AKF, 2010]). Several recent international reports highlight the importance of teachers as key determinants of quality Early Childhood Development and Education (ECDE) (ILO, 2012; Raikes, 2015; UNESCO, 2015). Pre-primary teachers who are well-trained and equipped with the right knowledge, skills, and conditions are more likely to support rich reciprocal interactions and content teaching that positively influence children's socio-emotional development, language development, and cognitive skills. Investment in pre-primary teachers' initial formal education, practical in-service training, and ongoing mentoring and coaching is therefore paramount to achieving quality in ECDE programs (Raikes, 2015; Yoshikawa & Kabay, 2015).

Different contextual underpinnings have been adopted to define Early Childhood Development and Education (ECDE). It has universally been defined as the period from birth (or prenatal) to eight years old (UNESCO, 2010; UNICEF, 2008). It (ECDE) relates to how well a child is tracking in their education over this period. This includes physical health and wellbeing; social competence; emotional maturity; language and cognitive skills, and communication skills and general knowledge (International Labour Organization - ILO, 2012). The importance of ECDE to the global community came out during the convention of the World Conference on Education for All (EFA) that took place in Jomtien, Thailand, in March 1990 (UNICEF, 2008). The conference articulated the significance of the early years as the foundation for life of an individual (UNESCO, 2010). Further, the Dakar Convention of 2000 recognized ECDE as the first Education For All (EFA) goal to be realized by 2015 (UNICEF, 2008). The outcome of the two conventions led to policy formulation to entrench ECDE as a basic human right of the child.

Evidence illustrates that improvements in programme quality and learning outcomes are often correlated with better educated and trained teachers (Engle et al., 2011; Behrman, Engle and Fernald, 2013; Rao et al., 2014). Several studies have also found training to have positive effects on teacher behavior and interactions (Raikes, 2015; Behrman et al., 2013). Teachers with more training and experience are more likely to hold child-centered beliefs and engage in similar pedagogical practices, which can be associated with better learning outcomes for children (Pianta, et al., 2009, in Raikes, 2015). There is evidence from the Organization of Economic Cooperation and Development (OECD) countries that favorable structural characteristics, such as low child-staff ratios, improve both programme quality and child outcomes (Banu, 2014; Thao & Boyd, 2014).

The global average pupil-teacher ratio (PTR) at the pre-primary level has hovered around 20:1 since 1999, though this static figure may actually indicate improvement given the rise in enrollment since 2003 (UNESCO, 2015) when deliberate efforts were made to boost access to basic education. While enrollment at pre-school level is generally lower than those in primary schools, these ratios can vary within regions and countries. The lowest average PTRs are typically found in Central and Eastern Europe and Central Asia while the largest ratios are typical of South and West Asia. In Nepal, for example, one teacher can be in charge of more than 40 children (Education International [EI, 2010]). The number of children per adult can vary within countries due to shortage of personnel in rural areas. In 2008, China had a pupil to full-time qualified teacher ratio in rural areas of 51:1, while the ratio in towns was much lower (about 25- 28 children per teacher) and lower still in larger cities (about 16-19 children) (Sun et al., 2015).

Although Sub-Saharan Africa has a regional average PTR of around 29:1, individual country averages can be much lower, such as in Togo with 17:1, or significantly higher, such as in Nigeria with 37:1 (EI, 2010). Some countries among the Arab States have experienced a decreasing trend. In both Morocco and Oman, for example, the average PTR fell from nearly 40 to less than 20 learners per teacher from 1999 to 2005 (Shehadeh, 2008). In-country differences can also vary between public and private settings. In Ghana, for example, PTRs in private ECDE centers are much lower, around 26:1, than those in public centers, about 34:1 (EI, 2010). A shortage of teachers and subsequent high PTRs not

only can compromise the quality of interactions and the amount of learning taking place, but can also have implications for access, as crowded classrooms may be less able to accommodate additional children.

Information with regard to implementation of ECDE programmes in public preschools by devolved units is limited ever since the management of the same were devolved to the 47 counties in Kenya. Similarly, the professional qualifications of ECDE teachers who have been recruited is not well documented. Thus, it was interesting to compare these variables among counties in Kenya. Section 26 of the Basic Education Act (Republic of Kenya, 2012) states that the roles of the County Government will include the provision of funds required for the development of the necessary infrastructure for institutions of basic education and training used for conducting pre-primary education, childcare facilities, home craft centres and village polytechnics. The scenario in Kenya is that the National Government has been disbursing funds to devolved systems meant to cater for but not limited to education, including ECDE, which has been put under the management of County Governments (Republic of Kenya, 2014). It was therefore important to compare and determine the status of quality teaching among different counties in the country. This study therefore attempted to fill this gap by comparing the status of teacher professional qualifications as well as PTRs in Kisumu, Siaya, Homa Bay, and Migori Counties.

### *1.2 Statement of the Problem*

The constitution of Kenya 2010 bequeaths the management of Early Childhood Education to County Governments. The 47 County Governments are expected to recruit adequate number of teachers with sufficient qualifications commensurate with enrolled learners for enhancement of quality ECDE in public pre-schools. It is about five years since County Governments were established in Kenya, and it is envisaged that the counties have put in place steps to improve the quality of ECDE in their respective areas of jurisdiction. The question is: what have county governments done in the provision of quality ECDE, particularly in terms of teachers' staffing and qualifications? This study therefore investigated the status of quality of ECDE teaching and learning in public pre-schools in the light of teacher factors.

### *1.3 General Objective of the Study*

The general objective of the study was to investigate the status of quality of ECDE teaching and learning in public pre-schools in four Counties in Kenya in the light of teacher factors.

#### *1.3.1 Objectives of the Study*

The objectives of the study were to:

i. Establish relevance of qualifications of ECDE teachers employed by Homa Bay, Kisumu, Migori and Siaya counties from 2010 to 2016.
ii. Determine the level of staffing of ECDE teachers compared to the number of learners enrolled from 2010 to 2016 in Homa Bay, Kisumu, Migori and Siaya Counties.

## 2: Literature Review

### *2.1 Theoretical Underpinnings*

This study was informed by Hawe's and Stephen's (1990) Theory of Goals, Context and Agency. The theory tends to restrict itself to primary education in low income countries and takes an essentially humanist stance on education and development. It holds that quality can be interpreted as having three strands: efficiency in meeting set goals; relevance to human and environmental needs and conditions. The envisaged relevance is to do with the context, the present and future needs of learners and relevance to humanity. The latter covers the notion that education has social as well as personal benefits for the individual compared to the national economic benefits (Hawe's & Stephen's, 1990).

The goals of quality education include promoting human development and survival while the principles of practice are learner-based, experience-based, resource-based and sequenced. These are placed at the hub of the wheel, surrounded by conditions for successful implementation and an outer circle of agents of implementation (e.g. teachers and administrators) as shown in Figure 1. Hence, Hawe's & Stephen's (1990) privilege the value-basis of education as a measure for assessing quality. Enabling context and the agency of educational stakeholders are identified as key inputs, necessary for quality education. In more recent work, scholars have highlighted the context-dependency of educational practices by emphasizing the role of culture (Stephen's, 2007).

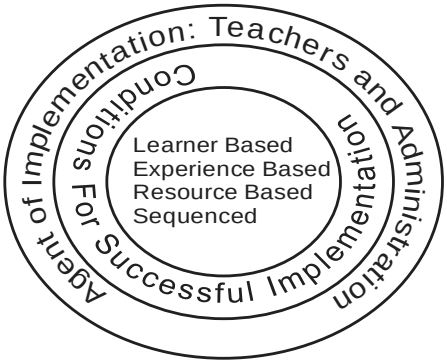


Figure 1: Hawe's and Stephen's (1990) Theory of Goals, Context and Agency wheel.

The theory of goals, context, and agency was considered relevant in this study because quality of ECDE teacher training is embedded upon set goals (to impart appropriate skills, among others) to a trainee. For this to be attained, contextual issues like pedagogy and infrastructure must be appropriately used to enhance positive outcomes in learners. Additionally, there must be an agency (trainer) whose responsibility is to utilize the available resources for the attainment of the set goals. Thus, teachers and the management of ECDE centers must be adequately prepared with the requisite skills to ensure that quality of ECDE teacher is achieved.

***2.2: Teacher qualifications***

Globally, many governments have struggled to come up with standardized qualifications for teachers, although attainment of the set threshold seems to be a nightmare. For example, the Chinese government mandated all kindergarten teachers to at least hold an associate degree. As per 2012 statistics from the Ministry of Education Official Website, 47% of teachers held associate bachelor degrees while 43% of teachers had high school education or below (Sun et al., 2015). In Indonesia, Jung and Hasan (2014) noted that ECCE institutions were usually staffed by volunteer teachers with little or no training since very few institutions provided training for early childhood teachers. But in even in cases where there were adequate training institutions, the transfer of knowledge into the classroom was unclear and there was lack of quality assurance systems.

Pre-primary teacher beliefs and actual pedagogical practices are two critical dimensions to ensuring quality learning environments for young children. Rao, et al (2014) observed that teacher beliefs and perspectives about children's development and quality learning environments can influence the organization and practices in an early childhood setting and affect quality and learning outcomes among pupils. Available studies in both developing and developed countries underscore the importance of teachers' curriculum knowledge and ability to translate their understanding of child development to form warm, responsive, and enduring relationships (Gialamas et al., 2013; Naudeau et al., 2011). In the US, Pianta, et al., (2005, in Raikes, 2015) found that effective teachers hold "child-centered" beliefs that emphasize the child's role in decision-making and de-emphasize obedience and adult control. There is increasing focus

in curricula and training on child-centered approaches, including those fostering children's play as a means to improve quality, and trained teachers have tended to adjust their practices (Banu, 2014; Thao & Boyd, 2014).

In the African region, studies focusing on quality of ECDE seem not to have assessed provision of quality ECDE under the lenses of training, competencies, as well as knowledge and ability. Schneider (2013) explored what two Grade R teachers understand literacy to be and how it is enacted in their classrooms in South Africa. The findings showed that teachers understand literacy in a sophisticated way: literacy is about meaning making and communication. Gina, Chowa, Masa, Ramos, and Ansong (2013) used Youth Save Data in Ghana to obtain a sample of 4,993 youths and 89 schools to investigate how students and school characteristics influence youth academic performance. It was found that student traits, including academic self-efficacy and commitment to school, were positively associated with Math and English scores. Ndani and Kimani (2010) used a sample of 40 centres and 46 ECDE teachers to investigate factors influencing early childhood development teachers' motivation in Thika District, Kenya. Among the key findings was the revelation that the motivation levels of more than 50% of the teachers were low.

Literature across the globe as cited above, paint a picture of the important role teacher training plays in improving quality of education at ECDE level. Teacher training has been found to positively influence teacher personality, interaction, methods of teaching and qualifications.

***2.3: Pupil – Teacher Ratios (PTRs)***

Although quality of teaching itself is made up of various factors such as teacher qualification, teacher training, teacher personality, teaching style etc., the size of the class that the teachers are teaching is also considered important (Dabo, 2015). If the size of the class is small, the learning achievement of students in that class will be better than the students in another class, which has a larger class size (Amjad, 2013). In the case of the smaller class, teachers will be able to give more individual attention to the students, thus accelerating the learning process (Kaloki, 2012).

Uhrain (2016) examined whether class size in secondary school predicted student achievement as measured by teacher-issued end-of-course numerical student grades (TIECNSG). The effect of smaller class sizes on TIECNSG was determined through the use of a linear regression model. For 9 course offerings, an increase in class size resulted in a decrease in TIECNSG, whereas for 8 course offerings, an increase in class size resulted in an increase in TIECNSG. The results of this study, however, were inconclusive, suggesting that other unaccounted confounding variables may have affected student achievement.

In Europe, the most influential studies use the maximum class-size rule. In Sweden, a "one-student" reduction in class size in grades four to six was associated with an increase in test scores in Mathematics and Swedish, at ages 13 and 16, of 0.023−0.033 standard deviations respectively (Chingos, 2012). Similarly, in France, numerous researchers have applied this technique and identified a smaller, positive relationship between smaller classes and student achievement, both in elementary and secondary grades (Raikes, 2015). Two studies in Denmark, using different data sets and statistical techniques, also demonstrate small benefits of reduced class sizes for both test scores and year of schooling (Chingos, 2013).

Behrman, et al (2013) investigated patterns of heterogeneity in the effects of class size on student achievement that showed improvement. They found that students in higher poverty schools and academically gifted students both benefitted from smaller class size. The researchers conjectured that in higher poverty classrooms, there are larger number of interruptions and classroom management issues that can be minimized with smaller class sizes. In academically gifted classrooms, smaller classes can result in more individualized and challenging instruction. In Nigeria, Dabo (2015) sought to trace the effect of teacher-pupil ratio on the teaching-learning process in Bauchi State primary schools. The outcome of the study revealed that primary schools were overcrowded and that this led to less effective teaching- learning activities. Teachers were therefore facing instructional, physical and evaluation problems. Kaloki, et al (2016) assessed the pupil-teacher ratio and its impact on academic performance in public primary schools in Central division of Machakos County, Kenya. The study targeted 78 public primary schools in which a total of 24 schools were sampled for the study. Findings indicated that as PTR increases performance decreases and vice versa. It

also revealed that 10.4% of the performance is due to PTR. The findings of the study revealed that PTR significantly influenced performance of pupils in national examinations.

It is critical to note from the reviewed studies that a significant relationship exist between qualification of ECDE teachers and performance of learners on one hand, and pupil to teacher ratio on the other. However, the reviewed studies did not measure these variables in the context of provision of preschool education by decentralized governments.

## 3 Materials and Methodology

### *3.1 Study Area*

The study covered public pre-schools in Kisumu, Homa Bay, Migori, and Siaya Counties. The selected areas were found to be relevant in the sense that they exhibit both urban and rural features, and shared similar social and economic circumstances. Additionally, each county has an area covered by Lake Victoria with inhabitants who engage in fishing activities. Kisumu County occupies a total area of 2, 085.9 $km^2$ and a water mass of 567 $km^2$. The county has a total arable land of 1, 342 $km^2$ and non arable land of 209 $km^2$. The population of the county is 1,145,749 people. It lies within longitudes 33° 20'E and 35° 20'E and latitudes 0° 20'South and 0° 50'South. Homa Bay County, on the other hand, covers an area of 3,183.3 sq km with a population of 1,177,181 people. It lies between latitude $0^o$15' South and $0^o$52' South, and between longitudes $34^o$ East and $35^o$ East. The county covers an area of 4,267.1 $Km^2$.

Migori County has a population size of 1,006,499. The county covers an area of 2,597 KM square. Migori County borders Homa Bay to the South, Republic of Tanzania to the South and South West, Kisii to the North East, Narok to the East and North East and Lake Victoria to the West. It lies between latitude $0^o$16' South and $0^o$54' South, and between longitudes $35^o$ East and $37^o$ East. Siaya County occupies 2,530.5 $Km^2$ with a population size of 964,390 people. It is bordered by Busia County to the North West, Vihiga and Kakamega counties to the North East, Kisumu County to the South East and Homa Bay County across the Winam Gulf to the South. The water surface area forms part of Lake Victoria (the third largest fresh water lake in the world). It approximately lies between latitude $0^o$ 26´ South to $0^o$ 18´ North and longitude $33^o$ 58´ and $34^o$ 33´ East.

### *3.2 Research Methodology*

This study adopted a mixed research design. The target population was thirty nine sub county administrators and three officials from the Governor's office in each of the four counties, totaling to 12 county officials (Kisumu, Homa Bay, Migori, and Siaya). The officials were the county executive member in charge of education, the Chief Officer in the department of education, and the director of ECDE. The study adopted census sampling method. According to Oso and Onen (2011), census sampling method is appropriate for small populations. This entails including in the study all the characters within the population. Thus, all the 27 sub county administrators and 3 county officials from the Governor's office in the 4 counties were selected as respondents. These comprised the County Executive Committee Member, the Chief Officer in education department, and the Director of ECDE.

The researcher developed an open ended questionnaire which was used to collect data from the selected sub county officers and directors of ECDE. Document analysis technique was used to obtain information such as confidential information like ECDE enrolment records, teacher establishment records, records of teacher recruitment and deployment, teacher training levels, and pupils' enrollment records. The process of data collection involved the researcher presenting an introductory letter to sub county offices before approaching the sampled chief officers, sub county administrators, and the Directors of ECDE in each county with the study instruments. Document analysis guide was clearly explained to the respondents before an appointment was made with each officer for data collection.

## 4. Study Findings

### *4.1 ECDE Enrolment*

The study did not get enrolment record for 2013 and 2014 in County 2 (C-2), while County 3(C-3) and County 4 (C-4) had the records for 2013 to 2016. Table 4.1 presents the distribution of ECDE enrolment from 2013 to 2016 in the four counties.

Table 4.1: Distribution of ECDE enrolment between 2013 and 2016

| | **2013** | | **2014** | | **2015** | | **2016** | |
|---|---|---|---|---|---|---|---|---|
| | **M** | **F** | **M** | **F** | **M** | **F** | **M** | **F** |
| C 1 | 0 | 0 | 39,850 | 41,585 | 40,334 | 42,055 | 41,950 | 43,100 |
| C 2 | 0 | 0 | 0 | 0 | 45,911 | 44,340 | 47,929 | 46,520 |
| C 3 | 35,336 | 31,230 | 36,412 | 33,621 | 40,337 | 41,322 | 42,413 | 40,334 |
| C 4 | 25,567 | 25,354 | 28,407 | 28,171 | 31,563 | 31,301 | 35,070 | 34,778 |

Results in Table 4.1 illustrates that there was a steady increase in enrolment of learners in the four counties. In all the four counties, there was an increase of an average of two thousand male and female learners each year up to 2016. The table also shows that two counties; C1 and C2 did not have records of learner enrolment for some years.

### *4.2 Distribution of ECDE Teachers*

The researcher proceeded to assess the trend of ECDE teacher recruitment up to 2016. Table 4.2 presents distribution of ECDE teachers in the four counties.

Table 4.2: Distribution of ECDE Teachers by Counties

| | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | | 2016 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F |
| C 1 | | | | | | | | | | | 25 | 1064 | 25 | 1064 |
| C 2 | | | | | | | | | | | 72 | 1623 | 60 | 1812 |
| C 3 | 3 | 620 | 4 | 630 | 6 | 640 | 5 | 866 | 8 | 907 | 8 | 1272 | 10 | 1272 |
| C 4 | | | | | | | | | | | 110 | 1855 | 121 | 1879 |

Findings in Table 4.2 indicate that only C3 had complete records for 2010 to 2016, while C1; C2; and C4 had records for 2015 and 2016 only. The table also illustrates that the three counties (C2; C3; C4) increased the number of ECDE teachers each year. By end of 2016, C-1 had 1089 ECDE teachers; C-2 had 1872 teachers; C-3 had 1282 teachers for ECDE learners, while C-4 had 2000 ECDE teachers.

The study further compared ECDE enrolment with teachers prior to the period 2013 to obtain the distribution of ECDE learners per teacher. This analysis was only possible in C-3 which had complete ECDE enrolment (Table 1) as well as teachers' (Table 4.2) records for the period ending 2012 and 2016 respectively. Table 4.3 presents the distribution of ECDE learners per teacher between 2010 and 2012 in C-3.

Table 4.3: Ratio of teacher to ECDE learners between 2010 and 2012 in C-3

| Year | No of Learners | No of ECDE teachers | Teacher Pupil Ratio |
|---|---|---|---|
| 2010 | 36,125 | 623 | 1: 58 |
| 2011 | 32,335 | 634 | 1: 51 |
| 2012 | 33413 | 646 | 1: 52 |

Table 4.3 illustrates a high ratio of ECDE learners per teacher between 2010 and 2012 in C-3. For instance, ECDE teacher to learners' ratio was 1:58 in 2010; 1:51 in 2011; and 1:52 in 2012. This shows a large class size in C-3.

In addition, compared with the enrolment records in Table 4.1, the study was able to estimate the average ratio of ECDE learners per teacher in each of the four counties by end of 2016. Table 4.4 presents the distribution of ECDE learners per teacher in the four counties.

Table 4.4: Distribution of ECDE teacher to learners in 2016

| County | Number of Learners | No of ECDE teachers in 2016 | Teacher Pupil Ratio |
|---|---|---|---|
| C-1 | 85,050 | 1089 | 1: 78 |
| C-2 | 94,449 | 1872 | 1: 50 |
| C-3 | 82,747 | 1282 | 1: 64 |
| C-4 | 69,848 | 2000 | 1: 35 |

Table 4.4 shows that teacher to pupil ratio for C-1 was 1:78; C-2 was 1: 50; C-3 was 1: 64; and 1:35 in C-4 in 2016. This implies that class sizes in C-1; C-2, and C-3 were relatively large. The class size in C-4 seemed to be moderate, although this was still not meeting internationally acceptable standards.

The results in tables 4.3 and 4.4 mean that before 2013, there were so many pre-school age going children who did not go to school. They faced barriers to access school at this level. With the coming of County Governments after 2013, so many pre-school age going children who did not go to school in the earlier years went to school as was evidenced by huge increase in enrolment. There was also increase in the number of teachers employed by the Governments. However, the number of teachers employed by the County Governments could not match the increase in learners' enrolment. That explains the huge teacher pupil ratios in table 4.4.

***4.3 Level of Training of Teachers***

The other part of quality teaching that the study sought to assess was the distribution of teachers in terms of teacher training. Table 4.5 presents the distribution of ECDE teachers by levels of training.

Table 4.5: Distribution of ECDE Teachers by Training Level

| | Qualifications | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| C 1 | Untrained | 0 | 0 | 0 | 0 | 0 | 25 | 25 |
| | Certificate | 0 | 0 | 0 | 225 | 0 | 1003 | 1003 |
| | Diploma | 0 | 0 | 0 | 175 | 0 | 0 | 0 |
| | Degree | 0 | 0 | 0 | 0 | 0 | 60 | 60 |
| | **TOTALS** | **0** | **0** | **0** | **398** | **0** | **0** | **1089** |
| C 2 | Untrained | 0 | 0 | 0 | 0 | 0 | 403 | 478 |
| | Certificate | 0 | 0 | 0 | 0 | 0 | | |
| | Diploma | 0 | 0 | 0 | 0 | 0 | | |
| | Degree | 0 | 0 | 0 | 0 | 0 | | |
| | **TOTALS** | **0** | **0** | **0** | **0** | **0** | **1695** | **1872** |
| C 3 | Untrained | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Certificate | 00 | 00 | 00 | 880 | 777 | 932 | 932 |
| | Diploma | 00 | 00 | 00 | 100 | 190 | 300 | 300 |
| | Degree | 00 | 00 | 00 | 00 | 15 | 50 | 50 |
| | **TOTALS** | **00** | **00** | **00** | **980** | **982** | **1282** | **1282** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| C 4 | Untrained | 0 | 0 | 0 | 0 | 0 | 900 | 900 |
| | Certificate | 0 | 0 | 0 | 0 | 0 | 860 | 860 |
| | Diploma | 0 | 0 | 0 | 0 | 0 | 233 | 233 |
| | Degree | 0 | 0 | 0 | 0 | 0 | 7 | 7 |
| | **TOTALS** | **0** | **0** | **0** | **0** | **0** | **2000** | **2000** |

Table 4.5 indicates that there were incomplete records covering training level of ECDE teachers in C-1, C-2, C-3, and C-4. The table also illustrates that C-1 had 60 ECDE teachers with degree level of training and C-4 with 7 teachers with degree level of training. County 3 (C-3) was however leading in the number of ECDE teachers with diploma qualifications (300 teachers), while C-1 had the highest number (1003 teachers) of teachers with certificates by end of 2016. County 4 (C-4) was leading in the number of untrained ECDE teachers (900 teachers) by end of 2016.

The findings imply that ECDE teacher training level among the sampled counties was sufficient. The ratio of ECDE learners to teachers was high. For instance, 50 ECDE learners to one teacher or 44 learners to one teacher is comparatively high taking into consideration the caliber of the learners. According to Atieno (2017), teacher to learner ratio for children below 2 years should be 1:4; for 2-3 years, 1:10; for 3-4 years, 1:15; for 4-5 years, 1:25; for 5-6 years, 1:30, and for 6-8 years. 1:40. It is therefore clear that there was understaffing of ECDE teachers in all of the sampled counties in the year 2016.

According to the theory of goals, context, and agency, environment is crucial to ECE learners in the classroom, and such instruction should be geared to the zone of proximal development that is beyond the learner's actual development level as espoused by Hawe and Stephen (1990). These findings concur with what Atieno (2017) found out: that there is low teacher to learner ratio in a study that was conducted among public ECDE centers in Muhoroni. Understaffing was also found by Murundu, et al (2010) to be affecting implementation of ECDE curriculum in a study that was done in Emuhaya District, Kenya. Quality of teaching among the county governments under study could therefore be impaired due to high low ratio of teachers to learners.

## 5. Conclusions and Recommendations

The study findings revealed that there exists poor management of ECDE programme records in all the four counties. With regard to ECDE enrolment, there was an increase in ECDE enrolment of between 2,018 males and 2,200 females on one hand, and 3,507 males and 3,477 females on the other, from 2010 to 2016. With regard to quality teaching in ECDE, the study concludes that the number of ECDE teachers employed by each county government compared with ECDE enrolment result into high teacher pupils ratio, hence impairing quality of teaching in these schools. However, the teachers had sufficient qualifications to deliver ECDE curricula, with majority of the teachers having certificate level of training while untrained teachers being negligible.

Given that quality ECDE teaching in the four counties is affected by ineffective enforcement of education policies regarding recruitment of teachers, it is recommended that employment of ECDE teachers should correspond with enrolment of learners in public preschools. The Ministry of education should also provide an appropriate ECDE syllabus, and also give appropriate direction with regard to jurisdiction of ECDE centers and the mother primary school. There should be improved record keeping for the ECDE programmes including funds allocation, infrastructure, teachers and pupils' enrolment and teaching/ learning materials.

## 6. Acknowledgement

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