

## **Influence of Teacher-Child Ratio on Reading Achievement among Pre-Primary Children in Wote, Makueni County**

Rose Wandia Kyalo<sup>1\*</sup>, Ouko Hudson<sup>2</sup>

*Department of Early Childhood Studies  
Kenyatta University, Nairobi, Kenya*

---

**Abstract:** Education sector in Kenya continues to face quality crisis with little significant changes in learning outcomes. Uwezo reports that majority of the children in Kenyan pre-primary schools cannot fluently read comprehensions in any of the languages, whether first, second or third. The purpose of this study was to investigate the effect of teacher-child ratio on reading skills achievement among pre-primary school children in Wote, Makueni County. The study employed Social Interactionist Theory exemplified by Vygotsky. The study employed a descriptive research design targeting 110 pre-primary schools in Wote. Simple random sampling was used to select the schools while purposive sampling design was used to select the pre-primary teachers. The study employed 30% to get a sampled of 33 pre-primary schools in Wote Sub-county. Pre-primary schools teachers were represented by 10% of the 66 in each school since the number was quite large for observation. Questionnaires and observation checklist were used to collect data. Data analysis used both descriptive and inferential statistics. The majority of the teachers disagreed that most of the children in class one can correctly read 30 English words per minute. Class to teacher ratio was found to be high with an increasing enrollment rate being witnessed yearly. Teachers complained that despite the increase in enrollment levels, the schools were not increasing the number of teachers. As a result, the majority of teachers (62.9%) believe that the large number of learners per class negatively affects acquisition of reading skills among the pre-primary schools. Head teachers are recommended to increase the number of teachers for pre-primary to ensure that enrollment rates do not overly increase the teacher-learner ratio to address the issue of large classes.

**Key words:** Teacher-child ration, reading achievement, preprimary children

---

Date of Submission: 06-12-2019

Date of acceptance: 23-12-2019

---

### **I. Introduction**

The past 15 years has seen major changes in the education systems in the East African Countries. There has been a significant rise in the net primary enrollment rates over 90% improvement in gender equity. However, despite these achievements, there is a rising concern by stakeholders on the children enrolled in school remain functionally illiterate and innumerate despite completing multiple years of schooling (Malmberg, Mwaura, & Sylva, 2011). Early childhood professionals recognize the importance of language and literacy in preparing children to succeed in school, (IPAR, 2011). Literacy in early childhood enables early learning experiences that are linked to academic achievement, reduced grade retention, higher graduation rates and enhanced periodicity later on in life. However, despite this knowledge, more that 250 million primary school age children around globe cannot read or count according to the Uwezo report (2013). Literacy development starts early in life and is correlated with social achievement, physical, emotional, cognitive and language are interrelated and interdependent. Therefore, the more limited a child's experience with language and literacy, the more he or she has difficulty learning to read.

Pre-primary schools (also nursery school, kindergarten), is an educational establishment that offers early childhood education which effects the smooth transition from home to school and prepares the child for primary level rudiments of numbers, letter, colors, shapes forms and play among others (World Bank, 2011). Reading comprehension plays a critical role in the school curriculum, yet pre-primary and primary classes do not give it the attention it deserves. Currently the major problem facing the teachers is not only the ability of students to read, but also their general lack of interest, indifference and sheer rejection of reading as well as lack or poor comprehension of the materials. The key early predictors of reading and school success include oral language, alphabetic code and print knowledge. To achieve this, well-conceived standards for child outcomes, curriculum content and teacher preparation are required to help establish clarity and shared vision for early literacy (World Bank, 2011).

Teachers of literacy have two primary goals, to help their learners become able readers and help instill in them the desire to read. In the United States, literacy is widespread and the ability to read is evident, however, there is lack of motivation to read, which is a widespread issue and is mostly found in elementary schools where

there is negative attitude towards reading. Reports show that 50% of the children read books for an average of four minutes per day less than the two minute per day or even less with some not reading any book at all. Reading is not one the activities children want to do on their spare time in the country. In the U.K the reading achievements were above the international average with the best readers in fourth grade coming from the country. However, the PIRLS report (2011) also found that there was a greater proportion of weaker readers than in any other achieving country. It was also found that the pupil's attitude towards reading were less positive with the weaker readers lacking the motivation to read or even enjoy reading. The report further found that the pupils in fourth grade who enjoyed reading attained the highest scores in examination, proving the theory of professional that reading and literacy are direct determinants of performance correct.

According to the Uwezo Report (2013) children in Kenya, Uganda and Tanzania are not acquiring the foundation skills of literacy and numeracy consistent with the official curricular requirements in each of the three countries. The report shows that less than one-third of the children enrolled in Grade 3 have the basic reading skills that should be acquired at grade 2. The report states that literacy tests which entailed reading a letter (sounds), reading a word, reading a paragraph and reading and comprehending a short story were below par and highly deficient with only 25% of children in grade three passing a literacy test. The report asserts that many children in East Africa are not acquiring the basic competencies in the early years of primary school. The problem is also prevalent in grade seven children where one out of five are not able to pass a simple reading test (World Bank (2011)). In Uganda, three out of ten children in primary three and primary four cannot read and understand a story.

According to National Institute for Child Health and Development (2011) in US, for children to comprehend what they read they must do so fluently and accurately as well as with adequate speed and prosody. Uwezo (2011) reports that there exist 69 languages spoken in Kenya including Kiswahili and English whether the former is majorly taken as second while the latter as the third language. However, the report cites that majority of the children in Kenyan pre-primary schools cannot fluently read comprehensions in any of the language, whether first, second or third. Ehrenberg, Brewer, Gamoran and Williams (2011) points out that the situation is worsening with increasing enrolment of children into pre-primary schools, where teachers are becoming less and less in contact with individual learners. Makueni County is one of the most affected areas, where Uwezo report 2011 pinpoints having reduced reading achievement among pre-primary children. This study was premised on the fact that reading achievement may have been affected by changing teacher-child ratio, hence the study sought to establish whether there exists any link between the two.

## **II. Literature Review**

Reducing the size of classrooms to increase student achievement is an approach that has been researched, debated and analyzed for decades. The logic of the premise is that fewer pupils for will coax better performance for the teacher and the pupil. In this regard, Ajani and Akinyele (2014) found that a significant relationship existed between student perception of student-teacher ratio and academic achievement in mathematics. They attributed this to the increased attention from teachers where low-performing pupils benefit the most. The study found that learners in larger classes drift off task because of too much instruction from the teacher to the class as a whole instead of individual attention. Additionally, it found that small class sizes reduce the learners' achievement gap in reading science in later grades. Similarly, Ehrenberg, Brewer, Gamoran and Willms (2011) reported that the student teacher ratio is significant in determining the learning achievement of students. However, for the teacher-student ratio to work, the authors claim that the teacher's instructional methods should be tailored to work in close groups where the teacher has a personal relationship with the students. The study found this to be true in lower elementary classes where teachers need to apply hand-on projects.

Kornfeld (2012) also investigated the relationship between class size and student performance. The longitudinal study of students were assessed in grade four in 2000 and later in 2004 when they were in grade 8 and the final tests were then tested in 2006 when they were in grade 10. The study found that graduation rates for large five schools was the same as that from other schools with smaller classes. These were in contrary with other findings by Ehrenberg, Brewer, Gamoran and Willms (2011) which found that smaller classes had a higher student achievement. The study was only similar to those of Ehrenberg, Brewer, Gamoran and Willms (2011) in regards to 10th grade math scores where smaller classes achieved better scores.

Shofokeye, (2014) also did a study whose main purpose was to investigate the impact of three teaching methods on pre-primary pupil's learning achievement in selected nursery and primary schools in Ondo Wes Local Government using ANOVA. The study findings reveal that the students did better in post-tests exams than in the pre-test.

The study further found no significant main effect of method yet the pupils taught by demonstration performed relatively better than play-way and conventional methods. The study attributed poor performance among the students to inattention and inadequate instructional materials. The study findings provide sufficient literature on the influence of multi-instructional approach to teaching students among pre-primary students. The study's scope is similar that of the current study, and by using the study's methodology, the current study will seek to determine whether these findings can be generalized in Wote Division Makueni County.

From the literature reviewed in this section, there is enough evidence that teacher child ratio has a general negative effect on various aspects of learning. However, researchers have not shown that interaction between teacher ratio and other factors can determine whether learning is affected or not. For instance, in Wote, there are pre-primary schools that have large number of learners but still perform well while there are others with few learners and relatively adequate teachers but still perform poorly in reading skills. It was therefore, not clear from the available literature, whether teacher child ratio has a significant influence on reading achievement in the region.

### III. Methodology

The study employed a descriptive research design. According to Sifuna (2009), descriptive research designs are useful in collecting data from a large population using different kinds of data collection instruments. Gathara (2009) opines that descriptive studies require triangulation in order to improve their plausibility and be able to support cause-effect relationships. This study employed descriptive research design since it allowed the researcher to collect data from a large population within a short time. Moreover, the design was scientifically acceptable and was able to address the research question fully. Teacher child ratio: measured in a scale of 1 to 5 where 1 was the largest ration while the one close to United Nations Benchmark of 40 pre-primary children per teacher were awarded 5 points. Achievement in reading: Measured on scale of 1 to 5 where 1 was be lowest ability of a pre-primary child to read standard words meant for their level while 5 will be maximum achievement.

The study targeted 110 pre-primary schools in Wote (County Government of Makueni, 2017). Each pre-primary had an average of 2 teachers and 40 pre-primary children. The study therefore targeted 220 teachers and 4400 pupils. Through the experience as a teacher in Wote, the researcher was well versed with the problem of low reading achievement among the pre-primary schools in the region.

Purposive sampling technique was used to sample Wote zone. The choice of this zone was informed by the fact that there have been low levels of reading achievement among the pre-primary learners, which has been perpetuated to later classes, hence affecting the later schooling life of the child. Simple random sampling was used to select the schools owing to the fact that the researcher was not in a position to study all the pre-primary schools. Purposive sampling design was used to select the pre-primary teachers since the researcher was only interested in pre-primary schools.

The study targeted parents and caregivers of preschool children in Embakasi Sub-county. There were approximately 52 preschools in Embakasi Sub-county with an approximate of 25 children each. The study, therefore targeted 1300 parents. Parents were identified through their children from different preschools where data was collected. The study adopted two levels of sampling design; first, stratified sampling design was employed to sub-divide Embakasi into wards. Simple random sampling was then used to select preschools and participants. According to Mugenda and Mugenda (2003), a sample size of 10% to 30% is adequate for a sample size. The study therefore used 30% to select preschools and 10% to select parents of these preschools. Caregivers were purposively selected based on the sampled preschools.

**Table 1: Sample size distribution**

Region	Pre-primary schools	Pre-primaryers	Teachers	Sample pre-primary schools (30%)	Sample pre-primaryers (10%)	Sample teachers (30%)
Kaiti	28	1120	56	8	112	17
Kee	24	960	48	7	96	14
Mulaani	27	1080	54	8	108	16
Wote town	31	1240	62	9	124	19
<b>Total</b>	<b>110</b>	<b>4400</b>	<b>220</b>	<b>33</b>	<b>440</b>	<b>66</b>

The study adopted structured questionnaires and observation guide to collect data from teachers and the pupils. According to Creswel (2003), used of mixed methods of data collection enriches the findings of a study and leads to more scientific results. Questionnaires were used to collect data from teachers while observation guide check the level of interaction between teachers and the learners. The researcher also involved document analysis techniques involving records of teachers and children.

A pilot study was conducted in the neighboring zone (Kathonzweni), since it has similar characteristics with the study area (Wote). One school was picked randomly to pretest the study instruments. Sifuna (2009)

emphasizes that pilot study should be conducted in areas with similar characteristics with the actual study area and subjects. The findings of the pilot study were used to check validity and the reliability of the study instruments.

Validity was ascertained through triangulation as recommended by Creswell (2003). Triangulation involved use of different data collection instruments to strengthen the findings. In this study, the use of questionnaire, observation guide and the test enhanced validity of the study. Through triangulation, the researcher was able to determine the specific weakness posed by each instrument. Using a Cronbach alpha (Sifuna, 2009), the researcher judged whether the study was reliable or not. Orodho (2013) asserts that an alpha of 0.7 and above is adequate to declare the findings of the study as reliable. The study was therefore, judged based on the 0.7 threshold.

Data gathered in this study was analyzed using both descriptive and inferential statistics. Descriptive statistics was used to present the findings of the study using measures of central tendency and dispersion. ANOVA and correlations were used to analyze the inferential data.

The researcher prepared for the study by first seeking permission to collect data from Kenyatta University School of Education, after which further permission was sought from National Commission for Research, Technology and Innovation (NACOSTI). Moreover, headmasters of all the schools where data was collected were informed prior to data collection. The principles of informed consent was further followed. All respondents were informed the aim of the study and they were assured of anonymity and privacy of the personal information.

#### IV. Findings and Discussions

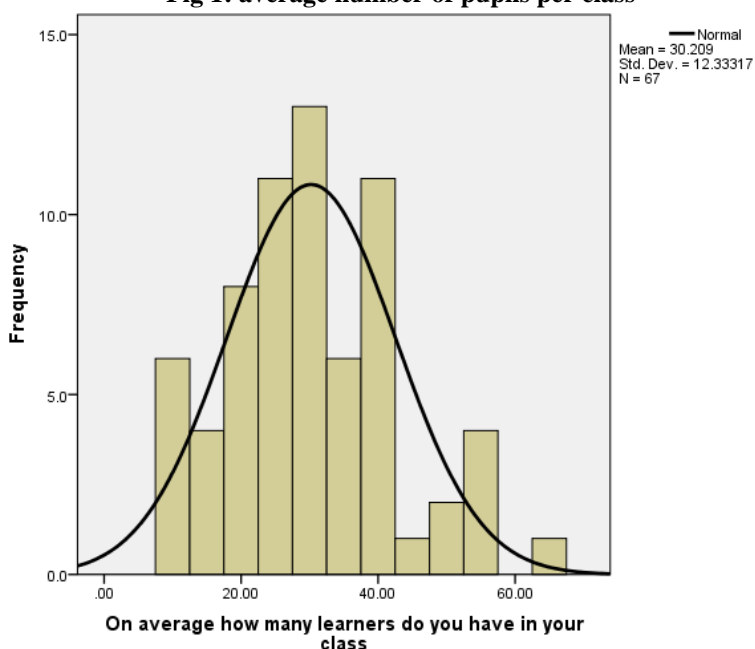
The study intended to answer the research question, ‘What is the influence of teacher-child ratio on reading achievement among pre-primary children in Makueni County?’ Respondents were provided with a scale of 1 to 5 where (1 –Strongly Agree, 2-Agree, 3-Neutral, 4-Disagree and 5 -Strongly disagree). The table 4.1 below displays their opinions. The results displayed in table 2 displays the perceptions of parents on the quality of pre-school environment.

**Table 2** Respondents opinion on level of reading skills

Statement		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	S.D
Most children in class 1 can read correctly at least 30 English words in a minute	F	7	20	23	12	1	2.6825	.96429
	%	10.0	28.6	32.9	17.1	1.4		
Most children in class 2 can read at least 55 English words in a minute	F	13	22	18	8	1	2.3871	1.01392
	%	18.6	31.4	25.7	11.4	1.4		
The reading skills among most children in my class can be said to be high for their level	F	1	12	18	22	17	3.6000	1.08213
	%	1.4	17.1	25.7	31.4	24.3		
Interventions are needed to improve reading skills among pre-primary learners in this school	F	30	20	7	6	5	2.0588	1.25641
	%	42.9	28.6	10.0	8.6	7.1		

From the findings, most of the respondents were neutral (32.9%) on whether most children in class 1 can read correctly at least 30 English words in a minute. Moreover, (28.6%) agreed with the opinion and (10%) strongly supported the argument. Individuals who disagreed made up (17.1%) while those who strongly disagreed were (1.4%). On the other hand, majority (31.4%) agreed that most children in class 2 could read at least 55 English words in a minute which was a positive response. Those who had neutral opinion made up (25.7%) while (18.6%) strongly agreed. Contrary to the positive response were those who disagreed on the statement making up (11.4%) alongside those who strongly disagreed (1.4%). More over majority disagreed (31.4%) that the reading skills among most children in my class can be said to be high for their level. On the other hand, those who strongly disagreed made up (24.3%) while those who were neutral were (25.7%). A minority strongly agreed (1.4%) while (17.1%) agreed with the opinion. On the idea that interventions are needed to improve reading skills among pre-primary learners in this school a majority (42.9%) strongly agreed while (28.6%) agreed. On the other hand, (8.6%) and (7.1%) disagreed and strongly disagreed respectively. Moreover, (m=3.6) meant that majority agreed that reading skills are of high level. Only one variable had a one standard deviation being below one an implication that there was a higher level of deviation on the four variables.

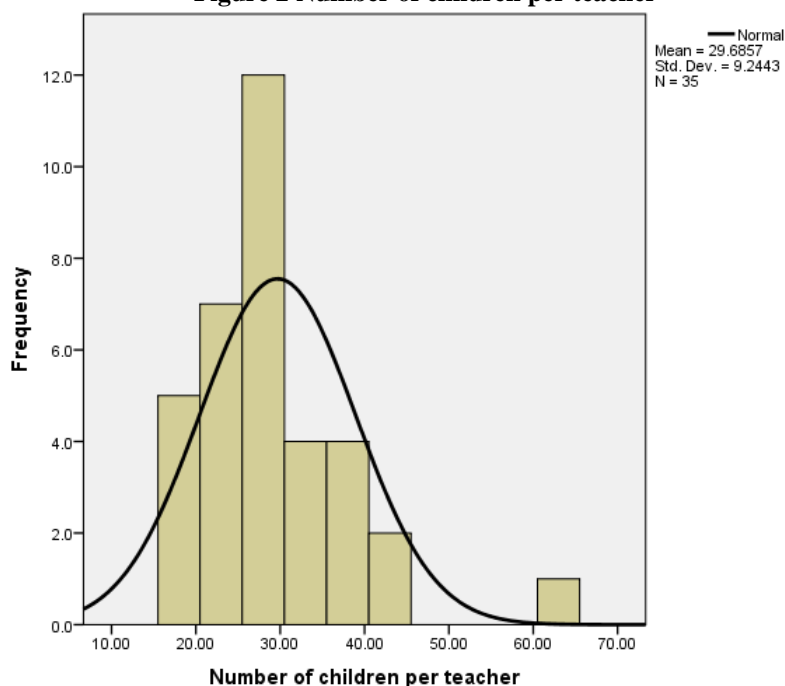
**Fig 1: average number of pupils per class**



From the findings displayed on the histogram, it shows that on average, there were thirty learners in every class in Makueni County. Hence within the standard teacher child ratio of forty in Kenya. The ratio of one teacher to thirty learners in the pre-primary is being evident. More over, most classes exceeded the thirty-number limit as the curve is slightly skewed towards the right side.

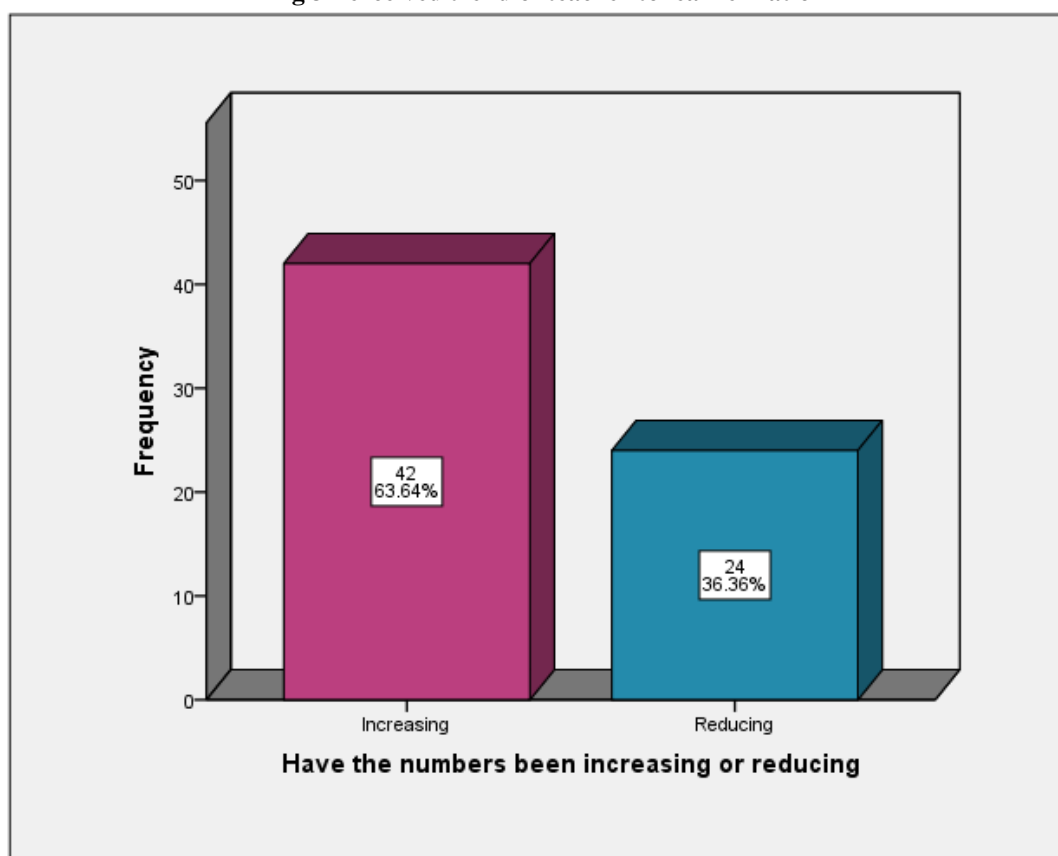
According to the results of the observation guide, the average number of learners per class was as presented in the figure 2

**Figure 2 Number of children per teacher**



Under the aspect of the number of children per teacher, there was an average of twenty-nine children on one teacher in Makueni County. Which supports the argument of Ngotho (2016) that on the level of education sector the standard ratio of one teacher should not be more than forty children and our study lies between its thresholds.

**Fig 3 Perceived trend of teacher to learner ratio**



The ratio of teacher to child have been increasing evident in 63.64% increase while 36.36% reported to witness a reducing trend in numbers. It can therefore, be deduced that there is a general perceived increase in numbers per class which implies that here is a yearly increase in class size. It can be concluded that the ratio effect should solve in that as in some years' time the ratio effect of teacher to child will be a larger number. The ratio effect can be solved by increasing the number of teachers this supports the argument of Marshal (2016) on the ratio effect.

Respondents were provided with a scale of 1 to 5 (1 –Strongly Agree, 2-Agree, 3-Neutral, 4-Disagree and 5 - Strongly disagree). The table 3 below presents their responses.

**Table 3 Respondents opinion on Teacher-Child Ratio**

Statement		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	S.D
The number of children I teach is very high for one teacher	F	20	10	9	16	15	2.9429	1.54999
	%	28.6	14.3	12.9	22.9	21.4		
The school has been increasing enrolment of pre-primary learners without increasing the number of teachers	F	21	14	7	9	17	2.8088	1.60463
	%	30.0	20.0	10.0	12.9	24.3		
The large number of learners per class is affecting acquisition of reading skills among pre-primary children	F	34	10	3	8	14	2.3913	1.64690
	%	48.6	14.3	4.3	11.4	20.0		

The findings show that respondents were quite divided on whether the number of children they teach was very high for one teacher. For instance, most of them (28.6%) strongly agreed while 22.9% disagreed that the number of children was high. Another 14.3% strongly agreed. Though largely divided as can be seen in the high standard deviation value of (SD=1.55), it can be observed that majority were of the opinion that the number of children they teach were very high for one teacher according to the mean of (M=2.9). Respondents had the assertion that the school has been increasing enrolment of pre-primary learners without increasing the number of teachers can be confirmed by the fact that majority (30%) strongly agreed and (20%) agreed. Those who

disagreed and strongly disagreed made up 12.9% and 24.3% respectively while those who had a neutral opinion were only 10%. The large number of learners per class is affecting acquisition of reading skills among pre-primary children with the majority of respondents strongly agreeing (48.6%) compared to those who strongly disagree (20%). Individuals who undecided opinion had had a lower percentage of 4.3% which implies that majority had decided opinion, since 14.3% agreed and 11.4% disagreed. A general mean of 2.4 was obtained, which the lesser mean from the three variables, which means that respondents were of less opinion in giving the feedback on the variable compared to the other two. In relation to the teacher-child ration and its impact on pre-primary reading achievements, the findings of this study indicate that there is some level of correlation. This is because the study, after data analysis, failed to reject the null hypothesis that there is a relationship between teacher-and pre-primary reading achievement.

These findings are congruent with past literature, which further supports this proposition. For instance, Ajani and Akinyele (2014) conducted a study to determine the student-teacher ratio of academic achievement of selected secondary school students in Port Harcourt Metropolis, Nigeria. The study found that learners in larger classes drift off task because of too much instruction from the teacher to the class as a whole instead of individual attention. Additionally, it found that small class sizes reduce the learners' achievement gap in reading science in later grades. Therefore, the findings of this study are in agreement with this past study.

Conversely, while investigating the relationship between teacher-child ration and pre-primary reading achievement, Kornfeld (2012) found that graduation rates for large five schools was the same as that from other schools with smaller classes. This implies that there is no relationship between teacher-child ration and pre-primary reading achievement, contrary to the findings of the current study.

However, the study by Ehrenberg, Brewer, Gamoran and Willms (2011) leads to the former opinion that there is no relationship between teacher-child ration and pre-primary reading achievement. In this case, the authors conducted a study to determine the influence of class size on student achievement, using the quasi-experiment. After data analysis, study found that the student teacher ratio is significant in determining the learning achievement of students. However, for this relationship to work optimally, there are other important variables involved, such as the level of teacher training and the associated skills, besides availability of resources for teaching and learning.

ANOVA tests were run to determine whether there was an association between reading skills and the size of the class the table below presents the results.

**Table 4 ANOVA on Reading achievement**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	533.857	1	533.857	7.428	.010
Within Groups	2371.686	33	71.869		
Total	2905.543	34			

The between groups category 533.857 is due to interaction in samples between the groups. If the sample means are close to each other, the value tends to be small. The within groups variation 2371.686 is due to differences within individual samples. The table also lists the F statistic 7.428 which is calculated by dividing the between groups mean square by within groups square. The  $p=0.01 < 0.05$  leads to a rejection of the null hypothesis. Therefore, it can be concluded that there was a relationship between children per teacher and reading achievements, which supports the words of Ehrenberg, Brewer, Gamoran and Wilims (2011).

The researcher further sought to establish whether there was a significant relationship between respondents' opinions on teacher child ratio and reading achievement among preprimary learners (table 5).

**Table 5 Correlations**

		Reading achievement	Teacher child ratio
Reading skills	Pearson Correlation	1	-.044
	Sig. (2-tailed)		.754
	N	56	53
Teacher child ratio	Pearson Correlation	-.044	1
	Sig. (2-tailed)	.754	
	N	53	64

The relationship between reading skills and teacher child ratio got a negative correlation of -0.044 which shows that there is no correlation at all and it can be evidenced by the level of significance of ( $P=0.754 > 0.005$ ) which is above the standard statistical threshold measure. Moreover, on the teacher child ratio and reading skills a negative correlation was also obtained implying no correlation between the two variables (-0.044) which the ( $P=0.754 > 0.005$ ). The current study found that there is a correlation between pre-primary teachers' requisite training skills and learner's reading skills, there was a positive correlation. This implies that

the pre-primary teachers' requisite training skills positively impacted on the learners' reading skills. Some of the past studies have shown similar findings, whereby pre-primary teachers' requisite training skills positively impacted on the learners' reading skills. For example, Piper & Zuilkowski (2015) articulates that recent efforts have been channeled to the nature of teacher instruction skills, which have resulted into betterment of pre-primary learners' reading skills. This echoes the findings depicted on the current study. However, it was difficult to find a study with a contrary opinion, rejecting a null hypothesis that there is a positive correlation between pre-primary teachers' requisite training skills and learner's reading skills.

## V. Conclusion

Children in pre-primary cannot read English words correctly in one minute. Class two learners are better off at reading skills with the majority being able to read 55 words per minute. However, it can be concluded that class one learners are lagging behind in reading skills with the majority not being able to read 30 English words in one minute. One can also come to the conclusion that teachers are failing in impacting reading skills to pre-primary learners.

Secondly, based on the second objective, it can logically be concluded that class-teacher ratio is quite high in Wote Subcounty with an increasing trend being recorded in enrollment rates but this does affect acquisition of reading skills evident by the presence of a statistically significant relationship between teacher ratio and learner acquisition of reading skills. Therefore, the lack of acquisition in reading skills can partly be blamed on the class-teacher ratio. The teachers associated the low reading skills among their learners to the class size.

## VI. Recommendation

Teachers should develop and implement a realistic plan to ensure that learners enhance their reading capabilities over time. They should also take time to deal with individual learner to identify problem areas in reading and help him or her overcome them. Head teachers need to ensure that remedial lessons are conducted for the learners whose word count per minute is too low to ensure that they catch up with the rest of the learners. Head teachers are recommended to increase the number of teachers for pre-primary to ensure that enrollment rates do not overly increase the teacher-learner ratio to address the issue of large classes. Wote sub-county should work with the pre-primary to increase the number of pre-primary teachers in order to enhance learner interaction with the teacher which will promote acquisition of reading skills. The ministry of education needs to set guidelines on the average number of words a learner is expected to learn as they progress in pre-primary. This will help push teachers to work harder to ensure that learners improve their reading skills. The study also recommends that parents help their kids at home to help them acquire reading skills in cases where teacher-learner ratio is too high. Further studies should be done on the factors that influence learner's reading word count per minute. Other factors like teaching methods and instruction materials should be investigated to determine whether they affect reading other than class-teacher ratio.

## References

- [1]. Ajani, I. R., & Akinyele, O. B. (2014). Effects of Student-Teacher Ratio on Academic Achievement of Selected Secondary School Students in Port Harcourt Metropolis, Nigeria. *Journal of Education and Practice*, 5(24); 100-107
- [2]. Creswell, J. W. (2003). *Research design, Qualitative, Quantitative and Mixed Methods Approaches*. Thousand Oaks, CA; Sage.
- [3]. Department of Education Research Brief. (2015). *Effective pre-primary, primary and secondary education project (EPPSE 3-16+)* Early Childhood Education. Kenya Institute of Education Syllabus
- [4]. IPAR (2008). *Radical Reform for Kenya's Education Sector: Implementing*
- [5]. Kornfeld, M (2012). *The effects of class size on student academic achievement in a rural state*. (Unpublished thesis University of Vermont), pg1-100
- [6]. Malmberg, L.E., Mwaura, P., and Sylva, K. (2011). *Effects of a pre-primary intervention on cognitive development among East-African pre-primary children: A flexibly time-coded growth model*. Elsevier; Madrasa Regional Research Programme, East Africa, Kenya
- [7]. Morrison, G. T., & Moser, G. P. (2011). *Increasing Students' Achievement and Interest in Reading*. *Reading Horizons*, 38, (4).
- [8]. Mugenda, O., & Mugenda, A. (2003). *Research methods: Quantitative and qualitative approaches*. Nairobi: African Centre for Technology Studies. [primaryschool%20education.pdf?sequence=1](#)
- [9]. Orodho, A. J. (2013). *Essentials off Education and Social Science Research Methods*. Mazola Publishers. Nairobi.
- [10]. Shofoyeke, A. D. (2014). *The Impact of Teaching Methods on Pre-Primary School Pupils' Learning Achievement in Protection Issues in Selected Nursery and Primary Schools in Ondo West Local Government*. *Journal of Elementary Education*, 25, (2); 45-60
- [11]. *Uwezo Report (2013). Are our children Learning? Uwezo surveys.*
- [12]. World Bank (2011). *Schooling Access to Learning Outcomes: An Unfinished Agenda: An Evaluation of World Bank Support to Primary Education*. Independent Evaluation Group. World Bank

Rose Wandia Kyalo. " Influence of Teacher-Child Ratio on Reading Achievement among Pre-Primary Children in Wote, Makueni County" *IOSR Journal of Research & Method in Education (IOSR-JRME)* , vol. 9, no. 6, 2019, pp. 40-47.