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Influence of Tusome Early Grade Reading Intervention on the Reading Abilities of Learners in Public Primary Schools in Nandi County, Kenya

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10 May 2022 Early Grade Reading Interventions have been introduced in several countries both developed and developing in a bid to respond to low educational outcomes.

Keywords: Interventions seek to improve certain skills that learners have not sufficiently acquired. Therefore, the provision of learners with an early start in reading is highly associated with developed reading skills in the long term. The study sought to find out the influence Tusome, an Early grade reading intervention, had on the reading abilities of learners in public primary schools in Nandi County, Kenya. The study's research question was what was the influence of Tusome Early grade reading intervention on learners reading abilities in public primary schools in Nandi County, Kenya. The study was grounded on Marie Clays' literacy processing theory of reading. The study adopted a causal-comparative research design with data being collected from a sample size of 200 class six and seven learners in public primary schools in Nandi County. Sampling was done using stratified and simple random sampling techniques. A pupil's reading test and an observation schedule were used as the instruments of data collection. A comparison was made between class six, who underwent Tusome and Class Seven who did not undergo Tusome. The study found out that class six who underwent Tusome performed better than class seven who did not undergo the intervention.

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INTRODUCTION

Gove et al. (2017) noted that Early Grade Reading Interventions had been introduced in several countries both developed and developing in a bid to respond to low educational outcomes. Interventions seek to improve certain skills that learners have not sufficiently acquired. Sparks et al. (2014) observed that the provision of learners with an early start in reading was highly associated with developed reading skills in the long term. According to Graham and Kelly (2018), Early Grade Reading Interventions were effective though not perfect. The authors opined that in order to achieve high rates of literacy, it was paramount that learners learn to read at around six years of age. Fiester (2010) noted that grade three is an important grade with regard to a learner's reading ability since learners who exited this grade without achieving functional reading skills were more likely to struggle later on as readers. The author further noted that it was more likely for a learner to drop out of school later on if they were not able to achieve literacy skills at this grade. The Early Grade Reading Assessment (EGRA) Toolkit Research Triangle Institute International (2009) established that as a learner grew older, it became more difficult to acquire literacy. It further established that effective reading was acquired through constant and adequate practice. Early reading is paramount to developing reading skills and hence results in understanding the text with clarity. Well designed and properly targeted instructional interventions can increase the learners' learning (Banerjee et al., 2007). A meta-analysis of the current evidence on the effects of intensive early reading by Wenzek et al. (2018) found that intensive reading interventions resulted in positive reading outcomes for learners in the early grades.

An assessment carried out in Kenya to ascertain the level of literacy in Kenya in 2009 brought to attention a nation that was barely literate (UWEZO, 2010). It is assumed that reading fluency translates to better outcomes and learning achievement. This therefore made it necessary to remedy the situation through the rolling out of TUSOME, an Early Grade Reading Intervention in 2015. Uwezo (2011) reported that the reading levels in Nandi District were higher than the country's average. The report noted that 6 out of 10 learners in class three could read an English Paragraph. However, this changed as reported in UWEZO (2015) with Nandi County being one of the counties whose learning levels were below the expected national average.

TUSOME Early Grade Reading Intervention which was rolled out in 2015, sought to ensure an increase in the learning outcomes of 7 million learners in the initial school grades. The intervention was aimed at improving English and Kiswahili reading and writing skills in Kenya. TUSOME also aimed at improving the quality of education through the use of innovative means to acquire literacy. TUSOME was a flagship partnership between USAID and the Kenya Ministry of Education with the support of Research Triangle International (RTI). Tusome resulted from the successful implementation of the Primary Mathematics and Reading Initiative (PRIMR) with Tusome targeting tested and proven aspects of PRIMR. This resulted in Tusome being scaled up to all parts of Kenya. The strategies that TUSOME intended to put in place were: enhancing teacher capacity, improving schools' access to appropriate books and other learning materials, enhancing instructional support and supervision, and enhancing collaboration with other literacy actors (Bartilol, 2017).

Research continues to bring out the influence early grade reading interventions have had on learners reading abilities. A meta-analysis of 33 experimental and quasi-experimental studies on the impact of reading interventions for students in primary grades by Gersten et al. (2019) found that there was a statistically significant relationship between reading interventions and learners' reading abilities in the USA. A study by Young et al. (2015) found that there was a significant relationship between the 'Read Together' fluency reading intervention and the learners' fluency score. A study by Iyengar et al. (2016) in Malawi found that the learners in the intervention group read 13 more sounds per minute than those in the control group. The intervention group also read words with better accuracy as compared to those in the control group. Hamisi and William (2020) undertook a study in Tanzania that sought to find out the influence the literacy and numeracy education support programme (LANES) had had on the literacy skills of standard 1 and 2 learners in Dodoma, Tanzania. The study found out that the training the programme had offered to the teachers had greatly influenced how they implemented the programme and how they taught literacy and as a result, enabled them to improve the literacy levels of learners. A study carried out by Nkomo (2020) in Eastern Cape, South Africa, found that an extensive reading programme that was implemented on a group of grade 3 learners was beneficial in improving the reading abilities of the learners.

Other countries of the world have also introduced Early Grade Reading Interventions to improve the literacy levels in their countries. In January 2013, the Philippines rolled out an Early Grade Reading Intervention dubbed Basa Philippines, translated to Read Philippines. The main objective of the program was to support the country's goal of improving the reading skills of one million early grade learners. The strategies/ components of the reading program were as follows: training of teachers and school administrators on proper reading instruction, provision of teaching and learning materials and supplementary reading materials and capacity building of administrators to ensure proper and effective support systems (Bartilol, 2017).

In 2010 an Early Grade Reading Assessment (EGRA) in Ethiopia showed that by the end of grade 2, 34% of learners in Ethiopia were unable to correctly read one word, and 48% of students scored a zero in comprehension (RTI, 2010). This necessitated an appropriate intervention to remedy the situation. USAID, in 2012, therefore, rolled out Reading for Ethiopia's Achievement Developed Technical Assistance (READ TA) to ensure the improvement of learners' reading outcomes. The strategies of the program were: the development of reading and writing materials, teacher training, applying a methodology that was specific to language teaching, provision of technical support to the national ministry in teacher training, and the use of information and communication technology (ICT) and learning aids to boost language learning. The program was implemented for five years between 2012 and 2017, with the primary implementing organisations being RTI international and USAID as the funding organisation in collaboration with the regional state education bureaus and the Ministry of Education (Bartilol, 2017). The program was aimed at improving the reading and writing outcomes of learners from grades one to eight in both English and their mother tongue.

The situation was not any different in the other two East African countries. The Uwezo Tanzanian Assessment that was carried out in 2010 found out that seven out of ten Standard three learners could not read basic Swahili in spite of it being the national language. The situation was even worse in English, as nine out of ten learners were not able to read basic English words (Uwezo, 2010). As a result, interventions such as TUSOME PAMOJA Tanzania were rolled out to improve learners' literacy and numeracy outcomes. In Uganda, UWEZO 2010 established that 98% of learners in Primary 3 (P3) could not read a story meant for P2 learners. In 2012, The Ministry of Education in Uganda, together with other partners, came together in a bid to reform the state of numeracy and literacy in Uganda. Interventions such as Health and reading programs were rolled out. This intervention was to develop and ensure the distribution of early grade reading materials in twelve local languages. Two years later, the literacy achievement and retention activity were rolled out.

METHODOLOGY

The study was carried out in Nandi County, which is county number 29 of the 47 counties in Kenya. The target population of this study was learners from 723 public primary schools in Nandi County. The study opted for representativeness as a way of determining the sample size of the schools to be used; therefore, a sample of 50 schools from Nandi County was utilised, with Tindiret, Nandi South, Nandi North, and Nandi East sub-counties having 8 of their schools taking part in the study while Nandi Central and Chesumei had 9 of their schools taking part in the study. The pupils who took part in the study were selected using stratified random sampling to ensure an equal number of boys and girls and later followed up with simple random sampling. A sample size of 200 pupils was selected from the sample of 50 schools. 100 learners were selected from class six who experienced Tusome early grade reading intervention, and 100 were selected from class seven who did not experience

the intervention. This meant that 100 boys and 100 girls took part in the study. A pupils' reading test and an observation schedule were used to collect data on the reading abilities of learners. Descriptive and inferential statistics were utilised in data analysis. Percentages, frequencies, and means were the descriptive statistics that were used. Quantitative data were presented in tables and graphical illustrations. The study's hypotheses were tested using an independent T-test.

RESULTS

Demographic Characteristics of Research Respondents

Data was collected from class 6 and 7 pupils in Nandi County. The study sought to find out the learners' gender, class, and category/location of the school, whether urban or rural. The results are summarised in *Table 1*.

Table 1: Distribution of Demographic Characteristics of Class six and seven Learners

Demographic Characteristics (n= 200)		(f)	%
Gender	Boys	100	50
	Girls	100	50
Class	6 (Tusome intervention class)	100	50
	7 (No Tusome intervention)	100	50
Learners per Category of School	Urban	12	6
	Rural	188	94

Source: Field data (2021)

The findings displayed in Table 1 revealed that 100 (50%) of the learners who took part in the study were girls while 100 (50%) were boys, and in the same way, 100 (50%) were class 6 who had experienced the intervention while 100 (50%) were class 7 who did not go through Tusome. This equal representation in class and gender ensured bias-free findings since the study utilised stratified random sampling to ensure that both boys and girls took part in the study. The findings also showed that 12 (6%) of the pupils who took part in the study were from urban schools, while 188 (94%) of the pupils were from rural schools. This implied that most of the population in Nandi County resides in rural areas. This finding also had the implication that there were more schools in the rural areas than they were in the urban areas. This was also evident in Atoni (2018),

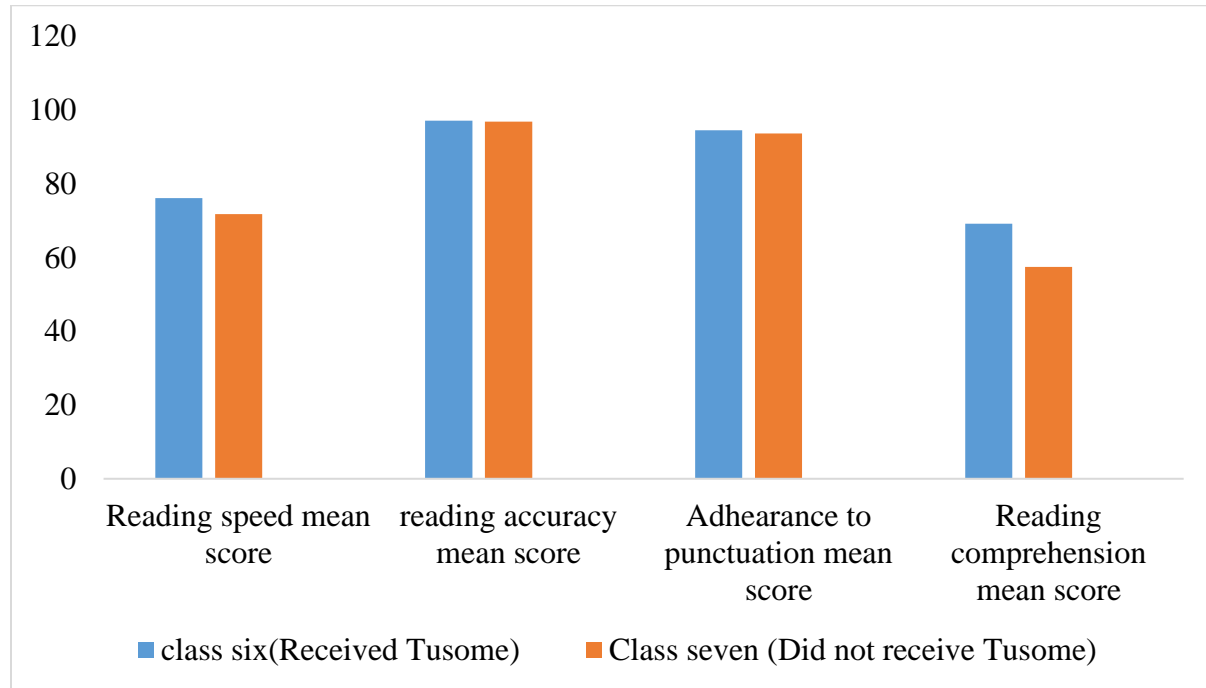
who established that there were more schools located in the rural areas than in the urban areas.

Learners' Reading Abilities in Public Primary Schools in Nandi County

The study's research question sought to find out the influence Tusome had had on the reading abilities of learners in public primary schools in Nandi County. The study administered a reading test to the learners and using an observation schedule; the study was able to score the learners on reading speed, accuracy, adherence to punctuation, and comprehension. After reading, the learners had to answer six comprehension questions which the study used to score them on comprehension skills. Learners from classes 6 and 7 undertook the test,

and a comparison was made on their reading abilities. The study findings are presented in *Figure 1* as follows:

Figure 1: Comparison of the reading mean scores between classes 6 and 7



Source: Field data, 2021

On reading speed, the learners were timed as they read, and the number of words read per minute was recorded. The learners' read words were subtracted from 150 words which is the set standard number of words that a learner should read in a minute. The learners' mean score was then calculated. The mean reading speed scores for class 6, who underwent Tusome and that of class 7, who did not undergo Tusome, were calculated and compared. On reading speed, the study findings revealed that class 6, who underwent Tusome had a mean score of 76.14%, while class 7, who did not undergo Tusome had a mean score of 71.82%. Class 6 scored better than class seven, and this meant that Tusome had had an influence on the reading speed of class 6 learners. The findings implied that the intervention measures that were put in place had positively influenced the reading speed of learners. According to Basaran (2013), reading speed is one of the key indicators of reading fluency. The study's findings agreed with those of Durukan (2020), who found out that the treatment group who had gone through a reading

speed program read faster than the control group who had not gone through the program.

On reading accuracy, the words read wrongly by the learners were recorded and subtracted from the total number of words read by the learners. The learner's percentage score was calculated, and later the two-class means were calculated. The study findings revealed that class 6 scored a mean of 97.14%, while class seven scored a mean score of 96.87%. Their scores were almost the same; however, it is worth noting that class 6 scored higher than class 7. This therefore implied that Tusome's approach to teaching sounds first had an influence on the reading accuracy of the learners in class 6.

On adherence to punctuation, the learners' number of missed punctuations was subtracted from the total number of punctuations. The study findings showed that class 6 scored a mean score of 94.53%, while class 7 scored a mean score of 93.68%. Class 6 scored higher than class 7 hence the implication that the intervention had had an influence on how

the learners utilised punctuation in reading. The final scoring parameter was that of comprehension. After the learners had read the passage, they were expected to orally respond to six comprehension questions. Class 6 scored a mean score of 69.15%, while class seven scored a mean score of 57.47%

The study also sought to compare the overall reading scores between the two classes. The findings of the study are presented in *Table 2*.

Table 2: Overall Reading Means Score Comparison of Class 6 and Class 7

Class	Mean	N
6 (Underwent Tusome)	84.26	100
7(Did not go through Tusome)	79.73	100

Source: Field data (2021)

The study findings presented in *Table 2* revealed that class 6, who had received Tusome performed better than class 7, who did not undertake the intervention. Class 6 had an overall reading mean of 84.26%, while class 7 had an overall reading mean of 79.73%. This finding meant that the intervention had had a positive influence on the reading abilities of learners in public primary schools in Nandi County. The findings also meant that the intervention was implemented as planned, and the necessary resources that had been provided had been well utilised. On the basis of these findings, therefore, the study concluded that Tusome reading intervention had a positive influence on the reading abilities of learners. This finding is in agreement with Kwayumba (2018), who found out that Tusome had had a positive influence on the learners' outcomes.

Test of Hypothesis

The study's hypothesis was tested using the independent T-Test.

H₀₁: There was no significant difference between the mean reading scores of learners who underwent Tusome Early grade reading intervention and those who did not undergo it in public primary schools in Nandi County, Kenya.

The null hypothesis that there was no significant difference between the mean reading scores of learners who underwent Tusome Early grade reading intervention and those who did not undergo Tusome in public primary schools in Nandi County, Kenya, was tested using an independent samples t-test. A comparison was drawn between class six, who underwent the intervention (Tusome) and class seven who did not undergo the intervention. The t-value and the p-value are displayed in *Table 3*.

Table 3: Independent Samples T-test for Differences between Mean Reading scores of Learners who experienced Tusome and those who did not

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Diff	Std. Err Diff	95% CI Diff	
									Lower	Upper
Reading Indicators	Equal variances assumed	.723	.101	.785	98	.000	4.464	1.179	2.138	6.789
Overall score	Equal variances not assumed			.785	97.9	.000	4.464	1.179	2.138	6.789

Source: Field data (2021)

Data presented in *Table 3* shows that a t-value obtained was 0.79 and a 2-tailed p-value of .00. Since the p-value was less than the set significance

level of 0.05 therefore, the study rejected the null hypothesis. Therefore, there is a significant difference between the mean reading scores of

learners who underwent Tusome Early grade reading intervention and those who did not undergo it in public primary schools in Nandi County, Kenya. This finding implied that the strategies of the intervention had significantly contributed to the improvement of the reading abilities of the learners. Kwayumba (2018) found that there was a statistically significant relationship between Tusome and improved learner outcomes in English.

CONCLUSION AND RECOMMENDATIONS

The study established that class six performed better than class seven in the reading test. On the reading abilities of learners, the study concluded that class six learners who underwent Tusome performed better than class seven who did not undergo Tusome. In all the parameters used to test reading abilities, class six scored higher than class seven. The study therefore concluded that Tusome positively influenced the reading abilities of learners in public primary schools in Nandi County. The study showed that Tusome was associated with improved reading outcomes; therefore, the study would like to recommend that it be rolled out from preschool. This study also recommends that the intervention be supported by the ministry of education even after the lapse of the donor funding period.

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