

Modeling behavior modification practice and enhancement of reading abilities: evidence among learners with Dyslexia in Kenya

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Pamela Atieno Ooko

Doctor of Philosophy in Education Psychology

Institution: School of Education, Jaramogi Oginga Odinga University of Science & Technology

Address: P.O. Box 210-40601 Bondo

E-mail: atienopamela71@gmail.com

Peter Jairo Odhiambo Aloka

Doctor of Philosophy in Education Psychology

Institution: School of Education, University of the Witwatersrand, South Africa

Address: Jan Smuts Avenue Braamfontein Johannesburg 2000, Private Bag 3, WITS, 2050

E-mail: jairopeteraloka@yahoo.com

Rose Achieng Koweru

Doctor of Philosophy in Special Needs Education

Institution: School of Education, Jaramogi Oginga Odinga University of Science & Technology

Address: P.O. Box 210-40601 Bondo

E-mail: rkoweru@gmail.com

ABSTRACT

The study investigated modeling behavior modification practice and enhancement of reading abilities among learners with Dyslexia in Kenya. The mixed-methods sequential explanatory design was used. The sample size comprised 229 learners and 54 English teachers and 4 guidance and counseling teachers selected from 4 public primary schools. To obtain a sample for the study purpose, saturated and random sampling methods were used in selection of schools, teachers and learner participants respectively. A pilot study was conducted on 24 learners and 6 teachers selected from two public primary schools within Changanwe Sub-County to ascertain validity and reliability of the instruments. The research tools used included the Bangor Dyslexia Test, Hardin Simmons dyslexia screening test and English reading test. The Cronbach's alpha for of 0.807 for modeling reinforcement revealed that the instruments had adequate reliability for the study. The data was generated using mixed methods approach where both quantitative and qualitative methods were used for analysis. The findings indicated that, after the level of modeling behaviour practices were included, the model as a whole explained 25.2% (R Square = 0.252) of the variability in reading abilities among the primary school learners. The study recommended that teachers should use these behavior modification practices to improve dyslexic learners reading ability.

Keywords: modeling behavior modification practice, reading abilities, learners, Dyslexia, Kenya.

1 INTRODUCTION

The term dyslexia is of Greek origin stemming from two words *dys* meaning “trouble with” and *lexia* meaning “words”. Therefore dyslexia means trouble with words (Berninger and wolf 2009). Thus,

dyslexia can be referred to as a learning disability where learners tend to have a problem in reading, spelling words, appreciation of what is being read or expressing their thoughts on paper. The International Dyslexia Association (IDA) (2017), described it as a specific learning difficulty in which learners have problems with poor spelling and decoding abilities. The North American countries refer to it as learning disability or specific learning disability; whereas, in the UK and Australia, it is referred to as specific learning difficulty. In New Zealand, on the other hand, the preferred term is reading disability. The Kenya dyslexia organization borrows the IDA (2017) definition which states that Dyslexia is a neurologically-based language deficiency which interferes with the acquisition and processing of language. These difficulties result from a phonological component of language and are unexpected in relation to age and other cognitive and academic capabilities. The problems in phonological awareness make it difficult for children with dyslexia to decode and spell printed words. Such children also find difficulty in retrieving words which are not repeated.

Dyslexia was first discovered by Oswald Berkhan in 1881. Initially the condition was referred to as congenital word blindness by Rudolf Berlin but, in 1896 he too adopted Morgan's naming of the condition as Dyslexia in 1887 after associating it with difficulty in reading and writing (Hulme & Snowling, 2009). Dyslexia is the most common cause of reading, writing and spelling difficulties in learners. According to the national center for learning disabilities (Cortielle, C. 2011 P.P .7.10.) 15-20% of the population have language based learning disability. Out of these 70-80% have difficulties in reading. Dyslexia affects memory, concentration, mathematics and organization of work. Although students with dyslexia can have problems in reading early in life, their problems become more compounded after they enter school. At school they experience extreme difficulty in acquiring accurate and fluent phonemics (phonics) and this interferes with their ability to read a text accurately and independently. This consequently makes them fall behind their peers in reading ability. Symptoms associated with dyslexia according to the IDA (2017), include confusion of words that start with letters b, p, d and g, memorizing numbers and words, slow and labored comprehension, problems with arithmetical calculations, remembering days of the week in sequence and ordering letters of the alphabet. Globally, dyslexia is estimated to affect 15-20 % of the population (Cortielle, 2011).

Modeling is the technique of modifying reading ability by observing how teachers or models read the letters and their corresponding sound then imitating the same. Modeling involves observation, imitation and copying actions from others. Cunningham and Allington (2010) define Modeling as the technique of modifying reading ability by observing how teachers or models read the letters and their corresponding sound well. In the technique persons serve as models for others, exhibiting the behavior to be imitated by the children (Berne & Degener, 2015). Modelling involves making careful observation and imitation of the model before trying to ape the behavior being passed down. Learners who have poor

reading skills were more likely to increase reading behaviors when presented with a model of the behavior (Denton & Hasbrouck, 2009). Successful modelling will depend on the characteristics of the model, whether the learner is able to retain the behavior, follow the behavior being modelled or practice what is being modelled. Effective modelling also requires the learner to be attentive and motivated to watch everything he or she can see before trying to copy the demonstrated behavior. Modelling enables a learner to perform a task which would be difficult to perform without additional help (Knight, 2011). According to Letchumy (2008) reading aloud to children can help to model fluent reading in a learner. If new words were taught to a learner without being reinforced soon after by another encounter, the learnt words would soon be lost, however when the new words are reinforced they enhance mastery of vocabulary (Skinner, 2011).

In New Zealand estimates of dyslexic cases are put at 10% of the population (IDA, 2017). In India the prevalence is estimated to be between 2- 18 % (Karande &Kulkarni, 2005) as cited in (Cheruiyot, 2015). It is assumed that dyslexia affects 1% of the Egyptian population, 10% of people in South Africa (Iwan, 2013) and 20% in Uganda (Ninsiima, 2013). In Kenya the prevalence is estimated to be about 10% since 4 out of 40 learners are said to be dyslexic (Symthe, Everatt, Ocampo & Gyarmathy, 2004) as cited in (Cheruiyot, 2015). According to the table above there are learners with symptoms of dyslexia in public schools in Changamwe (Changamwe, 2019). Mc Mbinji & Anika (2018) estimates the dyslexic cases in Mvita sub-county to be 270 from the nine schools dealing with special persons.

1.1 LITERATURE REVIEW

Literature on effects of modelling technique exists. In Brazil, Oliveira, Silva, Dias, Seabra & Macedo (2014) investigated the effects of the (reading component model) RCmodel in children and adolescents with dyslexia. The participants included 40 children aged 8–13 years. The findings established that dyslexic children and teenagers have deficits related to word recognition. Ambrose &Cheong (2011) in Malaysia indicated that the Clay Modeling Program has a positive effect on the reading behavior of dyslexic children. The findings of the study showed that the Clay Modeling Program does improve the reading behavior of dyslexic children. In U.K, Casey and Mac Phail (2018) established that teachers were more likely to influence the year 10's during physical education than the year 7's. Duran (2013) conducted a case study in the U.S.A to investigate the effect of word repetition on modeling fluent reading. A positive significant correlation was reported in the findings. In Italy, Zocolotti, Lucas, marinelli &Spinelli (2014) examined modeling individual differences in text reading fluency among developing readers and dyslexic learners. The participants included 43 typically developing readers (11- to 13-year-olds) and a group of 25 chronologically matched dyslexic children. The study findings established that orthographic decoding and integration of reading sub-components contributed significantly to the overall prediction of text

reading fluency. The study found that modeling affected individual reading performance of the dyslexic learners.

Robson, Blampied and Walker (2015) investigated the effects of feed forward video self-modeling on reading fluency and comprehension. The results showed that the majority of the children improved their reading fluency, comprehension and accuracy as well as reader self-perception (a proxy measure of self-efficacy). Graded reading tests were used to collect data. Data was analyzed by quantitative methods. The study findings established that feed forward video self-modeling (FFVSM) could be used in the educational settings to promote fluent reading. Alsalamah (2017) investigated using a video self-modeling strategy to enhance reading ability of students with learning disabilities. The results indicated that VSM strategy as a useful tool to help struggling readers. Maguire (2015) study in New Zealand indicated that daily reading diary scores did not provide enough information to determine if video modeling affect reading attitudes. The findings did not find a positive relationship between increased attitude and watching of video. Another finding was that the results from the daily diary reading showed that the Video self-modeling intervention did not influence the participants reading habits. In Thailand, Wichadee (2011) investigated how to engage in self-directed learning by using instruction model to enhance reading ability. The study findings established that post-test results of students in four learning styles were significantly higher than those of the pre-test ($p < .05$). Moreover, the post-test mean scores of self-directed learning ability of students in four learning styles were significantly higher than the pretest mean scores ($p < .05$). The study findings established that the mean scores of English reading comprehension in the pre-test and post-tests significantly improved. Another finding was that use of the self-directed models improved the students reading ability.

In the U.S.A, Lopez, Torrance, Rijalaarsdom and Fidalao (2017) investigated effects of direct instruction and strategy modeling on the writing ability of upper primary students. There was no statistical significant differences between the experimental and the control groups. The results of the students in the experimental group where direct instruction was done indicated $t(120) = 3.2$, $P = 0.002$, $d = 1.69$. The study findings indicate that direct teaching and modelling are effective in improving writing skills in upper primary learners. In the U.K, Holliman, Critten, Lawrence, Harrison, Wood & Hughes (2010) investigated effect of Modeling on the Relationship between Prosodic Sensitivity and Early Literacy. The level of prosodic sensitivity was significantly correlated with vocabulary ($r = .34$, $p = .003$), rhyme awareness ($r = .48$, $p < .001$), phoneme awareness ($r = .31$, $p = .008$), morphological awareness ($r = .33$, $p = .005$), word reading ($r = .4$, $p < .001$), and spelling ($r = .41$, $p < .001$). The findings of the study established that prosodic sensitivity are important in models of literacy development. A study conducted by Al-Mansour (2011) to investigate the impact of teacher modelling of storytelling on 40 participants in Saudi Arabia. Findings indicated that modelling improved comprehension among the learners in the

experimental group. There was also a positive significant correlation between teacher modeling and reading comprehension.

Wolff (2011) carried out an intensive phonics based intervention program for nine year old Swedish learners with reading difficulties were performed. They showed improvements in spelling, reading comprehension, reading speed, and phoneme awareness. The study findings established that there were significant indirect effects from intervention to all variables one year later. Reading comprehension at post-test predicted spelling one year later. Another finding was that phoneme awareness at post-test predicted both spelling and reading comprehension one year later. In Kenya, Mudaki (2016) investigated the influence of parental involvement in modeling reading performance in Kiswahili reading comprehension. At the baseline, influence of parental involvement on modeling reading comprehension was minimal. After the intervention parental modelling level on Kiswahili reading comprehension increased. The study established that influence of parents at home positively affected comprehension skills in Swahili language acquisition.

Despite the fact that many studies have been carried out to strategize on how to remediate the reading ability of dyslexics, the problem is still unsolved. Very few studies had addressed the problem among primary school pupils who are perceived to have unique reading challenges compared to other learners in the regular schools. In this regard, many studies in Kenya, Africa, and other parts of the world indicated that teachers, parents and peers have a crucial role in a child's reading development. In addition, the relevant studies reviewed indicate that there are inconsistent findings about the extent to which behavior modification strategies like prompting, shaping, coaching and modeling influence students reading behavior. Therefore, the present study sought to ascertain and expand these findings on the existing studies by examining how behavior modification methods influenced the reading ability of dyslexic learners in the primary schools in Kenya. The researcher used a mixed method approach whereby both qualitative and quantitative approaches were utilized to provide a deeper understanding of the phenomenon among primary school pupils. In addition, the sample characteristics of the research literature reviewed showed that many of the studies were conducted in foreign countries among university students and elementary school students. There is scarcity of research literature on the influence of selected behavior modification practices in the local context, Kenya, especially on the primary school students and secondary school students. Since this study has been conducted in an urban setting, it would be of interest to conduct such a study on a rural sample and on secondary school students in Kenya. By so doing, the researcher hopes that this may yield much needed and valuable literature for cross cultural comparisons.

2 METHODS

2.1 RESEARCH DESIGN

The mixed-methods sequential explanatory design consists of two distinct phases: quantitative followed by qualitative (Creswell, 2014). In this design, a researcher first collects and analyzes the quantitative data. The qualitative (text) data are collected and analyzed second in the sequence and help explain, or elaborate on, the quantitative results obtained in the first phase. The second, qualitative, phase builds on the first, quantitative, phase, and the two phases are connected in the intermediate stage in the study. The rationale for this approach is that the quantitative data and their subsequent analysis provide a general understanding of the research problem. The qualitative data and their analysis refine and explain those statistical results by exploring participants' views in more depth (Tashakkori and Teddlie, 1998).

2.2 STUDY PARTICIPANTS

The sample size comprised 229 learners and 54 English teachers, 4 guidance and counseling teachers selected from 4 public primary schools. To obtain a sample for the study purposive, saturated and random sampling methods were used in selection of schools, teachers and learner participants respectively. A pilot study was conducted on 24 learners and 6 teachers selected from two public primary schools within Changamwe Sub-County to ascertain validity and reliability of the instruments.

2.3 RESEARCH TOOLS

The research tools used included the Bangor Dyslexia Test, Hardin Simmons dyslexia screening test and English reading test. Cronbach's alpha method was used to ascertain the reliability of questionnaires. The Cronbach's alpha for of 0.87 for modeling reinforcement revealed that the instruments had adequate reliability for the study. These findings were in line with the proposal by Oso and Onen (2013) that a coefficient of 0.60 is of adequate reliability while coefficient of 0.70 and above indicates that the instrument has a high inter-item consistency reliability standard. Validity of the tools was ascertained by expert judgement by two specialists in Psychology and Special Needs Education at one Kenyan university.

2.4 DATA COLLECTION PROCEDURES

Ethical clearance to conduct the study was first obtained from National Council for Science, Technology and Innovation in Kenya. Teachers helped the researcher in the initial screening of learners with Dyslexic characteristics using the tool from Hardin, Simmons University. This was done after a short induction of the teachers by the researcher on dyslexia and its characteristics. The researcher also trained four data collection assistants who helped in conducting the reading comprehension and writing test. The

researcher then rescreened those identified with dyslexic characteristics with the same tool from Hardin Simmons. Those confirmed to have the dyslexic characteristics were then screened using a Bangor Dyslexia Test (Miles, 1997). The reading performance of learners listed to be having dyslexic characteristics were then extracted and recorded. In addition, the researcher gave a short reading comprehension test to assess learners' reading ability and a writing test to assess the learners' ability to organize ideas.

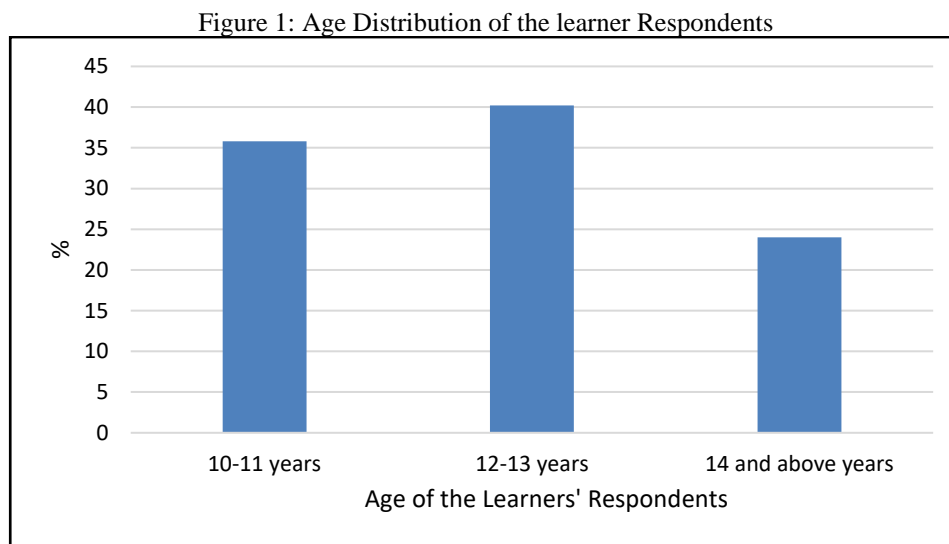
2.5 DATA ANALYSIS

The data was generated using mixed methods approach where both quantitative and qualitative methods were used for analysis. Descriptive statistical measures like frequencies, averages and percentages were used to analyze data. In addition, linear regression analysis was used to predict the value of a dependent variable. The qualitative data from interviews were analyzed using the thematic framework. Thematic analysis is a method that identifies, analyzes and reports patterns within the data.

3 RESULTS

3.1 AGE DISTRIBUTION OF THE LEARNER RESPONDENTS

The study sought to establish the age distribution of the learner respondents in the study. The findings are presented in figure 1.



The results in figure 1 showed that 40% of the learners who took part in the study were aged between 12 to 13 years; the learners in the 10-11 years were 36%. The learners who were in the age bracket of 14 years and above constituted 24% of the participants. In Kenya, learners in these classes are mostly aged between 12 to 13 years. In Kenya, learners in these classes are mostly aged between 12 to 13

years. However, because of the Free Primary Education in Kenya, other learners who were over 14 years were also studied.

3.2 DESCRIPTIVE STATISTICS OF THE SCORES OF THE FOUR GROUPS USED IN THE STUDY

The descriptive statistics results of the pre-test and post-test scores of the four groups of learners who participated in the study are presented in Table 1.

Table 1: Descriptive Statistics of the Scores of the Four Groups

Groups		N	Mean	Std. Deviation
Pretest scores	Group 1(Experimental & Pretested)	49	24.90	9.599
	Group 2(Control & Pretested)	54	24.13	9.239
	Group 3(Experimental & No pretest)	0	.	.
	Group 4(Control & No Pretest)	0	.	.
	Total	103	24.50	9.373
Posttest scores	Group 1(Experimental & Pretested)	49	33.14	8.080
	Group 2(Control & Pretested)	54	25.30	11.843
	Group 3(Experimental & No pretest)	49	32.39	7.905
	Group 4(Control & No Pretest)	52	26.35	11.383
	Total	204	29.15	10.570

Source: English reading test scores (2019)

The results presented in Table 1, indicated that it is evident that the highest mean score recorded in the post-test scores was 33.14 (SD=8.080) by the Experimental & Pretested-Group-1 learners who received modelling behaviour modification strategy after a pretesting. It was followed closely by the mean score of Experimental & No pretest-Group-3 learners, who received treatment but post-tested without pretesting, at 32.4 (SD=7.9) in a posttest examination. The least score recorded was pretest results (n=54, M=24.13; SD=9.2) for Group-2-Control & Pretested students, those who did not receive modelling behaviour modification strategy.

3.3 MEAN SCORES ON EFFECTS OF MODELING BEHAVIOUR MODIFICATION PRACTICE

The study established the effects of modeling behavior modification practice on reading abilities among learners with Dyslexia in public primary schools. First, the study explored the views of the learners with Dyslexia on the use of modeling behaviour modification practices after the intervention. Their views were summarized in means and standard deviation as in Table 2.

Table 2: Modeling Behaviour Modification Practice

Indicators	Mean	Standard Deviation
During teaching reading in English language the teacher reads the sounds of the words aloud for us to get it right.	3.20	0.64
Our teacher demonstrates and clearly explains what he wants us to learn how to do.	3.59	0.86
Our teacher modifies our reading ability by use of a positive reinforcement which is either be a token or praise.	2.95	0.67
Our teacher design and use flashcards during lessons teach reading and pronunciation of words of new words.	2.85	0.72
The teacher makes sound of a letter while we listen carefully before trying to ape what the teacher has just done.	3.25	0.75
Mean average modeling behaviour modification practice	3.39	0.74

Source: Survey data (2019)

The results of the survey revealed that there is a generally moderate modeling behaviour modification practice among the English language teachers in Changamwe Sub-County. Using the scale of 1 to 5, the mean average rating of modeling behaviour modification practice among the English language teachers was 3.39 (SD=0.74) as rated by all the learners who were surveyed. For example, a large proportion of the learners concurred that during teaching reading in English language their teachers read the sounds of the words aloud for them to get it right, which translates to a mean of 3.20 (SD=0.64). Equally, many learners alluded that their teachers clearly demonstrates and explains what they want them to do, which is an emancipation of modeling behaviour modification practice. It was also established that some teachers occasionally (mean=2.85; SD=0.72) design and use flashcards during English language lessons to teach reading and pronunciation of words of new words among the learners with Dyslexia. Likewise, it emerged that sometimes some teachers make sound of a letter while the learners listen carefully before they try to ape what the teacher has done, which signals modeling behaviour modification practice at a mean rating of 3.25 with a standard deviation of 0.75. This implies that teachers try to exhibiting a behavior so that they can be imitated by the learners.

3.4 EFFECTS OF MODELING BEHAVIOR MODIFICATION PRACTICES ON READING ABILITIES AMONG PUBLIC PRIMARY SCHOOL LEARNERS WITH DYSLEXIA

Inferential statistics was applied to establish whether there was any significant effect of modeling behavior modification practice on reading abilities among learners with Dyslexia. The hypothesis was started as follows:

H₀₁: *There is no statistically significant effect of modeling behavior modification practice on reading abilities among public primary school learners with dyslexia*

The null hypothesis was tested using a hierarchical linear regression analysis. The response on modeling behavior modification practice was used as the independent variable, while the learners score

on posttest exams was used as the dependent variable. To remove the effect of group of the respondents, a hierarchical regression analysis was run in SPSS as shown in

Table 3: Model Summary - Modeling Behavior Modification Practice on Reading Abilities among Learners with Dyslexia

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.330 ^a	.109	.104	10.004	.109	24.603	1	202	.000
2	.502 ^b	.252	.245	9.185	.144	38.624	1	201	.000

a. Predictors: (Constant), Group

b. Predictors: (Constant), Group, Modelling behavior modification practice

In Table 3, the variable in block 1 is the group of the respondent which was controlled for, while block 2 represents the predictor variable (the level of modeling behaviour practices) together with their interactions and the control variable. It is evident from Table 4.14 that respondent group alone accounted for 10.9% ($R^2=.109$) of the variation in reading abilities among the primary school learners. However, after the level of modeling behaviour practices were included in block 2, it is evident that the model as a whole explained 25.2% ($R\text{ Square} = 0.252$) of the variability in reading abilities among the primary school learners. $R\text{ Square Change}$ (.252) in block 2, indicates the amount of variances accounted for by level of modeling behaviour practices above that explained by the respondent's group. This implies that the level of modeling behaviour practices alone accounted for 14.4% of the variability in reading abilities among the primary school learners with dyslexia. Further, the Sig. F Change value $=.000 < .001$ indicates that the addition of the level of modeling behaviour practices has statistical significant contribution to the prediction of reading abilities among the primary school learners with dyslexia.

However, to determine whether the model was a significant predictor of reading abilities among the primary school learners with dyslexia, Analysis of Variance (ANOVA) was computed as shown in Table 4.

Table 4: ANOVA –Influence of Modeling Behavior Modification Practice on Reading Abilities among Learners with Dyslexia

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2462.461	1	2462.461	24.603	.000 ^b
	Residual	20217.828	202	100.088		
	Total	22680.289	203			
2	Regression	5721.319	2	2860.659	33.905	.000 ^c
	Residual	16958.970	201	84.373		
	Total	22680.289	203			

a. Dependent Variable: Posttest

b. Predictors: (Constant), Group

c. Predictors: (Constant), Group, Modelling behavior modification practice

The Model 2 in the ANOVA results output in Table 4 revealed that, the model statistically significantly predicts reading abilities among the primary school learners with dyslexia, $F(2, 201) =$

33.905, $p < .05$. This implies that the null hypothesis was rejected. It was therefore concluded that there is statistically significant influence of modelling behavior modification practices on reading abilities among learners with dyslexia.

Qualitative findings from the study identified a theme of chunking being used during the modelling reinforcement practice. Chunking refers to breaking up words or texts into meaningful sections for the learners. The use of chunks helps students to identify the main parts or ideas as they paraphrase the parts of a sentence for easy understanding. One of the teachers said:

"...I use chunking to present words that are cumbersome to the learners for example chunking helps the learner to read the word faster and more efficiently as they don't have to think of the entire word. Through breaking the word, I have different segments which I then model how to read. One part of the segment is read to automation before the next segment is read. Through chunking the learners find it easier to remember the smaller word units in comparison to the bigger longer word that they could not manage earlier on." (T 1)

One of the learners reported:

"My major problem in reading was with new words and spelling, especially Pseudo words like contemporaneous. My English teacher reminded me how I had dealt with other three letter words. So when I divided this word into segments, the task became easier" (PPL5, FGD1).

From the excerpts of PPL5, FGD1 and T1 it emerged that teachers use chunking to instruct their learners during the reading lessons. Chunking also helps to break words into segments which are then used to model the reading behavior. When using the chunks to model reading behavior, the model has to take into cognizance the needs of the individual learner as every learner learns differently. Chunking helps to reduce the information given to the working memory. It helps reduce the workload in the memory of a learner by segmenting and grouping information. These smaller segments of words help to recall information when they are in smaller units in comparison to when a whole word is read or remembered.

However, it emerged that many teachers try to modifying reading ability among their learners by being role models, that is they read the letters and their corresponding sound well so that their learners can copy them.

Another theme that was reported from qualitative findings was read alouds. This is a reading situation whereby a more knowledgeable person models or demonstrates a behavior while the student observes before practicing the same. Reading aloud involves a teacher, peer or parent reading aloud to a learner to hear before he /she is given the opportunity to read. Reading aloud allows the students to listen carefully before aping what they have heard. From the following excerpts are the feelings of respondents regarding reading aloud and modeling.

A Learner reported:

“Modeling helps me understand more especially when the teacher reads aloud and asks me to do it after him. Other learners used to laugh at me because they did not understand my problem. They made me feel so worthless. In fact many are the times I tried but ended up reading words opposite of what the teacher did .However after the teacher talking to me and taking me in small steps, I can read a few words.”(PPL5 FGD2)

One teacher said:

“I use read aloud to model phonological awareness where I help the learners to map the letters to their respective sounds as they read them. Through reading aloud the learner is able to get the sound of the letters and words respectively.”(T2)

A second teacher added:

“Read aloud help the teacher to demonstrate good reading behavior showing where to pause in case of commas and full-stops and also how to ask questions. It gives the learners an opportunity to familiarize with the various punctuation marks found in the texts as they read” (T 1)

From the excerpts of T1, T2 and PPL5 FGD2 it emerged that teachers use read alouds in the school set-up. Through a models demonstration of reading a learner learns the language structure of the words. It also gives the learner an opportunity to use their processing skills and working memory to engage with new vocabulary in the texts. Through reading aloud a teacher model engages the learner learning process. The ability to acquire proper reading skills enables a learner to identify words, map out sounds and meaning as they carry out the reading task.

From qualitative results, another theme reported is that modeling scaffolded new behavior. Scaffolding means the guidance given to a student to help him or her perform a task which previously he was not able to do (Athanasas & de Olivera, 2014). One of the learners reported:

“In my school, my language teacher handles me well .He has known my weakness in reading, so when I am reading aloud he encourages me to repeat the instruction many times. This helps me to master some words. My other teacher never used to do this and that was the reason why I ended up losing interest in school.”(PPL2 FGD1)

From the above expression it emerged that scaffolding helped to modify reading behavior

4 DISCUSSION & CONCLUSION

The results of descriptive analysis indicated that the highest mean score recorded in the post-test scores among dyslexic learners was by the Experimental & Pretested-Group who received modelling

behaviour modification strategy after a pretesting. The study reported that there was a moderate statistical influence between modeling and reading ability. The ANOVA results output revealed that, the model statistically significantly predicts reading abilities among the primary school pupils with dyslexia. It was observed in this study that students alluded that their teachers clearly demonstrate and explains what they want them to do, which an emancipation of modeling behaviour modification practice. The study established that modelling involved strategies such as repetition, chunking, reinforcement and read-aloud which were used to model the reading. The overall majority of the learners felt that they enjoyed reading when their teacher first modelled for them to see exactly what is to be done. Qualitative findings revealed that modelling helped in simplifying the tasks by chunking and use of read-alouds. Modeling also helped to give a better understanding of the task at hand. Therefore, the study findings concluded that there is a positive significant relationship between modeling behavior and reading ability among dyslexic learners. The findings are supported by Ambrose and Cheong (2011) which reported that Clay Modeling Program has a positive effect on the reading behavior of dyslexic children. On the contrary, this finding is not in agreement with the finding of Schukajilow et al., (2015) which found indirect effects of modeling on the treatment on learners' performance in mathematics. Another study by Loh (2009) found negative effects of modeling on teachers' classroom practices. This finding agrees with that of Zocolotti et al., (2014) which reported that orthographic decoding and integration of reading sub-components contributed significantly to the overall prediction of text reading fluency among dyslexics. The study also found that modeling improved individual reading performance of the dyslexic learners. On the contrary, these findings are not in harmony with those of Choi et al., (2018) in U.S.A which reported that there was no significant correlation between reading score and academic achievement among the learners' performance in mathematics. This finding agrees with that of Adelodun (2016) in Nigeria which established that training environment, circumstances and self-concept influences a learner's academic performance. These findings are also supported by Robson et al., (2015) in New Zealand which reported that feed forward video modeling improved reading fluency and comprehension. The finding however differs with those of Choi et al., (2018) which reported that there was no significant relationship between the reading score and mathematical achievement when school wide model was used to enhance learning.

The study concludes that the model statistically significantly predicts reading abilities among the primary school learners with dyslexia. It was therefore concluded that there is statistically significant influence of modelling behavior modification practices on reading abilities among learners with dyslexia. The study recommends that the Ministry of Education should set-up a learning support area in the schools to help manage those learners with dyslexic conditions. It should also equip the learning support departments in the public primary schools with the latest strategies for handling dyslexia in the classes.

This is because the current study established that a good number of teachers had large classes some of which had dyslexic learners.

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