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Effects of Home Tutoring Programme on Reading Achievement of Primary School Children with Dyslexic Learning Disabilities in Chanchaga Local Government Area, Niger State, Nigeria

NALADO A. LIMAN
Niger State College of Education, Minna, Nigeria

ZIKA JOHN IHENACHO
University of Jos, Nigeria

Abstract. This study looked at the effects of home tutoring programme on reading achievement of primary school children with dyslexic learning disability in Chanchaga Local Government Area of Niger state, Nigeria. The study adopted quasi experimental design, and particularly it employed the pretest - posttest control – experimental group design. A sample of eight (8) pupils was taken (four in the experimental and four in the control group). Three research questions and three hypotheses guided the study. The instrument for data collection was the Reading Achievement Inventory (RAI), which was validated and found to be appropriate for the study. Data analyses were done using simple percentage, mean difference and gain scores to answer research questions and t-Test to answer the hypotheses. The results obtained revealed that children taught using home tutoring programme performed better than children taught with the conventional method on all the variables under study, and it was recommend that parents should procure the services of a home tutor for their children with dyslexia among others.

Keywords: Home Tutoring Programme,Reading Achievement ,Primary School and Children with Dyslexic Learning Disabilities

1. Introduction

Home tutoring programme refers to a range of organized tutoring practices in academic or skill development area that occurs outside school period. It involves formal instruction or learning facilitation to the child which can be provided by a parent tutor, a paid or volunteer third party tutor, and can take place in a school building or at home. Whereas the school continues to serve as primary institution for educating children, the prevalence of home tutoring suggests that learning also takes place outside school (Mori, 2015). Home tutoring programme provides individualized instruction, customized to the learners own ways of learning, and an environment in which pupils progress at their own speed and receive praise, feedback, and encouragement from the home tutor. Home tutoring programme also maximizes time on task, and pupils see skills demonstrated instead of just verbalized (Fager, 1996; Atta, Jamil, Rehman, Ayaz, Saeed, and Shah, 2011).

Reading achievement is a measure of reading gain following performance. It is a measure of a child's success in word recognition, reading fluency and reading comprehension skills and represents expectations of children performance in relation to a range of text types and text difficulty and in response to a variety of assessment questions intended to elicit different cognitive processes and reading behaviours (National Assessment of Educational Progress, 2011). Reading achievement is important because it measures read proficiency which is a fundamental skill that affects the learning experiences and school performance of children. Children, who are competent readers, as measured by performance on reading tests, are more likely to perform well in other academic subjects. Though it is axiomatic in reading science and practice that children from early childhood education (pre-k and kindergarten) through primary one to primary three learn to read, but from primary four onward the children begin to read to learn.

Loveless (2018) pointed out that learning to read and reading to learn should occur simultaneously and continually throughout the child's elementary and secondary school years. Thus, the criterion for measuring reading achievement at different stages of schooling must include the basic skills of word recognition, reading fluency and comprehension. Reading achievement can be measured through norm referenced, criterion referenced or informal inventory techniques. This study will utilized the informal reading inventory methods of assessing reading achievement, whereby word recognition, reading fluency and comprehension skills of children with dyslexia were measured.

Dyslexia is an impairment that limits a child's ability to read, write, do arithmetic and take charge of his own cognition. Children with dyslexia are a sub-group of children with learning disabilities who have normal or above normal intelligence and receive adequate classroom instruction yet have difficulties with reading, writing or spelling or a combination of all of these skills. Dyslexia is a specific form of learning disability which affects the child's ability to recognize and process symbols and letters. In other words it affects the child's ability to break up a word into its component parts and to build the individual sounds into a word.

Some of the problems that hinder children with dyslexia from initiating and sustaining the reading act include the child's inability to think about sounds and recall sounds in a word, having difficulty in translating written to spoken language and vice versa, and the reversal of letters and words (Steinke, 2015). Additional problems may include difficulty in recognizing or pronouncing words (word recognition) or failing to pronounce words with appropriate fluency - speed and accuracy (Sujata, 2014). Yet another important reading skill that children with dyslexia are lacking is the comprehension (Odekhiran, 2007). This is demonstrated by their inability to connect ideas in a passage, confuse meaning of words and sentences. Other problems of children with dyslexia could be the inability to look for information from the text to answer literal questions and use of background experience to answer inferential questions.

Without intervention and support the learning and execution of reading function is significantly impaired for children with dyslexia. Even with support and intervention, learning to read for a child with dyslexia is painfully slow and laborious. That is why Ojo (2011) suggested that the most successful way to teach reading strategies to learners with limited reading proficiency is to employ the explicit instruction. This strategy involves familiarizing the pupil with key concepts, modelling the behaviour and cognitive steps, others include providing guided practice with feedback before the pupil finally move to independent and advanced practice level among others. Taking systematic steps of this nature requires time, expertise and individual contact between the teacher and the learner. All these are usually difficult to find in our public primary schools, hence the teachers teach using one method fits all and wait to fail model typically associated with current educational intervention (Mahone, 2016). It is in this light that the home tutoring programme which has the potential and flexibility to accommodate all categories of learners is

proposed to be used as a remedial programme that concentrates on imparting basic skills in which the learner is deficient. The programme provides less threatening and motivating learning environment where children's interest in reading is encouraged.

The study sought to investigate the effects of home tutoring programme on reading achievement of primary five children with dyslexia in Chanchaga Local Government Area of Niger State. Specifically, the objectives of the study were to: ascertain the extent to which home tutoring programme will influence word recognition scores of primary five pupils with dyslexia; determine the extent to which home tutoring programme will influence reading fluency scores of primary five pupils with dyslexia and; determine the extent to which home tutoring programme will improve reading comprehension scores of primary five pupils with dyslexia.

The study was designed to answer the following questions:

- To what extent will home tutoring programme influence word recognition scores of primary five children with dyslexia after intervention?
- What is the effect of home tutoring programme on reading fluency scores of primary five children with dyslexia after intervention?
- To what extent will home tutoring programme influence reading comprehension scores of primary five children with dyslexia after intervention?

The following hypotheses were tested at 0.05 level of significance:

- There is no significant difference in posttest word recognition mean scores of primary five children with dyslexia in the experimental and the control group following home tutoring programme.
- There is no significant difference in posttest reading fluency mean scores of primary five children with dyslexia in experimental and the control group following home tutoring programme.
- There is no significant difference in posttest reading comprehension mean scores of primary five children with dyslexia in experimental and control group following home tutoring programme.

2. Research Methodology

This study was quasi experimental in nature. Specifically, it adopted the pretest-posttest experimental-control group design. The population of the study comprised all primary five children with dyslexia in Chanchaga Local Government Area of Niger State. Two schools within the local government were randomly selected (Umaru Audi and New Tunga primary school all primary five children were screened for dyslexia. A total number of sixty three (63) children were obtained from the two schools selected (33 from Umaru Audi Primary School and 30 from New Tunga Primary School). A sample of eight children was randomly selected to participate in the study using simple random sampling technique. Balloting was adopted to share the sample into experimental and control groups, while Umaru Audi primary school Minna was made the experimental group, New Tunga primary school Minna was made the control group. The period of treatment lasted for four weeks, with two sessions per week for experimental group and control group. Each group had a 35 minutes intervention per session. One week was used for pre-test post-test. Both groups were administered a pretest before the commencement of treatment and after the treatment period, a posttest was administered to both groups.

The instrument for data collection was the Reading Achievement Inventory (RAI) which has three parts that were as follows: Part I - one hundred high frequency words for Nigerian children; Part II - Fluency Reading Passage and; Part III - Umolu Informal reading inventory (UIRI). The instrument was subjected to expert observation and inspection to determine the appropriateness of items in the instrument. Experts in the departments of Special education

and Rehabilitation Sciences; and Test, Measurement and evaluation unit of Department of Education Foundation University of Jos were involved in the validation. They rated the instruments as appropriate for use in measuring word recognition; reading fluency and reading comprehension. The instrument was therefore considered very high in magnitude and valid for the test of word recognition, reading fluency and reading comprehension skills respectively. The instrument was also subjected to test retest analysis to get the reliability index using Pearson Product moment correlation coefficient. A reliability index of 0.77 was obtained for RAI Parts I, II and III. This index indicated that items of the instrument have relatively high internal consistency**.**

3. Results

Research Question 1: To what extent will home tutoring programme influence word recognition skill of primary five children with dyslexia after intervention?

Table 1: Word Recognition Scores of Primary Five Children with Dyslexia

Word Recognition	S/No.	Pretest	Posttest	Gain Score
Experimental Group	1.	37	58	21
	2	48	60	12
	3.	49	55	6
	4.	45	61	16
Control Group	5.	35	41	6
	6.	42	48	6
	7.	40	42	2
	8.	47	50	3
	Total	343	415	72
	Mean	42.88	51.88	9.0

Table 1 shows the pretest and posttest word recognition gain scores of primary five children with dyslexia. From the table, the entire participants in the experimental group gained between 6 and 21 new words with participants 1 and 3 making the most and least gains respectively. In the control group however, participants 5 and 6 made the most gain (6words each) and participant 7 made the least gain (2 words).

Research Question Two: What is the effect of home tutoring programme on reading fluency of primary five children with dyslexia after intervention?

Table 2: Reading Fluency Scores of Primary Five Children with Dyslexia

	Reading Fluency			
	Experimental Group		Control Group	
S/No.	Pretest	Posttest	Pretest	Posttest
1	40	51	32	40
2	46	54	35	42
3	40	58	40	38
4	48	60	45	45
Total	174	223	152	165
Mean	43.5	55.75	38	41.25
% Increase	28.0		8.55	
% Difference	19.45			

Table 2 indicates the pretest and posttest reading fluency mean scores of primary five children with dyslexia. From the table, the experimental group had a pretest mean score of 43.5, before administration of treatment, but after the administration of treatment, the mean score was 55.75. This shows a 12.25

increase in mean score, 28.0 % increase in fluency score between pretest and posttest, for the control group, the pretest reading fluency mean score was 38.0 before administration of posttest but after posttest, the mean also rose to 41.25 giving a mean difference of 3.25, it also shows a 8.55% increase in fluency between pretest and posttest. The table further indicates that there was a 19.45% difference in performance between the experimental group and control group. The graph also shows that the experimental group performed better than the control group.

Research Question Three: To what extent will home tutoring programme affect reading comprehension skills of primary five children with dyslexia?

Table 3: Reading Comprehension Scores of Primary Five Children with Dyslexia

	Reading Comprehension			
	Experimental Group		Control Group	
S/No.	Pre-test	Post-test	Pre-test	Post-test
1	32.5	62.5	32.5	50
2	50	75	25	25
3	32.5	75	32.5	50
4	32.5	62.5	50	62.5
Total	147.5	275	140	187.5
Mean	36.75	68.75	35.0	46.88
% Increase	87.07		33.94	
% Difference		53.13		

Table 3 shows the reading comprehension scores of primary five children with dyslexia. The pretest reading comprehension mean score of the experimental group was 36.75 and the posttest mean score was 68.75. In the control group, the pretest reading comprehension mean score was 35.0 before the administration of treatment, but after the administration of treatment the mean score was 46.88. A percentage increase of 87.07% was recorded for the experimental group and 33.99% for the control group, this lead to 53.13% difference between the experimental and the control group.

Hypothesis One: There is no significant difference in posttest word recognition mean score of primary five children with dyslexia in the experimental and the control group following home tutoring programme

Table 4: t-Test Comparison of the Posttest Mean Scores of Experimental and Control Groups on Word Recognition Skill

Variable	No. of Sample	Df	Mean	SD	t-cal.	t-crit.	Sign level (p)
Exp. Group	4	3	58.5000	2.6458	10.075*	3.1824	0.002
Cont. Group	4		45.2500	4.4253			

*- Significant at 0.05 level of significance

Table 4 presents the t-test statistics result on the experimental and control groups posttest scores of pilot test. From the table, the t-value calculated (10.075) is greater than the t-value critical (3.1824), also the significant level (0.002) is less than 0.05 level of significance. This indicates that there is statistically significant difference between the mean score of the experimental group (58.5000) and that of the control group (45.2500) on word recognition skill at posttest.

Hypothesis Two: There is no significant difference in posttest reading fluency mean scores of primary five children with dyslexia in experimental and control group following home tutoring programme.

Table 5: t-Test Comparison of Posttest Mean Scores of Experimental and Control Groups on Reading Fluency Skill

Variable	No. of Sample	Df	Mean	StD	t-cal.	t-crit.	Sign level (p)
Exp. Group	4	3	55.7500	4.0311	7.178*	3.1824	0.006
Cont. Group	4		41.2500	2.9861			

*- Significant at 0.05 level of significance

Table 5 presents the t-test statistics result on the experimental and control groups posttest scores of pilot test. From the table, the t-value calculated (7.178) is greater than the t-value critical (3.1824), also the significant level (0.006) is less than 0.05 level of significance. This indicates that there is statistically significant difference between the mean score of the experimental group (55.7500) and that of the control group (41.2500) on reading fluency skill at posttest.

Hypothesis Three: There is no significant difference in posttest reading comprehension mean scores of primary five children with dyslexia in the experimental and control group following home tutoring programme.

Table 6: t-Test Comparison of the Posttest Mean Scores of Experimental and Control Groups on Reading Comprehension Skill

Variable	No. of Sample	Df	Mean	StD	t-cal.	t-crit.	Sign level (p)
Exp. Group	4	3	68.7500	7.2169	2.205ns	3.1824	0.115
Cont. Group	4		48.7500	12.3322			

ns- Not Significant at 0.05 level of significance

Table 6 presents the t-test statistics result on the experimental and control groups' posttest scores of pilot test. From the table, the t-value calculated (2.205) is less than the t-value critical (3.1824), also the significant level (0.115) is greater than 0.05 level of significance. This indicates that there is statistically significant difference between the mean score of the experimental group (68.7500) and that of the control group (48.7500) on reading comprehension skill at posttest.

Hypothesis Four: There is no significant difference in the pretest and posttest word recognition mean scores of primary five school children with dyslexia in the experimental group.

Table 7: t-Test Comparison of the Mean Scores of Pretest Experimental and Posttest Experimental Group on Word Recognition Skill

Experimental	No. of Sample	Df	Mean	StD	t-cal.	t-crit.	Sign level (p)
Pretest Group	4	3	44.7500	5.4390	4.335*	3.1824	0.023
Posttest Group	4		58.500	2.6458			

*- Significant at 0.05 level of significance

Table 7 presents the t-test statistics result of the pretest experimental and posttest experimental groups' scores of pilot test. From the table, the t-value calculated (4.335) is greater than the t-value critical (3.1824), also the significant level (0.023) is less than 0.05 level of significance. This indicates that there is statistics significant difference between the mean score of the pretest experimental group (44.7500) and that of the posttest experimental group (58.5000) on word recognition skill at the pilot test.

Hypothesis Five: There is no significant difference in the pretest and posttest reading fluency mean scores of primary five children with dyslexia in the experimental group.

Table 8: t-Test Comparison of the Mean Scores of Pretest Experimental and Posttest Experimental Groups on Reading Fluency Skill

Experimental	No. of Sample	Df	Mean	StD	t-cal.	t-crit.	Sign level (p)
Pretest Group	4	3	43.5000	4.1231	5.843*	3.1824	0.010
Posttest Group	4		55.7500	4.0311			

*- Significant at 0.05 level of significance

Table 8 presents the t-test statistics result of the pretest experimental and posttest experimental group scores. From the table, the t-value calculated (5.843) is greater than the t-value critical (3.1824), also the significant level (0.010) is less than 0.05 level of significance. This indicates that there is statistically significant difference between the mean score of the pretest experimental group (43.5000) and that of the posttest experimental group (55.7500) on Reading Fluency skill at the pilot test.

Hypothesis Six: There is no significant difference in pretest and posttest reading comprehension mean scores of primary five children with dyslexia in the experimental group.

Table 9: t-Test Comparison of the Mean Scores of Pretest Experimental and Posttest Experimental Group on Reading Comprehension Skill

Experimental group	No. of Sample	Df	Mean	StD	t-cal.	t-crit.	Sign level (p)
Pretest	4	3	36.87	8.75	8.540*	3.18	0.003
Posttest	4		68.75	7.22			

*- Significant at 0.05 level of significance.

Table 9 presents the t-test statistics result of the pretest experimental and posttest experimental group scores. From the table, the t-value calculated (8.540) is greater than the t-value critical (3.1824), also the significant level (0.003) is less than 0.05 level of significance. This indicates that there is statistically significant difference between the mean score of the pretest experimental group (36.8750) and that of the posttest experimental group (68.7500) on reading comprehension skill at the pilot test.

4. Discussion

Data analyzed from the pilot study revealed that there is significant improvement in word recognition, reading fluency and reading comprehension skills of participants in the experimental group more than the participants in the control group. These were shown in the in the differences between pretest scores of the participants and their posttest scores.

The result obtained from research question one table three revealed that the experimental group made the most gain. Gaining up to twenty one words after administration of treatment, whereas participants in the control made the highest gain of six words only after the administration of posttest. All the four Participants in the experimental group scored above the group mean after administration of posttest. However none of the four participants in the control group scored above the group mean after posttest.

The result of research question two presented on table four showed that there was improvement in reading fluency mean scores of both groups; however the experimental group had better mean score than the control group mean score. The result also showed that the participants in the experimental group made a higher percentage gain between pretest and posttest than the control group.

Result obtained from research question three on table five revealed that the experimental group made a significant improvement in comprehension after the administration of posttest. This agree with the study by Van Staden (2013) .The study aimed at identifying

factors that predict reading literacy achievement among Grade 4 children in South Africa by utilizing aspects of Carrols model of school learning. The result, point to statistical significance of engaged reading and cultivating motivation for reading among children through parental involvement in literacy activities. The study also agreed that the teaching of reading comprehension skills and strategies is identified as a significant predictor of reading literacy achievement, instruction of which should form an integral part of teaching reading in the classroom.

From analysis, results indicated that the difference between the pretest and posttest mean scores were significant for the experimental group (see table 9, 10 and 11). But unlike the experimental group, the pretest and posttest mean scores of the control group were not significant (see table 4 and 5). The comparative analysis of the posttest showed that for all the skills (word recognition, reading fluency and comprehension), the experimental group made significant gain as the experimental group scored significantly higher than the control group. Suleman and Hussain (2014) agreed with the findings. They studied the effect of private home tutoring on the academic achievement of children in mathematics. The study sampled fifty children and they were divided into two groups of control and experimental by equating them on the basis of their previous performance in mathematics as determined through pretest. Each group was composed of twenty five children. The study adopted the pretest posttest equivalent group design. Statistical analysis employed for the study was the mean, standard deviation and differences of means. Significance of difference between the mean scores of both experimental and control groups on the variables of pretest and posttest scores was tested at 0.05 levels by applying t-test. The study concluded that there is positive effect of private home tutoring on academic achievement of children in mathematics.

5. Conclusion

After data analysis, it was concluded that first, there is a significant positive effect of home tutoring programme on reading achievement of primary school children with dyslexic learning disability in Chanchaga local government area of Niger State. In other words, Home tutoring programme was found to be effective in raising the achievement level of children with dyslexia in reading. Second, the participants in the experimental group showed better performance than the students of control group. On the basis of conclusions reached, the following recommendations were put forward:

- Parents should be encouraged to be more involved in the education of their children with dyslexia by procuring home tutoring services for them.
- For the purpose of future studies, it is recommended that researchers should make the training of research assistants more intensive to avoid variability in the execution of the programme. It was noticed that there were individual participants who did not improve significantly after treatment, it is therefore recommended that in future teachers should intensify individual attention, so as to maximize their performance.

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