

EFFECTS OF REPEATED READING STRATEGY ON THE WORD RECOGNITION SKILL OF PRIMARY SCHOOL PUPILS WITH READING DISABILITIES IN ABUJA, NIGERIA



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ABSTRACT

The study investigated the effects of repeated reading strategy on the word recognition skill of primary school pupils with reading disabilities in Abuja, Nigeria. The objective of the study was to find the effects of repeated reading strategy on the word recognition skill. The study was guided by two research questions and two hypotheses tested at 0.05 level of significance. The study adopted the experimental research. Specifically, the pretest-posttest control group design was applied. Population of the study was 118 primary four pupils diagnosed with reading disabilities in the specific area of word recognition in five public primary schools in Gwagwalada that were identified using teachers referral and screened using Umolu Informal Reading Inventory. L.E.A Primary School, Gwagwalada was randomly picked for the study. Samples for the study comprised all the 25 pupils identified as having reading disabilities in L.E.A Primary School, Gwagwalada. These pupils were randomly assigned to experimental and control groups. The study used 100 High Frequency Words for Nigerian Children and Umolu Informal Reading Inventory as instruments for data collection. The validity and reliability of these instruments were ascertained. The data collected were analysed using descriptive statistics comprising percentage and mean scores to answer the research questions, and inferential statistics that involve t-Test dependent samples and t-Test independent samples that tested the hypotheses. The major findings of the study showed that repeated reading strategy improved word recognition skill of pupils with reading disabilities. Finally, the study recommended that repeated reading strategy should be used in remediation of word recognition problem.

Introduction

Word recognition refers to the ability of an individual to identify and read words correctly in a given text. It is one of the essential foundation reading skills upon which reading comprehension skills depend. Word recognition could be seen from a twofold perspective that involves the recognition and pronunciation of word and the connection to or accompanying of meaning to the pronounced word. In this study, only the pronunciation of words was assessed in word recognition because of the profoundness of the reading disability exhibited by the participants. Therefore, the other aspect of word recognition that is concerned with attaching or associating meaning with the word would have been very difficult to measure without first remediating the problem identified.

Pupils with reading disabilities expend a large amount of effort into decoding words, in other words, there is a problem in word recognition. Therefore, by the time a pupil with reading disabilities comes to the end of a sentence, the pupil will have forgotten what the sentence is even about. Comprehension is blocked because the process of decoding takes so much time and effort that the short-term memory cannot grasp the fragmented input of information. By contrast, a pupil who has good word recognition reads in a smooth and continuous phrase that the brain can retain and comprehend what is read.

Repeated reading strategy is the practice of reading the same text over and over again until the rate of reading error is minimal or eliminated. This strategy could be implemented individually or in group setting. It encourages a pupil to read a short passage aloud and when the pupil makes an error, hesitates, or asks for help, the teacher pronounces the word, and the pupil repeats the word and rereads the sentence. Here, the pupil could reread the text for at least three times. Thus, it is a teaching strategy that emphasizes the repetition of the same text for an average of about three to four times and has the advantages of boosting confidence in the pupils, maximizing pupils' engagement, providing a model of fluent reading, and creating opportunities for individual support.

Han and Chen (2010) revealed that repeated reading strategy has received a large amount of attention from first language reading researchers, and that most of which provided evidence of its potency for reading fluency and comprehension. Johns (2007) also found that repeated reading strategy increases struggling reader's reading fluency and comprehension. But, these studies, like most others, focused on the reading fluency of first language speakers, and in some cases the participants were not defined as pupils with reading disabilities. In the present study area, there are no laid down procedures for assessing pupils at the beginning of the school year to identify those that may require special education services. This could have led to the high percentage of primary school pupils that cannot read an instructional level passage (Federal Ministry of Education, 2015).

Pupils in primary four should be reading instructional level text at independent reading level. However, there are issues of reading problems among primary four pupils. This has been linked to problems in strategy, instruction, and teacher's effectiveness. Efforts are being made to address some of these problems. However, finding answers to the issue of reading disabilities among the generality of the pupils is not receiving much attention. If pupils who seem 'bright enough' to handle academic content and have the skills needed to perform everyday duties, find reading particularly challenging, it appears that poor word recognition skill is partly attributed to reading disabilities among pupils.

The problem this study sought to find solution to can be formulated under the question - will repeated reading strategy bring about an improvement in the word recognition skill of primary four pupils with reading disabilities in Abuja?

The aim of this study was to determine the effects of repeated reading strategy on the word recognition skill of primary school pupils with reading disabilities in Abuja, Nigeria. Specifically, the objectives of the study were to:

1. determine the reading levels of the pupils with reading disabilities before intervention.
2. examine the effect of repeated reading strategy on word recognition skill of primary four pupils with reading disabilities.

The study was designed to answer the following research questions:

1. What are the reading levels of the pupils with reading disabilities intervention?
2. To what extent does repeated reading strategy improve the word recognition skill of primary four pupils with reading disabilities?

The following hypotheses were formulated to guide the study and were tested at 0.05 level of significance:

1. There is no significant difference between the pretest and posttest word recognition mean scores of pupils with reading disabilities in the experimental group after intervention.
2. There is no significant effect of repeated reading strategy in the posttest word recognition mean scores of primary four pupils with reading disabilities in the experimental and control groups.

Method

The study was an experimental research that adopted the pretest-posttest control group design. This design is comprised of two groups, mutually selected from the same population by random sampling (Gravetter and Forzano, 2009). The pretest was administered to both groups at the beginning of the experiment. The experimental group was then exposed to treatment while the control group was exposed to same texts using the conventional strategy (that is, vocabulary strategy). At the end of the treatment period, a posttest was administered to both groups to determine the effects of treatment on the experimental group.

The population for this study was one hundred and eighteen (118) primary four pupils with reading disabilities in five public primary schools in Gwagwalada town, Gwagwalada Area Council, Abuja. Therefore, primary four pupils with reading disabilities was the target population. These are pupils whose reading levels were at least two years below their class level and were identified based on teachers referral before being screened and diagnosed as pupils with reading disabilities by the researchers.

A sample of twenty five (25) primary four pupils with reading disabilities in L.E.A Primary School, Phase III, Gwagwalada, was selected and used as the sample for the study. The school has three arms of primary four designated as 4A, 4B and 4C. There were eight (8) pupils with reading disabilities in primary 4A, ten (10) pupils with reading disabilities in 4B, and seven (7) pupils with reading disabilities in 4C.

The selection of the participants was based on the fact that the pupils have been identified as having reading disabilities.

The simple random sampling technique was used to select a school from among the identified five primary schools in Gwagwalada main town, and utilized all the pupils that were identified as having reading disabilities as participants in the study. The participants were selected using probability sampling assigned to experimental and control groups.

Two instruments were used for data collection. These are 100 High Frequency Words for Nigerian Children and Umolu Informal Reading Inventory (UIRI). The 100 High Frequency Words for Nigerian Children was developed by Professor Joanne Umolu in 1985. The instrument was adopted and revalidated for this study. Umolu Informal Reading Inventory was developed by Professor Joanne Umolu in 1985 for the Nigerian child (Andzayi & Umolu, 2004). This instrument was adopted and revalidated for this study.

100 High Frequency Words for Nigerian Children and Umolu Informal Reading Inventory (UIRI) were subjected to content and face validity through the scrutiny of four experts, two from Special Education and Rehabilitation Sciences Department and the other two were from Test and Measurement of the University of Jos, for vetting on the relevance and suitability of the instruments. From the experts' ratings of the instruments, a validity of concordance was calculated for each instrument. The result showed for 100 High Frequency Words for Nigerian Children a validity of concordance of 77.5% was obtained, and for Umolu Informal Reading Inventory (UIRI) 82.5% validity of concordance was obtained. Therefore, the instruments were considered very high in magnitude and valid for the test of reading fluency, word recognition and reading comprehension skills.

The test-retest reliability method was used to ascertain the appropriateness of the research instruments. This was as the study used a pretest and posttest. Therefore, the same instruments were administered twice on participants outside the main study area to establish the effect of the participants' constancy in response. The reliability index was used to estimate the stability of the tests on word recognition, reading fluency, and comprehension. This was done by calculating the correlation coefficient (r) of the pretest and posttest results. Hence, Pearson moment correlation was used to obtain the reliability indexes which were 0.87 for 100 High Frequency Words for Nigerian Children and 0.96 for Umolu Informal Reading Inventory. Therefore, the instruments were considered very high in magnitude and reliable for the test of word recognition.

The pupils were screened and those that were identified as having reading disabilities were selected for the study. A pretest on word recognition was administered to the participants before the introduction of treatment and at the end of the treatment period, a posttest on the same skill was administered.

Two research assistants were given a three-day mandatory training on the procedures of the Repeated Reading Strategy for the experimental group and vocabulary strategy (which is the conventional strategy used in public schools in Abuja) for the control group. A day trial observation period was conducted by the researchers to observe the research assistants put into practice the training they have

been exposed to. The research assistants were teachers from public school with a minimum qualification of NCE (English Language).

The treatment was an eight-week instructional unit on reading fluency and comprehension that was undertaken using unfamiliar passages that were two years below the participants' class level. The intervention was administered to the experimental group using Repeated Reading Strategy while the control group used the conventional (vocabulary) strategy. The research assistants provided the necessary support to the researcher during the entire study.

Repeated reading strategy was administered to the experimental group as treatment using repeated guided oral reading practice and immediate error correction to improve word recognition. The participants in the experimental group read short passages several times until a level of word recall that was satisfactory was attained. The same text (passage) was read over and over again until the rate of reading had no errors.

The control group used the same passages with the experimental group but with a different teaching strategy (that is, the conventional strategy). In using this strategy, the teacher asked the participants to identify vocabulary words in the passage, after which, the passage was read to the participants. At the end of the reading, the teacher read the comprehension questions before the participants were asked to write out the answers and submit. Both groups were given the same assignments after each session but in different forms.

The intervention period comprised sixteen sessions that lasted for eight weeks, each session took 35 minutes and the research participants always converged at the designated classrooms in the school for the sessions. The 35 minutes twice a week session was to ensure that the school break period of 45 accommodated the research work and also availed the participants 15 minutes break time.

The data collected from the field were analysed using both descriptive and inferential statistics. Tables were used to illustrate the scores of the participants in word recognition before and after the intervention. Also, tables were used to show the results of the t-test for related samples for hypothesis one and the t-test for unrelated samples for hypothesis two. The value obtained from the computation was referred to as the P-value and the effect size for independent t was calculated.

Results

Research Question One: What is the reading level of the pupils with reading disabilities before intervention?

Table 1 shows the reading levels of the pupils in the experimental group before the administration of intervention.

Table 1: Reading Levels of Pupils with Reading Disabilities before Intervention

Reading Levels	Word Recognition	
	No. of Pupils	%
Independent Level	0	0
Instructional Level	0	0
Frustration Level	13	100
Total	13	100

Table 1 showed the reading levels (word recognition) of the experimental group the administration of treatment. The word recognition levels of the participants revealed that the entire participants were at the frustration level. In other words, 13 participants representing 100% of all the participants were at frustration word recognition level. None was at instructional or independent levels representing 0% for both levels for a primary two text.

Table 2: Pretest and Posttest Word Recognition Scores of Pupils with Reading Disabilities

S/No.	Experimental Group		Control Group	
	Word Recognition		Word Recognition	
	Pretest	Posttest	Pretest	Posttest
1	76	100	88	92
2	86	100	89	90
3	60	96	80	80
4	78	100	87	88
5	65	94	70	72
6	72	98	76	80
7	78	100	57	60
8	67	99	34	37
9	65	100	61	69
10	70	99	73	80
11	54	100	55	56
12	30	100	49	47
13	38	100		
Total	839	1286	819	851
\bar{X}	64.54	98.92	68.25	70.92
% Increase		34.76		3.76
% Difference			89.18	

Table 2 showed that the pretest word recognition mean score of the experimental group was 64.54 before the administration of treatment, after the administration of treatment; the posttest mean score was 98.92 showing a percentage increase of 34.96%. For the control group, the pretest word recognition mean score was 68.25 and the posttest word recognition

mean score was 70.92 with a percentage increase of 3.76%. The percentage mean difference between the experimental group and the control group was 89.18%.

Hypothesis One: There is no difference between pretest and posttest word recognition mean scores of primary four pupils with reading disabilities in the experimental after intervention.

Table 3 shows the significance of the difference between the pretest and posttest reading word recognition mean scores as a result of the administered treatment for pupils with reading disabilities in the experimental group.

Table 3: Results of the Dependent Sample t-Test Analysis of Pretest and Posttest Word Recognition Scores of the Experimental Group

Experimental Group	Σn	\bar{X}	Sd	df	t-value	P-value
Pre-test	13	64.54	16.01	12	-7.67	.00
Posttest	13	98.92	1.89			

P<.05

The data on the word recognition skill mean score of the pupils with reading disabilities exposed to repeated reading strategy was analysed. The SPSS output of the analysis shows that those exposed to repeated reading strategy had a pretest mean score of 64.54, a standard deviation of 16.01, whereas the posttest mean score was 98.92 and a standard deviation of 1.89. This shows that there is a difference in performance between the word recognition pretest and posttest scores of pupils in experimental group.

In addition, the calculated value of t is -7.67 while the P-value is .00. Since the P-value is less than 0.05, it means that there is less than 1% chance that the difference between the pretest and posttest scores occurred by chance. Therefore, we reject the null hypothesis and conclude that there is a significant difference between the pretest and posttest word recognition of pupils exposed to repeated reading strategy.

Hypothesis Two: There is no effect of repeated reading strategy in the posttest word recognition mean scores of primary four pupils with reading disabilities in the experimental and control groups.

Table 4 shows the overall size or the magnitude of the effect of the treatment on posttest word recognition scores for pupils with reading disabilities in the experimental and control groups.

Table 4: Results of the Independent Sample t-Test Analysis of Posttest Reading Word Recognition Mean Scores of Experimental and Control Groups

Group	Σn	\bar{X}	Sd	df	t-value	P-value	r^2
Experimental Group	13	98.92	1.89	23	5.70	.00	0.59
Control Group	12	70.92	17.63				

P<.05

Table 4 showed that the posttest word recognition scores of participants in the control group (Mean = 70.92, Sd = 17.63) is significantly different from those of the participants in the experimental (intervention) group (Mean = 98.92, Sd = 1.63). The mean difference of 28.01 is statistically significant, ($t(23) = 5.70, P = .00$). This showed that there is statistical difference between the experimental group and control group scores. The size or the magnitude of the effect of the treatment ($r^2 = 0.59$) on the difference is around 59%, thus, the finding has a very large effect. Therefore, the null hypothesis eight of no significant difference between the experimental and control groups posttest word recognition mean scores is not supported by the data gathered, thus the alternative hypothesis of difference is accepted and confirmed.

Discussion

The study revealed the reading levels of pupils with reading disabilities. Table 1 showed that word recognition of all the pupils' in the experimental group was at the frustration level. The researchers deduced from this finding that all the pupils were at the frustration level in word recognition skill as result of reading disabilities. This finding was in concurrence with the works of Osisanya, Lazarus and Adewunmi (2013), Seok and DeCosta (2014), and Oyetunde (2015), who found a large percentage of primary school pupils with reading disabilities. Oyetunde, Korb and Babudoh (2016) suggested that additional instruction is needed in the area of word recognition skill in the classroom.

Table 2 revealed the word recognition level of all the participants before and after the experimentation. The result showed that pupils with reading disabilities in the experimental group performed better than twice in their posttest as they did in their pretest. The control had a very small increase in their posttest compared to their pretest score. The difference in the experimental group's pretest and posttest word recognition scores was tested and the null hypothesis of no significant difference that was presented in table 3 was rejected. Furthermore, the null hypothesis of no significant difference in the experimental and control groups posttest word recognition scores presented in table 4 revealed that there was a significant difference whose magnitude was very large. This finding is in harmony with the result of study carried out by Andzayi and Ikwen (2014) on developing beginning reading skills among primary school pupils. The study revealed that the general reading ability of pupils with reading disabilities were poor in all the skills measured (which include sight word recognition) during pretest. However, the experimental group improved significantly in the acquisition of all skills after intervention. The Andzayi and Ikwen recommended that all reading skills including word recognition should be targeted for improvement in pupils with reading disabilities.

Conclusion

Primary school pupils with reading disabilities who were exposed repeated reading strategy showed improvement in their word recognition skill. The current study presents a significant contribution to the literature on the effectiveness of repeated reading strategy as an intervention for the remediation of reading disabilities. In addition to the outcomes of other reading strategies, repeated reading is designed to equip pupils with reading disabilities with efficient and effective speed and accuracy skills. The efficacy of repeated reading strategy in improving the word recognition skill of pupils with reading disabilities could facilitate its

subsequent use as a strategy in remediating the reading challenges of other pupils who are identified as pupils with reading disabilities.

In addition, the effect of repeated reading strategy was determined largely on the extent to which it improved the reading skills of pupils with reading disabilities. The study showed that the duration of an intervention modality is necessary but not sufficient for the remediation of reading problems. However, the use of an instructional level text is a very essential aspect of remediating the reading problem of pupils with reading disabilities. In consistent with previously conducted studies, the findings of this study indicated that a short term treatment of reading disabilities can be effective.

The most encouraging implication of the findings of this study for classroom teachers is that the effectiveness of repeated reading strategy was confirmed in conditions that are reflective of classroom practices. The findings from this study also indicated that researchers can communicate that if pupils with reading disabilities take part in a reading remediation programme using repeated reading strategy, they can expect a modest improvement in the reading problems exhibited by these pupils.

Finally, findings from this study have important implications for improving the word recognition skill of primary school pupils with reading disabilities in Nigeria. The study showed that pupils with reading disabilities who were exposed to repeated reading strategy showed obvious improvement in error reduction as their word recognition skill.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Repeated reading strategy should be used in remediating word recognition problem of primary school pupils with reading disabilities.
2. Instructional level texts and not class level texts should be used during intervention for pupils with reading disabilities.

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