Effect of Remedial Reading Instruction on Word Recognition Problem for Inclusive Education in Nigeria

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Abstract

This study investigated the effect of remedial reading instruction on word recognition for inclusive education in Nigeria. Two research questions were posed and two hypotheses formulated for the study. A quasi-experimental design was used. A sample size of 20 primary school pupils selected out of a population of children with reading disability in Nsukka local government area were assigned to treatment and control groups. All the pupils recommended and identified by grade three teachers and continuous assessment record in reading respectively were pre-tested using adapted diagnostic checklist for oral reading and the grade reader. At the end of the treatment session, the participants were post-tested with the same instrument. The data were collated and analyzed using mean and standard deviations to answer the questions. While t-test statistics was employed to test the null hypotheses. The result of the study among other things revealed that there was mean difference in remedial instruction on word recognition, though they were insignificant.

Keywords: Remedial, automation, content, processes, diagonistic

1. Introduction

Reading is the major problem area of most children who are learning disabled (Learner, 1997). Research evidence has shown that 85 to 90% of children with learning disabilities have problems in reading. He further revealed that opportunities for gainful employment decrease for children with learning disabilities who are poor in reading and in overall educational achievements. Deficits between these children's reading skill and their grade placement may range from a few months to five or six years, depending on the grade level of the children. Furthermore, a reading deficit for several years may drastically affect the children's numerous subject areas because the textbook in these areas may be unreadable for children who are learning disabled. That is why reading problems are often the major concern in the education of children with learning problems.

Poor reading can lead to many other types of problems. However, a great number of children with learning disabilities who have difficulty in reading in Enugu and indeed Nigeria cannot, therefore be ignored. However, research on reading of children with learning disabilities compared to other children, score consistently lower on word recognition test (Bender, 1985a). Adeolle, (2005), reported that reading disabilities affect 15% or more of children and adolescents with learning disabilities. It has been observed that many children with learning disabilities have severe problems with reading, and that reading deficits are the most common academic deficit among these children. The reason may be that they enter school early (West-Christ, 2005). It is this population of children with reading problem that regular teachers have to cope with daily.

Reading disability is a major obstruction impeding the academic development of the school age population, increasing the prevalence of learning problems and resulting in the aggravation of out-of-school syndrome in the Nigerian society (Adeolle, 2005). The National Longitudinal Transition Study (NLTS) examined the school performance of secondary students with learning disabilities and found that one-third drop out of school due to reading deficits, (Wagner & Blackorby, 1996). Youths who drop out of high school have twice the unemployment rate, have fewer opportunities for continued training, and do not have the qualifications for post secondary school or college (Couutinho, 1995). In the world today, high technology and automation have spurred a demand for highly trained people. Odd jobs rapidly become obsolete, making the process of retraining a necessity. It is predicted that workers in every occupation will have to retrain themselves to prepare for new jobs many times during their work careers. Yet, the ability to read efficiently in view of Lerner (1997) is a key tool for retraining and for maintaining employment. Adeolle (2005) emphasized that reading is the basis of all other academic subjects within the educational setting and as such constitutes the fulcrum on which academic performance pivot. In his words, yet, a larger number of children with learning problem are finding it difficult to read resulting in their poor performance in schools. Rubin, (1991) explained that reading is a process in which information from the text and the knowledge possessed by the reader act together to produce meaning. In other words, readers bring their background experiences, as well as emotions into reading in order to understand what they are reading. Children with learning disabilities may not be able to bring their background experiences into

reading due to their limited vocabularies. They may find it difficult meeting reading milestones for a given age or grade. Adeolle (2005) found out that reading disability/difficulty leads to failure in school since those affected cannot get meaning from printed or written messages. The implication is that children with reading disability who cannot read with understanding often see reading activities as punishment.

Research findings support the efficacy of special instructional procedures on treatment of reading problems (Lerner, 1997). Most initial reading instruction involves the study of phonics, supplemented by sight word approaches. Word recognition according to Lerner deals with the ability to recognize and pronounce words. Some research has indicated that basic lists of 200 to 300 sight words may account for up to 85% of the typical material in the first eight years of school. Rubin (1991) stated that word recognition is necessary to be able to read. She sees word recognition as a twofold process that includes identification of printed symbols by some method so that the word can be pronounced, and the attachment or association of meaning to the word after it has been well pronounced. Consequently, it is very important for all children to master recognition of a set of basic sight words. Lyon (2000) said that scientific research does not support the claim that context and authentic text are a proxy for decoding skills. To guess the pronunciation of words from context, the context must predict the words. But content words, the most important words form text occur commonly 10 to 20 percent of the time. Instead, the choice strategy for beginning readers is to decode letters to sound in an increasing and accurate manner.

Automaticity is an essential quality of a good reader. It has been demonstrated consistently that good readers rarely skip over words, and readers gaze directly at most content words. In contrast, less skilled readers depend on context for word recognition. The word recognition processes of skilled readers are so automatic that they do not need to rely on context (Stanovich, West & Human, 1981). Good readers employ context to aid overall comprehension, but not as an aid in the recognition of unfamiliar words. Lyon (2000) asserted that an alphabetic cipher must be deciphered, and this requires robust decoding skills.

A good scale for identification of problem readers is based on the philosophy that most oral readers make some errors when they read. The following error types developed by Rubin (1991) not only indicate the kinds of reading errors, but also provide indicators of oral reading problem. They are as follows:

1.   Omissions -leaves out a word, part of a word or consecutive words.

2.   Substitutions - Substitutes a whole word

3.   Insertions - adds a word, part of a word, or consecutive words.

4.   Mispronunciations - mispronounces a word to produce a nonsense word (unlike substitution where an actual word is substituted).

5.   Words pronounced by examiner after a five-second pause by a child.

6.   Hesitations - a pause of less than five seconds.

7.   Repetitions - a word, part of, word, or a group of words repeated.

8.   Reversals - word order is changed.

9.   Self-correction - error is spontaneously corrected.

Programmatic research over the past 40 years has not supported the view that reading development reflects a natural process that children learn to read as they learn to speak, through natural exposure to a literate environment

(Liberman, 1992). He established that certain aspects of learning to read are highly unnatural. For example, the linguistic gymnastics in recovering phonemes from speech and applying them to letter and letter patterns. Unlike learning to speak, beginning readers must appreciate consciously what the symbols stand for in the writing system they learn. Reading as an uninterrupted flow in interpreting figures and fact is an outstanding feature of a good reader. But, when a reader stumbles on an unfamiliar word, he attempts to figure out how to pronounce them as well as to determine its meaning. Pupils or students who become effective readers must be able to automatically decode written symbols, which represent speech sounds. Inability to do so will prevent readers from bringing anything to or getting any message from the printed page. Such topics as phonics, auditory and visual discrimination, consonants, vowel sounds, special letters and sounds, phonograms, syllabication and skills like phonic analysis, synthesis, structural analysis, whole word or "look and say", asking someone and using dictionary were streamlined as prerequisite for word recognition in remedial instruction (Rubin, 1991).

However, Vellutino (1992) observed that at the heart of the debate between code meaning advocates is the question of whether fluency (automacity) in identifying words out of context is a prerequisite for effective and

efficient comprehension of what is read. Advocates of code-based approaches believe that being able to identify many words as you read does not depend on using context to guess meaning. Identifying words as you read is a highly automatic process. The more fluent and automatic you are in identifying words, the more effective you will be in getting meaning from context. Many studies support the code-based position. Three different groups reported similar findings. Vellutino (1991) summarizing the results of these investigations stated the following generalizations:

a.   The most basic skill in learning to read is word identification;

b.   An adequate degree of fluency in word identification is a basic prerequisite to successful reading comprehension;

c.   Word identification skilled readers is a fast acting, automatic, and in effect modular process that depends little on contextual information for execution;

d.   Even skilled readers can predict not more than one word out of four in sentence contexts, indicating that the predictive role of context must be extremely limited;

e.   Because of limited facility in word recognition, beginning and poor readers are much more dependent on context than are more advanced readers.

Vellutino further made two more generalizations: that alphabetic coding and awareness of letter sounds are essential skills for acquiring word identification, so some direct teaching of the alphabets and phonics is helpful in learning to read. The best approach in his recommendation perhaps makes sensible use of both phonics and whole language. Corrective reading programme takes place in the regular classroom, while the remedial reading usually takes place outside the regular classroom and is handled by special reading teacher, a therapist, or a clinician.

Remedial reading programme is a specialized reading instruction adjusted to the needs of a child who does not perform satisfactorily with regular reading instruction. Again, remedial reading instruction is an intensive, specialized reading instruction for children reading considerably below expectancy. It is a developmental reading instruction set differently for an individual or a selected group of individuals (Read Framework). It has been noted that remedial readers typically enter high school reading several grade levels below their peers. They have limited vocabulary and few internalized strategic reading skills. Often, remedial readers who may be in 4th grade have stalled below reading level and need help reading and understanding information from high school texts. They require reading instruction and intervention in order to succeed in the content area. The special reading teacher works with children having severe reading problem referred by the regular classroom teacher (Rubin, 1991).

Remedial reading as a traditional programme is a highly individualized instruction that takes place outside the regular classroom in a special class (Harris and Hodges, 1981). Remedial instruction is intended supplement or supplants the regular classroom reading programme. That is, children still participate in the daily classroom-reading programme and receive transition instruction as an extra support system. Special education programmes, also known as resources are intended to supplant or replace the regular classroom programme in reading (Reutzel & Cooter, 1992). Hence, remedial services should not be considered unless the classroom teacher has first attempted corrective instruction (i.e., an instruction offered by classroom teachers to children needing extra opportunities to progress). Reutzel & Cooter 1992), also found that in the United States the overall percentage of school children requiring some form of remedial services ranges from 5 to 12 percent. Undoubtedly, this estimate will be higher in Nigeria due to the dearth of reading specialists and special education facilities in schools.

It has been observed that for numerous reasons, some school children are already behind in reading and often maintain reluctant/remedial label throughout their educational careers. Heath, (2007) identified three reasons for reading failure. The identified reasons include: programmes not appropriate for the child, the pace of the instruction too rapid for children to achieve mastery of skills presented and too many children in the reading class. In many homes and schools, reading falls far down the line of priorities and are left solely for teachers. Thus, educational institutions from primary grades to secondary grades work twice as hard to teach large number of student's basic literacy skill. She advised every teacher to structure teaching to aid remedial readers. She explained that those students who are not strong readers often than not, are not as successful as they could be in given content area. Their progress is slow without the help of an observant and efficient teacher.

Student readers according to Heath (2007) can be classified into three broad categories: strategic readers, reluctant readers, and remedial readers. Strategic readers are able to use strategies, such as prediction, drawing inferences, recognizing cause and effect relationships, summarizing, questioning, and rereading. These

strategies permit comprehension of a text on or above the instructional reading level. Reluctant readers usually are able to read any material that is interesting to them. Reluctant readers are frustrated by text they find difficult and do not understand how to effectively apply reading strategies to ease their burden. It showed that remedial readers typically enter high school reading several grade levels below their peers. They have limited vocabulary and few internalized strategic reading skills. Often remedial readers have installed at or below a fourth-grade reading level and need help reading and understanding information from high school texts. While strategic readers generally need little content reading instruction. Reluctant and remedial readers require reading instruction and intervention in order to succeed in the content area.

A lot of efforts have been made to make available and improve educational services offered to children with divers learning challenges in Nigeria. The National Policy on Education (2004) views education in Nigeria as an instrument "par excellence" for affecting national development. The Nigerian philosophy of education posits that education fosters individual's stake and the general development of the society. And that every Nigerian child shall have a right to equal educational opportunity irrespective of any real or imagined disabilities each according to his or her ability. In addition, section 18 of the constitution of the Federal Republic of Nigerian (1999), emphasizes the urgency for government at all levels to strive to eradicate illiteracy and ensure equal and adequate educational opportunities for the citizens of the country. In light of these polices Universal Basic Education (UBE) was instituted to cater for the education of the Nigerian child.

According to Anyakoha (2002), Universal Basic Education is a vital developmental project that is in keeping with both the Federal Government of Nigeria (FGN) constitution and National policy on Education. Anyakoha reiterated the goals of the UBE scheme as universalizing access to basic education, engender a conducive learning environment and eradicate illiteracy in Nigeria within the shortest possible time. The Universal aspect of UBE has some of the following implications. Inclusiveness - which implies that persons of all manners and conditions of physical, spatial and psychological existence will benefits from the programme? Special attention to special groups - which implies that the special needs of all sectors of the population, will be taken into account (FGN, 2000).

The principles of inclusion aims at ensuring that most learners with disabilities are educated in the same regular school setting as their peers without disabilities and to achieve education for all (Eleweke & Rodda, 2001). Although Nigerian's National Policy on Education (2004) upholds inclusive education or integration of special classes and units into ordinary /public schools under UBE scheme, evidence suggests that inclusion programmes are not being satisfactorily implemented. Elekwe (2002) identified such factors as the absence of remedial services (in schools), relevant materials and support personnel as the major obstacles to achieving effective inclusion of children with disabilities in Nigeria. The provision of support personnel and services as integral component of UBE scheme is sine qua non to a successful and effective Education for All. In other words, establishment of remedial educational services, and retraining of mainstream teachers on the basic principles of educating children with special needs would go a long way to bridging the gaps already existing in the UBE implementation in Nigeria.

1.1 Purpose of the Study

The purpose of this study is to find out the effect of remedial reading instruction on word recognition problem of children with reading difficulty. Specifically, this seeks to;

1. Find out how remedial reading instruction would improve word recognition of children with reading difficulty.

2. Find out if there would be any difference in word recognition among children with reading difficulty.

1.1.1 Significance of the Study

The result of this study will be significant to school administrators, curriculum planners, teachers, as well as the children. These beneficiaries would be aware of the results of this study through seminars and workshops. It is hoped if they are well sensitized, it would help to reduce reading difficulty among children in Nsukka.

1.1.2 Scope of the Study

This study investigated on pupils identified with reading problems in Shalom International School Nsukka. It is meant to study experimentally the effect of remedial reading instruction on grade 3 pupils. The participants were selected based on their poor performance in reading as documented in the continuous assessment records and by the teacher's nomination. The study also focused on oral reading errors among pupils who have completed the learning to read programme.

1.1.3 Research Questions

The following research questions were posed to guide the study:

1. To what extent would remedial reading instruction improve the post mean word recognition scores of pupils with difficulties in word recognition?

2. Would there be any difference between the post-test scores of treatment and control groups?

1.1.4 Hypotheses

The following null hypotheses were proposed (at 0.05 level of significance) to guide this study.

H_{01}:   There is no significant difference in the post-test mean word recognition scores of pupils given reading instruction.

H_{02}:   There is no significant difference between the treatment group and control on the word recognition post-test mean scores.

1.1.5 Method

This section is presented under the following subheading: design of the study; area of the study population of the study, sample and sampling technique, instrument for the study, treatment procedure and method of data analysis.

1.1.6 Research design: The research design of the study is quasi-experimental with a treatment group and a control group. While the treatment group received treatment, the control group did not receive treatment.

1.1.7 Area of study : This was Nsukka urban, specifically at Shalom International School (Campus A) Nsukka, Enugu State. Nsukka Local Government Area is one of the 17 LGAs in Enugu State, made up of sixteen (16) communities.

1.1.8 Population of the study: It consists of all reading disabled children of grade 3 in Nsukka. The participants have completed learning to read programme. They were identified through the teacher recommendation and the continuous assessment cumulative record in reading.

1.1.9 Sample and sampling technique: This consists of twenty (20) reading disabled children selected through the screening test process. In assigning to groups, the researcher used proportionate stratified random sampling technique. The first group labelled A is the experimental group (i.e. the group instructed with remedial reading programme), the second group was labelled B – the control group (i.e. the group on conventional instruction). To ensure equal representation of gender in each group, the children were drawn stream by stream using sample balloting of M and F (for male and female); and A and B (for assignment to experimental group and control group).

Instrument used for the study as an adapted diagnostic checklist for oral reading-word recognition errors (DCORWR) developed by Rubin in (1991).Word recognition training programme was written to cover the following topics: Auditory and visual discrimination, consonants, vowel sounds, phonograms, phonics and structural analysis and syllabication. Macmillan English course for grade three was also used in course of lesson delivery. As each participant read, the researcher listened, recorded and scored the errors using the diagnostic checklist for oral reading. The first instrument was used during thepostest to screen children identified with reading problem and during the post-test for measuring the effect of treatment on reading problem. The diagnostic checklist for oral reading contains such items of word recognition errors as: omissions, insertions, substitutions, repetitions, hesitation, mispronunciations and reversals. The errors were measured and recorded quantitatively using the following scale: AA (Above Average) 4, Av (Average) 3, BA (Below Average) 2 and BBA (Badly Below Average) 1.

1.1.10 Method of Data Analysis

The data collected from the two tests (pre-test and Post-test) were analyzed in respect of the research questions and hypotheses. The mean of the data analyzed provided answers to the research questions, whereas t-test was employed in testing the hypotheses.

1.1.11 Result

The data are presented in line with the research questions and hypotheses that streamlined the study.

1.1.12 Research Question 1

To what extent would remedial reading instruction improve the post mean word recognition scores of pupils with difficulties in word recognition?(See table in appendix)

The results presented in Table 1 show that pupils exposed to remedial reading instruction had a mean post test word recognition score of 14.7 and a standard deviation of 17.78, as against pretest mean score of 10.9 and a

standard deviation of 0.08. The results in the table; therefore, seem to suggest that the pupils exposed to remedial reading instruction (treatment group) performed better in post test word recognition test than in the pretest.

H_{01}:   There is no significant difference in the posttest mean word recognition scores of pupils given reading instruction.

The results presented on Table 1 suggest the observed difference between-the pretest mean and post test mean in word recognition is not statistically significant. This is because the calculated t-value is -6.76, while the critical or table t-value is 2.1 0 1. Since the calculated t-value is less than the critical t-value, we do not reject the null hypothesis. The probability that the observed difference resulted from sampling errors is high (i.e., greater than 0.05). In conclusion, there is no significant difference between pretest and post-test mean word recognition scores of the experimental group.

1.1.13 Research Question 2

Would there be any difference between the post-test scores of treatment and control groups? (see table in appendix)

The results presented in Table 2 above depicts that the treatment group had the post test mean score of 14.7 and the standard deviation of 17.78. While the control group had the post test mean score of 11.4 and the standard deviation of -1.21. Results as shown on the table 2 portends that the experimental group, treated with remedial reading instruction performed better in word recognition than the control group (placed on conventional reading instruction). The high standard deviation score seems to suggest a widespread improvement across participants in the treatment condition than negative deviation figure shown in the control group.

H_{02}: There is no significant difference between the treatment group and control on the word recognition posttest mean scores.

Results presented in Table 2 reveal that the effect of remedial reading instruction in word recognition is not significant. This is because the calculated t-value of 0.59 is less than the t-critical value of2.l0 1 at 0.05 significant level. The null hypothesis of no significant difference between the posttest mean scores of treatment and control group in word recognition is not rejected. It is rather accepted. This indicates probability that the observed difference resulted from high sampling error (i.e., greater than 0.05), not due to effects of treatment and gender on word recognition.

1.1.14 Discussion

The results of the research are interpreted and discussed under the following subheadings: discussion of results, conclusions, educational implications, recommendations, limitations, suggestions for further study, and summary. The research questions and hypotheses served focal points in the discussion. They hinge on:

1.   Effects of remedial reading instruction on word recognition.

2.   Effect of remedial reading instruction on word recognition performance of the treatment group and the control group respectively.

1.1.15 Effect of remedial reading instruction on word recognition

Evidence obtained from this study proves that remedial reading instruction has no significant effect on word recognition. This shows that teaching learning disabled children identified with reading disability using remedial reading strategies do not significantly improve word recognition. Though, there is observed mean differences between the pre and post treatment scores, yet, it is not statistically significant.

The above result appears to be consistent with previous research findings in other culture on the effectiveness of remedial reading on word recognition strategies of reading disabled children. Such studies as Bender (1985a) indicated that students or children with learning disability score consistently lower on word recognition test. West-Christy (2005) explained that for numerous reasons, some children enter school already behind in reading and often maintain the reluctant/remedial label placed on them throughout their educational careers. Heath (2007) reports also indicated that 75 percent of children who are not proficient readers by the end of third grade never become proficient readers. Likewise, he stress that the reading instruction given to students with special needs should be much like the reading instruction given to all other students. Thus, the non significant result obtained could be due to other errors in the procedure.

Going by the findings of this study, it can be implied that same reading instruction should be given to all learners. Adeolle (2005) blamed poor instruction for the reading problem among children, and recommended high quality instruction. Thus, it is teachers' responsibility to provide high quality reading instruction early to meet with the learning need of the children to reduce challenges posed in lower primary school.

1.1.16 Effect of remedial reading instruction on word recognition of the treatment and the control group

The result of the study revealed that remedial reading instruction has no significant effect on the word recognition of the treatment and control group respectively. However, the mean and standard deviation result show reasonable difference. Thus, the measures of central tendency and variability revealed a mean and standard deviation difference between the effect of remedial reading instruction on the treatment and control group.

The above stated finding of no significant difference is consistent with the results of other research studies reviewed. Such as Bender (1985a) and Heath (2007). These findings already discussed suggested a homogenous reading instruction for all children and adolescents, and that remedial reading instruction would have no significant effect on reading problem. The authors discovered that almost all children could make good progress in learning to read if they receive high quality instruction on comprehension, word identification, vocabulary, and other topics. Form this study it is inferred that with high quality learning to read or correction reading programme (class-bound), every learner would perform better in word recognition and in reading generally.

1.1.17 Education Implications

The results of this study have some obvious implications for children in primary schools, teachers, parents, educational planners in schools. The results show that with or without remedial reading instruction children can still benefit from learning to read programme, and also in word recognition. It behoves teachers in primary and post institutions to develop high quality reading instruction that would emphasise learning of skill. Teachers in upper primary classes should adopt correction reading instruction in treating remedial reading. This implies that children identified with reading problem can receive correction instruction within an intact class.

School or education planning and other educational stake-holders should know that labelling of children with reading problem for remedial instruction may be psychologically apathetic. This implies that such special reading resource services should be provided in-class, not outside the classroom. It also implies that children have been proven through research to cope and recover educationally in the class.

Finally the findings of this study also reaffirm the importance of learning to read, programme, via-a-vice remedial reading instruction. Learning to read, correction reading and other in class reading activities classified under control group is equally effective in reading development. Therefore, children with reading changes can receive special intervention -and corrective help from the teacher in inclusive classrooms.

1.1.18 Conclusions

It is based on the premises of these research results, that the following conclusions are drawn.

That remedial reading instruction was not significantly effective in word recognition of primary school children with reading problem. However, marginal mean differences were observed

That remedial reading instruction has no significant effect on word recognition performance of treatment and control groups respectively

1.1.19 Recommendations

Based on the findings of this study and their educational implications, the following recommendations are made.

The result of this study showed that remedial reading instruction is not significantly effective in enhancing word recognition. Thus, emphasis should be placed on high quality reading instructional provision in class. Remedial reading remains a better alternative to helping children with reading problem in an integrated school system.

There should also be training workshops on the implementation of learning to read and reading to learn programmes. Such training would encapsulate drills in reading skills and remedial reading. In-service or pre-service trainings would build the competence of the teacher to intervene effectively on reading problems.

Teachers of children with reading problem should also ensure a maximum number of ten (10) pupils in each remedial reading class. Also instruction should be individualized to address peculiarities of each child with reading challenges.

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APPENDIX

Table1: Two-tailed t-test of the treatment group on Word Recognition.

Test	Mean	SD	n	df	t-cal	t-crit	Decision
Pretest	10.9	-0.08	10	18	-6.76	2.101	NS
Post test	14.7	17.78	10				

t-cal = Calculated t-value, t-crit. = Critical or table t-value, S = Significant at 0.5 level. NS = Not significant at .05 level.

Table2: Two-tailed t-test of the treatment group and the control group.

Group	SD	n	df	t-cal	t-crit	Decision
Treatment	14.7	17.78	10	18	0.59	2.101	NS
Control	11.4	-1.21	10				

Note: Though the result showed that there is a difference in the performance of the children who participated in remedial reading, the difference was noticed not to be significant when it was tested against word recognition.