Effect of Extended Word Study on Spelling Achievement of Children with Spelling Difficulties

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Abstract

This study examined the effect of extended word study instruction on spelling achievement of children with spelling difficulties. Three research questions were generated to guide the study. The design of the study was quasi experimental involving one experimental group and one control group. The sample consisted of 178 primary five pupils with spelling difficulties in four primary schools in Nsukka Local Government of Enugu State. The instrument used for the study is a researcher made Spelling Achievement Test which was validated by experts. Mean and standard deviation were used to answer the research questions while Analysis of Covariance was used to analyze the hypotheses. Major findings of the study include the following: exposing pupils with spelling difficulties to extended word study instruction resulted in better spelling achievement. There was no significant difference in the mean achievement scores of male and female pupils taught spelling using extended word study. There was no interaction effect of word study instruction and gender on pupils' spelling achievement. Based on these findings it was recommended that teachers should use extended word study instruction in teaching spelling since properly spelt words make reading easy.

Introduction

Spelling is quite crucial to children's academic achievement. Weeks, Brooks and Everatt (2002) define spelling as the ability to connect sounds in language with visual symbols. The knowledge of the symbols that are used in representing letters is essential for the learner to be able to represent different sounds with the proper symbols. Its knowledge goes a long way to produce good communication and command of the language. Unfortunately, this subject has been neglected in schools because it is no longer in the school timetable. Dictation which is drilling pupils on spelling seems to be a thing of the past. All these seem to make the performance of pupils on spelling to be poor

Spelling is the understanding of how different forms of words correspond to their spoken counterparts and underlies the ability to decode words during the process of reading and to encode words during the process of writing (Williams, Philips-Birdsong, Hufngel, Hungler & Lundstrom, 2009). This implies that for one to be able to spell effectively, memory is highly needed in the sense that the learner has to take cognizance of the proper production of the words he/she wants to spell. Pupils are expected to use that knowledge to match and identify such words when they are written down elsewhere. Chukwuma and Otagburuagu (2001) define spelling as putting together alphabets in order

to form words. Despite the fact that they define it ordinarily as putting together alphabets in order to form words, it is better to state that this putting together alphabets has to follow a logical and sequential pattern for the combination to be meaningful.

Spelling can enhance children's reading development, especially their ability to pronounce words correctly and decode unknown words (Graham, Harries and Chorzempa, 2003). This means that the skills required in learning how to spell can help a student in pronunciation of words and in vocabulary building. Gentry (2004) states that, the purpose of learning to spell is so that writing may become easier, more fluent, more expressive and more easily read and understand by others. Considering this assertion, it is obvious that the knowledge of spelling has multi-dimensional importance.

Realizing the importance of spelling, Wilde (2000) asserts that the education foundation given to a child matters a lot in repositioning him on how to spell, read and write. He went on to state that poor performance in English language is as a result of poor background given to pupils at their early stage. Supporting the above expression, Johnson (2001) opines that reading and spelling is the most important skills in the curriculum of the elementary school. He went on to state that success in these skills condition to a large extent progress in other subjects and influences the whole attitude of the pupil towards school life.

Despite the importance of spelling, many students experience difficulties in spelling English words (WAEC Chief Examiners Report 2006 -2009). This according to Ayogu and Ugwuja (2004) is because in English, the spelling of a word and its pronunciation are often unrelated and this is why many students fail in their bid to spell words. This is unlike most languages in Africa where there is a broad correspondence between the way words are pronounced and the way they are spelt. Pearce (2002) noted that other factors that cause spelling problems include methods of teaching, inadequate material resources and personal attitudes of both the learners and their teachers. He went on to state that, the overall effect of poor spelling performance in English language has continued to pull down the standard of education generally in society.

Ayogu & Ugwuja (2004) noted that both in West African School Certificate Examination, National Examinations and University Matriculation Examinations, students lose a lot of marks due to spelling mistakes and wrong pronunciation. These students make mistakes by their failure to differentiate between nouns and verbs such as advice (noun) and advise (verb). The pupils do not know how to differentiate between two or more words that sound alike but are different in spelling and meaning..

Phonological interference is also an outstanding problem of learning spelling. Children learn the language of their immediate environment (mother tongue) first before they try to learn a second language. As they start to learn a new language, the internalized features of the first language interfere with the learning of the second one. According to Bamigbose (2001), this internalized feature is sometimes so subtle that the learner is not aware of it. This made Lado (2001) and Dunstain (2003) to assert that the second language learner most of the time transfer the entire speech sound system (syllable structure and rhythm) of his native language to the foreign language. This creates a problem as there are some basic differences in the features of the first and the second language.

Folarin (1996) argued that consonant clusters could pose problem for children that have English as second language. He stated that consonant clusters do not exist in

many African languages, while it exists in English. A speaker of any of the African languages will find these clusters problematic. He therefore finds a vowel to add to the consonant clusters in order to bring it to his own system of language. Such a speaker when confronted with the word "ball", will pronounce 'bolu'.

Efforts have been made to teach spelling using various methods. Some teachers implemented an explicit word list approach that relies heavily on the use of books that teach spelling which involves rote memorization of words and dictation. This is the traditional approach of spelling instruction. Taylor & Alber (2003) claimed that, "the traditional approach to spelling instruction gives students a list of words at the beginning of the week and a test of the words (dictation) at the end of the week. Children are taught to memorize words rather than teaching them how to spell. Criticizing this method, Schlagal (2003) states that, the weekly plan may be structured for the students but isn't a valuable way for students to learn how to spell. He went further to state that; memory is not a sufficient tool to make spelling meaningful and lasting.

Research in the Western world seems to suggest that extended word study enhance students' performance in spelling (Bear, Invernizzi, Templeton, & Johnston, 2008; Brand, 2004). Extended word study according to Bear, Invernizzi, & Templeton and Johnson (2000) entails grouping words into categories of similarities and differences. It is a method that focuses on the phonics patterns and the rules in English. It guides the learners on the appropriate means of predicting spelling of words by listening to the way such words are pronounced. This method help children to develop the knowledge and application of the written representation of words in the process of spelling. Bloodgood (2001), stated that understanding extended word study approach of learning spelling equips the pupils with the knowledge of spelling patterns that enhances proper combinations of letters when writing.

Reading and writing ability of pupils can also improve as word study lessons develop their experiences with letters and their corresponding sounds, components of words, pattern of how words are spelt and how part of words often guide the meaning of a word, as well as its spelling or pronunciation (Pearce, 2002). The most interesting thing in this method is that the teachers first of all identify the appropriate developmental spelling level of their pupils before teaching them. Morris, Blanton, Nowacek & Perney (1995), and Abbot (2000) noted that pupils who use extended word study spelling instruction were exposed to the techniques of matching sounds with the words. They were also exposed to the knowledge of word formations thereby knowing the root, and affixes which enhance their spelling abilities.

In a situation where by the pupils have been given this insight, it will help them to master some words, their spelling, pronunciation and why they are spelt the way they are. At the starting of word study, teachers use spelling inventory to determine which stage of spelling development each student is at and they are grouped for instruction (Beer, Invernizzi, Templeton & Johnson, 2000). Based on this the pupils are grouped and the teacher develops different instruction based on the stage of development of each group. Instruction has to be deliberately sequenced by the teacher so that pupils will get instruction that will propel their development. Teachers select a group of words that demonstrate a particular spelling pattern and sequence these patterns to match children's development.

The issue of gender differences in spelling achievement has been a thing of consideration by many scholars. Most of the research studies provide evidence of girls' superiority over boys in spelling achievement. Studies by (Ganschouss (2007) and Taha (2006) show that girls perform significantly higher than boys at all grade levels on test of spelling achievement.

Savolaine, Ahonin, Aro, Tolvanen, & Holopainen, (2007), also agreed that poor spelling skills were powerfully predicted especially on the boys' side. According to Ayogu & Ugwuja (2004), Egbuna (2002), Ugwu & Ezema (2004), these spelling difficulties are common among all the students despite the sex. It is assumed that this study may help clarify the inconsistencies in the findings.

Research findings in foreign countries have shown that Extended Word Study could improve the spelling achievement of students with spelling difficulties (Dagglag, McLaughin and Weber 2002). However, it seems to the researchers that probably much studies have not been carried out on the effect of word study on spelling achievement of pupils with spelling difficulties especially among children that have English as their Second Language. Based on this, the researcher embarked on this study to ascertain the effect of Extended Word Study on spelling achievement of children with spelling difficulties in Nsukka where English Language is a Second Language.

Research Questions

The following research questions are stated to guide the study:

- (i) What is the effect of extended word study instruction on the spelling achievement of pupils with spelling difficulties as measured by Spelling Achievement Test (SAT)?
- (ii) To what extent does gender influence the spelling mean achievement scores of pupils with spelling difficulties as measured by SAT?
- (iii) What is the interaction effect of the extended word study and gender on spelling achievement of children with spelling difficulties?

Hypotheses

Ho₁ There is no significant difference in the mean achievement scores of pupils taught spelling using extended word study and those taught using the conventional method Ho₂ There is no significant difference in the mean achievement scores of male and

female pupils in spelling as measured by their mean scores on Spelling Achievement Test (SAT)

Ho₃ There is no significant interaction effect of strategy and gender on pupils achieving scores in spelling as measured by their mean scores on Spelling Achievement Test (SAT).

Design: The researcher used quasi experimental research design. Specifically, it is a non equivalent control group design. According to Ali (2006), this design offers less rigorous control compared to the true experimental design and it is used when subjects are pretested. The area of study is Nsukka Local Government Area of Enugu State. There are 46 government primary schools in this area. (Ministry of Education, Nsukka Zonal Office, 2012). The choice of this area was based on the fact that some children in Nsukka Local Government Area are experiencing spelling difficulties.

Population of the Study: The population of this study comprise of all the one thousand one hundred and seventy three (1173) primary 5 pupils with spelling difficulties in Nsukka local government area. These students were identified through a preliminary survey of the 46 government owned primary schools in the local government The researchers examined the written exercises of the pupils and those who consistently had spelling errors were identified.

Sample and Sampling Techniques: The sample consisted of 178 primary five pupils identified with spelling difficulties from the sampled eight intact classes drawn from four primary schools in Nsukka local government area. To compose the sample the researchers purposively sampled all the forty six schools in the area and the four schools with the highest number of children with spelling difficulties were used for the study. The four selected schools were randomly assigned to treatment and control groups. In each of the four selected schools, two classes with the highest number of children with spelling difficulty were used for the study. The treatment group consisted of 48 males and 46 females while the control group consisted of 43 males and 41 females. All together, the sample consists of 91 males and 87 females.

Instrument for the Study: Spelling Achievement Test (SAT) was used to collect data for the study. This test was developed by the researcher with the help of some qualified English teachers in primary schools under the guidance of experts in English Education and Special Education. Spelling Achievement Test was used to test the pupil's cognitive achievement in spelling. The test items were generated based on the stated objectives of extended word study spelling instruction. These items comprise of the words that have specific spelling patterns of which the knowledge of one can help to spell the other. It is made up of 25 items that were drawn from their Word Perfect Spelling Books and the government approved English textbooks for primary five pupils The same items used in pretest were reshuffled and used as a posttest.

Validation of the Instrument: The SAT was face validated by four specialists, two in English Education, one in special Education and one in measurement and evaluation. The specialists were required to check whether the items can really test what the researcher wants to find out. Their comments and suggestions helped in improving the SAT.

Reliability of SAT: The SAT was subjected to field trial. They were administered to 30 pupils who also have spelling difficulties in Igbo Eze south local government Area which is outside the study area. The data obtained was used in determining the internal consistency of the instrument. This was done using Cronbach alpha and it yielded a reliability estimate of 0.89. The test was re-administered after two weeks so as to ascertain the stability and the data obtained was analyzed using Pearson Product correlation and it yielded a reliability estimate of 0.65.

Lesson Plan: Daily lesson plans were developed to guide the teaching of spelling to the treatment group using extended word study and to the control group using conventional lesson. These lesson plans highlighted the objectives to be achieved, the instructional

materials, instructional strategies, entry behaviour, the teachers' activities, the learners' activities and the performance assessments. These lesson plans were designed for the 4 weeks periods of treatment.

Validation of the lesson plan: The lesson plan was validated by experts in English Education, Special Education and Measurement and Evaluation. This was to ensure that the lesson plan will be useful in achieving the desired objectives of this study. Their comments and suggestions helped in improving the lesson plan.

Training of Research Assistants: For this study, four classroom teachers were used as research assistants for both those in treatment and those in control groups. To ensure effective implementation of the lesson plans, the class teachers were exposed to 5 days training. The class teacher who handled the treatment group was exposed to the use of the lesson plans that emphasized Extended Word Study Spelling Instruction. This was done by guiding the research assistant on the steps for implementing word study thus: having ascertained students with spelling difficulties, the teacher groups them based on their knowledge of words, then follows them up by providing words that have similar spelling pattern after which he keeps on changing it until the pupils learn word knowledge that they can apply generally to a wide range of spelling.

The researcher allowed them to practice it. The research assistants provided some words that suit a particular pattern, then, the researcher became ensured that the research assistance have learnt the method before using them on the research population.

Experimental Procedure: Two instructional approaches were used for this study. The first approach was the use of dictation which is the conventional method of teaching spelling while the second approach was the use of extended word study. Extended word study was used for the treatment group while dictation was used for the control group. Pre-test was administered to all groups before the treatment. After this, the trained research assistants taught spelling following the lesson plan for each group.

For the treatment group that used extended word study, the first step is introducing the lesson as word study. The second step was getting the pupils prior knowledge of words and how they are being spelt. The third step was grouping the pupils based on their developmental level as realized in step two. The fourth step was exposing the pupils to the patterns that are involved in word study. The fifth step was teaching the pupils now to generate other words using specific spelling patterns that were studied.

At the end of the experiment which lasted for 4 weeks, the trained research assistants administered a reshuffled SAT as a post-test to the students in both groups. This was done after an interval of one week. The essence of this gap was to ensure that the result was not affected by what the pupils were taught newly. Their results were used to determine their level of spelling achievement after treatment.

Method of Data Analysis: Mean and standard deviation were used to answer the research questions while Analysis of Covariance was used to test the hypotheses at 0.05 level of significance.

Research Ouestion 1

What is the effect of extended word study instruction on the spelling achievement of students with spelling difficulties as measured by SAT.

Table 1: Mean and standard deviation achievement of students with spelling difficulties

Strategies for teaching	N	Pre-test	Post-test	Mean gain score
Word study Mean	94	14.07	37.53	23.46
Std deviation		4.56	6.15	
Conventional Mean		13.20	15.43	2.23
Std deviation		3.19	4.03	

From the result in Table 1 above, pupils who were instructed using extended word study had a pre-test mean score of 14.07 and a standard deviation of 4.56 in spelling achievement while their post-test mean score was 37.53 and a standard deviation of 6.15. The mean gain score between the pre-test and the post-test was 23.46. On the other hand, pupils who were instructed using the conventional strategy (dictation) had a pre-test mean score of 13.20 and a standard deviation of 3.19 while their post-test mean score was 15.43 and a standard deviation of 4.03. The mean gain score was 2.23. This result shows that Extended Word Study had a positive effect on spelling achievement of the children with spelling difficulties. The pupils who were instructed using Extended word study performed better than the ones who used the conventional study strategy which is dictation.

Research Question 2

What is the effect of gender on spelling achievement of students with spelling difficulties as measured by SAT?

Table 2: Mean and standard deviation of males and females that had spelling difficulties

Gender of the pupils		N Pre-test		Post-test	Mean gain	
					score	
Males	Mean	91	14.47	34.13	19.66	
	Std deviation		3.57	4.69		
Females	Mean	87	17.67	40.93	23.26	
	Std deviation		5.64	7.45		

Result in Table 2 showed that the male pupils had a mean score of 14.47 with a standard deviation of 3.57 in the pre-test and a mean score of 34.13 with a standard deviation of 4.69 in their post-test. Girls had a pre-test mean score of 17.67 with a standard deviation of 5.64 and the post-test mean score of 40.93 with a standard deviation of 7.45. This Table indicated that females outperformed their male counterparts both in pre-test and in post-test with a mean gain of 3.2 and 6.8 respectively.

Research Ouestion 3

What is the interaction effect of the word study and gender on spelling achievement of children with spelling difficulties?

Table 3: The mean and standard deviation of the pupils score in post-test treatment X gender level

Experimental group	gender of the pupils	N	Mean	Std Deviation
Word study	Males	48	17.07	4.56
	Females	46	28.53	6.15
Conventional	Males	43	13.20	3.19
	Females	41	11.43	3.30

The result here depicts that the females who were taught using Extended Word Study had a higher post-test mean score of 28.53 and a standard deviation of 6.15. Whereas the females taught using conventional method had a post-test mean score of 11.43 with a standard deviation of 3.30. The difference in the post-test mean score of the females in treatment and the control group was 17.1. Likewise, male pupils that were exposed to word study instruction had a higher post-test mean score of 17.07 and a standard deviation of 4.56 as against the male pupils who were taught using conventional method that had the post-test mean score of 13.20 and a standard deviation of 3.19. The difference on their post-test mean score is 3.87. Meanwhile, the higher spelling achievement made by the males and the females in the treatment group over those in control group is not as a result of gender influence rather, as a result of difference in exposure.

Table 4
Summary of the 2-Way Analysis of Covariance (ANCOVA) for Test of significance for three effects treatment, gender and interaction effect of treatment gender on Students' Scores on Spelling Achievement Test (SAT)

Source	Sum of	Df	Mean	F	Significance	Decision
	Sequence		Square		F.	at 0.05
				,		level
Corrected Model	8186.669 ^a	4	2046.667	206.605	.000	
Intercept	810.392	1	810.392	81.886	.000	
Pretest	943.019	1	943.019	95.287	.000	
Experiment	4689.797	1	4689.797	478.878	.000	*S
Gender	35.824	1	35.824	3.620	.062	*NS
Experiment* gender	8.184	1	8.184	.827	.367	*NS
Error	544.314	170	9.897			
Total	50285.000	178				

la		177	1		I
Corrected Total	8730.983	1//			

Data presented on Table 4 on treatment as main effect indicate that the F- calculated value for treatment is 478.878 with a significance of f at .000 which is less than 0.05. This indicates that there was a significant difference in the mean achievement scores of pupils taught spelling using extended word study and those taught using dictation. This implies that extended word study has a significant effect on students performance in spelling. The null hypothesis is therefore rejected at 0.05 level of significance while the alternative hypothesis is thereby accepted. The data for gender as main effect has an F-calculated value of 3.620 and a significance f of .062 is more than 0.05. This indicates that there is no significant difference in the mean achievement score of male and female students taught spelling using extended word study. The null hypothesis is therefore accepted at 0.05 level of significance.

The result on the interaction effect of treatment and gender has an F calculated value of .827 with a significance F value of .367 which is more than 0.05. this shows that there is on interaction effect of treatment and gender on students' scores on spelling. The null hypothesis is therefore accepted at 0.05 level of significance.

Discussion

The result of the study indicates that the achievement mean scores of the pupils that were taught spelling using extended word study is greater than the achievement mean scores of those taught using conventional method (dictation). This implies that learning spelling through extended word study is more effective than dictation. This finding agrees with the opinion of Morris, Blanton, Nowacek & Perney (1995), and Abbot (2000) that those taught using extended word study spelling instruction performed well because they were exposed to the techniques of matching sounds with the words and the knowledge of various forms of word formations. This knowledge improves the understanding of the root and affixes necessary for enhanced spelling abilities. The children are allowed to understudy each layer of the orthography and this helps them to discover the regularities, patterns and compositions of English words.

Extended word study exposes pupils to the patterns that enhance spelling abilities. They practice how to say a word clearly and listen to the pronunciation and sounds they hear, write letters for each part of the syllable they hear, generate rhyming words, use word families to spell related words, think out different spelling patterns that can be used to spell the words they hear and use resource materials in the classroom such as dictionary (Bloodgood 2001). This may have enhanced the performance of the pupils taught using extended word instruction. In corroboration Pearce (2002) noted that spelling, reading and writing of learners with spelling difficulty can improve using extended word study as it provides them with opportunities to develop experiences with letters and their corresponding sounds, components of words, patterns of how words are spelt and how parts of words often guide the pronunciation and spelling of these words. It was also observed that phonological awareness plays a vital role in spelling acquisition. The ability to pronounce and identify the sounds has great implication for proper spelling. This is because the knowledge gives the child the necessary guide on which letter comes before the other so that the combination of letters will be done in an orderly manner.

Another factor that has helped to enhance the spelling achievement of the pupils who were taught spelling using extended word study is the assessment of the pupils developmental spelling levels before they were taught. The assessment helped to determine what each child knows about the orthography and to group the pupils for small group instruction.

The influence of gender on spelling achievement of students with spelling difficulties indicate that girls performed better than boys in spelling achievement. This finding is in line with the study carried out by Ganschouss (2007) and Taha (2006) which shows that girls score significantly higher than boys at all grade levels on test of spelling achievement. Taha did not only support the issue of girls performing better than boys but also went ahead to find out the reason for that. He however, stated that he cannot be sure of the breadth of these gender differences until a wider variety of spelling tasks has been tested to compare the performance of males and females spelling achievements. Similarly, Savolaine, Ahonin, Aro, Tolvanen, & Holopainen, (2007), concluded that poor spelling skills were powerfully predicted especially on the boys' performance.

The interaction effect of extended word study instruction and gender on the spelling achievement of children with spelling difficulties shows that the achievement made by the pupils was not as a result of gender but as a result of different methods used in teaching each group. As a result of this, both gender experienced spelling difficulties in the two groups but the exposure made the difference. According to Ayogu & Ugwuja (2004), Egbuna (2002), Ugwu & Ezema (2004), these spelling difficulties are common among all the students despite the sex and this was as a result of the mother tongue interference, poor knowledge of the grammatical rules, inability to differentiate among words that sound alike, errors in consonant clusters and poor punctuations. All these often occur as a result of poor exposure, location of the students' school, education background of parents and irregularities within the structure of the language.

Conclusion

This study has demonstrated that pupils taught spelling skill using extended word study instruction had significant higher mean achievement scores than those taught using conventional method. This indicates that extended word study instruction accounted for better spelling achievement of the pupils. There was no significant interaction effect of strategy and gender on pupils achievement in spelling showing that strategy was effective across gender.

Recommendations

Based on the findings of this study, the following recommendations have been made.

- For improved performance in spelling, teachers are encouraged to give the pupils the necessary insights to learn spelling Primary school teachers should use extended word study instruction to teach spelling.
- 2 Teachers should teach spelling based on the pupils stage of development on the knowledge of words.
- 3 Extended word study should be taught to both male and female pupils

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