
Gender and Primary Pupils Spelling and Reading Performances in Akwa Ibom North East
Senatorial District

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ABSTRACT

The research determined the effect of rhyming, sound deletion, phoneme substitution and look and say instructional strategies on spelling and reading performance of male and female primary school pupils in Akwa Ibom North East Senatorial District. Two specific objectives, two research questions and two null hypotheses were formulated to guide the study. The study adopted the pretest, post-test, control group non-randomized quasi-experimental research design. The population of the study comprised of 11,180 primary two pupils consisting of 5,361 male and 5,819 female from public primary schools and a sample size of 120 respondents. Two instruments titled Pupils Spelling Performance Test (PSPT) and Pupils Reading Performance Test (PRPT) were used for data collection. Pearson Product Moment Correlation (PPMC) was used to determine the reliability of the instruments, which presented values of 0.83 and 0.87 for PSPT and PRPT respectively. Mean and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) was used to test the null hypotheses at 0.05 level of significance. The result shows that when taught using rhyming, female pupils had a mean value of 14.56 as against 11.47 for male pupils. when taught with sound deletion, the mean value for female pupils increased to 30.31 while the males had a mean value of 19.69. The mean value for female pupils in phoneme substitution was 25.84 and 13.5 for males; however, the mean value for female pupils in look and say was 15.36 as against 11.35 for male pupils. This result shows that female pupils performed better in spelling than male pupils. Hypothesis one also showed there is no significant mean difference in male and female pupils' spelling performance when taught using Rhyming, sound deletion and Phoneme substitution and Look and Say Instructional strategies. The result shows, when the scores of male and female students are considered for all the teaching methods, the probability value is .280. At $p < .05$.280, Based on the findings of the study, it is recommended that teachers should use sound deletion when teaching spelling in classrooms. The school administrators should consider in-service training for English teachers in phonological instructional strategies.

KEYWORDS: Spelling, Reading, Rhyming, Sound deletion, phoneme substitution, look and say instructional strategies.

Introduction

The main essence of schooling and one of the aims of early childhood education is the inculcation of literacy skills. Every school child requires sufficient literacy skills to be able to succeed both in school and later life. Literacy skills cover a wide range of academic activities with which pupils make progress in school. Basically, one of the hallmarks of literacy is the

ability to spell, read and write in English language. Learning how to read is a vital skill that pupils learn in early childhood education. This skill sets the foundation for academic success.

Learning to spell is viewed as a developmental process and a "highly complex intellectual accomplishment". Like other language activities, learning to spell involves the acquisition of complex rules and a variety of strategies for processing English writing as a multilevel system with underlying regularity (Morrow, 2018). Spelling accuracy is important at all levels of education. The ability to segment words into sounds and combining two or more sounds to form words and sentences indicates a pupil's chances of becoming proficient in spelling (Shippen et al., 2008).

Spelling helps learners to correctly put their thoughts in writing or print, communicate their intention with appropriate alphabetic symbols (Reed, 2012). Hence, difficulty in spelling is a clear indication that the individual is not literate in the actual sense. In the light of this, Carney (2012) believed that learners become frustrated when they score poor grades in spelling activities. Such frustration invariably takes a toll on their self-concept thereby creating a feeling of inadequacy and low self-esteem among their peers as poor spellers are poor writers.

Shahar-Yames and Prior (2018) opined that there are many ways to approach the reading process, and teachers rely on numerous reading strategies. Children in kindergarten to nursery classes are in the learning to read phase, while in primary two upwards, children are reading to learn. For pupils to successfully move through primary and secondary schools, they must have a solid foundation in reading and spelling.

Reading has to do with making meaning from print. Reading begins with pre-literacy skills which includes learning the alphabet, phonemic awareness and phonics instruction that teaches children how to map sound to letters and sound words (Ankrah, Nyanta and Opoku, 2017). In the early stages of reading, pupils are learning to sound out words, make meaning of the words in a sentence, and make meaning of the text.

The ability to read is an essential skill for pupils to master because information is presented in text throughout the world in websites, books, magazines and newspapers. In recognition of the importance of reading abilities of young learners, the National Policy on Education, (FGN, 2013) stipulates that, "the inculcation of permanent literacy and numeracy, and the ability to communicate effectively, and basic rudiment in numbers at the early stage of pupils' schooling" shall be the main drive of pre-primary and primary education. Children do not enter the classroom as blank slates, they come with an individual set of prior knowledge, exposure to language, reading rituals, and cognitive development. This means that teachers must find ways to stimulate and engage these active minds while at the same time providing instruction and support in areas where pupils are struggling.

On the whole, the goal of reading instruction in primary school includes; to help pupils master English alphabets, to help pupils master letter sounds, to help pupils get new information, to enrich pupils life with experiences, to expose pupils to information outside their immediate environment, to help pupils acquire new skills thereby improving on their old skills and to help pupils cognitive development, this has to do with pupils ability to make meaning out of written symbols (Ikoh, 2004)..

The goal of spelling and reading instruction at the primary school level is that each child should be functionally literate and be able to communicate effectively. Functional literacy means an

individual can read with meaning, think critically and utilize efficiently problem solving life skills, which are crucial for effective and successful living. The achievement of spelling and reading goal does not only prepare the child to read to learn, but that a child who terminates his or her education at this level will not slip back to illiteracy (Primavera, 2015)

Rhyming is a repetition of similar sounds (usually, exactly the same sound) in the final stressed syllables and any following syllables of two or more words. Rhyme awareness, and the ability of children to become aware of and produce rhymes are the essential abilities developed at the level of pre-primary and the beginning of primary education of children.

Sound -deletion involves having pupils manipulate spoken words by deleting specific phonemes. It is the ability to identify how a word would sound if one phoneme were omitted. The use of sound deletion helps to develop your child's phonemic awareness (Goswami, 2018).

Phoneme substitution is where a word is transformed into a new word simply by changing any of its phonemes or sounds. It is the ability to replace a phoneme in a word with another phoneme to form a new word.

Look and Say is a teaching method based on the recognition and pronunciation of words without any attempt to teach word analysis and synthesis. In the method of teaching reading, each word is taught as a whole.

Gender is another factor that is often reported to affect reading development. Girls are generally thought to perform better than boys in verbal and linguistic functions. The Gender and Education Association (GEA) (2012) observed that certain subjects are gender stereotyped, for example, males are believed to be better in Mathematics, Sciences and Engineering and are therefore, masculine subjects and females are believed to be better than males in Language Arts and are therefore feminine subject. Gender refers to socially constructed differences between male and female. Gender is a socio-culturally ascribed attribute which differentiates feminine from masculine gender differences in educational achievement have been a topic in the educational discourse for decades. Gender has been found to play an important role in influencing pupils' academic performance and activities along with different factors such as intelligence, study habit, self-concept, creativity, aptitude, interests, reading culture and socio-economic status of the parent (Horn, 2011).

Theory of Intellectual Development by Jean Piaget (1955) where Piaget regarded cognitive development as a process which occurs due to biological maturation and interaction with the environment, the nature and development of human intelligence and Theory of Instruction by Jerome Bruner (1966) which states that any concept can be taught effectively in some honest form to a child at any stage provided such a concept is introduced at the child's language level and that a learner is capable of learning any material so long as the instruction is organized appropriately.

The importance of spelling and reading equip pupils to understand written materials as well as other subjects in the school curriculum. In recent times primary school Pupils seem to have little knowledge of the activities involved in reading and only demonstrate a vague awareness of spelling. Pupils are even less aware that written words were composed of symbols and sounds that are represented by phonemes. Pupils cannot recognize, phoneme, pronounce words and put phoneme together in pronunciation and reading sentences. Most children forget words and cannot spell regular and irregular words. For many children, explicit instruction is necessary to

learn the dozens of letter-phoneme correspondences necessary to unlock word pronunciations. This problem has been a source of concern to teachers, researchers and significant others in the past. This unfortunate situation has resulted in vices like examination malpractice and drop out from school, that has bedeviled the school system lately. Researchers however have studied spelling and reading problems among school pupils, some have used sight words, vocabulary and syllabic awareness in attempt to remedy this problem. Despite research efforts in the past, the problem of poor spelling and reading still persist among primary school pupils. It is therefore on this premise that this study sought to examine the effect of three instructional strategies - rhyming, sound-deletion and phoneme-substitution on spelling and reading performance of primary school pupils in the North-east Senatorial District of Akwa Ibom State

Purpose of the Study

The main purpose of the study was to determine the role of gender in pupils spelling and reading performance in primary schools in Akwa Ibom North East Senatorial district of Akwa Ibom State, Nigeria. Specifically, the study sought to:

- i. Determine the mean difference in male and female pupils' spelling performance when taught using Rhyming, Sound deletion, Phoneme substitution and those taught with Look and Say Instructional strategies.
- ii. Determine the mean difference in male and female pupils' reading performance when taught using Rhyming, Sound deletion, Phoneme substitution and those taught with Look and Say Instructional strategies.

Research Questions

Two research questions were raised and answered in the study:

1. What is the mean difference in male and female pupils' spelling performance when taught using Rhyming, Sound deletion, Phoneme substitution and Look and Say Instructional strategies?
2. What is the mean difference in male and female pupils' reading performance when taught using Rhyming, Sound deletion, Phoneme substitution and Look and Say Instructional strategies?

Hypotheses

Two null hypotheses were formulated to guide the study and tested at 0.05 level of significance:

- i There is no significant mean difference in male and female pupils' spelling performance when taught using Rhyming, sound deletion and Phoneme substitution and Look and Say Instructional strategies
- ii There is no significant mean difference in male and female pupils' reading performance when taught using Rhyming, sound deletion and Phoneme substitution and Look and Say Instructional strategies

Methodology

Research design

This study adopted the pretest, post-test, control group quasi-experimental research design. This design was considered appropriate because it allowed the researcher to examine the cause and effect of the independent variables on the dependent variables using a sample of the population and the result was generalized to the entire population (White & Sabarwal 2014).

Area of the Study

The study is on Primary two pupils in Akwa Ibom North East senatorial district. It comprises nine Local Government Areas, namely; Uyo, Etinan, Nsit Ibom, Uruan, Nsit Ubium, Ibiono Ibom, Nsit Atai, Itu and Ibesikpo Asutan. The choice of the area of study was necessitated by the fact that the literacy level in this district is high and there are many public schools within the area. (National Population Commission, 2006)

Population of the Study

This study comprised of 11,180 primary two pupils, 5361 males and 5819 females in public primary schools in Uyo senatorial district of Akwa Ibom State. (Department of Planning, Research and Statistics, State Universal Basic Education Board SUBEB, 2022).

Sample and Sampling Techniques

Sample size of 120 primary two pupils was used for this study. All the schools in Akwa Ibom North East Senatorial District were clustered into nine local government areas. Multi stage sampling technique was used to select the sample size. In stage one, four local government areas were selected out of the nine local government areas through balloting. At stage two, one primary school was drawn from each of the four local government areas totaling four schools. At stage three, one intact class was drawn from each of the four schools making a total of four intact classes with an average class size of 30 pupils. This gave a total of 120 pupils. These intact classes were randomly assigned to three experimental groups and one control group. The advantage of using intact classes was to afford all the subjects in the group equal opportunity to participate in the study the way they are in their classes and hence, reduce sensitivities which may occur during the sampling process (Smith, 2015)

Instrumentation

Two structured instruments developed by the researcher, tagged: Pupils Spelling Performance Test (PSPT) and Pupils Reading Performance Test (PRPT) were used for data collection for the study. The Pupils Spelling Performance Test (PSPT) had four sections: A, B, C and D respectively and 20 questions. Section A collated demographic data of participants; section B had 10 questions; Section C and D consisted of 5 questions each totaling 20 questions in all. Each question was scored 5 marks each totaling 100 marks. The Pupils Reading Performance Test (PRPT) was made up of three sections A, B and C. Section A collated demographic data of participants; section B had 10 questions while section C consisted of 10 questions totaling 20 questions in all. Each question was scored 5 marks each totaling 100 marks. The instruments were used for pretest and post-test on pupils spelling ability on three and four lettered words; ability to recognize words; make simple sentences as well as read and answer

questions from comprehension passages. These instruments were used for data collection during the pretest and posttest for the experimental and control groups.

Validation of the Instrument

To ascertain the face validity of the instruments, the instruments were given to three research experts for validation. The research experts were selected from the Department of English, the Department of Early Childhood and Special Education and the Department of Science Education for the statistics aspect of this work. The experts evaluated the instrument taking into consideration the curricula, objectives of study and adequacy of the items based on the objectives, research questions and hypotheses of the study. Corrections and comments were noted and used to produce the final draft of the instruments. Content validation was done using test blue print as a guide in the development of the test items.

Reliability of the Instrument

Test-retest reliability method was used to establish the reliability of the instruments. The instruments (PSPT and PRPT) were administered on 30 pupils who were not part of the study sample but shared the same characteristics as the population under study. After two weeks of the first administration, the same instruments were administered to the same pupils with the order of the items on the questionnaires altered. This generated two sets of data were analysed using Pearson Product Moment Correlation (PPMC) to test for linear relationship between two variables (Laerd Statistics 2020). The instruments yielded reliability coefficient of 0.83 and 0.87 for PSPT and PRPT respectively. Generally, if the reliability of a standardized test is above .80 it is said to have a very good reliability. (Cho, 2022).

Method of Data Collection

The sample selected for the study were grouped into three experimental groups and one control group. Experimental group 1 was treated with Rhyming instructional strategy; experimental group 2 was treated with sound-deletion instructional strategy; experimental group 3 was treated with phoneme-substitution instructional strategy while the control group remained the conventional classroom for look and say instructional strategy. The class teachers were trained and used as research assistants. After the training sessions, a pretest was given to the pupils in all the groups using the Pupils' Spelling Performance Test (PSPT) and Pupils Reading Performance Test (PRPT). After the pretest, the full treatment commenced and lasted for six weeks. There were three contact periods of 30 minutes each per week. Thereafter, a post test was administered to all the groups still using Pupils' Spelling Performance Test (PSPT) and Pupils Reading Performance Test (PRPT). The entire process lasted for 12 weeks. The data that was collected from the pretest and posttest administration were collated and subjected to statistical analysis.

Method of Data Analysis and Decision Rule

Mean and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) was used to test the hypotheses at 0.05 level of significance. The pretest scores were used as covariates to the posttest scores.

Results

Research Question 1: What is the mean difference in male and female pupils' spelling performance when taught using rhyming, sound deletion, phoneme substitution and look and say instructional strategies?

Table 1: Summary of mean difference in male and female pupils' spelling performance taught using Rhyming, Sound deletion, Phoneme substitution and Look and Say Instructional strategies

Rhyming		Posttest PSPT	Pretest PSPT	Mean Values
	N	17	17	
Male	Mean	72.94	61.47	11.47
	S. D	20.24	24.42	
	N	11	11	
Female	Mean	79.55	65.00	14.55
	S. D	18.36	17.32	
Sound Deletion		Posttest PSPT	Pretest PSPT	Mean Values
	N	16	16	
	Mean	89.69	70.00	19.69
	S. D	9.74	24.83	
	N	16	16	
Female	Mean	84.69	54.38	30.31
	S. D	16.48	22.28	
Phoneme		Posttest PSPT	Pretest PSPT	Mean Values
	N	14	14	
Male	Mean	78.93	65.36	13.57
	S. D	17.12	16.69	
	N	12	12	
Female	Mean	86.69	60.83	25.84
	S. D	12.49	17.69	
Look and Say		Posttest PSPT	Pretest PSPT	Mean Values
	N	20	20	
Male	Mean	59.00	47.65	11.35
	S. D	35.19	23.33	
	N	14	14	
Female	Mean	68.93	53.57	15.36
	S. D	22.97	19.36	

Table 1 gives the summary of the male and female pupils mean and standard deviation performance scores in spelling when taught using Rhyming, Sound deletion, Phoneme substitution and Look and Say Instructional strategies. The result shows that female pupils performed comparatively better than the male pupils in spelling when taught using the four different instructional strategies. The result shows that when taught using Rhyming, female pupils had a mean gain of 14.56 as against 11.47 for male pupils. when taught with sound deletion, the mean gain for female pupils increased to 30.31 and males had a mean gain of 19.69. the mean gain for female pupils in phoneme substitution is 25.84 and male pupils had 13.57. The result also showed that the mean gain for female pupils in look and say is 15.36 as against 11.35 for male pupils. This result shows that female students performed better in spelling than male pupils.

Research Question 2: What is the mean difference in male and female pupils' reading performance when taught using Rhyming, Sound deletion, Phoneme substitution and Look and Say Instructional strategies?

Table 2: Summary of mean difference in male and female pupils' reading performance using Rhyming, Sound deletion, Phoneme substitution and Look and Say Instructional strategies

Gender 1: Rhyming		Pretest	Posttest PRPT	Mean Values
	N	17	17	
Male	Mean	35.29	75	39.71
	S. D	12.43	14.9	
	N	11	11	
Female	Mean	34.09	81.36	47.27
	S. D	8.61	16.75	
Gender 2: Sound Deletion		Pretest	Posttest PRPT	Mean Values
	N	16	16	
Male	Mean	34.06	83.44	49.38
	S. D	12.14	13	
	N	16	16	
Female	Mean	37.5	89.06	51.56
	S. D	8.76	11.86	
Gender 3: Phoneme		Pretest	Posttest PRPT	Mean Values
	N	14	14	
Male	Mean	34.29	81.36	47.07
	S. D	11.07	11.52	
	N	12	12	
Female	Mean	33.33	81.67	48.34
	S. D	10.73	14.51	
Gender 4: Look and Say		Pretest	Posttest PRPT	Mean Values
	N	20	20	
Male	Mean	30	68	38.00
	S. D	11.47	23.86	
	N	14	14	
Female	Mean	26.07	71.07	45.00
	S. D	7.38	22.72	

Table 2 gives the summary of the male and female pupils mean and standard deviation performance scores in reading when taught using Rhyming, Sound deletion, Phoneme substitution and Look and Say Instructional strategies. The result shows that when taught using Rhyming, female pupils had a mean gain of 47.27 as against 39.71 for male pupils. When taught with sound deletion, the mean gain for female pupils increased to 51.56 and males had a mean gain of 49.38. The mean gain for female pupils in phoneme substitution is 48.34 and male pupils had 47.07. The result also showed that the mean gain for female pupils in look and say is 45 as against 38 for male pupils. This result shows that female students performed better in spelling than male pupils.

Hypothesis One: There is no significant mean difference in male and female pupils' spelling performance taught using Rhyming, sound deletion and Phoneme substitution and Look and Say Instructional strategies.

Table 3: Summary of Analysis of Covariance for difference in male and female pupils' spelling performance taught using rhyming, sound deletion, phoneme substitution and look and say instructional strategies

Source	Type II Sum of Squares	Df	Mean Square	F	Sig.	Decision
Corrected Model	13832.508 ^a	8	1729.064	3.844	.001	
Strategies	89447.541	1	89447.541	198.869	.000	
Pretest_PSPT	1411.451	1	1411.451	3.138	.079	
Gender(Main effect)	529.976	1	529.976	1.178	.280	*
Group	11246.124	3	3748.708	8.335	.001	**
Error	49925.617	111	449.780			
Total	768325.000	120				
Corrected Total	63758.125	119				

* Not Significant at $p < .05$.280, **Significant at $p < .05$.001

Table 3 shows the summary of the effect of gender on pupils performance in spelling when taught using Rhyming, Sound Deletion, Phoneme substitution and Look and Say Instructional strategies. The result shows, when the scores of male and female students are considered for all the teaching methods, the probability value is .280. At $p < .05$.280, the result is not significant, thus, male and female students do not significantly differ in spelling. The null hypothesis is retained., Thus, there is no significant mean difference in male and female pupils' spelling performance when taught using Rhyming, sound deletion and Phoneme substitution and Look and Say Instructional strategies.

Hypotheses 2: There is no significant mean difference in male and female pupils' reading performance when taught using Rhyming, Phoneme -deletion and Phoneme substitution and Look and Say Instructional strategies.

Table 4: Summary of Analysis of Covariance for difference in male and female pupils' reading performance when taught using Rhyming, sound deletion, Phoneme substitution and Look and Say Instructional strategies

Source	Type II Sum of Squares	Df	Mean Square	F	Sig.	Decision
Corrected Model	8412.113 ^a	8	1051.514	3.911	.000	
Intercept	42380.172	1	42380.172	157.628	.000	
Pretest_PSPT	2728.476	1	2728.476	10.148	.002	
Gender(Main effect)	499.620	1	499.620	1.858	.176	*
Group	2799.035	3	933.012	3.470	.019	**
GenderG*Group(Interactive effect)	130.494	3	43.498	.162	.922	*
Error	29843.754	111	268.863			
Total	775216.000	120				
Corrected Total	38255.867	119				

* Not Significant at $p < .05$.176, 922; **Significant at $p < .05$.019

Table 4 shows the summary of the main and interactive effect of gender on pupils performance in spelling when taught using Rhyming, sound deletion, Phoneme substitution and Look and Say Instructional strategies. The result shows that the main effect of gender, that is, when the scores of male and female students are considered for all the teaching methods, the probability value is .176. At $p < .05$.176, the result is not significant, thus, male and female students do not significantly differ in reading. The result also shows the interactive effect of gender on reading

performance based on individual teaching methods. The result indicates that the probability value is .922. At $p < .05$, .922, the result is not significant, thus, there is no significant mean difference in male and female pupils' reading performance when taught using Rhyming, sound deletion and Phoneme substitution and Look and Say Instructional strategies.

Discussion of Findings

This study sought the difference in male and female spelling and reading performances when taught using rhyming, sound deletion, phoneme substitution and look and say instructional strategies. The result shows that female students performed better in spelling and reading than male pupils. The corresponding hypothesis test shows that there is no significant mean difference in male and female pupils' spelling performance when taught using Rhyming, sound deletion and Phoneme substitution and Look and Say Instructional strategies.

This finding agrees with Ikoh and Fakrogha (2015) conducted a study on games and word recognition skills of primary one who explored individual and gender differences in go fish and monopoly teaching methods. This study revealed that there was no significant difference in male and female word recognition skills when exposed to the reading games. The study found that gender predicted significant unique variance, independently of cognitive skills, in alphabet transcription and writing quality, although not dictated spelling skills. This finding is corroborates that of Vlachos and Papadimitriou (2015) who studied effect of age and gender on children's reading performance: The possible neural underpinnings. The findings of the study showed that Gender was not found to play an important role in reading performance. This finding is also in agreement with that of Adams and Simmons (2019) who explored individual and gender differences in early writing performance. They found no associations between phonological skills and writing were moderated by gender.

This finding is in variance with Reilly et al. (2019) who investigated gender differences in reading and writing achievement. Study found pronounced imbalances in gender ratios at the lower left and upper right tails of the ability spectrum. These results are interpreted in the context of Hyde's (2005) gender similarities hypothesis, which holds that most psychological gender differences are only small or trivial in size. The finding is also in variance with the study by Udosen (2002) conducted in Akwa Ibom State on the effect of gender on achievement in higher order reading comprehension. The result showed that gender had significant main effect on subject's achievement in higher order reading comprehension with females performing better than males.

Conclusion

The result shows that there is no significant mean difference in male and female pupils' reading and spelling performance when taught using Rhyming, Phoneme -deletion and substitution and Look and Say Instructional strategies.

Recommendations

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

1. Parents should always encourage their male and female pupils to attend spelling/reading classes
2. The school administrators should consider in-service training for English teachers in phonological instructional strategies for teaching male and female pupils.
3. Ministry of education should monitor teachers by visiting schools at regular intervals to ensure strict compliance of teacher with the use of research based strategies in teaching pupils irrespective of their gender.
4. Curriculum planners should incorporate Rhyming sound deletion and phoneme substitution strategies into school curriculum to ensure that teacher use them in class for male and female pupils

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