

Effect of Neurological Impress Method on Pupils' Reading Skill in Ilorin West Local Government Area of Kwara Of State

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Abstract: *It has been observed that pupils in primary schools have poor reading ability, which could hinder pupils' overall performance in all academic endeavor. The study focused on Effect of Neurological Impress Method on primary school pupils' Reading Skill in Ilorin West Local Government Area of Kwara State, the study was anchored by Howard Gardner theory of multiple intelligence and David Rumelhart Interactive Reading Model Theory. Pre-test, post-test, control group quasi-experimental research design was adopted for this study, the population of the study comprised of all primary four pupils in Ilorin West Local Government Area of Kwara State. Multi-stage sampling technique was used in this study, stratified sampling technique was used to stratify co-educational schools into public and private schools' primary from which three schools were randomly selected. in which 84 pupils participated in the study in total. Reading skill performance test and two instructional guides were used as instrument for this study which was subjected to validity and reliability, the reliability coefficient obtained was 0.85. Data collected were analyzed using both the descriptive and inferential statistics of analysis of Co-variance (ANCOVA). The findings indicated that there was significant effect of treatment on primary school pupils' reading skill ($F_{(2, 139)} = 228.701, P < 0.05$), there was no significant effect of gender on primary school pupils' reading skill ($F_{(1, 139)} = 1.985; P > 0.05$), there was no significant effect of school type on primary school pupils' reading skill ($F_{(1, 139)} = .032; P > 0.05$). Based on the findings of the study it was concluded that neurological impress method can improve primary school pupils reading skill than the conventional (lecture) method of teaching and learning. It was therefore recommended that since neurological impress method can improve primary school pupils reading skill classroom teachers should try to use this method by ensuring that pupils model after teachers reading during the reading activity and also read aloud to the pupils in so that the pupils can read fluently after series of repeated reading activity.*

Introduction

Reading ability is one of those skills that is essential for all learners to acquire as it is a gateway to academic success; it is essential because there are different things that pupils need to learn and share. Learning to read is like lighting a fire because every spelled word is a spark, the ability to read is not something that can be develop overnight it is a gradual process that begins with emergent stage where a child learns from full range of multiple sounds, words, concepts, images, stories, prints, and plain talk during the first five years of life. Reading skill helps pupils to understand and analyze information from a written text to interpret what the writer wants to say or transmit. Reading is a complex, interactive, comprehending skill that needs time, materials, and methods to thrive.

Pupils are expected to develop reading skill in order to be able to read more as they progress in life as pupils' success is largely based on their ability to read and comprehend textbooks and notes from different subject areas. Through reading, pupils can explore the world, find or improve new concepts, enhance their experience, problem-solving, and up-to-date knowledge about the world's changes (Knupp, 2013). Cosgun (2012) said that the ability of an individual to read successfully depends on the ability to decode words, fluency and comprehension which are components of reading skill.

Most current reading development theories stress the fundamental importance of phonological skills towards learning to read (Gallagher, 2016), while Graves (2016) noted that phonemic awareness, vocabulary, and fluency variables seem essential for predicting reading achievement. Phonics is the process of mapping sounds in words to written letters, it is one of the earliest components in reading skill children should develop because it introduces them to the link between letters and sounds, known as the alphabetic principle. Children must grasp the concept that printed text represents the sounds of spoken words. There are many phonics activities that individuals can do with their children at home, which will help the child to develop early phonics skills, although it is essential to remember that these activities should always be complemented with regular reading (Özdemir & Akyol, 2019).

In the survey of national literacy, it was discovered that learners that have good reading ability performs better than learners with poor reading ability using the ability of the learners to comprehend and interpret the text as standard (Clark, 2011), the poor reading ability could be described as the inability to interact with written or printed text effectively during reading activities. Low academic performance of pupils can be tailored to poor reading skill because, in the study conducted by Akib (2015), the study revealed that there is a significant relationship between the pupil's reading skill and pupil's academic performance.

Over the years, studies have been done to establish the existence of pupils poor reading skill, in addition different studies have shown that pupils poor reading skill could be hereditary or results from environmental factors (Maruyama, 2007). A study conducted by

Mando (2008) showed that pupils' have poor reading skill which is mostly caused by failure to acquire phonological awareness and skills in alphabetic coding. Maruyama (2007) considers three factors justifying causes of reading difficulties to be neurological which could lead to the manifestation of poor reading skill which are: disorientation and disorganization in recognition of visual patterns due to brain damage, hereditary relationship of reading ability and Interrelationship between visual, auditory, temporal and kinesthetic disorientation and disorganization. Also, Adeniji and Omale (2010) said that Lawal did diagnostic testing of reading skill of selected secondary schools in Zamaru, Zaria.

He described the students' reading problems that led to poor reading skill as: omission, substitution, reversal, mispronunciation, sight, vocabulary, not up to grade level, nervousness, slow reading, and lack of comprehension. Failure to understand words: This is where a student finds it difficult to know the meaning of a certain word or words in a piece of writing. Therefore, the entire write-up may appear meaningless to such a student. Failure to understand sentence: Here, is the situation in which a student fails to comprehend an important sentence or sentences in a piece of writing. Hence, the entire meaning of the write-up would appear contradictory to such a student. Failure to understand how sentences relate to one another: If a student does not identify with the coherence among sentences, the piece of writing as a whole would be of no meaning to him. Failure to understand how the whole text fits together: There are instances where a student might be free from all the above stages of reading difficulties, yet finds it difficult to comprehend the write-up as a whole. In this study, the researcher's focus is on the neurological impress method which are some of the teaching methods that could be used to improve pupils reading skill.

Neurological impress method, as it is one of the methods that could enhance vocabulary development, comprehension, and fluency of the learners. Neurological Impress Method (NIM) is one of the methods that could improve reading comprehension, which is part of the components of reading skill. According to Alper (2016), NIM is the method of improving reading by supporting and without threatening. It is an enjoyable method of improving reading activities with the learners. Moreover, Flood, Lapp, and Fisher (2015) state that the neurological impress method (NIM) helps pupils build confidence, focus on comprehension, and develop reading fluency and comfort. In teaching reading, many methods can be applied by the teachers. One of the methods appropriate to improve reading comprehension is the Neurological Impress Method (NIM), a form of paired reading in which pupils and tutors read the exact text almost simultaneously. Sitting side by side or in front of the tutor reads a text slightly faster and louder than the pupils while both follow the text with their fingers. (Henk 2011). In addition, Heckelman suggested that teachers increase pupils' motivation during the NIM process. One-to-one interaction between teacher and student will give a psychological influence and suggested that one of the reasons for the success that pupils often experience with the neurological impress method is that the student is exposed to many words, many times, in a relatively short period (Henk, 2011).

Neurological Impress Method (NIM) is one of the methods of teaching how to read. Neurological impress method is a system of unison reading by the pupil and the teacher who read aloud at a rapid rate. Neurological Impress Method (NIM), which aims to overcome the problems of a pupil who has insufficient reading comprehension although not having a mental or physical handicap, has been supported with various applications that aim to develop the capacity of "Sight Words" of the pupils (Oladele, 2013). The Neurological Impress Method is an imposing name for a simple teaching technique to improve reading comprehension. The NIM is a multisensory approach involving a pupil's sight, hearing and speech. Learning to use the NIM is relatively painless and involves no special training. Ideally, the text is at the pupil's interactional reading level and relates to a personal interest or school subject. The more proficient partner, reading slightly faster and louder than pupil, make a conscious effort to direct his or her voice into the pupil's left ear to "imprint" a sound symbol match in her head (Embrey, 2012).

Heckleman described neurological impress method as a rapid reading technique. The instructor reads a passage at a fairly rapid rate, with the instructor's voice directed into the pupil's ear. The teacher begins as the dominant reading voice, but gradually the pupils spend more time leading this session. Pupils who have learned mechanics without adequately learning reading fluency, frequently benefit from this, as do pupils who read slowly or who hesitate over a number a word but can identify most of the words in a sentence (Nasrudin, 2012). The neurological impress method was too time-consuming for teachers because it required one-on-one teacher attention. Using individual headsets, the pupil listens to his or her own voice along with the pre-recorded voice, the teacher speaks without any intermediate in pupil's turn while moving his finger along each row and below every word and they read the content together eloquently and fluently and only stop in places where there are written punctuations (Tarcan, 2014). Therrien (2004) indicated that three other fluency strategies evolved out of the Neurological Impress Method: assisted reading and reading while listening. Using audiotapes or and paired reading, where pupils read along with a model until they feel ready to read alone. Gardner found that the Neurological Impress Method (NIM) lowered pupil anxiety as they read because they were freed from failure experiences, they encountered using traditional methods of reading instruction (Chard, Vaughan, & Tyler 2012).

Neurological Impress Method (NIM) involves reading aloud that gives the teacher a helpful way of evaluating the progress of reading skill, that is intonation, word pressure, beheading, phrasing, and finding specific teaching needs; reading aloud provides verbal practice for readers and enhances the listening ability for listeners, reading aloud is the teacher's medium in guiding wisely, it can be

used to improve the ability to adjust to shy pupils. Meanwhile, for disadvantages, aloud requires more power than reading in the heart, reading in the heart is more popular than reading aloud, and reading aloud causes a commotion (Ziadat, 2018).

The problem of pupils' poor reading skill could be traced to different factors which includes self-efficacy, interest, school variables, parents' variables, school type, teachers' variables, self-esteem and many more. In the light of this study the researcher considered pupils gender and the type of school they attend which could be private and public school which are part of variables that could affect pupils reading skill. Gender is a specially constructed phenomenon. Society ascribes different roles, duties, behaviors, and mannerisms on gender. Gender connects to both males and females (Adeyemi, 2014). Gender, according to Ashcroft (2017), is a psychological experience of being a male or a female. The authors also opined that gender is a socio-cultural construct that connotes the differentiated roles and responsibilities of males and females in a specific society. This definition connotes that gender dictates the role one plays in connection to society's general political, cultural, social, and economic systems. Clark (2010) maintained that because of biological differences in the human makeup, such as those between man and woman, people presume that one sex may have a learning edge over the other. Intrinsically, there are practically no significant differences in the intelligence between male and female that is traceable to gender differences. He argued that men are the dominant and even superior sex does not mean that they are artistically better than women. It has become a general feeling or stigma that literacy is a girl's domain. Kamil and Heibert (2015) studied gender attitudes among preschool-age girls and boys; 136 children (68 boys and 68 girls) were involved in the study from daycare and kindergarten classrooms. Students were given a test and an interview, including reading-related questions. In contrast to elementary and intermediate school children, these children viewed reading as a predominantly male activity.

Gender is not the only factor responsible for pupils' poor reading skill problems; the type of school the pupils attend could also be a factor that could be private school or public school. Public and private schools are institutions owned, as the name connotes. In Nigeria, the public school has federal, state, and local governments as their proprietors, while private schools have individuals, associations, or organizations as their owners. Adeyemi (2014) maintained that private schools vary widely, and parental participation differs from one private school to the other. What is essential for a parent is to choose a private school with characteristics that match what he/she is looking for. Parents pay for the cost of educating their children in private schools and therefore tend to be more engaged in determining what the schools offer than parents whose children are in public schools (Adeyemi, 2014).

Based on the different research findings, related to gender and school type, Klingner, Sharon, and Alison (2017) research findings revealed that female pupils have good reading ability because their reading skill components manifest and consolidates faster than male pupils, research findings state that male pupils have a very good reading ability than female pupils which could be traced to well-developed reading skill components in male pupils (Nasrudin, 2012), furthermore some findings also revealed that private schools help pupils' to become successful readers as they help the pupil to develop a very good reading ability paying closer attention to the components of reading skill which is fundamental to successful reading unlike public schools, although some researchers claims otherwise stating that public schools ensure that pupils develop good reading ability by taking them through each of the reading skill components as a unit unlike private schools that take the whole component as a unit within a content.

Statement of the Problem

It has been observed that pupils in primary schools have poor reading skill, which could hinder pupils' overall performance at primary level of education, different studies discussed in the body of this work have established the existence of poor reading skill among primary school pupils, also different number of studies has also revealed that gender and school type has effect on pupils reading skill and some also revealed otherwise. Based on the 2021/2022 report of common entrance examination, it was reported that pupils' performance in English Language is relatively low, in which the low performance of pupils in the English language might be as a result of pupils' poor reading skill ability, researchers have tried to solve the problem of poor reading of pupils to improve the academic performance of pupils in schools by using different variables or strategy such as cloze up procedure, corporative learning, rebus reading, think pair and share, test read test and others on reading skill generally but despite their effort, the problem persist. However, none has specifically looked at the effects of this strategies on each reading skill components, as the poor development of these components is integral to poor reading ability. This study looked at the effect of neurological impress method on the primary school pupils reading skill which is the research gap this study filled. Reading is the gateway to success in the general academic performance of pupils in schools. On this premise, the researcher finds it necessary to look into the effect of neurological impress method on the primary school pupils' reading skill in Ilorin West Local Government Area of Kwara State.

Research Hypotheses

Ho1: There is no significant main effect of neurological impress method on primary school pupils reading skill in Ilorin West Local Government Area of Kwara State.

Ho2: There is no significant main effect of gender on primary school pupils reading skill in Ilorin West Local Government Area of Kwara State.

Ho3: There is no significant main effect of school-type on primary school pupils' reading skill in Ilorin West Local Government Area of Kwara State.

Methodology

In this study pre-test, post-test, control group quasi-experimental design was adopted to look into effect of neurological impress method on the primary school pupils' reading skill in Ilorin West Local Government of Kwara State. The first three levels are one experimental group (neurological impress method) and one control group (conventional method), the second factorial level is based on gender that is male (M) and female (F), while the third factorial level is based on school type (public and private). The target population for this study comprised all primary four pupils in public and private primary schools in Ilorin West Local Government Area of Kwara State.

Multi-stage sampling technique was used in this study, sampling technique was used to stratify the co-educational schools into public and private primary school in which simple random sampling technique was used to select 3 public and private coeducational schools, simple random sampling technique was used in order to give all elements the chances of been selected. The three public and private school selected have 84 pupils in total and the experimental group comprises of pupils from one public and one private school with total number of 54 pupils and the control group comprises of pupils from public primary school with total number of 30 pupils in which 84 pupils participated in the study in total. Three instruments were used for this study which includes two instructional guides and Reading skill Performance Test were used as instrument for data collection which was subject to validation and reliability test where $r = 0.85$. The data collected was analyzed using inferential statistics, the research hypotheses were tested using the Analysis of Co-variance (ANCOVA). All hypotheses were tested at 0.05 level of significance.

RESULTS

Hypothesis One: There are no significant main effects of Neurological Impress Method on primary school pupils reading skill

Table 5: Summary of Analysis of Co-variance (ANCOVA) Showing the Main Effect of Neurological Impress Method on Primary School Pupils Reading skill in Ilorin West Local Government Area of Kwara State

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta
Corrected Model	3030.168 ^a	12	252.514	88.019	.896	.022	
Intercept	545.727	1	545.727	190.224	.000	.578	
Pretest	1412.571	1	1412.571	492.379	.729	.002	
Main Effect							
Treatment	1312.226	2	656.113	228.701	.000	.767	
School type	.093	1	.093	.032	.857	.000	
Gender	5.694	1	5.694	1.985	.161	.014	
Error	398.773	139	2.869				
Total	47255.000	152					
Corrected Total	3428.941	151					

a. R Squared = .884 (Adjusted R Squared = .874)

Table 5 shows the effect of treatment on primary school pupils' reading skill. There was significant effect of treatment on primary school pupils' reading skill ($F_{(2; 139)} = 228.701$, $P < 0.05$; $\eta^2 = 0.767$). The hypothesis is therefore rejected in the light of the result since the significant value (.000) which is less than 0.05. This implies that treatment had significant effect on primary school pupils' reading skill. In order to determine the magnitude of treatment size, table 6 presents the estimated marginal mean score.

Table 6: Summary of Estimated Marginal Mean Score of Pupils in Reading skill Performance Test by Treatment

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Neurological Impress Method	20.272 ^a	.358	19.565	20.980
Conventional Method	12.225 ^a	.256	11.718	12.731

Table 6 shows that those exposed to Neurological Impress Method (Mean =20.272^a) performed significantly better than those exposed to conventional method (Mean =12.225^a).

Hypothesis Two: There is no significant main effect of school type on primary school pupils' reading skill.

Table 5 shows there was no significant effect of school type on primary school pupils' reading skill ($F_{(1,139)} = .032$; $P > 0.05$; $\eta^2 = 0.000$). The hypothesis is therefore not rejected in the light of the result since the significant value (.857) which is greater than 0.05. This implies that school-type had no significant effect on primary school pupils' reading skill

Hypothesis Three: There is no significant main effect of gender on primary school pupils' reading skill.

Table 5 shows there was no significant effect of gender on primary school pupils' reading skill ($F_{(1,139)} = 1.985$; $P > 0.05$; $\eta^2 = 0.14$). The hypothesis is therefore not rejected in the light of the result since the significant value (.161) which is greater than 0.05. This implies that gender had no significant effect primary school pupils' reading skill

Discussion

The first finding from this study revealed that there was significant effect of neurological impress method on primary school pupils' reading skill in Ilorin West Local Government Area of Kwara State. This signifies that the pupils taught using Neurological impress method performed better than their peers taught with conventional method. The finding concurs with the results of McAllister, (2010) study that indicated that the Neurological Impress Method (NIM) has a positive and significant effect on two components of reading, speed and fluent reading, but this effect has no significant result on other two components of reading, i.e., the comprehension. The finding agrees with Hadi (2013) study with the aim to determine the effectiveness of Neurological Impress Method on the mentally retarded male pupils' reading development in first year of professional skills course in Boroujerd city. Data analysis of statistical tests indicated that the pupils, educated with the Neurological Impress Method in the professional skills course, have the significant difference with the control group in terms of fluent and speed reading, but this difference is not significant in terms of comprehension, which concurs with Proctor (2017) study to determine the effectiveness of using the Neurological Impress Method (NIM) with pupils in grades four through six. Results from the study indicated that the average total reading gain for the control group was slightly less than six months. Based on the results of the investigation of Pinell in (2015), concluded that the modified NIM was "effective" for the remedial readers in this particular study. The finding is also in tandem with Indah (2018) also conducted a study on Neurological Impress Method (NIM) Towards Pupil's Reading Ability.

The second finding also revealed the effect of school-type on primary school pupils' reading skill Ilorin West Local Government Area of Kwara State. There was no significant effect of school type on primary school pupils' reading skill in Ilorin West Local Government Area of Kwara State. This implies that school-type had no significant effect on primary school pupils' reading skill, either public school or private school do not influence primary school pupils' reading skill. The finding does not corroborate the finding of Rose and Modupe (2019) study on Reading comprehension skills of standard 4 pupils: a comparison of private and public schools this paper compares the reading comprehension of standard 41 pupils in four primary schools, two public and two private schools in urban and rural settings in Botswana. The findings show that the private school pupils performed better and that the urban private school pupils were better at extracting information and making inferences, while the rural private school pupils were better at interpreting information. The study underscores three areas of need: enhancing learning environment in public schools, building a strong foundation for critical/analytical reasoning and maintaining reasonable class size.

The finding of the study is not in line with Conner and Southworth (2012), who compared the academic performance of private, charter and public-school learners in the USA, concluded that private school learners scored higher than both charter and public-school learners in national examinations. Stanback (2012) investigated the performance of fourth and eighth graders in mathematics and reading in both private and public schools in the USA, and concluded that the difference in the mean scores between private and public schools was statistically significant, with private schools achieving higher mean scores. Furthermore, the finding is not in line with Nunan, (2011) study that evaluated the effect of school type on the reading comprehension of junior secondary school pupils (grades 7-9). The primary data source for the study was the three full rounds of the Indonesia Family Life Survey. The result showed that pupils that attended public junior secondary schools, moderating for other characteristics, have higher test scores upon completion than those who attended private schools. The third finding of study showed that, there was no significant effect of gender on primary school pupils' reading skill. This implies that gender had no significant effect on primary school pupils' reading skill. This implies that the gender of the pupils does not have any significant influence on primary school pupils' reading skill. The finding from this study was not supported by the findings of Ashcroft (2017) conducted a study on do boys' attitudes to reading differ to those of girls? A study into the views of reading within a year three class.

Conclusion

The study investigated the effect of Neurological impress method on primary school pupils' reading skill in Ilorin West Local Government Area of Kwara State. Based on the findings of the study, it can be explicitly stated that Neurological impress method can improve primary school pupils reading skill than the lecture method of teaching and learning.

Recommendations

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

1. Since Neurological impress method can improve primary school pupils' reading skill, classroom teachers should try to use this method by ensuring that pupils model after the teachers during the reading activity and also read aloud to the pupils in so that the pupils can model after his or her reading approach
2. Government and private school owners should help teachers to improve their professional skills development by allowing them to attend seminars, workshop, conferences and trainings on how to help learners to achieve proficiency in reading skill.
3. Teachers should make sure that all pupils in the class are carried along during the teaching and learning process irrespective of the gender.

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