



DYSLEXIA AND COMPREHENSION ACHIEVEMENT

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Abstract: *The study investigated the extent dyslexia serves as a correlate of reading comprehension achievement among junior secondary school students, Imo State. The study was guided by three each of specific objectives, research questions and hypotheses. The design of the study was correlational. The sample size was 442 (262 males and 180 females) students with dyslexia identified using two stage sampling technique drawn from a population of 2211 JS II students. Two research instruments were validated and employed for data collection. The stability of the instruments were determined using Pearson's Product Moment Correlation Coefficient which gave reliability indices of $r = 0.73$ and 0.87 for Dyslexia Identification Scale for Students (DISS) and reading comprehension achievement Test (RCAT) respectively. Data were analyzed using Pearson Product Moment Correlation to answer research questions, while Linear and Multiple Regressions were used to test the hypotheses at .05 level of significance. It was found that Dyslexia to a negative high extent correlate with reading comprehension achievement, while the study also found that Gender to a significant low extent correlate to reading comprehension achievement. Among the Educational Implications of the finding was that it would help teachers identify problems associated with dyslexia. When teachers identify the problems associated with dyslexia, they would be able to understand and effectively manage and accommodate the changing mood of students caused by stereotypes associated with dyslexia. It would help to know why some students feel inferior and shy at times before their mates. Based on the findings, it was recommended that teachers observe their students properly in order to identify the dyslexics and other learning disabled. This is to enable them know which measure, teaching methods and teaching styles to utilize for them as well as to carry everyone along in the classroom.*

Keywords: Dyslexia, Comprehension, Achievement, Secondary School Students

Introduction

A major function of school is to ensure that the learners acquire literacy and numeracy skills. The school also educates the learners on other needed skills by the society. Many pupils and students find

schooling interesting while some develop anxiety, fear and may not adjust well as to enable them learn. Some experience challenges in learning the letters of the alphabets, associating sounds with letters that represent them, identifying or generating words, or

Academic Journal of Current Research

An official Publication of Center for International Research Development

Double Blind Peer and Editorial Review International Referred Journal; Globally index

Available www.cird.online/AJCR: E-mail: AJCR@CIRD.ONLINE



counting syllables in words (phonological awareness); dividing words into individual sounds (phonemic awareness) and so on (Ikediashi, 2012), the children with such problems can be said to have a reading disorder or impairment. Pupils and students that are afraid and nervous about studying and schooling may be suffering from learning disabilities. A careful observation and diagnosis of these children might indicate that they are suffering from dyslexia.

The term Dyslexia means disabilities with reading. Dyslexia is a reading disability characterized by trouble with reading irrespective of normal intelligence (Achilike, 2017). Dyslexia is a reading disability distinguished by problems of single-word reading and spelling (Pennington, 2009). It predominately ranges from 6 to 17% of the learners population based on how severe the problem of reading is (Fletcher, 2007). The origin of dyslexia is neurological with strong connection with inheritance from parents, but environmental influences also form and reduce the likelihood of dyslexia occurrence; it can be checkmated in the lives of learners with early intervention (Fletcher, 2007; Pennington, 2009). Children with dyslexia find it hard to read confidently regardless of the basic instruction, at least average intelligence, and sufficient motivation and chances to learn.

According to International Dyslexia Association (IDA, 2014), dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficiency in the phonological component of

language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Other consequences may include problems in reading comprehension and limited reading experience that can impede acquisition of language and adept understanding. The term ‘dyslexic’ is also used to refer to those who have a distinctive learning disability (Scott, 2009). They perform poorly than their cognitively matched peers as established by cognitive assessment (Scott, 2009; Scowling, 2013). Usually those who are called dyslexic are diagnosed with this condition by an educational psychologist prior to their fourteenth birthday (Scott, 2009; Snowling, 2013).

The term “dyslexia” come into prominence lately but before the recent term, this learning disability was regarded as “word blindness”. According to Achilike (2017), dyslexia is a disorder primarily associated with trouble reading, writing and spelling. Dyslexia is known by difficulties in processing word sounds and by weaknesses in short-term verbal memory. Its effects may be seen in spoken language and written language. Research has it that these problems sprout up as a result of the inefficiencies in language processing areas in the left side of the brain which, in turn, appear to be connected to genetic difference (Been &Zwarts, 2009). This disability makes a child unable to read, comprehend, write, organize his thoughts well, and present them in an orderly manner in apt time and place the child finds himself. If a child has reading disorders, it suggests that the child has difficulty in an academic area such as in reading, mathematics or written expressions.

Much of research in this area has been carried out in the United States, with many individuals found to be



Learning Disabled” (Riddick, 2009; Burden, 2008). The British Psychology Association (2010) advances that dyslexia occurs when accurate and fluent word reading and spelling develops poorly or with great difficulty despite suitable learning opportunities; that is, learning opportunities which are efficient for many learners. Many definitions of dyslexia are approached from the medical model of disability which emphasize on the problem with the individual. Scientists believe dyslexia is caused by a neurological difference in the brain and results from a neurological problem in the left side of the brain where several regions located in the brain’s left side have the responsibility for controlling the task of reading and writing (Snowling, 2013). Dyslexia is a type of learning disorder. Learning disorders are sometimes called learning difficulties or learning disabilities. Learning disorders describe a group of disorders known by inadequate development of specific academic, language and speech skills. The five main types of learning disorders are reading disorders (Dyslexia), mathematics disorders (dyscalculia), written expression disorders (Dystrophic), fine motor skills disorders and information processing disorders (Amesbury, 2006). This work concentrated on the reading disorder called, Dyslexia. The researchers chose this reading disorder because it is one of the well-known problems students face in school especially in this part of the world. The researchers also chose to study junior secondary school students because dyslexia may not be dictated in the early years of schooling, like in the primary school. (Martin, 2008). It may however become more pronounced when the child enters secondary school. The child may become

unmotivated and develop a dislike for school. The child’s interest in school may become jeopardized if the problem remains unrecognized, unmanaged or untreated. This may also account for the numerous cases of secondary school drop-outs in Nigeria and in Imo State precisely. This work is undertaken to sensitize on what dyslexia is capable of doing in a child’s life and advocating for researchers to delve into this area of students’ problems with the purpose of finding a lasting management or a probable solution to it. This work is a follow up research of the researchers work on Dyslexia as a correlate of psychosocial problems among junior secondary school students.

This disability can be challenging for a person to learn at the same pace as someone who does not have reading disability. People with reading disorders have trouble performing specific types of skills if left to figure things out by themselves (Ikediashi, 2010). However, reading difficulties have no gross effect on the intelligence of an individual. Generally, children who are tagged reading disabled may have impairment in the acquisition, retention and processing of information. Standardized tests place them well below their intelligence quotient range in their area of difficulty (Mortimore, 2008). Reading disorders are the most prominent of learning disorders. Children with reading disability have difficulty interpreting letters and words (dyslexia). They are unable to record and decode the sounds (phonetic structure). This condition reduces accuracy and comprehension in reading. (Igbo, 2010). Reading disorders can have an effect on any part of the reading process such as fluency and word recognition or both word decoding and reading rate



oral reading with expression and reading comprehension.

Learners with reading disorders may have normal intelligence; learning disorders may have little to do with intelligence of such a child (Motimore, 2008, Oxford Online Dictionary, 2014). Reading disorders then could be academic difficulties experienced by children and adults of average to above average intelligence. Children with reading disabilities may have difficulty with reading, writing, listening and speaking. These difficulties may significantly interfere with academic achievements or daily living (Encyclopedia of Children's Health, 2017). One gets more worried when this interference in the academic achievement of children linger up to secondary school level of education.

Education at secondary school level is assumed to be the bedrock and the foundation towards higher knowledge at tertiary institutions. It is an instrument that can be used to achieve a speedy economic, social, political, technological, scientific and cultural development in the country. Unfortunately, there has been a poor achievement of students at this level. The academic achievements of students have been a worrisome concern not only to parents and students but to the entire society (Epunam, 2009). The academic achievement of a person is referred to as the learning outcome of that person. Academic achievement or (academic) performance is the outcome of education that is the degree a learner, teacher or institution has achieved their educational goals (Ward & Ward, 2006). Academic achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects

is most important-procedural knowledge such as skills or declarative knowledge (Ward & Ward, 2006). In California, for instance, the achievement of schools is measured by the Academic Performance Index. (Martin 2008). In Nigeria, the academic achievement of students is measured by the administration of both teacher made test and standardized tests (Isangedighi&Ogomake, 2010). The achievement of students could be measured by their scores in different school subjects. A learner that finds it difficult to read, that is a learner with dyslexia, will be underachieved in academics. Thus, there should be an early diagnoses and intervention to help such children so that they will excel in their academics.

Reading is a cognitive process which entails decoding symbols to arrive at meaning. It entails building meanings of words (Ayedun, 2014). Reading is pertinent and essential for efficient academic functioning and it determines the achievement of the aim and objective of teaching and learning. However, a learner that is deficit in this pertinent skill is limited in exploiting the opportunities for an effective academic excellence. Sadly, however, as decisive as reading is to teaching and learning, researchers have found that underachievement in reading retards effective academic growth among learners all over the globe (Adebayo, 2009). Nigeria is faced with the problem of underachievement in reading. For instance, it has been established to be a national problem (Okedara 2007).

Many efforts have been made to address this problem. Some interventionists have viewed it from the angle of socio-psychological factors relating to



the learners' background while others have looked at the students reading habits as a factor and others have focused on the readability of the text as a prime factor that determines reading efficiency or inefficiency (Ezeahurukwe, 2010). More specifically, Amadi, (2011) in a study of reading comprehension among students in Imo State, stated that the deficiency in reading comprehension at the post primary school level is high and attributed the problem to environmental factors of the home background. Ayodele (2009) opined that the methodology of teaching of reading coupled with poor learning environment in most Nigeria's secondary schools has hitherto yielded nothing to enhance the needed reading requirements of today's academic demands. This has resulted in the major crisis being witnessed in the school certificate results on English Language examinations of any form (Ayedun, 2014). Thus, researches to combat the challenges posed by underachievement in English reading comprehension among students at the basic level of education have continued unabated; yet, the problem is still persisting with continued increase in yearly failure rates in major English Language examinations (Ayedun, 2014). As important as reading is, a student who is unable to read fluently at the basic level of education may need close tutoring and help. Again, it is often remarked that students' achievements in many school subjects have always been below expectation (Johanna, 2013). The trend of poor achievements in different school subjects in Imo State has been confirmed by the Examination Development Centre (EDC) Reports for the years: 2013, 2014, 2015, 2016 and 2017. These reports show that students' achievements were poor in many

subjects. For instance, the Examination Development Centre in Imo State, (Junior School Certificate Examination) reports of 2013, 2014, 2015, 2016 and 2017 indicated that only 27.99%, 29.27%, 31.28%, 52.94%, 63.00% respectively of the students who wrote the examinations obtained five credits including Mathematics, English language and Basic science which are the basic subjects and requirements for admission into Senior Secondary School (EDC, 2013 – 2017). These uninspiring achievements in examinations are causes for concern.

The study by Nwachukwu (2014) on gender and secondary school students' performance in English Language in Imo State advanced that students fail in English Language based on poor comprehension, poor study habits and attention deficit disorder but did not mention dyslexia. This research work focuses on dyslexia as a correlate of reading comprehension achievement among junior secondary school students. It is in a bid to find solutions to the scourging causes of failures in examinations that necessitated the need to embark on this research. This research is therefore filling the gap in literature on the causes of reading problems and students academic achievement and proffering solutions to the problems. All these reveal that reading for comprehension is a major problem that should be addressed. The concept of reading relates to the present study because this study looked at the correlation that exists among dyslexia and reading comprehension of junior secondary school students. There are gaps in research in Nigeria regarding the selected area of research as some of the available researches are on awareness of dyslexia prevalence



in Nigeria children. Special education is integrating but progressing at a low speed and effective inclusive education is rare in Nigeria. So this research will be helpful in recognising a unique area of research (dyslexia) in Nigeria so that future education of these learning including their psychosocial problems like self-perception, self-esteem, anxiety and even emotional needs can be recognized and managed so as to enhance their academic skills and sustain their interest in school.

A number of conferences and workshops have been organized with a view to addressing the problem of reading comprehension in secondary schools (Uroko, 2010). As a result, a number of strategies have been recommended for teaching so that students can comprehend what they read. These include: Elaborative interrogation and self-questioning (Ezeahurukwe, 2010); Use of games (Umoh, 2006); Enquiry – Discovery method (Ekpo, 2006); Use of ICT in the classroom (Olorundare, 2006). All these recommended approaches look quite interesting in their theoretical orientation, but evidence show that the problems are still prevalent, as could be seen from the EDC (2013) – 2017) Chief Examiners' reports. Students' poor academic performance in Nigeria have over the years been attributed to poor intelligent quotient, teachers' inefficiencies, poor teaching methods, inadequate teaching facilities, among others, with little or no reference to dyslexia which affects students' reading and writing skills (Ikediashi, 2012).

A factor that is believed to interact with dyslexia as a correlate of reading comprehension achievement of students is parental level of education. Highly literate parents would like their children to obtain

quality education and reap its benefits. IDA, (2014) posited that highly educated parents will insist that their children acquire academic success than those parents with low educational attainment. Highly literate parents often prod their children to aspire higher to achieve success in life. Highly motivated students often perform better academically than the lowly motivated pupils. Muola (2010) conducted a study on the relationship between academic achievement motivation and home environment among standard eight pupils. A significant positive relationship was seen between some home environmental factors like fathers' educational level, occupation, mothers' occupation and academic achievement motivation. The result also showed that pupil's motivation to do well in academic work to an extent depends on their home background. One wonders the extent parental educational level could interact with dyslexia as a correlate of reading comprehension achievement of students.

The need for the study becomes more compelling when one considers the fact that dyslexia forms one of the masking issues that militate against the reading culture of many students in Nigeria. This disorder leads to poor performance of students, negative self-perception of their academic abilities, social skills and drop-out of some students from school (Igbo, 2010). There is substantial and growing international research into teacher recognition and support for dyslexic learners in government-owned secondary schools/mainstream schools. Comparatively, the understanding of teachers' attitudes and beliefs around learning difficulties and how severe the impact is on students are limited in Nigeria.



Operationally, many Nigerians and classroom teachers have minimal knowledge and understanding of dyslexia. The lack of widespread recognition of the disability may mean that families will continue to encounter difficulties in having their child assessed/having the diagnosis of dyslexia recognized, and consequently having their child helped in schools. The typical difficulties experienced like delay in reading development and the memorization of whole words may be attempting to correct the literacy predicament through memorization and drill. A well-researched study could contribute to the understanding of where teachers are currently situated in terms of knowledge and support of dyslexia and in devising strategies that may improve the education of dyslexic students. The adoption of learning strategies unique to dyslexia, and the endorsement accomplishments in oral, visual or other areas, as signposts of achievement could have a significant influence on educational outcomes for students.

1.1 Statement Of The Problem

The problem of reading difficulty has generated concerns from parents, teachers, counsellors and researchers over the years. The term ‘dyslexia’ has been described by Rudolph Berlin as ‘word blindness’ since 1887 (Moats and Dakin, 2011). Since then, the problem of dyslexia has been seen among many children in the primary and secondary schools alike. This issue of dyslexia has been militating against the effective learning of students for ages. In America, the American Dyslexia Association (ADA) offer training and support for the dyslexics and in Britain, the British Dyslexia Association (BDA) do the same coupled with the

fact that there are special schools for this set of students where they are taught and their difficulties well managed using individualized methods Kendeou, Savage and Van den Broek (2009). The reverse is the case in Nigeria where most teachers, even some researchers are yet to know the prevalence of dyslexia among pupils/students. Nigeria is confronted with the biting effects of underachievement in reading. Again, it has been established to be a national problem in Nigeria (Okedara, 2007). Regrettably, the issue of dyslexia is not well known by many people in Nigeria but one in eighty persons is affected by dyslexia (Ikediashi, 2012, Glazzard, 2010). It is also estimated that 12 million Nigerians are living with learning disability, especially dyslexia and out of that number; four million are children (Adesulu, 2014).

In Nigeria, there are no provisions for special schools where children that have this problem are well taught using individualized methods. Again, the problem is more pronounced in this contemporary age because majority numbers of teachers are unaware of this scourging problem of reading among students. A learner, who is deficit in this all important skill, is already limited in exploiting available opportunities for a successful academic excellence. A learner who is unable to read fluently at age 12 may have need for close tutoring and monitoring and probably a dyslexia diagnosis so as to improve his learning experience and psychosocial adjustment in school. An experienced teacher by way of careful observation can easily detect dyslexia and offer help rather than labelling the student as lazy, uneducable, blockhead, which makes them to



pass through psychosocial problems of shame and depression et cetera.

In Nigeria the academic achievement of students in both Junior secondary and Senior Secondary Certificate Examinations are declining steadily coupled with the fact that some educators are still unfamiliar with the term ‘dyslexia’ which is one of the masking problems that militate against the effective reading and academic achievement of many Nigerian children. Dyslexic students can be assisted to learn to read and write with appropriate instructional strategies and educational support. An important aspect of dyslexia is for school to develop a plan with the parent of dyslexics to meet their challenges. The extent dyslexia correlates with the reading comprehension achievement of Nigerian students who operate in different socio-cultural circumstances is yet to be well investigated and established. Therefore, the problem of this study put in a question form is: To what extent does dyslexia correlate with reading comprehension achievement of students in the junior secondary schools in Imo State?

1.2 Objectives Of The Study

The objectives of the study were to:

1. Determine the correlation between dyslexia and reading comprehension achievement among junior secondary school students.
2. Investigate the influence of gender in the correlation between dyslexia and reading comprehension achievement among junior secondary school students.
3. Investigate the influence of parental level of education in the correlation between dyslexia and

reading comprehension achievement among junior secondary school students.

1.3 Research Questions

The following questions were answered to guide the study.

1. What correlation exist between dyslexia and reading comprehension achievement among junior secondary school students?
2. What is the influence of gender in the correlation between dyslexia and reading achievement in comprehension among junior secondary school students?
3. What is the influence of parental level of education in the correlation between dyslexia and reading comprehension achievement among junior secondary school students in Imo State?

1.4 HYPOTHESES

The following null hypotheses were formulated and tested at 0.05 levels of significance.

Ho1: There is no significant relationship between dyslexia and reading comprehension achievement among junior secondary school students in Imo State.

Ho2: There is no significant interaction effect of gender in the correlation between dyslexia and reading comprehension achievement among junior secondary school students in Imo State.

Ho3: There is no significant influence of parental level of education in the correlation between dyslexia and reading comprehension achievement among junior secondary school students in Imo State.



2. METHOD

(1) Design of The Study

The study adopted a correlational research design. Ali (2013) opined that a correlational design is a form of research design that involves collecting data on two or more variables and computing them to find the correlation coefficient or the extent of linear relationship or association that exists between the two or more variables. The major purposes of correlational design are: to explore relationships between variables and to predict scores on one variable from research participant's scores on other variables. Correlational design was therefore suitable for this study in that it enabled the researchers establish the relationship that exists among dyslexia and reading comprehension achievement of students.

2.2 Population of The Study

The targeted population of this study was 2211 junior secondary class two students with dyslexia. They were selected from 119 public secondary schools in Owerri Education Zones 1 and 2 of Imo State in 2017/2018 session. The 2211 dyslexia students were made up of 1312 males and 899 females. To identify the dyslexics, the researchers conducted an initial preliminary survey and subsequently, conducted the main/complete research. The researchers made use of Dyslexia Identification Scale for Students (DISS) to identify the students with dyslexia in public secondary schools. The students that scored 60 point and above in the DISS were identified as being dyslexic. Therefore, the choice of students with dyslexia in public secondary schools was motivated by the need to find out the extent dyslexia serves as a correlate of reading comprehension achievement among junior secondary

school students, as a way to provide students with information about the relationship between dyslexia, and reading comprehension achievement among students.

SAMPLE AND SAMPLING TECHNIQUES

The sample was 442 (262 males and 180 females) identified students with dyslexia using multi-stage sampling technique. Initially simple random sampling technique was used to draw two education zones (Owerri Education Zones one and two) in Imo State. Purposive sampling technique was used to draw 35 schools with up to ten students with dyslexia. Proportionate stratified sampling technique was used to draw 20% of the total population of JSS2 students with dyslexia. The use of 20% was in line with Ali's (2013), recommendation which indicated that when the population is large up to 2000), about 5 to 20% could be used for the study.

RESEARCH INSTRUMENT

Two research instruments were developed and used for the study.

1. Dyslexia Identification Scale for Students (DISS)
2. Reading Comprehension Achievement Test (RCAT)

A 20-item Dyslexia Identification Scale for Students (DISS) was developed by the researchers.

The (DISS) comprised of two sections: Section A is the personal data of the students and instruction to the respondents. It includes parental educational background, sex of the respondents and so on. Section B required students to fill the instrument as it related to them. The Dyslexia Identification Scale for Students (DISS) items were based on a four (4) point rating scale of Very High Extent (VHE – 4),



High Extent (HE -3) Low Extent (LE – 2), and Very Low Extent (VLE -1). This instrument was used separately to identify the subjects for the study. The negative items were reversely scored. Students who had a score of 60 points and above were considered dyslexics while students who scored below 60 were not considered dyslexics.

Reading Comprehension Achievement Test (RCAT) The (RCAT) was developed by the researchers with the help of English Language teachers. The comprehension tests were drawn from passages in Intensive English for junior Secondary Schools 2, which the students would not have been taught before the time of the research. To develop the instrument, a test blue print was designed and used in guiding the construction of the test. The guiding principles for developing the test blue print were the emphasis on each aspect of the contents in the curriculum. The objectives of the contents taught were also considered. There were objectives that guided on the number of topics for each of the units and the levels of questions generated.

VALIDATION OF THE INSTRUMENT

The Dyslexia Identification Scale for Students (DISS) was subjected to face validation in order to ascertain the relevance in the present study. In view of this, the instrument was given to three experts from Educational Psychology, Guidance and Counselling; and Measurement and Evaluation Departments, all from Michael Okpara University of Agriculture, Umudike. The validates checked the suitability of language, its clarity, relevance of items to the study and total coverage in addressing research questions; bearing in mind the purpose of the study. Their corrections and suggestions helped

to strengthen the face and content validity of the instrument.

The face and the content validity were established for the Reading Comprehension Achievement Test (RCAT). To ensure the face and content validity of the Reading Comprehension Achievement Test (RCAT)it was presented to four experts from Educational Psychology, Guidance and Counselling. Measurement and Evaluation and English Language from the School of General Studies all from Michael Okpara University of Agriculture, Umudike. The experts were required to observe whether the items were representative of the content and objectives. Based on their comments and suggestions, some items were removed and some others retained after their modification. The content validity of the Reading Comprehension Achievement Test (RCAT) was ensured through the use of the test blue print. This was achieved by ensuring that the test items reflect the specification of the test blue print. The total questions used for the study were 12.

RELIABILITY OF THE INSTRUMENT

The Dyslexia Identification Scale for Students (DISS) and Reading Comprehension Achievement Test (RCAT) were subjected to trial testing through test retest method using 30 JSS 2 students in Okigwe Education Zones of Imo State which were different in location from the selected Zones of the study. The stability of the instruments was determined using Pearson's Product Moment Correlation Coefficient which gave reliability indices of 0.73, and 0.87 for the DISS and RCAT respectively. The internal consistency of the items was determined using Cronbach's Alpha method after single administration which yielded reliability indices of 0.77 and 0.88 for



the DISS and RCAT respectively. Cronbach’s Alpha method was used since the instruments were not dichotomously scored.

ADMINISTRATION OF THE INSTRUMENT

The researcher administered the validated instrument DISS and RCAT with the help of four research assistants briefed by the researcher so as to facilitate the study and coverage of the scope. Four hundred and forty-two sets of the instrument were administered to the sampled secondary schools in the zone through direct delivery and recovery method. The essence of direct delivery and recovery method is to ensure a higher percentage of recovery of the copies of the instruments. The researchers briefed the research assistants on how to administer correctly the instruments. The respondents were also given proper instruction on how to answer the item questions in the instrument. At the end of the data collection, 424 copies of the instruments were retrieved and collated which represents 96% retrieval rate.

ANALYSES OF DATA

The data were analyzed using Pearson’s (r) Product moment correlation to answer research questions

Table 1: Correlation Matrix of Dyslexia and Reading Comprehension Achievement among Junior Secondary School Students

		DISS	RCAT
Pearson Correlation	1	-.624	
DISS Sig. (2-tailed)			.000
N		424	424
Pearson Correlation	-.624	1	
RCAT Sig. (2-tailed)		.000	
N		424	424

while linear and multiple regressions were used to test the null hypotheses at 0.05 levels of significance. In using Pearson’s (r) product moment correlation, the decision rule was that ±0.00-0.20 = very low relationship; ±0.21-0.40 = low relationship; ±0.41-0.60 = ±moderate relationship; ±0.61-0.80 = high relationship;±0.81-1.00 = very high relationship was used in the interpretation. The instrument with which the data was collected has four points’ responses scale. The null hypotheses of significant difference was accepted if the p-value was equal or greater than alpha value of .05 but rejected if the p-value was less than the alpha value of .05 level of significance.

3 RESULTS AND ANALYSIS

3.1 RELATIONSHIP BETWEEN DYSLEXIA AND COMPREHENSION ACHIEVEMENT

Research Question 1

What correlation exists between, dyslexia and reading comprehension achievement among junior secondary school students?

Data for answering research question 1 are presented in Table 1.



DISS = Dyslexia Identification Scale for Students, RCAT =Reading Comprehension Achievement Test. *. Correlation is significant at the 0.05 level (2-tailed).

Data in Table 1 indicate a correlation coefficient (r) of .62 which is negative and within the coefficient limit of $\pm 0.61 - 0.80$. This indicates that Dyslexia to a negative high extent correlates to reading comprehension achievement among junior secondary school students.

Hypothesis 1

There is no significant relationship between dyslexia and reading comprehension achievements among junior secondary school students Imo State.

Data for testing hypothesis 1 are presented in Table 2

Table 2: Linear Regression Analysis of Dyslexia Reading Comprehension Achievement among Junior Secondary School Students in Imo State

Model	Sum of squares	Df	Mean Square F	Sig.
Regression	6846.016	1	6846.016	19.751 .000 ^b
Residual	146621.510	423	346.623	
Total	17591.333	424		

Df = degree of freedom, F = F-calculated, Correlation is significant at the 0.05 level (2-tailed).

Data in Table 2 show that the calculated F-value of 19.751 has a p-value of .00 which is less than the alpha value of .05. This means that there is significant relationship between dyslexia and reading comprehension achievements among Junior Secondary School Students in Imo State. Therefore, the hypothesis of no significant relationship between dyslexia and reading comprehension achievements among Junior Secondary School Students in Imo State was rejected.

3.2 Subsection 2: Influence of Gender, Dyslexia and Comprehension Achievement

Research Question 2

What is Influence of gender in the correlation between dyslexia and reading comprehension achievements among junior secondary school students?

Data for answering research question 2 are presented in Table 3.



Table 3: Correlation Matrix of Influence of Gender in Dyslexia and Reading Comprehension Achievements among Junior Secondary School Students.

		Gender	DISS	RCAT
Pearson Correlation	1	.214	.117	
Gender Sig. (2-tailed)		.231	.518	
N		424	424	424
Pearson Correlation	.214	1	-.788*	
DISS Sig. (2-tailed)	.231		.000	
N		424	424	424
Pearson Correlation	.117	.788*	1	
RCAT Sig. (2-tailed)	.518	.000		
N		424	424	424

DISS = Dyslexia Identification Scale for Students, RCAT

=Reading Comprehension Achievements Test. *. Correlation is significant at the 0.05 level (2-tailed).

Data in Table 3 indicate a correlation coefficient (r) of .21 which is positive and within the coefficient limit of $\pm 0.21 - 0.40$. This indicates that gender has influence to a positive low extent in the correlates between dyslexia and reading comprehension achievements among junior secondary school students. It also indicates a correlation coefficient (r) of .17 which is positive and within the coefficient limit of $\pm 0.01 - 0.20$. This indicates that gender influence to a positive very low extent in the correlate between dyslexia and reading comprehension achievements in comprehension among junior secondary school students. It further shows a correlation coefficient (r) of .79 which is positive and within the coefficient limit of $\pm 0.61 -$

0.80. This indicates that dyslexia to a positive high extent correlate to reading achievements in comprehension. Consequently, gender influences to a positive low extent in the correlation between dyslexia and reading achievement in comprehension among junior secondary school students.

Hypothesis 2

Gender has no significant influence in the correlation between dyslexia and reading comprehension achievement among junior secondary school students Imo State.

Data for testing hypothesis 2 are presented in Table 4

Table 4: Regression Analysis of Gender Influence in the Correlation between Dyslexia and Reading Comprehension Achievements among Junior Secondary School Students in Imo State.

Model	Sum of	Df	Mean Square	F	Sig.
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	squares				
Regression	6899.615	2	3449.808	9.680	.001 ^b
Residual	150397.000	422	356.391		
Total	17591.333	424			

Df = degree of freedom, F = F-calculated, Correlation is significant at the 0.05 level (2-tailed).

Data in Table 4 show that the calculated F-value of 9.680 has a p-value of .001 which is less than the alpha value of .05. This means that Gender has significant influence in the correlation between dyslexia and reading comprehension achievement among Junior Secondary School Students in Imo State. Therefore, the hypothesis of Gender having no significant influence in the correlation between dyslexia and reading comprehension achievement among Junior Secondary School Students in Imo State was rejected.

Table 5: Correlation Matrix of Influence of Parental Level of Education in the Correlation between Dyslexia and Reading Comprehension Achievement in Dyslexia and Social Problems among Junior Secondary School Students

		PLE	DISS/RCAT
Pearson Correlation	1	.235	
PLE	Sig. (2-tailed)		.188
	N	33	33
Pearson Correlation	.235	1	
DISS/RCAT	Sig. (2-tailed)	.188	
	N	33	33

DISS = Dyslexia Identification Scale for Students, RCAT =Reading Comprehension Achievement Test; PLE = Parental Education Level *. Correlation is significant at the 0.05 level (2-tailed).

3.3 Subsection 3: Correlation of Parental level of Education, Dyslexia and Comprehension Achievement

Research Question 3

What is the influence of parental level of education in the correlation between dyslexia and reading comprehension achievement among Junior Secondary School Students in Imo State?

Data for answering research question 3 are presented in Table 5.

Data in Table 5 indicates a correlation coefficient (r) of .24 which is positive and within the coefficient limit of $\pm 0.21 - 0.40$. This indicates that parental level of education positive low influence in the correlates between dyslexia and reading



comprehension achievement among junior secondary school students in Imo State.

Hypothesis 3

There is no significant influence of parental level of education in the correlation between dyslexia and

reading comprehension achievement among junior secondary school students Imo State.

Data for testing hypothesis 3 are presented in Table 6

Table 6: Linear Regression Analysis of Influence of Parental Level of Education in the Correlation between Dyslexia and Reading Comprehension Achievement among Junior Secondary School Students Imo State.

Model	Sum of squares	Df	Mean Square F	Sig.
Regression	.521	1	.521	1.815 .188 ^b
Residual	121.401	423	.287	
Total	9.419	424		

Df = degree of freedom, F = F-calculated, Correlation is significant at the 0.05 level (2-tailed).

Data in Table 6 show that the calculated F-value of 1.815 has a p-value of .19 which is greater than the alpha value of .05. This means that there is no significant influence of parental level of education in the correlation between dyslexia and reading comprehension achievement among junior secondary school students Imo State. Therefore, the hypothesis of no significant influence of parental level of education in the correlation between dyslexia and reading comprehension achievement among junior secondary school students Imo State was not rejected.

4.1 DISCUSSION OF FINDINGS

The findings of the study have indicated that Dyslexia to a significant negative high extent correlates to reading comprehension achievement among junior secondary school students. This finding confirms Adekola, Oluseun and Olarewaju

(2014) whose study on the impact of dyslexia on the performance of students in English comprehension in Lagos State Secondary Schools, detected that there is a significant relationship between reading deficiency and students’ achievement. Low reading comprehension achievement could be traced to Hoskins (2015) who noted that they do not feel anxious about the education environment per se, but learners with dyslexia expect to take part in what education systems do and find it distressing when they cannot meet the expectation of themselves and others. The finding to an extent builds to the findings of Ayedun (2014) on Home and School factors as determinants of achievement in reading comprehension among senior secondary school students in Ogun State, who showed that home and school factors significantly predict achievement in reading comprehension.



It was also found that gender has significant positive low influence in the correlation between dyslexia and reading comprehension achievement among junior secondary school students in Imo State. In line with the findings. Brown (2008) on a study of the relationship among self-concept, reading attitude and reading comprehension in second grade readers in Newfoundland America, found out that gender had a significant influence only on reading self-concept and reading attitude, with the boys having less positive ratings in these areas. The boys in this study were found to have less positive reading self-concepts and less favourable reading attitude than the girls. To an extent the finding contrasts the finding of Burden and Burdett (2008) which explored the consequences of such cognitive self-appraisal for successful learning outcomes in learners with dyslexia in Texas. The study speculated the influence of gender and specialist provision upon the positive self-image of the learners. The finding shows positive self-perceptions because of resilience, self-efficacy and internal locus of control owing to adequate support from families and specialized educational help with no gender differences in the findings of the study.

The finding further showed that there was no significant influence of parental level of education in the correlation between dyslexia and reading comprehension achievement among junior secondary school students in Imo State. The finding is in line with Shaywitz (2013) who found out that equal numbers of boys and girls in both grades had reading difficulties, and that the pupils were also found to attribute the problems to their parental educational background since they only received educational

assistance when they are in school and their parents seemed not to value them at all. Also in line with the finding Eissa (2010) on Psychosocial and Behavioural Problems associated with Dyslexia in Tanzania, revealed that dyslexia has negatively influenced the self-esteem of the students from parents with both high and low educational attainment and caused them to feel different from others with poor school achievement and lower feelings of well-being without gender differences.

4.2 CONCLUSION

Learning disorder describe a group disorders characterized by inadequate development of specific academic, language and speech skills. Among the various kinds of learning disorders is Dyslexia. Dyslexia also known as reading disorder is evident when accurate and fluent word reading and spelling develops very incompetently or with great difficulty despite appropriate learning opportunities; that is, learning opportunities which are effective for the great majority of children. It is one of the most common problems students face in school especially in this part of the world. Dyslexia can go without being dictated in the early years of schooling but become more pronounced when the child enters secondary school. The child's interest in school may become jeopardized if the problem remains unrecognized, unmanaged or untreated. This may also account for the numerous cases of secondary school drop-outs in Nigeria and in Imo State precisely. This situation becomes an issue because it has been militating

Against the effective learning of students. In advanced counties such as America and Britain, there are special schools for this set of students



where they are taught and their difficulties well managed using individualized methods. Regrettably, the reverse is the case in Nigeria where the issue of dyslexia is not well known by many people yet, one in eighty persons is affected by dyslexia. Because of this, there are no provisions for special schools where children that have this problem are well taught using individualized methods. Consequently, the academic achievement of students in both Junior Secondary and Senior Secondary Certificate Examinations in Nigeria are declining steadily.

It was in a bid to cover this gap that the researchers embarked on this study to unravel the relationship and the strength of such relationship between dyslexia, and reading comprehension achievement of Nigerian students who operate in different socio-cultural circumstances. Dyslexic students can be assisted to learn to read and write with appropriate instructional strategies and educational support. An important aspect of dyslexia is for school to develop a plan with the parents of dyslexics to meet their challenges.

4.3 EDUCATIONAL IMPLICATION OF THE FINDINGS

The findings of this study have education implications to students, parents, teachers, psychologists and guidance counsellors, curriculum planners and textbook authors, Non-governmental organizations, the government and researchers when published. If the findings of this study on the extent to which dyslexia correlates with reading comprehension achievement of students in the junior secondary schools in Imo state is accessed and made known to the public, there would be sufficient knowledge on how to understand why dyslexic

students have difficulties with single-word reading and spelling. It would also help to know why some students feel inferior and shy at times before their mates and why some students couldn't continue in their education. Hence, bringing about a decrease in secondary school dropout. Again, parents would understand the causes of dyslexia and the relationship between dyslexia, and reading comprehension achievement of their children. It would also enable them to identify children with dyslexia so as to look for early intervention.

The findings of this study would help teachers identify problems associated with dyslexia. When teachers identify the problems associated with dyslexia, they would be able to understand and effectively manage and accommodate the changing mood of students caused by stereotypes associated with dyslexia. There has been always a persisted prevalent belief among the teachers that if a student cannot learn, there is nothing a teacher can do to make him learn. This attitude is not realistic as the learner also places their failure to learn on their teachers. The findings would help them to know how best to teach students with dyslexia. The findings would help to understand the extent of manifestation of dyslexia in schools and the need to assist the dyslexic students to cope with the psychological and social problems encountered by such students. The findings would also help to understand and effectively manage the changing mood of the students caused by stereotypes associated with dyslexia.

The study would help the curriculum planners to develop modules that would meet the students' relationship needs and psychosocial needs of these



set of students. It would also provide knowledge on how best to plan and implement appropriate learning skills that should be used in the classroom and as well ensure that personal competence characteristics such as self-confidence, knowing one's strength and weakness, self-control of emotions, trustworthiness and commitment are enshrined in the school syllabus that is developed for learning by the students. The findings of the study would help the curriculum planners understand the perceptions of student and teachers regarding dyslexia.

The results of the study would help textbook authors have a wider scope of the knowledge about the emotions that can influence students' academic life and its changing challenges. The findings would as well provide a platform that will academically assess issues which affect the school operations through writing.

Special bodies like Non-governmental organizations should focus attention to this group of people that have not received much attention in Nigeria on how to better and enhance their reading and general academic lives. Researchers should develop skills that would enable them monitor the trend of manifestation of dyslexia and the relationship between dyslexia and reading comprehension achievement of students and proffer solutions to the trending problem.

4.4 RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations were made.

1. Teachers in general should study and observe their students properly in order to identify amongst them the dyslexics and other learning disabled. This is to enable them know which measure, teaching

methods and teaching styles to use for them as well as to carry everyone along in the classroom.

2. Where dyslexic students cannot be separated from brighter ones, teachers of such classes should exhibit patience and teach other students how to accommodate one another.

3. There should be special dyslexia programs, caring environment, early identification, on-time interventions, school and home partnership in order to help the dyslexics.

4. Parents of the dyslexic should open up, treat them with care and not seeing them as a burden but help them at home where necessary, as well as present them for proper guidance and counselling.

5. All students at their early secondary school stage should be subjected to therapy to determine whether they have dyslexia or not before facing the senior secondary level.

6. Teachers, parents and even peers and classmates should stop labelling the dyslexic students negatively so as to avoid the feeling of depression, anger and other psychosocial problems.

7. The government, non-governmental organizations and school administrations should provide adequate special facilities and structures for dyslexic students, since dyslexic students perform better and not feel isolated when not mainstreamed.

8. Curriculum planners and developers should develop modules that are befitting for all students, taking into consideration the dyslexics.

9. Special or professional teachers should be assigned to teach the dyslexics in their special schools.



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