INVESTIGATING THE READING DIFFICULTY OF PUPILS IN PUBLIC PRIMARY SCHOOLS IN NIGERIA: WHAT ARE THE ROOT CAUSES?

KOLAWOLE AKINJIDE ARAMIDE
Department of School Library and Media Technology,
University of Ibadan, Nigeria
E-mail: kolaakinjide@gmail.com
ka.aramide@ui.edu.ng
ORCiDs: https://orcid.org/0000-0002-9949-8712

IBITOLA OLUWATOYIN ADIGUN
Department of School Library and Media Technology,
University of Ibadan, Nigeria
E-mail: io.adigun@mail1.ui.edu.ng
oloriadigun@gmail.com
preciousft2002@yahoo.com
ORCiDs: https://orcid.org/0000-0002-1296-3512

Abstract

The study investigated factors causing reading difficulty among pupils in public primary schools, focusing on Abadina Primary School, University of Ibadan. Using a descriptive survey design, the study included 56 pupils initially identified by their teachers as having reading difficulties. Thirty-three (10 Primary Four and 23 Primary Five pupils) were confirmed after screening with the "Reading Ability Index Screening Scale". The Reading Difficulty Checklist was the primary instrument for data collection. The study examined cognitive, biological/physiological, and psychological factors related to reading difficulties. Parental and pupil consents were obtained through the school management. Data were analyzed using descriptive statistics. Results revealed that the major causes of reading difficulty in the pupils are the cognitive factors. The study concluded that inadequate cognitive abilities significantly influenced pupils' reading difficulties. The study recommends children's early exposure to reading activities at home and regular school engagement to help them in developing cognitive abilities and eliminating reading difficulties.

Keywords: Reading difficulty, Cognitive factors in reading, Psychological factors in reading, Physiological/Biological factors in reading, Pupils' reading ability
DOI:https://doie.org/10.0913/SER.2024583553

Introduction

Reading difficulty could be a major setback in the attainment of academic success and achievement of life goals because of the crucial role reading plays in learning. Reading has been identified as a tool for learning and the foundation for success in school and life (International Literacy Association, 2018). Without the ability to read effortlessly, pupils may have challenges in coping with academic activities which may invariably lead to the pupils recording low academic achievement. Castillo (2018), Gangi (2018) and Abu-Ubaida et.al (2017) attributed the inability of primary school pupils to read effortlessly to deficiencies in basic reading skills such as print awareness, letter

knowledge, phonological awareness, vocabulary, narrative, fluency, and comprehension.

According to Cassel (2011) and Pannell (2012), these skills form the foundation of reading ability without which reading will be a tedious or near-impossible task. Studies such as Cheraa (2013) and Mwoma (2017) among others have shown that some primary school pupils encounter difficulties in reading. Consequently, such pupils find it hard to learn other subjects since reading is central to all learning. In some cases, such pupils drop out of school because of their inability to cope effectively. Becoming a successful reader depends on the pupil's ability in the seven early reading skills (Wheater, 2011). Children are likely to experience difficulty in reading when these skills are missing because the skills are the foundation on which pupils would build their later reading skills.

When these foundations are weak at the beginning for a child, there is a high probability that the child will experience difficulty in reading because these skills are the basic requirements for successful reading development. The International Literacy Association (2019) submitted that the development of these skills could be enhanced by motivation, interest, culture, prior knowledge, socioeconomic status, and experience of the pupils. Thus, parents as the first teachers of a child play a crucial role in utilising all the motivating factors to foster the foundational skills in their children at their impressionable ages to prevent difficulty in reading at a later time.

Literature review

A child's ability to read has been found to be dependent on oral language ability and concept of print which include alphabet knowledge and phonological awareness (Heilmann, 2018). Print awareness indicates among others, the child's ability to identify parts of a book, understand that reading is from left to right, understand that space is put between words, understand that letters of alphabet are in upper and lower case and that spoken language is represented in written form (Bayraktar, 2018). This ability forms the basis of reading before progressing to acquiring the knowledge of the letters of alphabet. Alphabet knowledge which is the ability to identify letters and their corresponding sounds was reported by Heilmann et.al (2018) to have significant influence on later reading ability as a child's ability to decode written text is enhanced by the it.

In addition to naming or idebtifying letters, a child requires the ability to produce the sound of every letter for effective decoding of written text thus making phonological awareness one of the foundation skills required for a successful reading development (Ying and Cheng, 2020). Reading difficulty arises from pupils' lack of phonological required for easy spelling and decoding of words (Booker, 2013). The inadequacy of phonological awareness in a child makes it difficult for the child to identify, spell, and decode words in a sentence (Turan & Akoğlu, 2014). Moreover, a lack of phonological awareness oftentimes results in pupils having problems acquiring alphabetic coding skills and difficulty in word recognition (Hougen, 2016). Phonological awareness skill is crucial to reading as it enables pupils to identify and manipulate individual sounds in words for correct and accurate pronunciation. A pupil needs phonological awareness skills to break a part of the sound in a word and/or blend sounds in a word together to decode the meaning (Pannell, 2012; Booker, 2013).

Difficulties in reading can also be traced to the inability to read fluently because attention is concentrated on decoding words rather than comprehension. Fluency is described as the ability to read with appropriate speed, accuracy, proper intonation, and proper expression (Capellini & Germano, 2018; Elhassan et.al, 2017). Fluency implies that the child can automatically identify and decode effortlessly familiar words and quickly identify unfamiliar words in a text for easy comprehension of the content (Korb & Selzing-Musa, 2012). With fluency skills, the pupils' attention when reading will be on making meaning out of the text, but without it, the readers' focus will be on decoding the words in the text and this will make reading comprehension difficult (Myers, 2015). Comprehension is important as the main purpose of reading, because, without it, information in the text may be impossible to retrieve. Álvarez-Cañizo et.al (2015) asserted that automatic word recognition and decoding are non-negotiable factors in achieving fluency in reading; and without fluency in reading, comprehension will not be achieved.

Fluency is particularly important in reading because research has established that difficulty in reading fluency correlates to poor performance in all school subjects such that pupils who have difficulty in reading fluency perform poorly in school (Capellini & Germano, 2018). Furthermore, word recognition and analysis, and comprehension or structuring of textual understanding are very important factors in reading fluency. Kodan (2017) affirmed that reading difficulty arises when a reader finds it difficult to concentrate on word recognition and analysis simultaneously. Myers (2015) also asserted that reading comprehension is achieved only when pupils extract and construct meaning simultaneously during interaction with written text.

Meanwhile, reading fluency also depends on the pupils' vocabulary ability as García-Gómez and Sánchez (2022) averred that vocabulary ability predicts reading fluency and difficulty in pupils. Pupils with adequate vocabulary would encounter few difficult words while reading making it possible for them to read with fluency. On the other hand, when pupils lack adequate vocabulary ability, reading becomes difficult as the pupils would find it difficult to decode words with ease. Sidek and Rahim (2015) also found vocabulary as a predictor of reading comprehension, stating that lack of adequate vocabulary would make drawing meaning from a text difficult to achieve. With adequate vocabulary, pupils are equipped to decode words without difficulty thereby enhancing reading comprehension (Röthlisberger et.al, 2023).

In the submission of Mule (2014), reading difficulty can rarely be attributed to only one factor. Therefore, it is important to state that the factors identified as associated with reading difficulty can best be described as predisposing factors. The factors are broadly categorised into environmental/sociological, biological, and psychological. Environmental or sociological factors include those that relate to the home, school, social, and cultural environment of the pupil (Jennings et.al, 2014). When adults engage children in reading activities, they provide children with what Lev Vygotsky called a scaffold in his sociocultural theory of reading. The scaffold provided by adults propels the child to the level where the child becomes an independent reader. As Topçiu and Myftiu (2015) explained, through interaction with adults, pupils receive knowledge, assimilate it and thereafter add value to the knowledge which then results in the child's independence in the reading task.

Poor language development has been associated with the social and cultural environment, and this also impacts the child's reading ability (Dolean et.al). Consequently, a child from an environment where the standard of English is low will find it difficult to achieve comprehension when reading due to inadequate vocabulary and lack of fluency in reading (Genesee et.al, 2012). The school environment is another aspect of the environmental or sociological factor which contributes to reading difficulty in pupils.

The school environment influences children's reading ability by the way schools harness children's cultural/linguistic background, family expectations, socioeconomic status, and personal experience to provide effective instruction and support through teachers within a well-structured and coordinated school setting (International Literacy Association, 2019). Jennings et.al (2014) averred that environmental and physiological/biological factors could also predispose children to difficulty in reading. According to the authors, the biological factors that predispose pupils to reading difficulty include vision impairment, hearing impairment, speech problems, and general health and nutrition problems. Vision impairment refers to low vision which could be due to hyperopia (far-sightedness); myopia (near-sightedness) and strabismus (poor binocular coordination caused by muscle imbalance preventing the eyes from focusing on a single point).

Others include poor fusion, retinopathy of prematurity (underdevelopment of the retina blood vessel leading to the formation of scar tissue in the retina), Nystagmus (involuntary movement of the eye leading to fatigue when carrying out visual tasks), retinitis pigmentosa (degeneration of retina cells leading to night blindness and extreme sensitivity to light), and optic atrophy (degeneration of optic nerve fibres leading to inability to transmit accurate visual images from the retina to the brain) (Carney et.al 2003). Vision impairment in children could constitute a major impediment to reading and academic success because reading is at the centre of learning and a major predictor of success in educational achievement (Atowa et.al, 2019). Moreover, pupils with vision impairments, especially those with farsightedness, face reading difficulties due to challenges in decoding letters (Thurston, 2014).

Meanwhile, many of the pupils with vision impairment come from low-income backgrounds and often have the impairments untreated, thus, recording poor academic performance (Atowa et al., 2019). Hearing impairments and speech problems are additional biological factors that can lead to reading difficulties. Hearing impairment that impedes language development, putting children at a disadvantage in acquiring reading skills according to the World Health Organization (WHO, 2021) is caused by various genetic and prenatal factors. Meanwhile, Charlesworth et al. (2006) stated that the child should have an adequate language base, the ability to connect prior experience with the language to printed text, and the ability to articulate speech sounds correctly to read effectively.

Children with hearing impairment often find it difficult to accomplish such tasks because children develop their vocabulary through constant exposure to language. Thus, when there is limited vocabulary as is the case in hearing-impaired children, comprehension will be difficult (Agunda, 2016). However, Jennings, Caldwell, and Lerner (2014) submitted that speech problems may not necessarily cause reading

difficulty, even though a higher occurrence of speech problems is noted among pupils with low achievement in reading.

Nutrition has been identified as having a significant effect on brain functioning. For instance, Stuber (2014) reported that food rich in protein, carbohydrates, and glucose enhances cognition, concentration, and energy level of pupils; while food high in trans and saturated fat harms the brain. Ross (2010) showed that a low level of iron in pupils leads to a short attention span, low zinc results in a reduced ability to remember, and inadequate protein makes pupils lethargic, withdrawn, and passive. The authors further affirmed that an adequate diet is crucial to pupils' growth, development, and functioning while hunger and malnutrition make it difficult for pupils to learn as a result of poor concentration, apathy, irritability, lack of energy, and motivation to learn.

Furthermore, Stuber (2014) affirmed that poor nutrition leads to stomach disturbance and headache and makes pupils susceptible to illness, while good nutrition, especially breakfast may enhance pupils' psychological well-being, reduce aggression, and improve their cognition, concentration, and energy level. Psychological factors associated with reading also include frustration which could result from the inability to read which could make reading become a tedious task, thereby making reading demotivating and frustrating (Zemni and Alrefaee, 2020).

Theoretical framework

The Metacognitive theory of reading serves as the theoretical framework for this study. The theory holds that reading is an interaction between the reader and the written text and that comprehension in reading is achieved when the reader brings prior knowledge and experiences into the reading task (Latifah et.al., 2017). The theory holds that as the reader reads, he engages in a thinking process which include paying attention to text structure and important points, make predictions on the text and analyse complex expressions (Babayiğiti, 2019). The theory asserted that the reader will experience difficulty in deriving meaning from the written text when he lacks prior knowledge of the content of the text (Ahmadi, 2013). Before reading, the reader identifies the purpose and the type of text to read. While reading, the reader identifies the topic sentence and the author's purpose for writing. Then after reading, the reader summarises the text and draws an inference from what was read (Babayiğiti, 2019). Failure of the reader to complete these three stages results in the inability to comprehend text. The theory as applied in this study provided insight into the predisposing conditions that could lead to reading difficulties in children.

Research questions

The study sought to provide answers to the following research questions:

1. Which of cognitive, biological/physiological and psychological factors, is the prevalent cause of reading difficulty in pupils in public primary schools?
2. What are the major cognitive, biological/physiological and psychological factors that cause reading difficulty in pupils in public primary schools?

Methodology

The descriptive survey design was adopted for the study. The Purposive sampling procedure was used in selecting the participants for the study. At the first stage, Abadina Primary School, University of Ibadan, Oyo State, Nigeria was purposively selected for the study because it is a public school with a spread of pupils that cuts across all categories of socioeconomic background and ease of access of the researchers to the school. Moreover, the nature of the study demands that the pupils should be taken out of their school to a school library which is close to the school, where they could be exposed to books and reading to enable the researchers to closely observe the pupils with the minimum form of distraction. Abadina Media Resource Centre, a model school library located close to the school, provided the suitable and appropriate resources as well as the environment required for the study.

The last stage of the selection procedure involved the use of the teachers to select the pupils observed and considered as having reading difficulty. Fifty-six pupils spread across primary four (23 pupils) and primary five (35 pupils) were identified and considered as having reading difficulty by the teachers. Primary Four and Primary Five pupils were considered appropriate for this study because they are the higher classes where pupils are expected to have acquired a sufficient level of proficiency in reading with minimum difficulty. Thereafter, the "Reading Difficulty Index Scale" was used to screen all the 56 pupils that were identified by their teachers and 33 pupils that scored below the 55% set as the benchmark were established as actually having reading difficulty. All the 33 pupils who fell below the cut-off point were selected as participants for the study using the total enumeration method.

Parental and pupil consents were obtained through the school authority. The pupils were allowed to pick a children literature of their choice from the library and were asked to read the book while being closely observed. The pupils' reading ability was assessed during the reading through close observation. The instrument used for data collection was observation using "Reading Difficulty Checklist" as the assessment tool. The checklist has 3 indicators and 14 items measuring reading difficulty which are: Cognitive abilities (7 items) Biological/Physiological factors (4 items) and Psychological factors (3 items). Descriptive statistics of frequency counts and percentages were employed to analyse the data collected.

Presentation and Interpretation of Results

Research question 1: Which of the cognitive abilities (biological/physiological and psychological) factors, is the prevalent cause of reading difficulty among pupils in public primary schools

Table 1: Causes of reading difficulty of the pupils

Items	Responses	
	Yes	No
Cognitive factors		
Can recognise words	8(24.2%)	25 (75.8%)
Can spell words	5(15.2%)	28(84.8%)
Can pronounce words	9(27.3%)	24(72.7%)
Can attempt difficult words	25(75.8%)	8(24.2%)

Can blend sound into words	8(24.2%)	25(75.8%)
Adequate vocabulary	1(3%)	32(97.0%)
Adequate comprehension	0	33(100%)
Biological/physiological factors		
Normal eye movement	32 (97.0%)	1(3.0%)
Expected vision	27 (81.8%)	6 (18.2%)
Defective speech sound	14 (42.4%)	19 (57.6%)
Poor nutrition	13 (39.4%)	20 (60.6%)
Psychological factors		
Good attention span	18 (54.5)	15 (45.5)
Adequate concentration	16 (48.5)	17 (51.5)
Frustrated at reading	19 (57.6)	14 (42.4)

Table 1 presents the result on the prevalent causes of the reading difficulty in the pupils in response to research question 1 which attempts to find out the prevalent factor that causes the reading difficulty of the pupils. The table showed cognitive factors as the prevalent cause of the reading difficulty of the pupils. This is revealed in the inability of the pupils to display good cognitive abilities as shown in the table. The results revealed that most of the respondents cannot; recognise words,(75.8%), spell words (84.8%), pronounce words (74.7%), blend sound into words (75.8,%) and also lack adequate vocabulary (90.0%). All the respondents showed that they lack adequate comprehension (100.0%). The result further revealed that, for biological/physiological factors, the minority of the pupils have defective speech sounds (42. 4%) and poor nutrition problem (39.4%). Moreover, 51.5% of the pupils lacked adequate concentration in reading. The inference that can be drawn from the results is that the problem of cognitive abilities is the major factor responsible for the reading difficulty experienced by the pupils assessed and it also suffices to say that poor cognitive abilities is the major cause of reading difficulty among pupils in public primary schools.

Research question 2: What are the major cognitive, biological/physiological and psychological factors that cause reading difficulty in pupils in public primary schools in Nigeria?

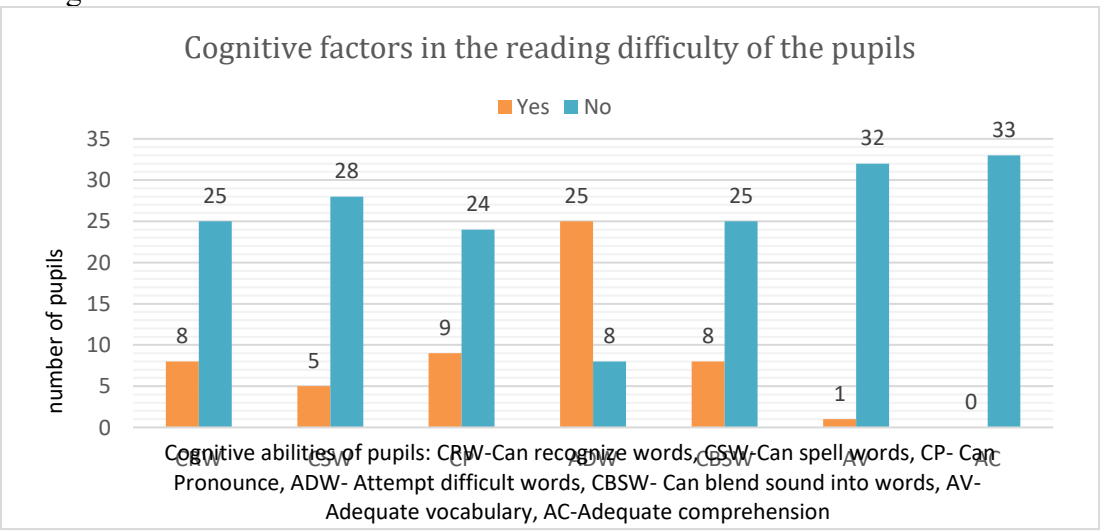

Figure 1: Cognitive factors associated with the reading difficulty of the pupils

Figure 1 presents the result showing the specific cognitive abilities factors that cause reading difficulty among pupils in primary schools and provides the answer to research question 2. The result indicates that all 33 (100%) pupils showed inadequate comprehension of reading materials, inadequate vocabulary (32), problem of blending sounds into words (25), problem of recognition of words (25), and problem of pronunciation of words (24). It can be deduced from the results that inadequate comprehension, inadequate vocabulary, lack of ability to blend sounds into words, inadequacy in recognition of words and inability to pronounce words are the major cognitive abilities factors responsible for reading difficulty among pupils in public primary schools in Nigeria.

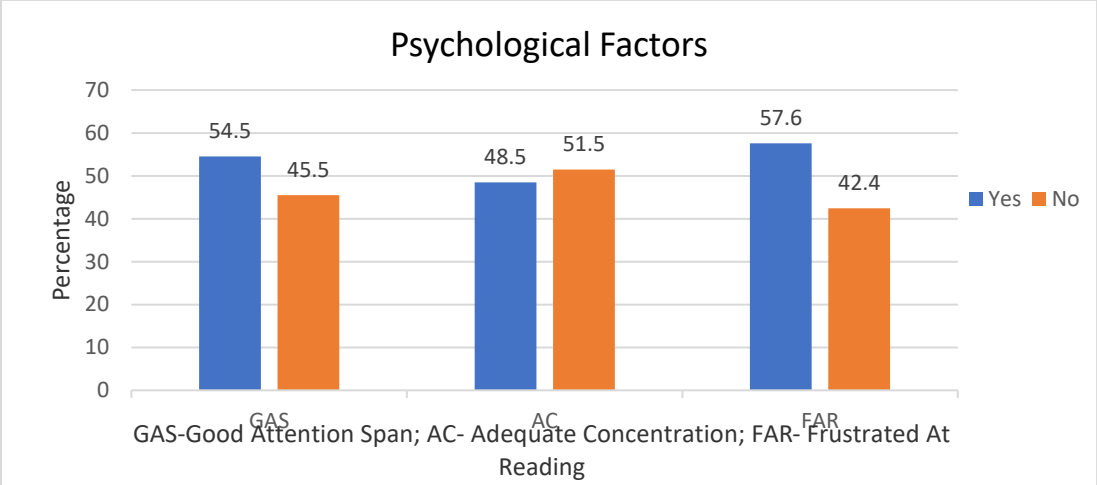

Figure 2: Psychological factors associated with the reading difficulty of the pupils

Figure 2 depicts the psychological factors associated with the reading difficulty of the pupils and also provides the answer to research question 2 on the major psychological factors associated with the reading difficulty of the pupils. The result revealed that 57.6% of the pupils demonstrated frustration at reading, 51.5% had inadequate concentration and 45.5% exhibited a lack of good attention span. The result revealed that despite having a good number of the pupils exhibiting a good attention span, they still showed frustration at reading. It can be deduced from the result that frustration at reading is the major psychological factor causing reading difficulty in the pupils.

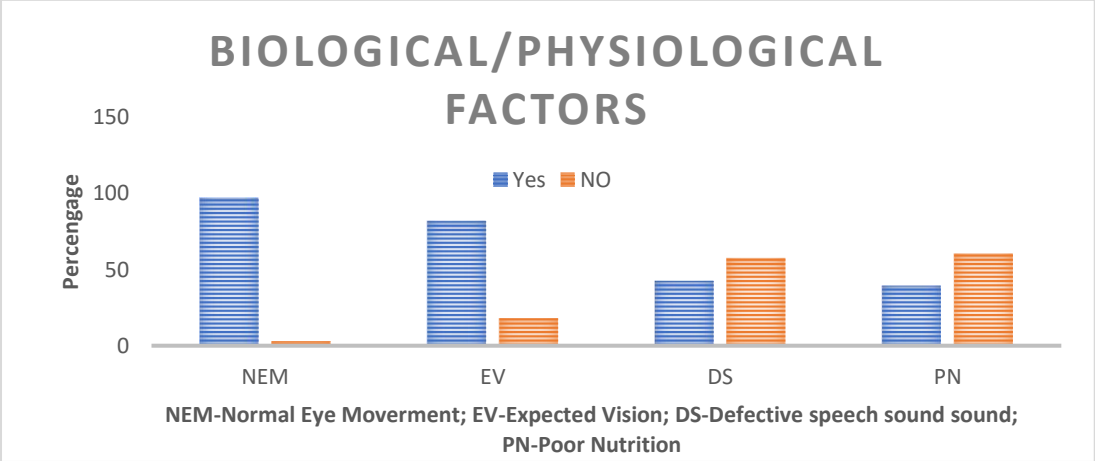

Figure 3: Biological/physiological factors associated with the reading difficulty of the pupils

Figure 3 depicts the physiological factors associated with reading difficulty in the pupils and provides the answer to research question 2 which attempts to find out the major biological/physiological factors causing reading difficulty in the pupils. The figure revealed that 14 pupils (42.4%) exhibited defective speech sounds while 13 pupils (39.4%) had poor nutrition. It could be deduced from the result that defective speech sound is the major biological/physiological factor responsible for reading difficulty in the pupils.

Discussion of the findings

The findings of this study showed that despite having cognitive factors as the prevalent cause of reading difficulty in the pupils, psychological and physiological factors also contributed to it. The finding supported the earlier report of the International Literacy Association (ILA) (2019) which indicated that despite the ability of some pupils to decode words accurately and quickly, they may still have difficulties in reading comprehension. The finding showed that the major factor responsible for reading difficulty in the pupils is the deficiency in cognitive factors including word recognition. This finding supported the study by Kodan (2017) which reported that reading difficulty arises when a reader cannot recognise words and derive meaning from the text simultaneously. Since making meaning is the purpose of reading, failure to do so implies that the purpose of reading has not been achieved.

The finding further revealed that pupils had difficulty in spelling, pronunciation, and decoding. This result corroborated Booker (2013) which indicated that pupils who cannot spell and decode words encounter difficulty in reading. The results also supported findings from Álvarez-Cañizo et.al (2015) study which established that difficulty in word recognition and decoding will result in reading difficulty because both are crucial to achieving fluency in reading. Findings from the study also revealed inadequate vocabulary as the major cognitive factor responsible for pupils' difficulty in reading. The result indicated that many of the pupils lack adequate vocabulary to support their reading ability. The results affirmed the study by García-Gómez and Sánchez (2022) which indicated that vocabulary ability predicts pupils' fluency in reading and reading difficulty, and Sidek and Rahim's (2015) study which established that vocabulary aids word decoding for the achievement of comprehension in reading.

The findings also revealed frustration at reading as the major psychological factor responsible for reading difficulty in the pupils. Moreover, the finding showed that lack of adequate concentration is another psychological factor responsible for reading difficulty in the pupils. The lack of concentration in the pupils showed their frustration at reading and made reading repelling to them. The finding affirmed the submission of Zemni and Alrefaee (2020) that reading becomes demotivating and frustrating to readers when they have difficulty reading. The study revealed further that poor nutrition is another cause of reading difficulty in pupils. The finding supported Stuber's (2014) study that poor nutrition leads to stomach aches, and headaches and makes pupils susceptible to illness; but good nutrition, especially breakfast enhances pupils' psychological well-being, reduces aggression and improves pupils' cognition, concentration, and energy level. The result also affirmed Ross's (2010), and Stuber's (2014) findings which revealed that adequate diet is crucial to pupils' growth, development, and physical and brain functioning.

Conclusion

The study established that the reading difficulty of the pupils is majorly associated with cognitive abilities. It was shown in the study that the cognitive ability and skills required for reading were not fostered in the pupils. The failure of both home and school to achieve success in impacting the pupils' cognitive ability through fostering reading skills in the pupils may have resulted in reading difficulty in the pupils. Therefore, there is a need to embark on policies, programmes, and actions that would promote a friendly environment where children can thrive in pre-reading skills. By so doing, they would have been adequately prepared for the reading task ahead of them such that when they start formal schooling, reading will not be problematic to them.

Recommendations

Based on the findings of this study it is recommended that:

1. Parents and caregivers should expose children to early reading to develop their cognitive abilities including word recognition, spelling, vocabulary and comprehension skills.
2. Parents should provide a scaffold for children in their reading development by providing books that will help their vocabulary and comprehension skills to prevent difficulty that could result in frustration and avoidance of reading.
3. Poverty could be a major reason why some pupils go to school without breakfast, therefore, the problem of poverty must be addressed by the concerned stakeholers.

References

Abu-Ubaida, S., Amina, U. U., Aishatu, A. B., & Abubakar, U. U. (2017). Exploring the teaching of reading skills in Nigerian secondary schools. IOSR Journal of Research & Method in Education (IOSR-JRME), **7** (2): 75–79. https://www.iosrjournals.org/iosr-jrme/papers/Vol-7%20Issue-2/Version 2/M0702027579.pdf

Agunda, O. B. (2016). Reading strategies adopted by learners with hearing impairments to enhance comprehension in special primary schools, Kisumu County, Kenya (M.Ed. Project). School of Education, Kenyatta University.

Ahmadi, M. R., Ismail, H. N., & Abdullah, M. K. K. (2013). The importance of metacognitive reading strategy awareness in reading comprehension. English Language Teaching, **6** (10): 235-244. https://files.eric.ed.gov/fulltext/EJ1077125.pdf

Álvarez-Cañizo, M., Suárez-Coalla, P., & Cuetos, F. (2015). The role of reading fluency in children's text comprehension. Frontiers in Psychology, **6**: 1810. https://doi.org/10.3389/fpsyg.2015.01810

Atowa, U. C., Hansraj, R., & Wajuihian, S. O. (2019). Visual problems: A review of prevalence studies on visual impairment in school-age children. International Journal of Ophthalmology, **12** (6): 1037–1043.

Babayiğiti, Ö. (2019). Examination of the metacognitive reading strategies of secondary school sixth grade students. International Journal of Progressive Education, **15** (3). https://files.eric.ed.gov/fulltext/EJ1219168.pdf

Bayraktar, V. (2018). Investigating print awareness skills of preschool children in terms of child and parent variances. Education and Science, **43** (196): 49–65.

Booker, B. (2013). Phonemic awareness: An important piece of the reading puzzle. http://www.lynchburg.edu/wp-content/uploads/volume-10-2014/BookerB Phonemic-awareness-Reading.pdf

Capellini, S. A., & Germano, G. D. (Eds.). (2018). Fluency and reading comprehension in typical readers and dyslexic readers. Lausanne: Frontiers Media. https://doi.org/10.3389/978-2-88945-415-0.

Carney, S., Engbretson, C., Scammell, K., & Sheppard, V. (2003). Teaching pupils with visual impairment: A guide for the support team. https://www.perkinselearning.org/content/teaching-pupils-visual-impairments-guide-support-team-0

Cassel, R. (2011). Home literacy factors affecting emergent literacy skills (Ph.D. Thesis). Nova Southeastern University. https://nsuworks.nova.edu/cps_stuetd/17

Castillo, W. (2018). Measurement and application of reading motivation for diverse subgroups of pupils (Ph.D. Thesis). The University of Pennsylvania. https://repository.upenn.edu/edissertations/2966

Charlesworth, A., Charlesworth, R., Raban, B., & Rickards, F. (2006). Teaching children with hearing loss in reading recovery. Literacy Teaching and Learning, **11** (1): 21–50.

Cheraa, M. (2013). An investigation of the contextual and psychological factors that affect reading: A case study of second-year learners at Abderrahmane Ibn Aouf Secondary School in M'sila (M.Sc. Dissertation). Mohamed Kheider University of Biskra. http://archives.univ-biskra.dz/handle/123456789/4748?mode=full

Dolean, D., Melby-Lervåg, M., Tincas, I., Damsa, C., & Lervåg, A. (2019). Achievement gap: Socioeconomic status affects reading development beyond language and cognition in children facing poverty. Learning and Instruction, 63, 101218. https://doi.org/10.1016/j.learninstruc.2019.101218

Elhassan, Z., Crewther, S. G., & Bavin, E. L. (2017). The contribution of phonological awareness to reading fluency and its individual sub-skills in readers aged 9 to 12 years. *Frontiers in Psychology*, **8**: 533. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387103/pdf/fpsyg-08-00533.pdf

Gangi, A. (2018). The effect of home literacy practices on emergent literacy skills (M.Ed. Project). Department of Language, Learning and Leadership, University of New York. https://dspace.sunyconnect.suny.edu/bitstream/handle/1951/70514/Gangi_Ashley_ MastersThesis_Summer2018.pdf?sequence=1&isAllowed=y

García-Gómez, L. Y., & Rueda Sánchez, M. I. (2022). Vocabulary depth as preliteracy skill. Revista de Investigación en Logopedia, **12** (2): e79647. https://dx.doi.org/10.5209/rlog.79647

Heilmann, J. J., Moyle, M. J., & Rueden, A. M. (2018). Using alphabet knowledge to track the emergent literacy skills of children in Head Start. Topics in Early Childhood Special Education, **38** (2): 118–128. https://files.eric.ed.gov/fulltext/EJ1185518.pdf

Hougen, M. (2016). Phonological awareness: An essential component of reading instruction. University of Texas/Texas Education Agency. https://www.texasgateway.org/sites/default/files/resources/documents/1Brief_Phon ologicalAwareness.pdf

International Literacy Association. (2018). The case for children's right to read. Newark, DE: Author. https://literacyworldwide.org/docs/default-source/resource-documents/the-case-for-childrens-rights-to-read.pdf

International Literacy Association. (2019). Children experiencing reading difficulty: What we know and what we can do [Literacy leadership brief]. Newark, DE: Author. https://www.literacyworldwide.org/docs/default-source/where-we-stand/ila-children-experiencing-reading-difficulties.pdf

Jennings, J. H., Caldwell, J. S., & Lerner, J. W. (2014). Reading problems: Assessment and teaching strategies. https://www.pearsonhighered.com/assets/samplechapter/0/1/3/2/0132837803.pdf

Kodan, H. (2017). Determination of reading levels of primary school pupils. Universal *Journal of Educational Research*, **5** (11): 1962–1969. https://doi.org/10.13189/ujer.2017.051112

Korb, K. A., & Selzing-Musa, G. (2012). Balanced literacy instruction: Promoting the five foundational literacy skills in early childhood. Paper presented at the First National Conference, Faculty of Education, Nasarawa State University, Keffi, Nigeria, June 11–14, 2012. http://korbedpsych.com/LinkedFiles/Balanced_Literacy_Instruction.pdf

Latifah, M., Suradijono, S. H. R., & Mursitolaksmi, L. R. (2017). The use of metacognitive strategies in reading and their influence on reading comprehension of junior high school students in the upland region of Java. Advances in Social Science, Education and Humanities Research (ASSEHR), 135. https://www.atlantis-press.com/article/25896691.pdf

McIver, E. C. (2016). Promoting literacy development in the early childhood classroom: An evaluation of phonemic awareness and phonics instruction (LSU Doctoral Dissertation). https://digitalcommons.lsu.edu/gradschool_dissertations/4409

Mule, K. (2014). Types and causes of reading difficulty affecting the reading of English language: A case of grade 4 learners in selected schools in Ogong Circuit of Namibia (M.Ed. Project). The University of Namibia. https://repository.unam.edu.na/handle/11070/851

Mwoma, T. (2017). Children's reading ability in early primary schooling: Challenges for a Kenyan rural community. *Issues in Education Research*, **27** (2): 347–364 http://www.iier.org.au/iier27/mwoma.pdf

Myers, T. (2015). The relationship between fluency and comprehension (M.Ed. Project). Goucher College. https://mdsoar.org/bitstream/handle/11603/1691/MEd_Myers_actionres_Su2015.pdf

Pannell, M. (2012). Relationships between reading ability in third grade and phonological awareness in kindergarten (PhD Thesis). East Tennessee State University. https://dc.etsu.edu/etd/1410/

Ross, A. (2010). Nutrition and its effect on academic performance: How can our school improve (M.A. Project). Northern Michigan University. https://www.nmu.edu/sites/DrupalEducation/files/UserFiles/Files/PreDrupal/SiteSe ctions/Pupils/GradPapers/Projects/Ross_Amy_MP.pdf

Röthlisberger, M., Zangger, C., & Juska-Bacher, B. (2023). The role of vocabulary components in second language learners' early reading comprehension. *Journal of Research in Reading*, **46** (1): 1–21. https://doi.org/10.1111/1467-9817.12411

Sidek, H. M., & Rahim, H. Ab. (2015). The role of vocabulary knowledge in reading comprehension: A cross-linguistic study. *Procedia - Social and Behavioral Sciences*, **197**: 50–56.

Stuber, N. (2014). Nutrition and pupils' academic performance. Wilder Research. https://www.wilder.org/sites/default/files/imports/Cargill_lit_review_1-14.pdf

Thurston, A. (2014). The potential impact of undiagnosed vision impairment on reading development in the early years of school. *International Journal of Disability, Development, and Education*, **61** (2): 152–164. https://doi.org/10.1080/1034912X.2014.905060

Topçiu, M., & Myftiu, J. (2015). Vygotsky theory on social interaction and its influence on the development of preschool children. *European Journal of Social Sciences, Education and Research*, **2** (3): 172–179.

Turan, F., & Akoğlu, G. (2014). Home literacy environment and phonological awareness skills in preschool children. Journal of Education, **29** (3): 153–166. https://www.researchgate.net/publication/287617215_Home_literacy_environment_and_phonological_awareness_skills_in_preschool_children.

Wheater, J. (2011). Strategies to assist emergent literacy learners in acquiring alphabetic knowledge, print awareness, and phonological awareness skills (M.S. Project). St. John Fisher College. https://pdfs.semanticscholar.org/025b/83047308ddc317429c06ab31beb5fe306626.pdf

World Health Organization. (2021). Deafness and hearing loss. https://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss

Ying, J. W., & Cheng, J. L. (2020). Alphabetic knowledge and phonological awareness: A comparison between Malaysian preschool children from public and private kindergartens. *Journal of Cognitive Sciences and Human Development*, **6** (2): 1-15. https://www.researchgate.net/publication/344704866_Alphabetic_Knowledge and_Phonological_Awareness_A_comparison_between_Malaysian_Preschool_Children_from_Public_and_Private_Kindergartens.

Zemni, B. and Alrefaee, Y. (2020). Investigating the source of reading anxiety among undergraduate Saudi female EFL students in translation departments. *TESOL International Journal*, **15** (5): 65-77.