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**Phonemic Awareness as a Determinant of Reading  
Abilities of Children with Reading Disabilities in the Buea  
Municipality, South West Region of Cameroon**

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## **Phonemic Awareness as a Determinant of Reading Abilities of Children with Reading Disabilities in the Buea Municipality, South West Region of Cameroon**

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### **Abstract**

**Purpose:** This study was aimed at examining phonemic awareness as a determinant of reading abilities of children with reading disabilities in the Buea Municipality, South West Region of Cameroon

**Methodology:** This Study Was Based on the Premise That Phonemic Awareness Has Been Identified As The best early indicator of a learner's reading potentials because it sets the stage for phonics, and literacy. A quasi-experimental design was adopted for the study with 14 participants, 7 in the experimental group and 7 in the control group. A pre-test and post-test were administered to the children before and after the intervention. The instrument used for data collection was a phonemic awareness test that constituted elements of reading, sound identification, deletion of the first phoneme, deletion of the second phoneme, initial phoneme identification and final phoneme identification. Data was analyzed using EpiData Version 3.1 Cohen's d test and Cramer's V test.

**Findings:** Results indicated that the phonemic awareness has a significant effect on the reading abilities of children with reading disabilities, this was based on the mean difference of the pre-test (11.37) and post-test (15.17) giving a mean difference of 3.8 with a paired sample t-test of 2.844 giving a significant value of  $P= 0.05$ . The study concluded that effective instructions through the development of a child's ability to understand how individual phonemes can be manipulated and arranged to create words can stop and repair the learning gap and can impart the skills an older reader missed in the earlier grades.

**Recommendation:** Based on the findings, it was recommended that teachers should be more inclusive in their handling of students' .Also, parents should be encourage to help children back at home to develop reading skills

**Keywords:** *Phonemic awareness, reading ability, children with reading disabilities*

## Introduction

Reading is one of the basic skills of literacy and the most essential among the skills that are very necessary for children to acquire by the end of primary education in order to enable them read and write effectively. It is, therefore, necessary for educators to come up with appropriate teaching and learning strategies within the curriculum to help children develop reading skills. Teaching reading to children should be organized in such a way that it can enable them acquire the basic skills of reading that will help them not only to be able to read but to gain mastery of other subject areas.

Reading difficulties are usually the most frequent learning difficulty that occurs in children with a large number of children not identified. The most obvious difficulties exhibited by children with reading problems are poor word recognition, sounding out words, difficulty reading sight words, insufficient phonological processing, difficulties processing and understanding sentences, difficulties in understanding that words are made up of syllables and syllables are made up of individual phonemes or sounds and weak decoding skills (Paris, 2005; Chan & Dally, 2001; Bowers, Sunseth & Golden, 1999). Their weakness in identifying words prevents them from reading fluently and from focusing on the meaning of what is being read. Slow processing of print overloads working memory capacity that is required for effective comprehension and reflective thought (Jenkins & O'Connor, 2002).

## Reading Disabilities in Children

According to Saul (2009), reading disabilities likely occur in at least 20 percent of the population (Shaywitz, 2003), however only about four percent of school-age students receive special education services for reading disabilities. Researchers have made considerable progress in understanding all types of reading disabilities (Fletcher et al., 2007). For purposes of research, "reading impaired" children may be all those who score below the 30th percentile in basic reading skill (Moats & Tolman, 2009). Among all of those poor readers, about 70-80 percent have trouble with accurate and fluent word recognition that originates with weaknesses in phonological processing, often in combination with fluency and comprehension problems. These students have obvious trouble learning sound-symbol correspondence, sounding out words, and spelling. The term dyslexic is most often applied to this group.

Moats and Tolman (2009) are of the opinion that 10-15 percent of poor readers appear to be accurate but too slow in word recognition and text reading. They have specific weaknesses with *speed* of word recognition and automatic recall of word spellings, although they do relatively well on tests of phoneme awareness and other phonological skills. They have trouble developing automatic recognition of words by sight and tend to spell phonetically but not accurately. This subgroup is thought to have relative strengths in phonological processing, but the nature of their relative weakness is still debated by reading scientists (Fletcher et al., 2007; Katzir, Kim, Wolf & O'Brien, 2006; Wolf & Bowers, 1999). Some argue that the problem is primarily one of timing or processing speed, and others propose that there is a specific deficit within the orthographic processor that affects the storage and recall of exact letter sequences. This processing speed/orthographic subgroup generally has milder difficulties with reading than students with phonological processing deficits.

Teom and Luwel (2003) 10-15 percent of poor readers appear to decode words better than they can comprehend the meanings of passages. These poor readers are distinguished from dyslexic poor readers because they can read words accurately and quickly and they can spell. Their problems are caused by disorders of social reasoning, abstract verbal reasoning, or language comprehension. Some students are more likely to develop reading difficulties than others. It is important to know about these tendencies so students can be monitored and any difficulties caught early. Students may be more likely to develop a reading difficulty if they have parents with histories of reading difficulties; if they have been diagnosed with a specific language impairment or a hearing impairment; or if they gained less knowledge or skills related to literacy during preschool years (Snow, Burns & Griffin, 1998).

Researchers currently propose that there are three kinds of developmental reading disabilities that often overlap but that can be separate and distinct: *Phonological deficit*, implicating a core problem in the phonological processing system of oral language, *processing speed/orthographic processing deficit*, affecting speed and accuracy of printed word recognition (also called *naming speed problem* or *fluency problem*). And *Comprehension deficit*, often coinciding with the first two types of problems, but specifically found in children with social-linguistic disabilities (e.g., autism spectrum), vocabulary weaknesses, generalized language learning disorders, and learning difficulties that affect abstract reasoning and logical thinking.

If a student has a prominent and specific weakness in *either* phonological or rapid print (naming-speed) processing, they are said to have a *single deficit* in word recognition. If they have a combination of phonological and naming-speed deficits, they are said to have a *double deficit* (Wolf & Bowers, 1999). Double-deficit children are more common than single-deficit and are also the most challenging to remediate. Related and coexisting problems in children with reading disabilities often include: faulty pencil grip and letter formation; attention problems; anxiety; task avoidance; weak impulse control; distractibility; problems with comprehension of spoken language; and confusion of mathematical signs and computation processes.

Good reading instruction is necessary for students to learn to read. It is also no simple task. Reading and language experts have likened teaching reading to rocket science (Moats, 1998). With so many different reading components, it can be difficult to diagnose students' difficulties and find precisely the right techniques to remediate them. To be successful, teachers need strong and deep understanding of reading theory and practice.

### **Developing Reading Abilities in Children**

Reading is a complex process, where every writer gives reason to what he or she reads to establish meaning. Hamka (2005) states that reading is a process of transmitting of information where the author is regarded as the informant and the reader, on the other hand, is the receiver. During the reading process, the reader interacts with the author directly. Reading is defined according to Kilfoil and Van Der Walt (2007) as the ability to decode words, both prints, and meaning. It is a combination of automatic and accurate decoding, which allows for an understanding of what is being read (Leppanen, Aunola, Nieman & Nurmi, 2008). Furthermore, Carrel & Devine (2000) argue that reading is a psycholinguistic process in that it starts with a linguistic surface representation encoded by a writer and ends with meaning –which the reader constructs. There is an essential interaction between language and thought in reading. The writer encodes thoughts as language and the reader decodes language to thoughts.



For beginning readers in nursery and primary schools to meet the reading demands of their social environment, teachers must develop in them reading readiness concepts and skills such as oral language foundation, print awareness, letter recognition skills, phono-phonemic awareness skills, sight word recognition skills as well as comprehension skills. These concepts and skills serve as a gradual development from non-reading to beginning reading (Oyetunde & Mmuodumogu, 1999; Davis, 2000; Andzayi & Ikwen, 2014). One of the skills that children need to master before they can read books is the possession of a broad, general appreciation of the nature of print (Rosenberg, 2006). Children need to be exposed to forms of print in everyday life, including conventions associated with book reading. Learning reading comprehension, for beginning readers, requires having them prepare to hear a story, reading the story to them, and then following up with questions to strengthen their reading comprehension skills (Torgesen & Matthews, 2000; Prasongsook, 2011; Andzayi et al., 2014).

Developing skilled reading is a significant milestone in the early years of schooling (Kamhi & Catts, 2012). A lot of children will enjoy playing with print and reading new words while another group will experience significant difficulties in learning to read, which will affect their academic, social and personal development (Nelson, 2010). These children are at serious risk for falling behind their typically developing counterparts in reading acquisition and for experiencing significant inequalities in educational outcomes (Morgan, Farakas, & Hibel, 2008; Stanovich, 1986). Reading is a linguistic skill that is reliant on the integration of sufficient phonological, semantic, syntactic and pragmatic spoken language abilities (Kamhi et al., 2012; Lonigan, Schatschneider & Westberg, 2008). In order to understand how fluent reading works, we have first to understand the ways in which a combination of lower-level processes works. The term "lower-level" does not necessarily imply undemandingly; through these processes, we acquire the very skills that, when automatized, enable us to become fluent readers (Koda, 2005; Stanovich, 1990, 2000; Grabe, 2009 cited in Tsiadimos, 2015).

Phonological processing involves using phonological clues that interact with orthographic and semantic ones in the effort to recognize words in a process prompted by visual input (Plaut, 2005). Phonological processing skills have also been found to predict later reading development and are often connected to reading problems (Grabe, 2009). As syntactic and semantic information is always preceded by word recognition (Grabe, 2009), the contribution of semantic and syntactic processing to word recognition has often been the subject of heated debates. The theory of automatic spreading activation mechanisms (Coltheart, Rastle, Perry, Langdon & Ziegler, 2001; Mc Rae, Sa & Seidenberg, 1997) has offered us an interesting insight into the ways in which these processes can contribute to lexical access by a reader. Their theory suggests that accessed words spread some sort of activation to their semantic neighbours, such as collocates, thus activating their recognition. In other words, syntactic and semantic processing of context can aid the recognition of difficult to process or unknown words, especially by non-fluent readers.

### **The Concept of Phonemic Awareness**

Phonemic awareness is an understanding of how individual phonemes (consonant or vowel sounds) can be manipulated and arranged to create words (National Reading Panel, 2000). This may sound similar to phonics, but there is a difference. Phonics concerns letter-sound knowledge, whereas phonemic awareness refers to sound-word knowledge. Phonemic awareness

is also the ability to identify and manipulate individual phonemes in spoken words (Ehri, 2004). More simply, it can be thought of as the ability to recognize that spoken words are composed of a sequence of individual sounds. Phonemic awareness is essential to learning in an alphabetic writing system because letters represent sounds (Ball & Blachman, 1991). Also, phonemic awareness is fundamental to mapping speech to print. For example, a child should be able to note that /pan/ and /pot/ begins with the same sound /p/ or able to blend sounds /s/ /u/ /n/ into the word /sun/.

Phonemic awareness is aimed on auditory understanding, as opposed to words on a page. Children need an awareness of phonemes themselves before they can make sense of words on a page. For example, to read the word 'cat' aloud, students have to know what the phonemes /c/, /a/, /t/ sound like when put together. Studies have identified phonemic awareness as the best early indicator of a student's reading potential (National Institute for Literacy, 2008). Phonemic awareness sets the stage for phonics, and virtually every other component of literacy. Acquiring the ability to read and comprehend provides children with a solid educational foundation and thus the opportunity to pursue numerous educational opportunities and the ability to compete in a global society; one that demands that individuals analyze information effectively (Considine, Horton & Moorman, 2009). But not all students or children become fluent readers. Phonemes are the smallest unit of sound in the English language. For example, the word "cat" is made up of three individual sounds or phonemes: /k/ /a/ /t/. Preschool children may begin recognizing the beginning sound in their own name and generalizing it to other words for instance, "Ben" and "Bat" begin with the sound /b/. When a child recognizes these similarities, they have the beginning of phonemic awareness.

### **Problem Statement**

Developing appropriate reading skills (that is, the ability to understand written text) should not be taken for granted as these skills are required by children if they are to be fully prepared for learning and growing independently. Through reading, one is able to gather information in his area of study, as well as general knowledge outside his field of study. All things being equal, everyone should learn to read early and easily and with great pleasure. When all things are not equal, there are many for whom learning to read becomes a barrier, both to their intellectual development and their self-esteem.

Children learn to read from the moment they make sense of language, for reading brings together the abilities of visual and auditory discrimination that children explore from birth, and the sense of meaning that language engenders. However, reading is acknowledged to be a complex skill, and it is not surprising that in many schools today some learners encounter learning difficulties in the area of reading. Failure to learn to read during the first year in school quickly catches the attention of parents and teachers, and it is probably true to say that difficulties in reading are often the first indication that a learner has a learning problem. Unfortunately, such problems are not always easily remedied by classroom teachers and may stay with the learner throughout the school years and beyond. Acquiring the ability to read and comprehend provides children with a solid educational foundation and thus the opportunity to pursue numerous educational opportunities and the ability to compete in a global society; one that demands that individuals analyze information effectively. But not all children in school system today become fluent readers. Literacy is a major concern in the field of education, a frequent media topic, and an

urgent political topic that needs to be addressed. High dropout rates and low achievement scores are indicators of failure in instructional effectiveness and the need for school improvement. Given these, schools should focus on strategies to raise proficiencies in reading and literacy as a whole. One of these strategies that can help to improve the reading abilities of learners today is phonemic awareness. It is against this backdrop that a study was proposed on phonemic awareness as a determinant of reading ability of children with reading difficulties in the Buea Municipality of the South West Region of Cameroon.

## Method

### Design of the Study

Taking into consideration the nature of this study, the experimental design was adopted. This design was useful in addressing evaluation questions about the effectiveness and impact of the programme under investigation. The type of experimental design adopted for this study was the quasi-experimental design. In doing so, the researcher employed the Pre-test Post-Test Only design with Non-Randomized experimental and control groups. In using this design, the researcher also substituted statistical controls for the absence of physical controls of the experimental situation.

### Participants

The sample population of the study was made up of 14 pupils with reading disabilities purposefully selected from four primary schools from the Buea Municipality of the Fako Division of the South West Region of Cameroon. The following primary schools made up the institutional sample of the study: Integrated Government Primary School Buea Town Group 2, Government Primary School Buea Town Group one, Parents International Nursery and Primary School Buea, Jamadiale Nursery and Primary School MolykoBuea. The sample population is presented on the tables below in both the experimental and the control groups.

**Table 1: Experimental Group**

School	Number of boys	Number of girls	Total
Integrated Government Primary School	1	1	2
Government Primary School Buea Town Group one	1	0	1
Parents International Nursery and Primary School Buea	1	1	2
Jamadiale Nursery and Primary School MolykoBuea	1	1	2
<b>Total</b>	<b>4</b>	<b>3</b>	<b>7</b>

**Table 2: Control Group**

School	Number of boys	Number of girls	Total
Integrated Government Primary School	1	1	2
Government Primary School Buea Town Group one	1	0	1
Parents International Nursery and Primary School Buea	1	1	2
Jamadiale Nursery and Primary School MolykoBuea	1	1	2
<b>Total</b>	<b>4</b>	<b>3</b>	<b>7</b>

### Measures

#### *Identification of children with reading disabilities*

To identify children with reading disabilities in the selected schools for the study, the researcher used informal methods of identification. Renzuilli and Reis (1994) argue that action information outcomes could be used for the identification of children with special educational needs. According to these writers, action information outcomes include the following; observation by the teachers of the children in specific as well as non-specific learning situations, school records, developmental data, documented learning experiences, students' folios of work demonstrating their abilities and anecdotal evidence of events that take place in the learning environment. For the purpose of this study, the informal methods adopted to identify the children with reading disabilities were; discussions with teachers and exploration of school records.

#### *Test items*

After identifying the children informally, they were given a pre-test to get their starting level for the intervention. The test consisted of the following components of phonemic awareness: reading, sound identification, deletion of the first phoneme, deletion of the second phoneme, initial phoneme identification and final phoneme identification. The test used for pre-test was the same test administered to the children during the post-test in order to identify whether there was any improvement.

#### *Procedure*

Before administering the test to the children, the researcher followed the following procedures: Explained to the participants that they were going to answer some very important questions in order to test their reading skills, Instructed the participants how to fill the forms, that is, their sex, age, and the test level; Pre-Test (at the beginning) and Post-Test (after training) as appropriate before handing them out to the participants and Made sure that each participant had a pen or pencil.

The phonemic awareness test took into considering the visual discrimination of letters and sound (identification of similarities and differences of letters and sounds, identification of first sound,



second sound and final sounds in words). Arranging and placing similar letters together. The phonemic awareness test was made up of six items that were subdivided into five items each. For the first item, each child was asked to sound out the sounds of the letters provided and a mark was given for every correct sound that was produced by a participant and the session was stopped after ten successive errors were made. The children did the second to the sixth item as a group as the researcher read the instruction to them and allowed the children to circle or underline or write the right response within 30 seconds for each item. A mark was awarded to each correct response. The same test was given to the participants at the end of the intervention period to see if the intervention had any impact on the performance of the participants.

Immediately after the pre-test then followed the intervention period that took place three times a week for six weeks. During this period that the children were trained on phonics skills the lessons were drawn as follows: The lesson started with a revision of previous sounds taught, the next step was teaching the sound for the day; as such, the sound and the story were written down, this was followed by letter formation with a suggestion on how to teach the participants the step required to form the letter, next was blending and sounding accompanied by suggested words or phrases or sentences depending on the level of the participants and the last item was dictation.

### **Analysis**

Data was entered using EpiData Version 3.1 (EpiData Association, Odense Denmark, 2008) and analyzed using the Statistical Package for Social Sciences (SPSS) Standard version, Release 21.0 (IBM Inc. 2012). Variables were explored to identify questionable entries, inconsistency in responses and outliers and their validity discussed to make the necessary corrections. The variables were essentially scaled and box plots were used to this effect.

### **Results**

The results presented here are based on the phonemic awareness ability of children with reading disabilities in both the experimental group and the control groups. The reading awareness tasks indicated that the mean score of the pupils on the pre-test was  $\mu = 2.14$ ,  $SD = 0.69$  and the post-test was  $\mu = 2.71$  and  $SD = 1.254$ . The results show an improvement based on the mean difference in the post-test mean score by 0.57. Also, the mean score and standard deviation on the sound identification awareness for the pre-test was  $\mu = 1.43$ ,  $SD = 0.535$  and the post-test was  $\mu = 2.43$ ,  $SD = 1.512$  showing an improvement of 1.0 on the post-test. Furthermore, the mean score on deletion of first phoneme base on the pre-test was  $\mu = 3.14$ ,  $SD = 0.90$ , meanwhile that for the post-test was  $\mu = 4.71$ ,  $SD = 0.756$ . This shows an improvement in the mean score in the post-test mean score of 1.57. Based on the deletion of second phoneme the pre-test mean score was  $\mu = 2.71$ ,  $SD = 0.488$ , while the post-test score was  $\mu = 4.14$ ,  $SD = 0.90$ . There was therefore an improvement in the mean score of 1.43. Likewise, the final phoneme identification mean score on the pre-test was  $\mu = 3.14$ ,  $SD = 0.90$  and the post-test was  $\mu = 4.86$ ,  $SD = 0.378$ . The mean score difference of 1.72 indicated there was an improvement in the scores.

**Table 3: Description of phonemic awareness ability across test level in the experimental group**

Phonemic awareness tasks		Test level	
		Pre-test	Post-test
Reading	Mean	2.14	2.71
	Median	2.00	3.00
	Std. Deviation	.690	1.254
Sound identification	Mean	1.43	2.43
	Median	1.00	2.00
	Std. Deviation	.535	1.512
Deletion of first phoneme	Mean	3.14	4.71
	Median	3.00	5.00
	Std. Deviation	.900	.756
Deletion of the second phoneme	Mean	2.71	4.14
	Median	3.00	4.00
	Std. Deviation	.488	.900
Final phoneme identification	Mean	3.14	4.86
	Median	3.00	5.00
	Std. Deviation	.900	.378
Initial phoneme identification	Mean	2.71	3.57
	Median	3.00	4.00
	Std. Deviation	.756	1.512
<b>Phonemic awareness/20</b>	<b>Mean</b>	<b>10.29</b>	<b>14.86</b>
	<b>Median</b>	<b>10.00</b>	<b>14.00</b>
	<b>Std. Deviation</b>	<b>.756</b>	<b>2.410</b>

The mean score difference for the pre-test and post-test of 0.86 as seen in table 3 above indicated that there was an improvement of the pupils in the initial phoneme identification. Finally, the phonemic awareness mean score and standard deviation for the pre-test was  $\mu = 10.29$ ,  $SD = 0.756$  and that for the post-test was  $\mu = 14.86$ ,  $SD = 2.41$  indicating a mean improvement of 4.57. Consequently, the experimental group had an improvement in the scores from pre-test to post-test for all the scales and the overall phonemic awareness. The results of the experiment on the phonemic awareness for the control group are presented in the table below.

**Table 4: Description of phonemic awareness ability across test level in the control group**

Phonemic awareness scale		Test level	
		Pre-test	Post-test
Reading	Mean	2.29	2.00
	Median	2.00	2.00
	Std. Deviation	.756	.000
Sound identification	Mean	2.00	1.43
	Median	2.00	1.00
	Std. Deviation	.816	.535
Deletion of the first phoneme	Mean	1.86	1.86
	Median	2.00	2.00
	Std. Deviation	.690	.900
Deletion of the second phoneme	Mean	1.71	2.29
	Median	2.00	2.00
	Std. Deviation	.756	.756
Final phoneme identification	Mean	2.57	2.14
	Median	3.00	2.00
	Std. Deviation	.976	.378
Initial phoneme identification	Mean	1.86	2.00
	Median	2.00	2.00
	Std. Deviation	.690	.816
<b>Phonemic awareness/20</b>	<b>Mean</b>	<b>8.00</b>	<b>7.71</b>
	<b>Median</b>	<b>8.00</b>	<b>7.00</b>
	<b>Std. Deviation</b>	<b>1.000</b>	<b>.951</b>

The mean test scores and standard deviations on the reading awareness tasks indicated that the mean score of the pupils on the pre-test was  $\mu = 2.29$ ,  $SD = 0.756$  and that of the post-test was  $\mu = 2.00$  and  $SD = 0.00$ . The results indicated no improvement (-0.29) in the mean score from the pre-test to the post-test. Also, the mean score and standard deviation on the sound identification awareness for the pre-test was  $\mu = 2.00$ ,  $SD = 0.816$  and for the post-test was  $\mu = 1.43$ ,  $SD = 0.535$  showing there was no improvement from the pre-test to the post-test (-0.57). Furthermore, the mean score on deletion of first phoneme based on the pre-test was  $\mu = 1.86$ ,  $SD = 0.69$ , meanwhile that for the post-test was  $\mu = 1.86$ ,  $SD = 0.90$ . The results showed no improvement in the mean score from the pre-test to the post-test. Based on the deletion of second phoneme the pre-test mean score was  $\mu = 1.71$ ,  $SD = 0.756$ , while the post-test score was  $\mu = 2.29$ ,  $SD =$

0.756. This showed an improvement in the mean score from the pre-test to the post-test of 0.58. Likewise, the final phoneme identification mean score on the pre-test was  $\mu = 2.57$ ,  $SD = 0.976$  and the post-test was  $\mu = 2.14$ ,  $SD = 0.378$ . There was no improvement in the mean scores (-0.43) from the pre-test to the post-test.

Furthermore, the mean score on the initial phoneme identification for the pre-test was  $\mu = 1.86$ ,  $SD = 0.69$  and the post-test was  $\mu = 2.00$ ,  $SD = 0.816$ . The mean score difference for the pre-test and post-test of 0.24 indicated a slight improvement. Finally, the phonemic awareness mean score and standard deviation for the pre-test was  $\mu = 8.00$ ,  $SD = 1.00$  and that for the post-test was  $\mu = 7.71$ ,  $SD = 0.951$  indicating no mean improvement (-0.29). From all indications, it was noticed that in the control group there was no improvement in the scores from pre-test to post-test for all the scales and the overall phonemic awareness. In the control group, no improvement was obtained for reading, sound identification, deletion of first phoneme identification and the overall phonemic awareness even though an improvement was obtained with the deletion of second phoneme and initial phoneme identification.

### *Testing of Hypothesis*

It was hypothesized that phonemic awareness does not significantly influence the reading ability of children with reading difficulties.

To ascertain the impact of the phonemic awareness ability of the children who took part in the study, the progression based on mean difference comparison, and the progression based on the difference in the proportion of the number of children that have progressed was used to test the hypothesis as indicated below.

Progression based on mean-difference comparison

**Table 5: Comparing progression in (mean difference from pre-test to post-test) between control end experimental groups**

	Progression (mean difference from pre-test to post-test)	
	Experimental group	Control group
Reading	0.6	-0.3
Sound identification	1.0	-0.6
Deletion of first phoneme	1.6	0.0
Deletion of second phoneme	1.4	0.6
Final phoneme identification	1.7	-0.4
Initial phoneme identification	0.9	0.1
<b>Total phonemic awareness</b>	<b>4.6</b>	<b>-0.3</b>

Theoretical effect size= 0.725

Group SD=3.183

Calculated effect size=1.445

The theoretical effect size was smaller than the calculated one. This therefore, implied that there was a significant progression for the overall phonemic awareness score from pre-test to post-test on the experimental group while there was no significant progression for the overall phonemic awareness score from the pre-test to the post-test on the control group. Comparing progression based on the mean difference between the experimental and the control group, it was higher in the experimental group for all the scales and there was no progression in the control group. This showed that the intervention positively influenced reading abilities of participants in the experimental group. To further ascertain the impact of the intervention on the intervention progression based on the difference in the proportion of the number of pupils that had progressed was further evaluated as indicated below. Progression based on the difference in the proportion of the number of pupils that have progressed

**Table 6: Comparing progression rate based on simple improvement between control and experimental groups**

	Phonemic awareness		Total	Test statistics
	No progression	Progression		
<b>Experimental group</b>	N	0	7	<b>Cramer's V: V=0.745; P=0.005</b>
	%	0.0%	100.0%	
<b>Control group</b>	N	5	7	
	%	71.4%	28.6%	

Comparing the progression rate based on simple improvement between control and experimental groups, all the children in the experimental group had progressed while only 2 of them making 28.6% had progressed in the control group and this difference was significant ( $P < 0.05$ ). The hypothesis stated was then rejected thus implying that the phonemic awareness had a significant positive influence on the reading abilities of children with reading disabilities as demonstrated in the experimental group. The control group did not show a remarkable improvement in the phonemic awareness of the children which indicated that since the children did not receive an intervention there was no positive progression in their reading abilities.

### Discussion

In comparing the progression rate based on simple improvement between control and experimental groups, the results showed that all the children in the experimental group had progressed, meanwhile less than half of them had progressed in the control group and this difference was significant. The hypothesis stated was then rejected thus implying that using the phonics method to teach phonemic awareness to children with reading disabilities has a significant positive influence on their reading abilities as demonstrated in the experimental group. The control group did not show a remarkable improvement in their phonemic awareness ability. The few pupils in the control group who improved on their phonemic awareness ability might have been because of their interaction with pupils from the experimental group.



These findings are in line with the work of L'opez (2003) who conducted a study on phonemic awareness instruction on the reading development and spelling development of Mexican-American first grade students. The results of his study indicated that, the students exposed to phonemic awareness instruction significantly increased in their reading and spelling development than those who did not. Also, other results like those of Mohler (2002) from a study conducted on the effect of direct instruction in phonemic awareness, multisensory phonics and fluency on the basic reading skills of low ability seventh grade students showed that, phonemic awareness had a great impact on the reading ability and word recognition of children.

### **Conclusion**

Most reading difficulties are created and not inherited which may be due to the child's environment at home and at school. Reading difficulties also are not the result of generalized developmental delay or sensory impairment, therefore, a child may show difficulties in reading skills that are unexpected in relation to cognitive ability, intervention, quantity and quality of instruction and age. This study has shown that effective instructions through the development of a child's ability to understand how individual phonemes (consonant or vowel sounds) can be manipulated and arranged to create words (phonemic awareness) can stop and repair the learning gap and can impart the skills an older reader missed in the earlier grades. Without proper instruction given at the right time the child will fail to acquire the skills needed to develop normal reading ability.

### **Recommendations**

Based on the findings of this study, it was recommended that teachers should be more inclusive in their handling of students'. Also, parents should be encouraged to help children back at home to develop reading skills

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