

**EXAMINING ASPECTS OF LINGUISTIC KNOWLEDGE OF ANGLOPHONE
PRIMARY SCHOOL TEACHERS OF NORTH WEST PROVINCE OF
CAMEROON IN RELATION TO CHILDREN'S LITERACY ACHIEVEMENT**

A Dissertation

by

MARY NJANG GHONG

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2006

Major Subject: Curriculum and Instruction

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ABSTRACT

Examining Aspects of Linguistic Knowledge of Anglophone Primary School Teachers of North West Province of Cameroon in Relation to Children's Literacy Achievement.

(December 2006)

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Literacy is an important phenomenon in all societies today. Nations around the world put in a great deal of effort and allocate a lot of funding for educational purposes to improve literacy rates of children and to help them to become literate citizens so that they can function better in society. Studies of teacher education in the United States have shown that many of the in-service teachers lack the basic foundation of linguistic constructs needed to improve literacy skills in elementary classrooms. Further, it has been shown that students who were taught by teachers with a linguistic background performed better on reading, writing, and spelling skills than those children who were taught by teachers without such a linguistic background. These studies have recommended better teacher training programs that incorporate classes to specifically teach linguistic constructs. However, there are various factors that may affect literacy development in school children, such as family background and number of books available at home. The majority of these studies have been conducted in the United

States and what is true for the U.S. may not be true for other countries. The purpose of this study is to examine the linguistic knowledge of elementary classroom teachers and how it impacts children's achievement in literacy skills in the North West region of Cameroon where English is the predominant language of instruction in schools. Data were collected from 100 primary school teachers and 200 third grade children from the rural and urban regions, then analyzed using independent t-tests at a 0.05 level of significance. Overall the teachers exemplified a lack of linguistic knowledge; however, when comparing rural to urban, the urban teacher's linguistic knowledge was significantly higher. Similarly, the children's results also revealed a higher performance rate from the urban children. Based on the results it is recommended that teacher preparatory programs should foster content and pedagogic expertise and include essential features in literacy instruction. The quality of teachers teaching in the primary schools is important and the Ministry of National Education in Cameroon should ensure a better teacher education program that can prepare confident and knowledgeable teachers.

DEDICATION

This dissertation is dedicated to the loving memory of my husband, Joseph Kedze Ghong born November 2, 1954 and went to be with the Lord on October 25, 2002. And also to my dad Pa Peter Nchia, who against all odds decided I had to go to school in a society where the girl child was not considered for school. It was my husband's idea that I continue with a doctoral program after the Masters' degree. Joseph believed in education as the key to broaden one's horizon, and to live a meaningful life. During his last months with cancer, he incessantly reminded me of the need to complete my degree and never to give up. Joseph, I wish you were here to share in this achievement, but I know you are smiling with pride from above. Thanks for the encouragement and support in my educational career ever since we got married in December 17, 1977. For our twenty-five years you were a wonderful source of strength and support. I felt your presence and insistence to complete my program each and every time I thought of giving up. It was hard to do it without a critic and editor like you. Your perseverance, endurance, intelligence, and your famous question, "who said the sky was the limit?" has remained indelible in my mind and those words have been the driving force during this long and difficult process. It was difficult without you, but I knew you were there praying for me. Thanks for all you did and know you are always there in our thoughts.

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CHAPTER I

INTRODUCTION

The Importance of Literacy and Teachers' Linguistic Knowledge

Literacy is a phenomenon important in every nation. Literacy is defined to mean that a person has the potential “to carry out the complex tasks using reading and writing related to the world of work and to life outside the school” (International Reading Association [IRA], 1989, as cited in Tompkins, 2006, p.11). According to Webster’s Ninth New Collegiate Dictionary, literacy is defined as “the quality or state of being literate” (p.789). To be literate means an individual has the ability to read, write, and speak a language proficiently. It also means that individuals are able to take on different roles and adjust appropriately with regards to the way they speak, think, behave, communicate, and rationally solve problems (Tompkins, 2006).

The importance of citizens being able to read and write has been a focus for most nations around the world. This fact is evident by the huge budget most developed nations allocate for educational purposes and research, in the hopes of improving literacy skills of children around the globe (McKeough, Phillips, Timmons, & Lupart, 2006). Literacy is further, an essential investment for any society because it is key to broadening one’s horizons in life. The ability to read and write is of great value to any person, because reading opens the minds of people to the world.

This dissertation follows the style of the *Journal of Educational Research*.

Reading and writing enable individuals to get good jobs and live better and more enjoyable lives. Tadadjeu (2004) noted that “literacy was crucial to the industrialization of nations because reading and writing almost always trigger some kind of industrial development” (p.4). In this light, developing literacy skills internationally in all children is of utmost importance, if the promotion of a better quality of life is to be assured. The Summer Institute of Linguistics [SIL International] in 2006 examined in great depth the importance of literacy to individuals, and to society at large. SIL (2006) pointed out that:

Literacy may have become a current “buzz word” but the importance of this major global issue has long been recognized by international educators and laden with related issues, such as quality of life. Members of minority groups, without pen, paper, or literature in print in their own language, or literacy in any other language, are marginalized and certainly on the downside of the so-called digital divide. The current intensity and speed of globalization compounds the urgency of addressing the issue of literacy for all, especially among the poor and marginalized on as many fronts as possible. (p.1)

Literacy offers people an opportunity to realize their dreams, and this prospect can begin with early education. Some researchers (Lyon, 1998; Snow, Burns, & Griffin, 1998) have advocated the idea that for literacy instruction to be effective, it must be thoughtful, planned, and based on instruction in the areas of phonemic awareness, phonics, fluency, vocabulary, and comprehension (National Institute of Child Health and Human Development (NICHD), 2000). These instructional components are crucial during the early elementary years of literacy acquisition, and teachers are in a better position to effectively teach them if they are well-trained and knowledgeable with regards to children’s literacy development. This is especially true since the early stages of the development of literacy have been reported by researchers (Adams, 1990;

McCormick, 1999) to be crucial years for children if they are to master an understanding of the alphabetic principle.

Furthermore, research has shown that the earlier elementary school grade levels provide the foundational stages of literacy development, and children who are still struggling with reading skills by the third grade will, in all likelihood, struggle with reading and writing for the rest of their lives (Hatcher, Humes, & Ellis, 1994; Jerger, 1996; Lyon, Gray, Krasnegor, & Kavanagh, 1993; Shaywitz, 1998; Snow et al., 1998). It is frightening to imagine that a child could be destined to be a poor reader for the rest of his or her life simply because there was a lack of proper literacy instruction during the early stages of his or her schooling. Other studies have also found that at least twenty percent of early elementary school students will face difficulties to read if explicit instruction in phonological and phonemic awareness is not provided (Cunningham, Moore, Cunningham, & Moore, 2004; Hatcher et al., 1994; Torgesen & Mathes, 2000, 2002).

Moats (1994) has reported that while 20 % of all students have significant reading problems, reading failure rates for minority and poor American children range from 60 to 70 %. Nonetheless, other statistical figures show that while 70 % of children can read and write, 20 % of those children still struggle with reading and writing. McKeough et al., (2006) have found that the “United Nations Educational, Scientific and Cultural Organization’s 2002 illiteracy figures range from 7 % to 14 % for developed countries and are as high as 48 % in least developed countries” (p. ix). Furthermore, according to Montes and Johnson (2005) at least 50 % of the unemployed in the United

States are functionally illiterate. If the United States, which is assumed to be a world-leading nation with a substantially developed technological infrastructure, shows such statistics, it clearly indicates that there is a literacy problem not only in the US, but also all over the world.

In addition, research has indicated that there are also some contributing factors, such as socio-economic status, background experiences, and exposure to print at home that can influence a child's literacy achievement. According to McKeough et al., (2006), "literacy learners differ in many ways including cultural background, neurophysiological, material resources, experience with language, and developmental level. Thus the need for customizing instruction is crucial" (p. x).

In order for children to achieve literacy skills, they need to be taught by highly qualified teachers with sufficient linguistic and subject-matter knowledge. There are many different definitions on the perception of linguistic knowledge, such as the knowledge of the sound system of language, the pragmatic use of language, or the knowledge of words and sentences. Due to the broad definition of the term, we have defined it as a synthesis of cognitive elements, such as phonologic, orthographic, morphologic, and semantic knowledge.

The focus of the study will be to explore and measure teachers' linguistic knowledge in phonological, orthographical, and morphological knowledge. Such knowledge, according to Jetton and Dole (2004), encompasses all awareness and skills needed in the processing use of spoken and written language. Since linguistic knowledge involves phonological awareness, it is necessary for this study to demonstrate

a clear understanding of the distinction between phonological awareness and phonemic awareness. Phonological awareness is a “linguistic term that refers to the ability to reflect on and manipulate the structure of an utterance as distinct from its meaning,” while phonemic awareness is defined as “the most advanced form of phonological awareness that requires the conscious awareness of individual phonemes in a given word” (Torgesen, 1997). This awareness requires the ability to manipulate sounds in spoken words, to identify individual phonemes to graphemes, and to translate that information into the process of reading [e.g., sand and sick begin with /s/, and told and laid end with /d/ (Henry, 2003)].

Efforts to implement evidence-based best practices have been advocated for better preparing teachers for the challenging task of teaching. Studies have also shown that teachers’ use of their linguistic knowledge depends upon how well they can implicitly and explicitly integrate their instructions with elements of phonology, syntax, and semantics in order to enable children to acquire reading comprehension (Goswami & Bryant, 1990; Joshi & Aaron, 2000; Torgesen, 2002; Wren, 2000, 2001). It is necessary for teachers to be knowledgeable in their subject matter so that they can address the specific areas of confusion that children encounter in reading and writing (Carlisle, 2003; Moats, 1999).

All languages have structure and an implicit knowledge of that structure is crucial to comprehension. In order to develop children’s literacy skills, children need to be taught to understand their language, to hear, distinguish, and categorize the sounds in speech (phonology). Children should be implicitly familiar with the structure that

constrains the way words fit together to make phrases and sentences (syntax). They should also be able to understand the meaning of individual words and sentences being spoken and the meaningful relations between them (semantics) (Cunningham et al., 2004; Henry, 2003; Rasinski & Padak, 2001; Ruddell & Ruddell, 2002; Wren, 2000).

Exposure to oral language skills, print, and phonological awareness, letter knowledge and motivation to learn enhances children's literacy development (Heilman, Blair, & Rupley, 2002). For this study this researcher will explore children's literacy achievement based on spelling, phonological, morphological, and orthographical skills. Research indicates the importance of phonological awareness as predictors of early literacy acquisition. Although these skills are essential, they are not a mean to an end. Learning to read involves the ability to decode and to comprehend. As a result, comprehension skills and strategies are crucial for literacy development. However, children's literacy skills are not comprehensively tested for this study. It is beyond the scope of this study to go into details on comprehension skills and strategies.

While most educators make efforts to ensure that all children get the right instruction in reading and writing, a corpus of studies have proven that teachers' linguistic knowledge is inadequate to offer explicit instruction to children who have reading problems (Mather, Bos, & Babur, 2001; McCutchen, Harry, Cunningham, Cox, Sidman & Covill, 2002; McCutchen & Berninger, 1999; Moats, 1999). However, it is encouraging to know that whatever the cause of a child's reading disability, early diagnosis and intervention can enhance their reading development (Foorman, Francis, Fletcher, Schatschneider & Mehta, 1998; Joshi & Aaron, 1992; Snow et al., 1998;

Tomlinson, 2004; Torgesen & Mathes, 2000, 2002). In addition, there is converging evidence from studies on remedial interventions for older children that indicate that acquisition of reading ability can be achieved for many children even after they have struggled for a number of years (Torgesen, 2004, as cited in McCardle & Chhabra, 2004).

Teachers are often celebrated as being the “key to success” for their students and it is crucial for teachers to uphold this recognition. This achievement would require teachers to know the subject matter and to possess advanced pedagogical knowledge. As educators, they need to understand that literacy acquisition is not easy for most children, because reading and writing do not come naturally like learning to speak or walk. With this in mind, teachers can discern how best to relate to and teach children. Students, in turn, can develop knowledge and interests that will lead to competence in literacy and success in life.

According to Medwell, Wray, Poulson, and Fox (1998) subject matter takes into consideration knowledge of content which includes what students need to study to be successful and a knowledge of helpful pedagogy which focuses on the accepted principles fundamental to the teaching of literacy. However, Medwell et al., (1998) regretted that despite decades of research on what could be considered good teaching practices of various literacy strategies, some teachers do not use these strategies in their classrooms. The reason why teachers do not use what has been recommended by researchers as workable is still an unanswered question. One can only speculate that some teachers may not be aware of the new findings in the teaching of early literacy

instruction, or that teachers are aware of literacy strategies but lack the linguistic knowledge to teach children. The latter could imply that teachers are not well prepared in their teaching preparatory programs.

Reading is a complex process and teachers need to have a good content and pedagogic knowledge to teach literacy skills effectively. The ultimate aim of reading is to comprehend and this can be accomplished when teachers focus on linguistic or conceptual knowledge of language. Consequently, an understanding about comprehension and its dependence on the other aspects of reading and on various language skills is essential for educators (Burns, Griffin, & Snow, 2004).

The recommendations of the National Reading Panel (NICHD, 2000) concerning the extensive research that supports the effectiveness of the essential components of reading instruction (phonemic awareness, phonics, fluency, vocabulary, and comprehension) should be utilized and implemented as excellent strategies for early literacy development. Teachers are expected to take up the challenge of enabling all children to become successful readers. To accomplish this, teachers must have the linguistic knowledge to teach children reading skills and strategies that have been shown to be useful for early literacy acquisition (Snow et al., 1998). Every teacher who teaches reading should possess some basic knowledge of the structure of language in order to enhance the skills that children need in order to read (Moats, 1999). Teachers are supposed to be good communicators, educators, and evaluators of the content material they teach (Fillmore & Snow, 2000). They play a critical role in teaching children to read and write. They need to understand how language works in order to select

appropriate material for their students. Consequently, there is a need for all teachers around the world to be well trained, to be linguistically informed, and to be able to apply research-based programs and best practices in their classrooms. Without the ability to read and write, the chance for academic success and a good career is definitely limited (NICHD, 2000). Teachers at the primary level should have an understanding of reading, writing, and literacy development and the importance of effective instruction.

McQuillan (1998) examined Warwick Elley's international study of reading in 32 countries with more than 200,000 students. Elley concluded that

Acceptable levels of literacy are achieved by most pupils, in most systems, despite a diversity of reading methods and traditions. In general, however, achievement is greatest when the education systems are endowed financially, when teachers are well educated, when students have ready access to good books, when they enjoy reading and do it often, and when their first language is the same as that of the language of the school (Elley, 1994, p. xxi-xxii; as cited in McQuillan, 1998, p.67).

The conclusion from Elley's study is worth noting because it gives good insight into real solutions that can help educators and knowledgeable teachers alleviate the many problems faced in the literacy process of children.

Statement of the Problem

Learning how to read is an empowering skill necessary for a child's success in the future. Children who have problems reading in the early grades have a bleak future because research has shown that their performance in their early years of education is a strong predictor of the child's literacy achievement up to ten years later (Adams, 1990; McCormick, 1999). Furthermore, difficulties in learning to read have been correlated with a low socio-economic status, poverty, and emotional problems (McLoyd, 1998; Smith & Dixon, 1995). McQuillan (1998) has noted that children from low income families are three times more likely to drop out of school than peers from higher income families, because "children from low socioeconomic status homes have less physical access on average to the kind of print materials related to the literacy most valued at school" (p.84). These problems are not only found in the US, but are also found in other countries and in the Republic of Cameroon in particular.

The Republic of Cameroon is a country with a population of 16 million people. It is a bilingual country with English and French as the two official languages, and this language distribution reflects its colonial history. Cameroon has ten provinces. Two provinces, the North West and the South West provinces are predominantly English speaking and are referred to as the "Anglophone provinces." The other eight provinces use French as the predominant language, which, in turn is used as the language for classroom instruction. These regions are known as the "Francophone" provinces. It is important to note that the terms "Francophone" and "Anglophone" have special

connotations in Cameroon and these words are politically oriented as they refer to the French and British colonial influence (Kouega, 2002).

Cameroon, like most developing countries, is faced with numerous problems centered around the areas of educational, political, social, and economics. The focus of this study is on selected literacy-related problems faced by children and teachers in the North West provinces of Cameroon. While many children can read well at a level that matches their peers, it is also evident that not all children are competent readers. There are reports recording a gross discrepancy in reading capabilities between the schools in the rural and the urban areas. While urban schools have more trained teachers and better classrooms, the rural schools, on the other hand, have been neglected (Ekangaki, 1998). The rural schools are characterized with poverty-stricken children who come to school barefoot and with no textbooks, and are taught in muddy classrooms with no windows. This scenario is a common phenomenon and confirms the reports from UNESCO (2000), which gives a more vivid picture of what goes on in some African countries. UNESCO noted that one in three African children drop out of school before completing the primary school level, one third of the classrooms lack a blackboard, and thirty percent do not have chairs. This grim report holds true for Cameroonian rural schools. It should be noted that these are additional major problems that further impede the acquisition of literacy skills for most children in the primary schools in Cameroon.

First, the Ministry of National Education (MINEDUC) oversees national education policy. Given such centralization of authority, the ministry has to face challenges regarding issues of equity, equality, and quality and to rectify these problems

amongst the ten provinces. Notably, early childhood primary and secondary education is not compulsory. The number of primary schools is almost evenly split between those sponsored by government and religious denominations (Endeley, 2004). Although the students attending government schools pay no tuition, most of the schools are neglected, with buildings not conducive to learning. The religious mission schools play an important role in education because they have a lower student – to - teacher ratio and better physical structures, but the fees are high and not affordable for many families. Amongst the many West African countries, Cameroon has one of the highest rates of attendance in their schools, but as Tadadjeu (2004) has regrettably recorded, “the major problem is the content of education” (p.5).

Second, most children go to school with a low level of English proficiency and often speak a different dialect from that which is used by the teachers. It is worth noting that the society is multilingual, with over 260 indigenous dialects that differ from each other in phonology, lexicon, and syntax (Kouega, 2002; Verhoeven, 2003). Research has shown that non-English speakers, who learn the skills required for reading by being taught in their first language, find it easier to apply those skills to the second language. Abu-Rabia (2002) has noted that different writing systems show different and unique characteristics that affect the reading and spelling process in various ways unique to the various languages that can be spoken, but in the case of Cameroon this is different, because most of these indigenous languages have not been scripted. Some researchers (Abu-Rabia & Siegel, 2003; Cummins, 2001) have advocated the use of the first language (the vernacular) for early literacy instruction before using the English language

for wider communication instruction. However, the use of the vernacular is not feasible in Cameroon because there is no single indigenous language spoken by all Cameroonians, as is the case with Swahili, spoken in South Africa, or Ibo and Hausa, which are the mother-tongue languages spoken by Nigerians. The language or dialect spoken at home and the one used for instruction at school show some differences for most children, and may contribute to difficulties in acquiring literacy skills. The Pidgin language is widely spoken by both children and adults. Like the various Cameroonian dialects, Pidgin English has also not been scripted and not studied in any official capacity. Cameroonian educators may agree or disagree with Tadadjeu's (2004) opinion regarding the inclusion of the mother tongue for achievement of literacy in elementary schools. Tadadjeu has noted,

In English urban areas, few children know Standard English before they start school. That is why pidgin if it is the mother tongue should be used in urban kindergartens. This would prevent a psycholinguistic blockage to Cameroonian children's development in English-speaking areas (p.7).

While it is crucial to begin literacy instruction in the language a child is familiar with, it is also important to realize how difficult the task can be in a diverse environment. The use of Pidgin in the schools has been an ongoing issue, with raging debates regarding whether to ban Pidgin English or to allow children to use it. Proponents of the use of Pidgin think it is a language in its own right and that it should not be undermined. Opponents of the use of the Pidgin language who think it should be banned believe that Pidgin is not a complete language and that it lacks true syntax in a general, rule-governed sense. The latter schools of thought will for that reason disagree with Tadadjeu's remarks. Further, Pidgin has been found to interfere with the

acquisition of the English language for most Cameroonian children (Mbangwana, 1991). Words in Pidgin sound similar to what they do in English, so children tend to spell words just as they perceive them in Pidgin. For example, they will spell “small” as “simall,” “trouble” as “trobou,” and “smell” as “simell” (Mbafor, 1996). Due to the diverse nature of primary languages, when learning the English language children have to grapple with a myriad of inconsistencies in linguistics structures (Gfeller & Robinson, 1992). It can be seen that teachers in Cameroon certainly have a substantial responsibility to improve their students’ learning of English because children are already exposed to a form of English different from the Standard English language (words and grammatical forms that native speakers of the language use in formal writing).

In addition, according to the Edstats (2002), the total literacy rate in Cameroon reported was 63 %. The data collected on literacy levels indicate that Cameroon has to invest substantial financial and human resources to achieve the necessary advancements in education. It goes without saying that a failure to learn to read puts anyone in a precarious position in society. A society with only a 63 % literacy rate in the 21st century suggests that there are issues of causation that include inequities within the schooling systems of numerous countries, such as inadequate teacher materials and a lack of good institutions for teacher preparation. For over two decades, the school system in Cameroon has remained static. Textbooks have not been changed and the same outdated teaching methods are still used in the school system. Class size in particular, is a disturbing factor contributing to the problems with the school system, as one can frequently find seventy to ninety children crammed into a small classroom.

Children often sit four to five at a time on a small bench and there are no spaces available where activities can be carried out in the classroom. Consequently, less attention is paid to individual children who might need special attention. Children in rural areas experience gross inequalities to those in urban areas, such as in the level of inexperience of their teachers, and the faulty nature of their schools' infrastructure (Eloundou, 2004; Tchombe, 1998).

Fourth, most children in rural areas live in poor communities and, as noted above, "poverty poses numerous threats to children's educational prospects and children in low-income families tend to have uneducated parents, lack adequate nutrition and attend substandard schools" (Burns et al., 2004, p.133). These factors are detrimental to literacy acquisition. For instance, most Cameroonian primary schools do not have a library, and the reading of literature texts is not a common practice.

As a teacher for 15 years in Cameroon, this researcher has had the opportunity to live and work with children from impoverished backgrounds and to understand the plight of many young Cameroonian children. It is important to share what school children encounter. From impoverished backgrounds, children struggle through school with little or no help from parents. Parent's involvement in their children's education is limited to the fact that most parents themselves are not literate. Many of the schools at the primary and secondary level are fee-paying as a result there are significant differences between the enrolment figures of boys and girls at all levels, especially in the rural areas and the northern regions of the country in particular. The enrollment of the girl child is lower than the boys because the girl child is considered an economic asset

because of the dowry paid when girls get married. The distances to schools are far consequently a good number of children may trek over six miles on bare feet each day to school. The uses of technology and computers that may assist teachers in reaching their instructional goals are not available in Cameroonian schools. Children from elementary to secondary schools do not have the opportunity to interact with computers in their learning.

Given the low socio-economic backgrounds of most families, many Cameroonian children are not exposed to books at home before they reach school age. Even though reading materials and the role of literacy in the home are said to be factors that can directly influence children's literacy experiences (Beach & Robinson, 1992, as cited in Heilman et al., 2002) it is not the case with Cameroonian children.

For effective literacy instruction, it is necessary that children own their own textbooks (Michaelowa, 2001), but that is rarely the case with Cameroonian children. As a result, many children begin school with little or no knowledge of English, and those who come to school without English language proficiency lag behind, due to their limited vocabulary and lack of prior knowledge of English words and usage (Ekangaki, 1998). Consequently, students are not only given second-rate educational materials but, sometimes, inadequate instruction as well.

Moreover, the academic year is often disrupted by sit-down strikes carried out by teachers demanding salary increases, which leads to disruptions in the coverage of the curriculum (Tchombe, 1997). As a result of this and other factors, the dropout rate at the primary school level is greater than 40 percent, and the repetition rate is also high, while

at the secondary level the failure rate in examinations has been noted to be 70 % (Mineduc, 1999). Notably, children lack skills in reading and writing, and out of 7,098 children who took the common entrance examination, only 5,064 (71.6 %) succeeded in passing (Luma, 2001; Kouega, 2002). In addition, the percentage of pupils who reach the fifth grade was 65 %, the ratio of pupils to teachers was an astounding 80:1, and the primary school completion rate in 2001 was reported to be 54 % (Edstats, 2002). This situation has led to complaints from parents and educators regarding the falling educational standards, which is further evident in the poor performances of secondary students in the national examinations over the years, such as the General Certificate of Examination (GCE) at both the Ordinary and Advanced levels (MINEDUC, 2001).

Finally, it is noteworthy to add that in Cameroon, teachers are trained in various categories in the teachers' training schools, popularly known as the Ecoles Normale d'instituteurs (ENI). Holders of teaching credentials, the Brevet d'études du premier cycle du second degré (BEPC), and the First School Leaving Certificate [FSLC] (that is, the certificate of the lowest level of completion, which will be the equivalence of the completion of 5th grade in the U.S.) receive two years of training. Holders of the Baccalaureate, or the GCE Advanced level, are trained for three years (MINEDUC, 2001). Ironically, the teachers who are less educated get fewer years of training and are expected to teach the primary school grades. These teachers get the grade two and grade three certifications after one year. Consequently, these teachers are ill prepared and have inadequate knowledge to enable them teach effectively. They work under adverse

conditions and their salaries continue to be significantly low (approximately 50,000 CFA, corresponding to US \$100 a month).

Cameroon, as are most developing countries, is faced with a multitude of factors that put children at risk for failing to learn how to read. These factors include family poverty, low levels of parental education, a lack of diagnosis of specific early-language impairment, insufficient literacy skills, and the lack of sufficient command of the level of entry knowledge necessary to start school. Despite these prevailing conditions, teachers can still make a difference in children's learning to read. They can make concerted efforts to learn about the English language in an endeavor to evaluate and find the right materials and methods to use in meeting the learning needs of their students. An understanding of the complexities of the English orthography and the various orthographies of other languages can be a source of strength to teachers, because such knowledge will enable them to conceptualize why spelling could be a difficult task for students who are second-language learners. More importantly, teachers have to identify unusual words and be able to teach children how to cope with unfamiliar words within various texts. Researchers (Joshi, Leong, & Kaczmarek, 2003; Juel, 1988; Moats, 2001) have indicated, most reading failures are preventable and, in addition, many high-risk students could improve their reading and writing achievements when exposed to effective instruction.

Reading experts (Adams, 1990; Fox, 2004; Gough, 1996; Hoffman & Pearson, 2000; Moats, 1994; Rasinski & Padak, 2001) have pointed out that reading entails a deep linguistic process and that certain language skills are necessary if students are to improve

their reading. As a consequence, there is a real need to find out if children have the skills to enhance their literacy ability and to ensure that children have a firm foundation in decoding words. A condition where an individual is unable to decode words is known as dyslexia. Regrettably, dyslexia is not a familiar word used by Cameroonian educators. A lack of the knowledge necessary to recognize a widespread reading disability, such as dyslexia is a signal that no child in Cameroon is diagnosed as dyslexic. Rather, teachers often blame the children for being lazy or stupid. In the United States, diagnosis of dyslexia is done when an individual's reading achievement is said to be below the expected level, given an individual's cognitive abilities and motivation to read and learn, and children with reading disabilities are often given an individualized educational program in an effort to enable them become successful readers (Heilman, et al., 2002).

According to Sisulu (1999), it is imperative to redesign and upgrade teacher-training programs in Africa so that teachers can transform their classrooms into forums of intellectual exploration. At the "All Africa conference", Sisulu noted that throughout Africa, emphasis has not been placed on teacher preparation. Thus, teachers in Africa are poorly motivated and ill equipped to teach reading. She added that there is an ever-present need for more research on teacher preparation in reading and advocated for more information on research regarding reading to be made accessible to teachers.

Additionally, a lack of reading specialists, libraries and well-trained teachers are a common phenomenon in most African schools and in Cameroon in particular, and as noted, the inability of children to become effective readers will continue to be the root cause of academic failure in African schools (Arua, 2003; Collin, 1995).

In summary, as noted earlier, education is perceived to be the cornerstone of any society in order to ensure its social, political and economic growth. Such growth and progress cannot be realized in Cameroon's educational system unless the teachers' training programs are improved. The quality of the teacher should be one of the most important variables that can determine literacy acquisition in children who have not been brought up in a literate environment. In view of that fact, improvement of the level of teacher education programs should be one of the main tasks for decision-makers in the Ministry of National Education. Major strategies should be undertaken to ensure that teacher education programs can provide teachers with the expertise they need to teach. The need for more professional development programs that can focus on research findings that support effective teaching of reading to assure children's acquisition of reading development and their implementation should be established. In addition, strategies should be implemented to provide quality textbooks that are culturally relevant and readable for students.

Purposes of the Study

The primary purpose of this study is to examine the various aspects of linguistic knowledge in primary school teachers. The elementary school years are crucial for literacy acquisition for children and those who teach them are expected to be knowledgeable. This researcher wishes to gain insights into the teachers' pedagogical and content knowledge. This research is intended to identify any weaknesses in teachers' linguistic knowledge and offer suggestions regarding how to ameliorate it.

Another purpose of this study is to evaluate teachers' degree of awareness regarding language skills. This researcher is interested in discovering what linguistic knowledge teachers have in rural and urban areas, and also when teaching the early elementary-level grades which is considered to be the crucial time period for the acquisition of reading and writing skills. This is because the results from rural areas are, curiously, poorer than those from the urban towns (DELEDUC, 2005). To accomplish this research it will be imperative to gain insight into the preparedness, attitudes, and confidence of the teachers practicing in both of these areas.

A typical Cameroonian child goes to school with exposure to at least two or more languages before English is ever taught to them. Also, a typical child in Cameroon has the ability to effectively communicate in up to four languages: their dialect, Pidgin, English, and French. These languages should be an advantage to children rather than a disadvantage because studies have shown a consistent and strong inter-language correlation between literacy and literacy-related tasks in bilinguals (McBride-Chang & Kail, 2002; Durgunoglu, (2002); Snow et al., 1998). Cummins's study (as cited in Snow et al., 1998) has noted that efforts invested in developing the first language of students contributes to a successful achievement in learning a second language. As a result, this researcher intends to also examine the level of literacy skills the children in class four (which is the U. S. equivalence of 3rd graders) have mastered at this grade level.

Research Questions

This study will closely examine the linguistic knowledge of teachers in Cameroon in both rural and urban schools, and children's literacy achievement. It is expected that the teachers studied are knowledgeable and that they are able to teach children the strategies and skills needed for literacy achievement. The following research questions will be used for this study:

- 1) What levels of linguistic knowledge do the Cameroon primary school teachers of North West Province possess which are associated with the effective teaching of reading?
- 2) To what extent do the levels of linguistic knowledge vary in the rural and urban teachers?
- 3) What are the levels of spelling, phonological, orthographical, and morphological awareness skills noted for the class four primary children?

Significance of the Study

The results of this study will add to the existing literature on the topic (Bos, Mathes, Dickson, Podhajski & Chard, 2001; McCutchen et al., 2002; McCutchen & Berninger, 1999; Moats, 1999; Spear-Swerling & Brucker, 2003, 2004) regarding linguistic knowledge of teachers and how such knowledge is essential in teaching children to read. Nonetheless, Moats (1999) still points out that "learning to read is not natural or easy for most children because reading is an acquired skill unlike spoken language" (p.14).

It is obligatory that teachers teach a defined body of knowledge, skills and abilities that are research-based and rely on methods that have worked with other learners, such as systems that develop phonological processing and phonemic awareness skills (NICHD, 2000). Therefore, linguistically informed and effective teachers can be prepared if the teacher training programs are well structured and organized. It is also hoped that this research will help teachers in both rural and urban areas to realize that they need to stay current with changes in teaching that enhance the acquisition of literacy skills.

This study is intended to create awareness among Cameroonian educators that the early years of a child's education are crucial in literacy acquisition. That is why the focus of this study is on class four children. Research has shown that by the third grade, children should be able to read well, and failure to read at this grade level should be a red flag for the Ministry of Education, especially if they hope to redevelop early reading programs to focus on strategies that have worked in other nations.

This type of research has not been conducted in Cameroon. Hopefully, this study will guide the school systems and the English Language Teacher Society (ELTS), which is a forum in the North West province of Cameroon, where teachers can meet and discuss ways to incorporate phonological awareness as part of reading instruction. Finally, this study should help teachers see the existing discrepancy between what they know and what they need to know in order to ameliorate children's reading difficulties and foster effective literacy skills.

Most Cameroonian teachers have been trained locally and sometimes by non-experts in the field. If these teachers are not knowledgeable of the growing body of research that supports the need for explicit and implicit teaching of phonological and phonemic awareness as a prerequisite for reading, then the current literacy rate of 63 percent should not be expected to change during the next decade. Most Cameroonian primary school teachers will need continuous professional development so that they can keep abreast of current research findings on the skills necessary for teaching the beginning levels of reading.

Thus, it is crucial for teachers who meet children from different backgrounds and with different needs to be able to master the linguistic knowledge, strategies, and skills necessary to reach out and meet the individual needs of the students. Having a solid background in linguistic knowledge will enable teachers to present linguistic concepts accurately, and to use appropriate examples. As a consequence, teachers will be able to assess and interpret students' stages of reading and spelling development, as well as be able to respond to students' errors in an appropriate manner (Moats, 1994, 1999).

Finally, it is the hope of this researcher that the Ministry of National Education can use the findings of this study to make administrative decisions regarding teacher education programs, as well as reading programs administered at the primary school level. Lastly, it is an anticipated outcome of this study that the results will enable headmasters and teacher trainers to become aware of the importance of adequately preparing teachers to teach reading, and not to rely on outdated concepts or the belief that anyone can teach reading.

Definition of Terms

Alphabetic Principle: The ability to understand that “the phonemes of a word can be represented by letters, and that the difference between words learned in the phonological structures is encoded by the letters of written words” (McKeough et. al., 2006).

Anglophone and Francophone: Cameroon is a bilingual country with both English and French commonly spoken. The province that speaks English is known as the Anglophone province, while the regions that predominantly speak French are referred to as the Francophone provinces.

Dialect: A regional or social variety of a language distinguished by pronunciation, grammar or vocabulary, especially a variety of speech buffering from the standard literary language or speech pattern of the culture in which it exists (Snow et al., 1998).

Ecole Normale Supérieure: A higher school for the training of teachers, the attendance of which is required for those who wish to teach in the secondary schools (US middle school equivalence).

Linguistic Knowledge: Used to mean the synthesis of cognitive elements such as phonologic, syntactic, orthographic, morphologic, and semantic knowledge.

Literacy: This includes the ability to read and write proficiently in any language.

Morphological Awareness: The aspect of language structure related to the way words are formed from prefixes, roots, and suffixes, and how these different word sections are related to one another.

Orthographic Awareness: These are the graphemic patterns of written language and their mapping onto phonology, morphology, and meaning.

Pidgin: A Creole form of language used extensively between several ethnic groups in the West Coast of Africa.

Phonics: Instructional practices that emphasize the relationship between letters and speech sounds in systematic ways.

Phonemic Awareness: The ability to orally manipulate sounds in a spoken language.

Phonological Awareness: A broader term that includes phonemic awareness and the ability to identify and manipulate phonemes, onsets, rimes, and syllables.

Risk factors: Characteristics of a child or the child's home, family, or community such that variations in such characteristics are associated with variations in reading achievement.

Syntax: The aspects of language structure related to the ways in which words are put together to form phrases, clauses, and sentences.

Semantics: An understanding of the meaning-system of language.

Whole Language: A style of reading instruction based on the concept that children learn best when literacy is naturally connected to their oral language.

CHAPTER II

REVIEW OF LITERATURE

This chapter will review the studies that have been done regarding teachers' knowledge and education and the importance of teachers' knowledge and the positive effect on students' achievement. The premise of the review is to illustrate that high quality teacher will lead to positive outcomes in children's learning. It will also discuss predictors of early literacy development for children such as phonological, orthographical, and morphological awareness and the necessity for teachers to possess linguistic knowledge that can enhance children's literacy acquisition.

The Importance of Teachers' Knowledge

Cole (2003) noted that for literacy to develop, teachers should be aware of critical components of literacy acquisition. Teaching children what they need to know is crucial to literacy acquisition. Primary grade school teachers should understand, more than anyone else, children's development, how they learn and what they can do. Teachers should expose children to a rich classroom environment so that they can be motivated to learn. In addition, teachers should provide a wide range of meaningful literacy activities that will develop positive attitude towards the acquisition of literacy. A classroom with a variety of reading experience will meet the needs of those who do not have books at home. Cole also emphasized the importance to give children lots of opportunities to learn, to use language, and to interact socially with each other in class. Snow et al., (1998) indicated that teaching reading is a complex process and teachers

should have a strong background in the cognitive and behavioral sciences, as well as in the humanities.

Moats (1994) was among the first researchers to advocate that linguistic knowledge was crucial to the teaching of reading. Moats surveyed the knowledge of 89 teachers. These were reading teachers, special education, classroom teachers, speech-language pathologists, and graduate students. They were from different colleges with various experiences and backgrounds. The survey tested teachers' knowledge of speech sounds, sound-symbol correspondence, and concepts about the structure of language. Moats stated: "the survey result showed insufficiently developed concepts about language and pervasive conceptual weaknesses in the very skills that are needed for direct, language-focused reading instruction; such as the ability to count phonemes and to identify phonic relationship" (P.91). Moats' survey interestingly revealed that "even the experienced teachers, had inadequate knowledge on spoken and written language structure" (93). Consequently, they could not teach these concepts to students if they did not have sufficient working knowledge of the speech sound system.

Moats pointed out that teachers needed to be well prepared in their training schools and during their professional development so that they can become effective teachers. Moats observed that few teachers were sufficiently prepared to teach and blamed teacher preparation programs for not adequately preparing teachers. Teachers' possessing a high level of knowledge is crucial because teachers who exhibit knowledge of the structure of language, phonics instruction, and phonological awareness and who, in turn, teach these components have the opportunity to enhance student literacy

achievement (Bus & van Ijzendoorn, 1999; Foorman, Breier, & Fletcher, 2003; Hoffman & Pearson, 2000; Lyon & Fletcher, 2001; McCormick, 1999; O'Connor, 1999).

Concerned with teacher education, Moats (1994) advocated that a core requirements and standards for new teachers should be established and that teacher education programs should be aligned with standards for students. She noted that a research-based core curriculum provides an extensive content-driven training program and challenging classroom practice. In addition, she recommended that the curriculum for teacher preparation should include essential elements such as the understanding of the structure of language, the psychological and developmental stages of linguistic acquisition, and a core curriculum that can provide efficient, reliable assessments to inform classroom teaching.

Reading has been repeatedly emphasized as the keystone of academic success, but contrary to most researchers' expectations, Moats and Lyon (1996) have noted that teachers do not naturally develop an explicit awareness of spoken language structure and its connectedness to writing simply because they are literate. They need to be pedagogically prepared in order to alleviate their lack of in-depth knowledge of how to actually teach reading and enhance literacy skills. Darling - Hammond (2000) showed that effective literacy instruction is directly related to student literacy outcomes. She also noted that teacher education curricula should focus on information about language development as it relates to literacy; in addition, it should be conversant about the relationship between early literacy behavior and conventional reading. Darling - Hammond reported that teachers should understand the features of an alphabetic writing

system, as well as the phonology and morphology in relation to spelling development in children.

In addition, some researchers (Ball & Blachman, 1991; Berninger, 2000; Bryne & Fielding, 1995; Lyon & Fletcher, 2001) have found that reading problems are more related to instructional programs than to individual students because teachers do not always use systematic, explicit instructional strategies that have been demonstrated to be effective. These researchers pointed out that reading problem could abound where teachers have no understanding of the structure of language at various levels, or the way that phonology is represented in orthography (spelling patterns).

Rath (1994) has found a significant deficiency in teachers' knowledge of phonemic awareness to be a critical factor in literacy acquisition. In her sample of 121 teachers, she found that 53 percent were completely unaware of what phonemic awareness actually meant. As a result, teachers were unable to accomplish tasks of phonemic segmentation and manipulation. Several teachers were also unclear about the distinctions between phonics and phonemic awareness. Rath concluded that the lack of such knowledge by teachers has led to a number of unresolved reading problems for children.

To better understand the level of content knowledge of various teachers, Valli, Rath and Rennert-Ariev (2001) devised a theoretical model that posited a direct linear relationship between teachers' learning opportunities, their teaching knowledge, beliefs, and practices, and their students' level of learning. These researchers noted that there were many factors affecting the increase of content knowledge for teachers, such as a

teacher's innate ability, their general educational opportunities, family influence, school contact, and their students' preparedness to learn, all of which influenced the knowledge and practice of the teachers. These researchers administered a survey to teachers in Tennessee and Connecticut who taught grades 3 through 8, both reading and mathematics, and found that teacher preparation had an impact on teaching knowledge, beliefs and practices, which in turn affected the students' level of learning. As a result of their study, Valli et al., (2001) postulated that teaching depended more upon the individual's personal integrity than on formal teacher preparation. They also concluded that before teachers attend school, they form viewpoints and have an already established body of knowledge.

Duffy and Atkinson (2001) examined elementary school teachers' beliefs as they were held before the teachers began to practice, as well as how these teachers understood the instruction of struggling readers. Duffy and Atkinson analyzed the assignments given to twenty-two pre-service teachers and found that throughout the year the teachers improved in their efforts to integrate their professional knowledge, as well as expanded their belief system necessary to improve their teaching. They noted that pre-service teachers' ability to articulate how they might use their integrated knowledge to teach might not always be translated into the actual practice of the teaching of reading.

Cunningham, Perry, Slavonic, and Slavonic (2004) investigated teachers' knowledge and the best practices that could be implemented to teach reading, finding that teachers differed greatly in their disciplinary knowledge and beliefs. Cunningham et al., (2004) also found that there was very little empirical data on the content knowledge

of teachers in the domain of reading. The study by Cunningham et al., (2004) investigated the knowledge level of 722 teachers, measuring their reading-related disciplinary knowledge. They observed a notable lack of knowledge across important domains connected to reading instruction in the early grades. They stated: “We observed that teachers know relatively little about phonemic awareness (e.g. knowing how many sounds are in the word ‘stretch’) or phonics (e.g. knowing that ‘what’ is an irregular word)” (P.161). Teachers showed limited knowledge of children’s literature and knew very little about phonics and phonemic awareness.

Furthermore, this study showed that two domains, phonological awareness and phonics were research-based and essential to reading development. The authors focused on three domains - children’s literature, phonological awareness, and phonics that were deemed important for kindergarten through third grade teachers, by a wide range of reading experts (Bos et al., 2001; Gough, 1996; Lyon, 1999; Moats & Foorman, 2003). These researchers pointed out that teachers’ knowledge of children’s literature and narratives was an integral part of any language arts curriculum. They further noted that teachers’ knowledge of what constituted a good children’s literature text and that text’s application were crucial to early reading instruction, which is in agreement with previous findings showing that clear motivation and extensive experience with reading can produce fluent readers (Heilman et al., 2002). They suggested an improvement of the level of knowledge of teachers and the need to improve literacy development through better preparation courses for teachers.

In a recent study, Spear-Swerling and Brucker (2004) examined the word structure knowledge of novice teachers (n=147) and the progress of children (n=38) these novice teachers tutored. These researchers noted that novice teachers, who in this study received word-structured instruction, outperformed a comparison group of teachers in word structure knowledge when given a post-test. Spear-Swerling and Brucker suggested that word structure knowledge was essential to the effective teaching of word decoding and advocated that well-prepared teachers should be equipped with an extensive knowledge base and skills that could allow these teachers to meet the diverse needs of their students. The researchers also noted that English writing system is opaque and word decoding can be challenging in instances where attention to letter pattern, individual letters within words may not follow the conventional spelling-sound correspondence blueprint. This intricacy could be the reason for the difficulties faced with word reading skills that are commonly exhibited by struggling readers. The study indicated that beginning teachers often do not possess the education or experience necessary to integrate and apply this important knowledge base in their practices. As noted by Spear-Swerling and Brucker (2004), “even participants with prior background for teaching reading including some certified elementary and special educators performed at relatively low levels on the word- structure measures at pre-test” (pg. 353).

Spear- Swerling and Brucker further explained that despite six hours of course instruction in word structure, the novice teachers still “performed below ceiling at post-test” (P. 353). However, the tutored children showed significant progress in “knowledge

of letter sounds, decoding and spelling phonetically regular words and reading and spelling of irregular words” (P. 354). The study confirmed what other researchers found regarding the lack of teachers’ content knowledge and an inability to present linguistic concepts or to evaluate students’ reading achievement in an appropriate fashion (Ehri, Nunes, Stahl, & Willows, 2001; Lyon, 1999; McCutchen, Abbott, Green, Beretvas, Cox, Potter & Gray, 2002; McCutchen & Berninger, 1999; Moats, 2001; Schwiebert, Green, & McCutchen, 2002).

In another study, Mather, Bos, and Babur (2001) emphasized the need for teachers to have positive perceptions regarding the role of systematic, explicit instruction, as well as knowledge of the English language’s structure. These researchers examined the perceptions and knowledge of general educators (at two professional levels, in-service (n=286) and pre-service (n=252) toward early literacy instruction for students at risk of failing to learn to read. They found that in-service teachers were more knowledgeable about the structure of language than pre-service teachers. In-service teachers had a more positive perception about using explicit, code-based instruction, while pre-service teachers had a limited knowledge of phonics terminology. Assessment results showed that twenty-two percent of the pre-service and thirty-six percent of the in-service teachers recognized that phonological awareness involved oral language. By extending this line of reasoning, it can be seen that teachers’ current levels of knowledge of both the spoken and written English language structure are inadequate for addressing the instructional needs of children with difficulties in learning to read. Teachers with more than ten years of teaching experience showed greater knowledge of language

structure than teachers with fewer than five years. It was noted that 50 percent of the pre-service and in-service teachers were only able to segment phonemes with one or two words. The pre-service (M=5.59) and in-service teachers (M=5.79) and as a result Mather et al., (2001) robustly agreed that k-2 teachers should have adequate phonics knowledge. From the body of research discussed, it can be concluded that teaching reading requires both linguistic knowledge and the implementation of different instructional strategies.

Teacher Training

Teachers are the keystones of every society. It is, therefore, imperative that centers that prepare future teachers should be focused on the best programs and the best practices to use in the classroom. Teacher preparation should have specific features marking the content and quality of preparation necessary, and not just keep count of the number of courses students take. There should be a more refined and stable measurement of teacher knowledge and behavior.

Grossman (1990) has suggested exploring the relative contributions of educational methods and educational foundation courses on prospective teachers. Training programs that could encourage and invest students in their studies would build an understanding of the conditions under which teachers are trained, and in turn could lead to a significant increase in teacher quality. Thus, teachers' knowledge base and pedagogical methods should be the main components of a teacher-training program. In addition, Grossman (1990) places emphasis on teaching principles and suggests teachers to employ practical knowledge, knowledge of the self, knowledge of the milieu

of teaching, knowledge of subject matter, knowledge of curriculum development, and knowledge of instruction. She remarked that a lack of knowledge of the structures of a discipline could cause teachers to misrepresent both the content and the nature of the discipline itself.

Tambo (1995) examined the non-formal and formal model of teacher education in Cameroon. He noted the lack of opportunities for teachers to progress in Cameroon. He observed that teachers who had the best academic qualification might not be the best teachers, and suggested thorough screening of teachers before they were allowed to teach. He went on to recommend a lot of field practice for graduate students who often received “little organized professional training during the so-called probationary period” (P.64). Tambo further remarked that a nonchalant attitude of the government reflected the status of teacher education in Cameroon as he noted in his report;

Another area of initial education that has received a lot of criticism is teaching practice. Although students are required by regulations to spend two hours per week each year for teaching practice in schools, this regulation is hardly respected and the organization of teaching practice in most departments leaves much to be desired. When students go out for teaching practice, they are generally left on their own without adequate supervision from the faculty, the government inspectors, or the classroom teachers (p.65).

In a self-study inquiry, Rickford (2001) looked at the effectiveness of a course of training in narrative reading comprehension for special education teachers and teachers of at-risk students. She used a case study of one teacher trainee’s progress and combined course work, in order to examine the quality of the lessons prepared and the implementation of those lessons in the classroom. Rickford observed that the study identified some of the principles of teacher training and student learning that enabled

teachers to become effective practitioners. She remarked that her study showed that robust teacher training could have both positive and practical outcomes in the classroom.

Merryfield (1995) suggested a couple of recommendations on teacher training and global education. Training teachers with a global perspective, means trying to have a well knowledgeable teacher who knows what goes on in the world. Merryfield encouraged teacher education programs to address issues of globalization in its curriculum. She emphasized that a global perspective will allow teachers to teach students about other people around the world, and the effect their everyday choices will have on other people around the globe. Teachers and students would come to learn that the environmental, economic, technological, and political issues that do affect them go beyond the boundaries of any one nation. Consequently, they will learn to appreciate cultural commonalities and diversity in their own society and the world at large. Merryfield (1995) further emphasized the fact that teaching with a global perspective differs from traditional approaches to study others. In a world characterized by human diversity, a knowledge of cross cultural understanding, open-mindedness, appreciation of others' point of view, resistance to stereotyping are crucial in the development of a global perspective. In summary, teacher-training programs need to be rigorous paying more focus on the global component in addition to the knowledge and pedagogic components.

Soares and Soares (2002) found that there were lower ratings on graduate students in a traditional pre-service program in comparison to those in a more accelerated program that combined fieldwork concurrently with evening courses. There

was a great difference in terms of class management, evaluation strategies, and adaptability in accommodating of students individual needs. More self-confidence was recorded from self-assessment of those who were absorbed in a progression of field experience throughout the teaching training programs. Their study also showed the importance of training program that integrated ecologically designed programs as opposed to inadequate field experiences. From such research, it is important to note that experience in field practice is of paramount importance for the training of primary school teaching. It would be noted that the study focused also on pedagogical methods that incorporated skills and knowledge of the teachers to enable them meet the needs of the students.

Teacher education should be a top priority for any nation if effective instruction literacy is to be achieved. Muzarek, Majorek, and Winzer (2000) give a synopsis of teacher training of some developed and developing countries. In most of these countries, teacher training is not emphasized or given much attention. In developing nations, the preparatory time or length of instruction averaged between two and three years. The entries level of knowledge of student teachers was not encouraging. In some countries, Muzarek et al., (2000) recognized the problems stemming from untrained teachers and less rigorous training programs. They found the issue of teacher shortages to be an acute problem universal to the nations he studied. Shortages of teachers imply ineffective teaching and fewer competencies when classrooms are overloaded.

Despite a general good will towards teacher training programs, there are still a lot of limitations and challenges that teachers face across the different nations of the world.

Muzarek et al., (2000) suggested that teacher training ought to focus its attention on clarifying for student teachers what education is and how they, as teachers, might improve it, in order to facilitate student learning. Although there is uncertainty, vagueness, and ambiguities rampant in teacher training students' failures in school are often unfairly blamed upon teachers are ill prepared to adequately do their job. This review indicates the importance of revamping teacher education programs for better literacy achievement in children.

Importance of Knowledge of Phonological and Phonemic Awareness

The review of the linguistic knowledge held by teachers is not currently as extensive as the research available on phonological and phonemic awareness. There are studies that support the possible positive outcomes of explicit phonological awareness training and eventual enrichment of literacy skills (Griffith & Olson, 1992; as cited in Goldsworthy & Pieretti, 2004). A teacher's knowledge of phonological awareness is integral to teaching children to segment the sounds in words, and this skill is fundamental to literacy enhancement (Bos et al., 2001; Goldsworthy & Pieretti, 2004). Failure to acquire and apply phonological processing skills to phonological awareness is detrimental to a child's educational progress (Hatcher et al., 1994). Although it is hoped that teachers should have a strong foundation in phonological, phonemic, and morphological knowledge, Scarborough, Ehri, Olson, and Fowler (1998) found a group of teacher education students who were challenged with the task of a graphophonemic segmentation exercise. As a result, Scarborough et al., (1998) advocated for the mastery of factors such as vocabulary, language ability, sentence recall, and phonological

awareness as essential predictors of literacy acquisition that teachers ought to be familiar with and be able to use effectively.

In a different study, Foorman, Fletcher, Francis, Schatschneider and Mehta (1998) demonstrated that third graders who were taught with the Orton-Gillingham synthetic phonics approach outperformed children who received a combined synthetic and analytic form of phonics instruction. Foorman et al., (1998) also reported that phonological awareness activities in kindergarten “can lead to significant gains in phonological processing skills relative to children in the same curriculum who do not get the training” (p.4).

The National Institute of Child Health and Development [NICHD] (2000) also found that twenty percent of children have reading problems. They suggested that the explicit and systematic teaching of phonology was essential to alleviating this problem, although this instruction alone was not enough for reading acquisition. This conclusion has led to the concept of a balanced literacy program because some researchers strongly hold that no one method of instruction is the best. Adequate literacy teaching would entail a combination of different approaches (Heilman et al., 2002).

Morais, Mousty and Kolinsky (1998) pointed out that phoneme awareness helps children learn to read. These researchers found that more than half of the first graders who learned to read using the whole word teaching method read fewer words correctly than the worst reader among the children who learned to read through phonics methods. Children are active learners and, given exposure to appropriate literacy experiences and good teaching during their early years, will almost always experience scholastic success

(Adams, Foorman, Lundberg, & Beeler, 1998; Goldsworthy & Pieretti, 2004; Paris & Paris, 2003; Snow et al., 1998).

Foorman and Torgesen (2001) used direct, systematic, comprehensive phonemic awareness and phonemic decoding instruction, and provided additional instructional time with plenty of repetition. Their method showed that explicit, systematic reading instruction in phonemic awareness was highly effective for 27-32 percent of first grade children who began the school year with inadequate phonological awareness, allowing them to become successful readers. In addition, Ball (1997) examined three groups of kindergarten-aged children. Ball compared the groups' performances in phonemic awareness, reading regular words phonetically, and spelling development. The group that met for twenty minutes, four times a week and received training in phonemic awareness significantly improved more than the control groups. Because of the gains realized, Ball recommended that it was crucial to include phonological awareness activities in the classroom to promote literacy acquisition.

Ehri (as cited in McCardle & Chhabra, 2004) reviewed experimental studies that tested the effectiveness of phonemic awareness (PA) instruction and came up with 96 cases that compared PA instruction with a controlled condition. The study focused on whether PA instruction helped students acquire PA and whether such acquisition helped in their reading and spelling ability. She combined several measures to assess reading including word recognition, pseudo-word reading, reading comprehension, oral text reading, reading speed and miscues. Ehri noted that some studies examined whether PA instruction affected students' performance in other subjects such as mathematics.

To find out if PA instruction helped different types of students under different circumstances, Ehri distinguished three groups of readers: typically achieving readers with no problems, children below second grade level who were at risk for developing reading difficulties, low reading levels or low socio-economic status, and low-achieving readers in second through sixth grade who were below their respective grade levels. The findings of the meta-analysis indicated an effect size of 0.8, indicating that PA instruction was effective. Ehri concluded that the benefits of PA instruction were more effective than any alternative form of instruction.

At this point it is important to observe that the spotlight on teachers' knowledge of phonemic awareness is on the increase in schools, because both phonological processing and phonemic awareness training have begun to be used with children before they even start formal education. This is because most children develop some levels of phonemic awareness naturally through everyday early childhood experiences (Rasinski & Padak, 2001) and also phonemic awareness is a precondition for learning phonics and subsequently reading (Adams, 1990; Plaza & Cohen, 2003). Many researchers have made the lucid connection between phonemic awareness and the acquisition of reading skills. Some have even gone on to show that phonemic awareness is necessary but not a sufficient condition on its own for learning to read (Vellutino & Scanlon, 1999). Other researchers hold that phonemic awareness enhances decoding skills and training in phonemic awareness would also enhance the ability of students to decode words (Ball & Blachman, 1991; Ehri et al., 2001; Rasinski & Padak, 2001; Richgels, 2001).

To show the importance of phonological awareness in studying a second language, Verhoeven (2003) observed that in most places in the world, minority children are immersed in a second language literacy curriculum. Verhoeven also pointed out the importance of considering different factors such as restricted background knowledge, interference from the first language (L1) and a limited proficiency in a second language (L2) that may impede the process of learning to read. A pertinent suggestion that has been made is the examination of the similarities and differences in the strategies used during L1 and L2 learning. Verhoeven concluded that when considering the sizeable body of research available on L1 literacy, phonological awareness can be recognized as the single most important factor in reading acquisition.

Importance of Knowledge of Orthographic and Morphologic Awareness

A number of studies have also shown that morphological awareness is significantly related to word reading and literacy improvement (Arnbak & Elbro, 2000; Abbott & Berninger, 1999; Brady & Moats, 1998; Carlisle, 2003; Fox, 2004; Henry, 2003; McCardle & Chhabra, 2004), and have indicated the importance for teachers of understanding the linguistic units of both print and speech. To have linguistic knowledge means to have an understanding of the spelling patterns of the English language and the different words' meanings. In addition, a good knowledge of the relationship between spoken language and written language at the level of derivational morphology is essential for teachers. Derivational morphemes comprise a large set of word parts that change a part of speech from a noun to an adjective or from a verb to an adjective, and such tasks are challenging to young readers. The knowledge of prefixes

and suffixes are crucial to understanding syntax and such knowledge contributes to the strength of syntactic clues. Therefore, such knowledge should be taught to young students because it offers a considerable insight into word meaning (Fox, 2004). These words are usually spelled consistently, although pronunciation may change based on the word combined (Henry, 2003; Moats & Smith, 1992; Schwiebert, Green, & McCutchen, 2002). Furthermore, researchers (Carlisle, 2003; Fox, 2004; Heilman et al., 2002) have emphasized that prefixes and suffixes are significant features that can enhance understanding of the meaning relationship among derived words. It further helps children relate new unfamiliar words they encounter in texts to what they already know. Also, Moats and Lyons (1996) noted that awareness of the morphemes in words facilitate both reading and spelling.

Teacher's morphemic knowledge helps them to instruct students in a systematic and explicit way regarding the relationship between word structures, meaning and syntactic structure (Moats & Foorman, 2003). The knowledge of morphemes (the smallest meaningful unit of language) and the usage of inflectional and derivational morphemes were both noted as essential elements of knowledge for teachers. Carlisle (2003) pointed out that morphemes serve as phonological, orthographical, and semantic units because they facilitate both reading and understanding of words and texts. Carlisle also indicated that it was important for children to be aware of the fact that many English words are combinations of morphemes. She recommended that strategies for decomposing words for reading and spelling are skills that should be taught, especially with focus on knowledge regarding the meanings and grammatical roles of word parts.

In addition, Arnbak and Elbro (2000) found morphological awareness training to be a significant factor that increased reading comprehension and spelling of morphologically complex words in fourth and fifth grade children diagnosed as dyslexic. Their research indicated that knowledge of morphemes gives insight into the meaning of words. Similarly, Abbott and Berninger (1999) found that older, underachieving readers succeeded more from learning structural analysis, syllable structure, and morpheme patterns. These findings further indicate the importance of phonological, phonemic, and morphological awareness in the acquisition of reading and spelling achievement. It is said that an expert teacher of orthography is one who can explain the spelling of almost any word with reference to its phonemes, syllables, morphemes, orthographic patterns, language of origin, usage, and meaning (Moats, 2004).

Moats and Foorman (2003) surveyed over 103 third and fourth grade teachers' knowledge about language structure and student learning. They noted that the five principal components of instruction (phoneme awareness, phonics, reading fluency, vocabulary, and text comprehension) warranted language teaching at the phoneme grapheme, syllable, word, structure and discourse levels, and that teachers needed explicit linguistic knowledge to meet the needs of all children to achieve success in reading and to become proficient language users. They acknowledged that phonological awareness instruction required the teacher to be able to differentiate syllables from onsets and rimes, and to count, blend, segment, and manipulate individual sounds in words. They suggested that phonemes ought to be distinguished from letters in order to clarify for learners the nature of speech in print correspondence (e.g., which and witch).

It was noted that due to the prominent role of English phonology in reading development, teachers needed to pronounce, compare, and manipulate the speech sounds of English in an effort to teach both implicitly and explicitly to their students. The study confirmed other studies (Cunningham et al., 2004; McCutchen & Berninger, 1999; McCutchen et al., 2002; Spear –Swerling & Brucker, 2004) that indicated teachers' knowledge of phonology and orthography to be underdeveloped for the purposes of explicit teaching of reading and writing, and for overall literacy enhancement.

From the review of the literature, there is convincing evidence that reading and writing are an integral part of everyone's lives. This fact is supported by the large body of research that has been conducted in an effort to more effectively teach and find solutions to literacy problems encountered by children. Furthermore, emphases have been put on the importance of phonological, phonemic, orthographic, and morphological awareness as factors that enhance as well as predict reading, writing, and spelling acquisition. It is both logical and valid for more spotlights to be placed on training teachers to examine and evaluate how they implement the skills and practices that will meet the literacy development needs of a great number of children. It is the importance of the knowledge of teachers that has spurred this researcher to embark upon this study. This researcher strongly believes that if teachers are able to demonstrate mastery of content and pedagogical knowledge especially that which is of paramount importance for literacy acquisition for children during their early years of school, a lot of challenges in literacy development for children will be significantly reduced.

CHAPTER III

METHODS AND PROCEDURES

Participants

The North West province of Cameroon has a total of 1455 primary schools, with an annual enrollment of approximately 35,200 pupils and 4,500 teachers (DELEDUC, 2005). In this study, a total of 300 participants were involved. The children (n=200) were boys and girls, and 100 teachers both male and female participated. Class four pupils (U.S. equivalence of third graders) took part in the study in order for the researcher to assess their literacy abilities. It is important to note that unlike the U.S., where teachers are trained for specific grade levels, in Cameroon teachers are trained for instruction at the primary school level and are expected to teach any class from class one through class seven. The children in class four and the teachers in the primary schools who taught these classes were eligible participants in this project. A total of 100 teachers were randomly selected from both rural (n =50) and urban (n =50) school areas. The teachers and children were randomly selected in order to eliminate systematic bias and to allow the chance for all groups to participate. Through simple sampling, the children (n =200) were selected randomly from four rural schools and four urban schools. No child was reported with any reading or learning disability because in Cameroon such diagnoses are not carried out in schools. Testing of the children was conducted in each classroom. Furthermore, the schools selected for this study formed a representative sample of both the rural and the urban schools in the North West province of the country.

Material

This study focused on the linguistic knowledge of teachers teaching in primary schools in both rural and urban areas. It also examined the literacy ability of class four children in both rural and urban school settings. The survey form was divided into two parts. Survey form A (see Appendix A) had questions directed toward finding out about the teachers' various background experiences, number of years in teaching, beliefs and attitudes towards teaching, and demographic information. The survey form B was designed to discover teachers' linguistic knowledge (see Appendix B). Questions asked focused mainly on phonological, orthographic, and morphological knowledge. Survey Form B had a total of forty questions. These were multiple choice questions and allowed teachers to choose one of four answers to show their awareness of terms and/or language concepts. Multiple-choice items are resourceful and can be used to assess different ability levels across a wide range of subject matter (Borg, Gall, & Gall, 1993).

A different testing form was designed for children in an effort to assess their phonological awareness. The test focused on phonological awareness (e.g. phonemic awareness activities like phoneme counting, initial sound matching, detecting rhymes, and phoneme deletion), orthographical and morphological awareness. Furthermore, Cameroon does not have standardized tests for children or for teachers, such as the sample formats of previous tests given to teachers in the U.S. and administered by reading experts (Henry, 2003; Moats, 1994; Moats & Foorman, 2003; Spear-Swerling & Brucker, 2004). Due to this lack of standardized tests, this researcher modified the assessment used by these experts by adding test items and words familiar and culturally

relevant to this population (See Appendix A and B). In addition, pens, pencils, and writing materials were provided for the children to facilitate the testing sessions.

Research Procedures

Towards the close of the fall semester 2005, the researcher traveled to Cameroon to carry out this study. Approval was granted by the Institute of the Institutional Review Board– Human Subjects in Research (IRB) of Texas A&M University to conduct the research. As a mark of academic integrity, the Delegate of National Education Bamenda North West Province was informed of the study, and invitations were sent to the headmasters and teachers of the various schools with the details of the project both in its planning phase and afterwards, when a summary report is completed. The Delegation of National Education gave permission to use the schools for the project.

The teachers were contacted and given the consent forms to read (see Appendix H and I). They understood that their participation was voluntary and could choose to answer the questions or not to answer them. There was no required approval process for students' participation in studies like this in Cameroon, as parental involvement in schools is not as active as it is in the United States. It should be understood that many parents in Cameroon do not have any formal education, so a written parental form or letter describing the study would mean very little to parents, especially in the rural areas, who trust and rely on teachers for the education of their children. Nonetheless, in order to develop a cohesive relationship between the respective schools, student participants, and their parents, an assent form was distributed to each parent. As a result, this researcher worked in close contact with and under the auspices of the respective school

administrations, accordingly, in an effort to strengthen parental involvement with the schools, as well as to encourage further involvement in the future. The children were given assent forms (See Appendix J) to be read and signed by their parents or guardians. The forms were written in English and parents who were unable to read had the forms read and interpreted to them by any member of the family who was literate. The forms were returned to the teachers and collected by the researcher. At the start of the data collection, a letter was read to the children explaining the procedures and expectation of their participation in the study (See Appendix K).

There was no financial compensation given to participants. The tests were conducted on the various school campuses. The test started each day in the morning and lasted for about an hour and thirty minutes for two weeks. The existence of large class size of about 70 to 80 in each class was not an ideal situation to carry out the study. Consequently, 25 children were randomly selected from four classes in the urban schools and four classes in the rural areas. During the study, children who were not participating were engaged in literacy activities so that their academic progress was not affected adversely as compared to their peers who were in the study. The test was administered both individually and as a group.

The test of phonological awareness for the children was modified in terms of culturally relevant words in an effort to assess the children' abilities in accomplishing the various language tasks. The spelling tests had familiar, easy and frequently used words considered appropriate for the grade level. The spelling task was administered in a group setting. Two teachers were trained to assist in the administration of the group

testing in an effort to ensure that the children paid attention and followed directions correctly. In addition, the teachers of the various classes assisted in the distribution of the test materials to the children in their different classrooms. Interestingly, some of these classrooms had no windows and this researcher had to deal with the wind that constantly blew papers around the classroom. It was easy to gain access to the classes because teachers had just finished their classes' final examinations. The children's papers were coded with numbers such as RC1, RC2, and UC 1 and UC2. "R" represented those children from rural schools and "U" those children who attended urban schools.

The teachers were given a survey to fill out. The form was divided into two sections- form A and form B. Form A focused on the teachers' demographic information, which recorded their respective years of teaching and levels of education. While in the survey form B section, teachers were asked questions in an effort to determine their level of knowledge of descriptive terminology about morphology, orthography, language structure, and phonological awareness.

Research Design

This was a non-experimental descriptive research design. The research design used for this study was a cross-sectional one that was carried out in the schools randomly selected for this study. A cross-sectional design is used to collect data at one point in time from a variety of people representing two or more population (Borg et al., 1993). Though a cross-sectional design is a fast way to collect data it has its drawback in that one cannot measure the growth of participants over a period of time. The researcher

designed the questions to find out about teachers linguistic knowledge and children's literacy achievement. The teachers' survey form was designed from an existing instrument to make it relevant to collect information on the teachers. The test for children was designed to gain insight to the concepts of literacy development the children had achieved in their grade level. The rationale for using the phonological awareness tasks was because it has been shown as a strong predictor of early literacy development (McBride-Chang & Kail, 2002).

Data Collection

The teachers were contacted individually and as a group in the selected school campuses. They were administered survey form A and B, to gather data based on their social and educational background and their knowledge of the structure of language respectively. The surveys were adapted and modified from known tests (Henry, 2003; Moats, 1994; Moats & Foorman, 2003; Spear-Swerling & Brucker, 2003) given to teachers. The test included tasks on phonological awareness, phonemic awareness, phonics, orthographic, and morphological awareness. There were 18 questions in survey form A, and 40 questions in survey form B.

Phoneme Counting

Teachers had to determine the number of sounds in words that were similar to a task developed by reading experts (Henry, 2003; Moats, 1994; Moats & Foorman, 2003; Spear-Swerling & Brucker, 2003). They were given a list of words to identify the number of phonemes or sounds. Example: "best" has four phonemes /b/, /e /, /s/, /t/.

“How many speech sounds are there in the following words? Or Count the number of speech sounds you hear in each of the words” (See Appendix A for complete list of words).

Syllable Counting

Teachers were asked to determine the number of syllables that they perceived in each word (See Appendix A for complete word list). For example the word “threat” has 1 syllable, “higher” has 2 syllables. How many syllables do these words have: Capital, (3) shirt, (1) banana, (3) lawyer, (2) and recreational? (5).

Similarly they had to provide the number of syllables in the words given.

Orthographic and Morphological Tasks

Teachers were required to identify spelling patterns and conventions of the language (See Appendix A for complete word list).

Example: A word that is an example of the ‘y’ rule of adding ending.

a) Hoping b) Enjoyable c) Easiest d) Cooked

2) Which of these words has a prefix and a suffix?

a) Unable b) Dismiss c) Uncontrollable d) Predict

3) Which of these words is not magic –e syllable pattern?

a) Confine b) Hope c) Drive d) Peace

The Phonological Awareness Test for Children

Data collection from the children was based on the phonological awareness test used by Adams, Foorman, Lundberg, and Beeler, (1998) to identify individuals with phonological difficulties (See Appendix G). Phonological awareness is said to be a strong predictor of reading growth not only in English but also in other languages such as Swedish, French, Russian, Italian, and Portuguese (Durgunoglu, 2002; Torgesen & Mathes, 2002; Verhoeven, 2003). Presumably, it will also be appropriate to use such a test with children in a multilingual society like Cameroon. According to Adams, et al., (1998) group screening and individual assessment can indicate children's general level of phonological awareness. The testing consisted of the following components.

Detecting Rhymes

The children were given ten pictures in two columns. The children were required to find another picture on the page with a rhyming name, and to draw a line to connect the rhyming pictures. The children were told that two words rhyme when they sound the same at the end e.g., cheek-peek; chair-hair; most-toast; and king-ring. Children were then asked other words that rhymed with bed such as red, head, bread, and said. Two columns of pictures were shown. On the left were pictures of the following items tree, moon, house, cat, and car. On the right were pictures of a star, mouse, hat, bee, and spoon. The children were instructed to draw a line between the two pictures that had a similar sound.

Syllable Counting

The children were required to count the number of syllables they perceived in the five words provided. Children were first demonstrated how to count the number of syllables in words. As each word was called out they were asked to clap. Each clap represented a syllable later on the children were shown words with one, two or three syllables and the syllables were marked at the clap of the hands (e.g., book, far-mer, win-dow, al-li-ga-tor). When the hand was clapped once the children were told to put one tally mark (1) against the word “book”. Then two tally marks (11) against the word “farmer”. The words were practiced together with the children so that they heard the two syllables in “win-dow” as an example.

The children were given five pictures: pencil, elephant, motorcycle, bow, and helicopter. For each picture the children had to figure out how many syllables were in the name of each picture they saw, and put a tally mark against each word as they identified the numbers of syllables.

Matching Initial Sounds

This subtest was intended to see how well children could match items that begin with the same phoneme. Children had 10 pictures. For every picture in the left column, the children matched the picture on the right that began with the same phoneme, and they had to draw a line between the two pictures. To get the children ready and to understand what they had to do, the researcher showed a picture of a kite and a king, and asked the children to say the first sound they heard in the words “kite” and “king” (kite is /k/ and the first sound in king is /k/). The children listened keenly as the sound /k/

were stressed (/k/-k-kite and /k/ k-king). A line was drawn between the pictures of kite and king to let children understand what they had to do. The researcher then provided the children with pictures of lamp, pig, fork, balloon, and heart on the left column of the page. On the right column, they had pictures of a bird, feather, hand, pencil, and leave. Their tasks were to find the pictures with the same beginning sound and connect the two with a line.

Phoneme Counting

Children were to count the phonemes in the words provided. The researcher first demonstrated with the word “knee”. A picture of knee was shown. Children were asked how many sounds they heard in the word “knee”. The stress was on the number of sounds not letters. The word knee was pronounced and the children were asked to indicate how many sounds they heard (knee has two sounds /n/ and /e/). Two tally marks on the line next to the picture of “knee” (knee = 11) was put to represent the number of sounds. Another word “Sun” was used to demonstrate the same concept. The three sounds in the word *sun* were noticeable by three tally marks (e.g. sun /s/ /u/ /n/ (111)). After the demonstration the children were given five pictures of: toe, ant, broom, soap, and paste to mark how many sounds they heard in the name of each picture. The names of the pictures were read to the children before they began the task.

Phoneme Deletion

Children were asked to individually give the word that remains when a phoneme is removed from a word. Examples: “what is ‘smile’ without the /s/?” (mile)

“Say ‘please’ without /l/”. (peas)

“Say ‘spoil’ without /p/.” (soil)

The children were then told to do the following words individually with the researcher.

- a) Say drove without /r/ (dove)
- b) Say next without /k/ (nest)
- c) Say melt without /l/ (met)
- d) Say spies without /p/ (size)
- e) Say snake without /n/ (sake)

Orthographic Awareness Test

Children were instructed to identify and underline the word that was wrongly spelled in a group of three words. This task was modified from Olson, Forsberg, Wise, and Rack (1994), as a useful way to assess word recognition and orthography of children. There were twenty words for this task. The children were given examples and then asked to do the same for the twenty words.

Example: a) Book, Man, Nam = Nam

b) Smell Simell Small = Simell

The children were then required to underline the wrongly spelled words on the sheets provided (See Appendix C for the complete list of the words).

Morphological Awareness Test

The morphological awareness test was designed to assess how derivational and inflectional suffixes can clarify word meaning. Children were given twenty words to form other words that made sense with the sentences provided. The words and the sentences were read to the children and they were required to use the right form of the

word. The researcher used the following examples to let children know what they were to do. Examples: A) Brave: John was awarded for his -----bravery-----

B) Encourage: Mary needs a lot of-----encouragement---

After the example shown the children were asked to do the same with the rest of the twenty words (See Appendix D).

Spelling Test

As research has shown spelling and reading are drawn upon the same knowledge, skills, and processes. To spell new words children should be able to map from their phonological form of the word to the orthographic form (Treiman, 1997). Children need to learn to read and spell effectively to improve their literacy skills. If children can spell a word they can also read it and they become good readers and writers (Bear, Invernizzi, Templeton, & Johnson, 2000; Henry, 2003; Hulme & Joshi, 1998). The spelling task was to assess how well they can recognize and spell words. Also, to see the skills and strategies the children had acquired at this grade level.

Children were instructed to write the given numbers on the papers provided. They were given twenty words to spell. Precaution was taken to guard against the lack of familiarity with words. Consequently words chosen were based on the frequency with which they appeared in the children's readers. The use of plurals in some of the words chosen was to evaluate children's knowledge of inflectional endings of words because as Carlisle (2003) noted, plurals have the semantic concept of numbers, and it is crucial for children to be aware of such concepts. In addition, most of the words were chosen from class four primary English textbooks that children were supposed to be familiar with in

class. Most of the words were regular words that are pronounced the same as when the words are spelled. The words chosen were intended to help to determine children's stages in spelling development and give an insight on the children's orthographic knowledge because orthographic knowledge has a variety of ways to map phoneme-to-grapheme sequences when spelling words. These words ranged from simple to complex words. Each word was said once, and then used in a sentence, then repeated, and children were asked to spell the word. They were told to try to spell each word the best they could and that some of the words will be easy to spell and some will be more difficult. They were instructed that if they did not know how to spell a word to spell it the best that they could and to write down all the sounds they hear. Twenty words were dictated for spelling (See Appendix E for the list of words).

Analysis of Data

Two types of statistical analyses, descriptive and inferential statistics were used on the data collected. Descriptive statistics were used to provide frequencies, percentages, means, and standard deviation for the variables. Frequency distribution groups data into categories and indicates the numbers of observations that may occur in the groups. The variables in the survey were age, gender, hours of teaching, number of times teachers attended seminars, number of years of teaching, and teachers' education qualifications. Independent sample t-tests were run to allow the comparison of the means of two or more groups, and to reveal if there were any statistical significant differences between the variables or groups.

Validity and Reliability

According to Borg et al., (1993) “a test or other measurement tool is valid to the degree to which it measures what it claims to measure” (p.102). The content validity for this study was a valid test to measure the knowledge of phonology, phonics, orthographic, and morphological aspects of the language. The set of questions included in the test comprised most of the items that the test was intended to measure. Furthermore, reliability is the degree to which test provides consistent assessment of a given construct (McCormick, 1999). This test was an informal one and implied to have sufficient reliability because many experts in the field (Cunningham et al., 2004; Moats & Foorman, 2003; Spear-Swerling & Brucker, 2004) have consistently used it to test teachers’ knowledge. Nonetheless the test for this study was analyzed and it yielded a reliability of .5642. Bos et al., (2001) had a reliability of .60 (Cronbach’s coefficient alpha) after giving 20 item multiple test to 286 teachers while Mather et al., (2001) used 25 items that was administered to 41 practicing educators with a high reliability of .74 (Cronbach’s coefficient alpha).

CHAPTER IV

RESULTS OF DATA ANALYSIS

Demographic Information

The data were collected with a return rate of 100 percent. It was easy to follow up with teachers at their respective campuses to retrieve the survey forms. This researcher had to wait patiently for the teachers to finish answering the questionnaires in their staff rooms. The data were collected and then codified, using “RT” for rural teacher while “UT” was used to mean urban teacher. Furthermore, “RC” was used for rural children and “UC” stood for urban children. This section has three parts. Part one gives the overall description of the results of the demographic information. The second part looks into the results of the research questions one and two. The third section will present the analyses on the children’s performance on the phonological, orthographical, morphological, and spelling tests to elicit their various levels in literacy skills.

The background questionnaire revealed important information on the demographic characteristics of the participants. Descriptive and inferential statistics revealed the mean scores, frequencies, and standard deviation of the different variables. The teachers (n=100) were made up of males and females. The age range was from eighteen to sixty years as seen in Table 1. Cameroonians culturally do not like revealing their ages to people so the age range had to be provided.

Background Characteristics of Teachers

Table 1.

Age Range and Percentages of Teachers

Range	Urban	Rural	Percentages
18-25	1	1	2%
26-40	41	35	76%
41-60	8	14	22%

As shown in Table 1, the majority of participants (76%) were in the range of 26 to 40 years, while a few teachers (22%) were in the 41 to 60 years group. However, teachers have the option to retire between ages 50 and 60 accordingly 76 % seems logical for this group.

With regards to the gender demographic, there were more females (60%) than males (40%) from both the rural and urban areas, as seen below in Table 2. In the urban area, 33 % of participants were female and 17 % were male. In the rural area, also, 33 % were female and 34 % were male as seen in Table 2. Combining the urban and rural areas participants culminated in 100 % involvement.

Table 2.

Gender Information of Participants

Region	Number	Females	Males	Percentage
Urban	Number	33	17	50
	% Within Region	66 %	34 %	100%
	% of Total	33 %	17 %	50%
Rural	Number	33	17 %	50
	% Within Region	66 %	34%	100%
	% of Total	33 %	17 %	50%
Total	% of Total	66 %	34 %	100%

Years of Teaching

The number of years of teaching experience varied from one to thirty -five years of teaching. The average length of time in teaching was twelve years. Generally, 20 % of the teachers had taught one to five years, 29 % taught six through ten years, and 29 % had put in eleven to fifteen years. Furthermore, 12 percent had served sixteen to twenty years, 6 % had more years from twenty-two through twenty-five and 4 % had taught for twenty-six to thirty-five years. In the urban region, the descriptive analysis showed a mean of 10.6 (SD=6.52) for the number of years spent in teaching. Similarly, in the rural schools the mean number of years of teaching was 13.6 (SD=6.57). There was a statistically significant difference ($t(99) = 18.12, p < .05$) between the urban and rural teachers with regards to their years of teaching. Rural teachers had generally taught

longer than urban teachers possibly because older teachers were settled in the rural schools and would not want to go looking for jobs in the urban areas.

Experience

According to Mastrilli and Sardo-Brown (2002) novice teachers should be considered to span the first five to seven years of practice. Based on this premise to get a clear understanding of what would be considered experience, this researcher classified teachers as “novice” if they had taught from 1 to 5 years, while those who had taught for 6 years and above were considered to be “experienced” teachers as shown in Table 3.

Table 3.

Percentage of Years of Experience of Teachers in Each Region

Region	Number	Experienced	Novice	Percentages
Urban	Number	21	29	50
	% Within Region	42 %	58 %	100 %
Rural	Number	31	19	50
	% Within Region	62 %	38 %	100 %
	% of Total	52 %	48 %	100 %

As shown in Table 3, in the urban region there was a statistically significant difference ($t(99) 29.47, p < .05$). The number of novice teachers was more than that of the experienced teachers, as was expected because young graduates tend to look for jobs in cities rather than in the rural towns of Cameroon. As seen in Table 3, 52 teachers

(52%) were experienced and 48 teachers (48%) were novices. Experienced teachers in urban schools were measured at 42 %, and novice teachers at 58 %. In the rural schools, there were more experienced teachers (62%) than novice teachers (38%).

Qualifications

The majority of the teachers (65%) had Grade One Certification, while 19 % had the General Certificate of Education (GCE) Ordinary level, and 8 % of the teachers had been trained for the Grade Two Certification. Another 5 % of the teachers had the First School Leaving Certification, which is the lowest certification available for teaching. The Bachelor of Arts is the highest degree and only 3 % of the teachers attained this level as shown in Table 4. Noticeably, there was no one with a Master's degree teaching at the elementary school level.

As seen in Table 4, within the urban regions, the analysis showed 80 % of the teachers had a Grade One Certification, while in the rural areas the percentage of teachers within this qualification group was 50 %. Notably, 8 % of the teachers in the urban and 8 % in rural areas had Grade Two Certifications. The General Certificate of Education (GCE) ordinary and/or advanced level was a qualification possessed by 4 % of the teachers within the urban areas and 34 % in the rural. For the FSLC it was 8 % for the urban and 2 % for the rural as seen in Table 4. Only 6 % was recorded for the Bachelor's degree. Teachers with a Bachelor's and Master's degree are often employed to teach in the secondary schools. It was also noticed that there was no statistically significant difference ($t(99) = 14.21, p > .001$) between the rural and urban teachers.

Table 4.

Level of Teachers' Educational Background

Region	Number	Grade1	Grade 2	FSLC	GCE O/A	BA	Total
Urban	Number	40	4	4	2		50
	% Within Region	80%	8%	8%	4%		100%
Rural	Number	25	4	1	17	3	50
	% Within Region	50%	8%	2%	34%	6%	100%
	% of Total	65%	8%	5%	19%	3%	100%

Hours of Teaching

An analysis of the hours spent in teaching reading in a week showed a mean score of 5.7 (SD=3.3) for the urban teachers. For the rural teachers' hours of teaching, an analysis revealed a mean score of 9.4 (SD = 3.8), as seen in Table 5. More hours of teaching reading was noted in the rural regions. The reason for more hours can only be speculated because there is more educational need for the rural child in Cameroon than the urban child.

Table 5.

Mean and Standard Deviation of Hours of Teaching in Both Regions

Group	Number	Mean	SD	Std Error Mean
Urban	50	5.7400	3.3000	.4667
Rural	50	9.4800	3.8239	.5408

Seminar

Seminars (professional development) are a forum where teachers can get updated information on current issues in education. The mean for the number of seminars attended was 8.3 (SD=5.1). It was noted that there was a statistically significant difference ($t(99) = 16.34, p < .001$) between the regions as regards attendance. In the urban schools, more teachers attended professional development seminars than those in the rural regions. Also, 77 % of the teachers attended between one to ten seminars while 23 % had attended twelve to twenty seminars.

Table 6.

Mean and Standard Deviation of Teachers Who Attended Seminars

Group	Number	Mean	SD
Urban	50	9.4600	5.7684
Rural	50	7.2800	4.1603

The mean of both groups were $M=9.46$ ($SD=5.7$) for urban, and $M=7.28$ ($SD=4.1$) for rural, respectively, as seen in Table 6. One could conjecture here that high attendance indicates that urban teachers were better prepared in terms of linguistic knowledge than rural teachers. Also, urban teachers have more access to seminars because they are often organized in cities. Poor road quality and transportation infrastructure may hinder the attendance of rural teachers.

Research Questions

Research Question One

“What levels of linguistic knowledge do the Cameroon primary school teachers of North West Province possess which are associated with the effective teaching of reading?”

In answering this question, the teachers’ responses to the survey questions were analyzed. The teachers’ performances in response to certain questions gave this researcher insight into their level of linguistic knowledge. Out of 100 teachers 71 % were able to correctly answer survey question one which asked for the definition of a

“phoneme”, while 29 % could not identify it as a “single speech sound”. However, with regards to the question that asked for the definition of “phonemic awareness” 52 % chose the right answer, while 48 teachers did not know that it is the “oral language skill characterized by the ability to recognize [or] manipulate the smallest sound in a word.” Interestingly, question five asked the teachers to define a “consonant blend,” and only 29 % knew that it is “a combination of two or three consonants [where] when pronounced, each letter keeps its own sound.” The bulk of the teachers (71%) were unable to answer this question.

Another question demanded knowledge of speech sounds in words, such as “fix”, “know”, “singing,” and “ring”. In answering this question, 49 % of the teachers were able to give the right speech sounds, but 51 % were unable to do so. An alarming result was question 11, where participants were to identify what ‘phonics’ is, showed that 92 % did not know that “it is a reading method that focuses on teaching the application of speech sounds to letters”. Only 8 % got the answer right. Also, the question which asked for the second sound in the word “queen” showed that just a few teachers (20%) knew /w/ is the second sound and 80 % were unable to give the right sound. There were also questions asked regarding their understanding and knowledge of orthography and morphology. These results also showed a lack of linguistic knowledge. For instance, participants were asked to circle a nonsense word that does not follow the English spelling pattern. 60 % correctly chose “toyn” while 40 % were not able to identify the correct word.

Furthermore, 56 % were unable to identify the word “uncontrollable” as a word with a prefix and a suffix, while 44 % were able to recognize the answer. In addition, 54 % were unable to identify that “retractable” had three morphemes. In identifying a word with a diphthong, only 32 % knew “boil” has the /oi/ as a diphthong, leaving 68 % that were ignorant. In addition, questions, which demanded the knowledge of words of Latin or Greek origin, were poorly answered. The majority of the teachers (98%) did not know that ‘inspector’ is a word with a Latin origin, while only 2 % knew the etymology of the words. This is important because knowing the root word “spect” can enable teachers teach children more derivational suffixes with the same root. Similarly, 80 % of the teachers were unable to identify the word “telephone” as a word with a Greek origin, while 20 % knew the word’s origin. Latin root words and Greek combining forms are essential to know because “roots are valuable not only as patterns for decoding and spelling but also for learning new vocabulary to enhance reading, writing, listening, and speaking” (Henry 2003, P.113).

The survey was comprised of 40 questions. A descriptive and frequency analysis of the total scores of the teachers in general was further analyzed. It gave a mean of 20.31 (SD = 4.02). Teachers who scored more than one standard deviation below the mean (20.3) were considered as low performing teachers on the instrument. Teachers who scored more than one standard deviation above the mean were considered as high performing teachers. Those who were between +1 and -1 standard deviations were classified as having medium or average performance, as Table 7 shows.

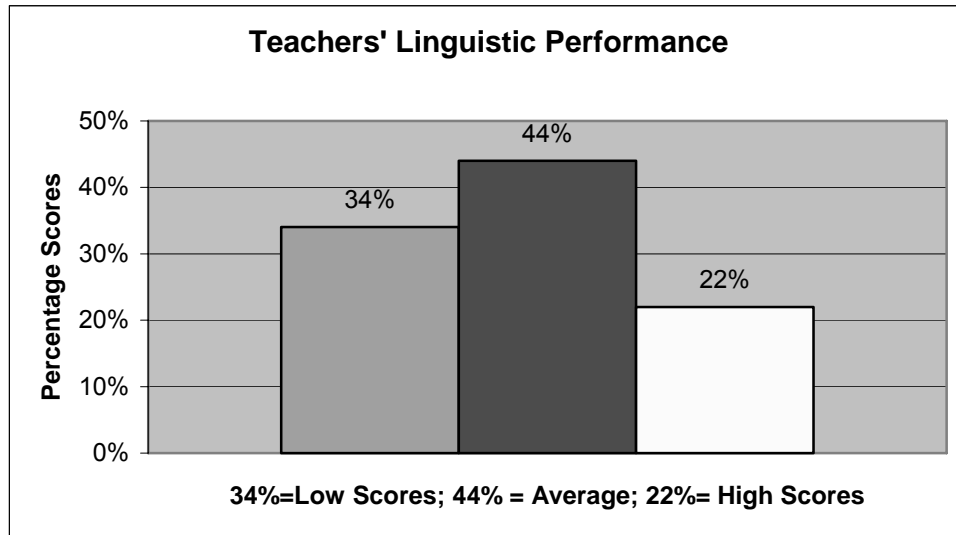
Table 7.

Categorization and Percentage Scores of Teachers (n=100)

Classification	S.D. (4.8)	Scores	Teachers	Percentage
Low	-1 σ or more	1-18	34	34 %
Medium	Between -1 σ , +1 σ	19-23	44	44%
High	+1 σ or more	24-48	22	22 %

As seen from Table 7, the lowest score was 12 and the highest score was 28. Furthermore, the frequency analysis showed that only 22% of the teachers had high scores, while 44% had medium scores and 34% had low scores. Distributions of the scores are graphically shown in Figure 1.

Figure 1.

Distribution of Teachers' Scores

Based on the teachers' performance on the linguistic test to examine their linguistic knowledge, this researcher concluded that the teachers had some knowledge but not sufficient to effectively teach reading. Given that only 22 % of the teachers could be classified as high performing indicates that the results were not very outstanding. On the other hand, if the 44 % were in the high category it should have indicated a good grasp of the linguistic concepts tested.

Research Question Two

To what extent do the levels of linguistic knowledge vary in the rural and urban teachers?

A descriptive analysis on the linguistic tests for teachers showed that the mean was 22.12 (SD = 3.86) for urban teachers, and for rural teachers the results revealed a

mean of 18.50 (SD = 4.83) as shown in Table 8. To see if there was any significant difference between the urban and rural groups, an independent sample t - test was run. The results indicated that urban teachers did statistically significantly better ($t(99) = 50.40, p < .05$) than rural teachers.

Table 8.

Mean and Standard Deviation of Teachers' Total Scores by Region

Group	Mean	SD	Minimum	Maximum	Variance
Rural	18.50	3.3396	12.00	26.00	11.15
Urban	22.12	3.8684	13.00	29.00	14.96
Total	20.31	4.0294	12.00	29.00	16.23

To further understand the degree of the magnitude of difference between the rural and urban teachers in the total scored obtained from the linguistic test, an effect size (Cohen's d) was calculated and the results revealed an effect size of 0.893. According to Cohen this statistical number is consistent with a positive effect. It also indicated that the variability in the test scores between the urban and rural teachers was 89 %. This researcher concluded that basically the disparity is not remarkable. However it is still worth noting that there was a difference between urban and rural teachers. The urban teachers did better than their counterparts in the rural area maybe because the

urban teachers had more access to attend seminars. Furthermore, there is better infrastructure in the urban than rural schools (Ekangaki, 1998).

Children's Performance Analysis

Research Question Three

What are the levels of spelling, phonological, orthographical, and morphological awareness skills noted for the class four primary children?

In answering research question 3, the children's phonological awareness test was also analyzed to ascertain how the children performed in the test. The phonological awareness test consisted of subtests, such as rhyme detection, syllable counting, phoneme matching, phoneme counting, and phoneme deletion. In addition, the orthography, morphology, and spelling tests were analyzed. Descriptive statistics showed the means and standard deviations of the various tests and subtest scores. There was significant variability among the subtests of the children and the means and standard deviations of each subtest differed from each other as displayed in Table 9.

Table 9.

Descriptive Statistics on Children's Test Scores

Group	Number	Mean	SD	Variance
Rhyme Detection	200	2.1950	1.37347	1.359
Syllable Counting	200	3.9950	1.33938	1.321
Phoneme Matching	200	4.1050	1.40851	2.393
Phoneme Counting	200	1.8500	1.14633	1.185
Phoneme Deletion	200	1.2350	.77639	.545
Orthography	200	10.6950	3.52193	10.804
Morphology	200	7.7500	4.53213	18.149
Spelling	200	4.9950	4.51296	9.061

Rhyme Detection Task

The rhyme detection task was to examine children's ability to recognize words that sound the same. The results indicated a mean of 2.19 (SD=1.37). Remarkably, 12 children (6%) were not able to detect any words that rhymed with each other, whereas 57 children (28.5%) were able to correctly rhyme one item out of the five words that were given. Out of 200 children, 65 (32.5%) successfully rhymed two words out of five and 37 (18.5%) were able to rhyme three out of five words. In addition, only 4 children (2%) could rhyme four words acceptably and 25 of them (12.5%) had all five words rhymed correctly. There was a statistical significant difference ($t(199) 22.6, p < .05$)

between the urban and the rural children. The urban children performed better than their counterparts.

Syllable Counting Task

The descriptive analysis provided a mean score of 3.99 (SD=1.33). In the syllable counting task, 5 children (2.5%) were unable to count the syllables in any of the words provided while 11 children (5.5%) could count only one syllable in the words given. Further, 13 children (6.5%) counted two syllables correctly and 23 children (11.5%) had three syllables correctly counted in the words. Also, 48 children (24%) were able to count four syllables and 100 children (50%) were able to count all the syllables in the words provided as seen in Table 10.

Table 10.

Children's Performance in Syllable Counting

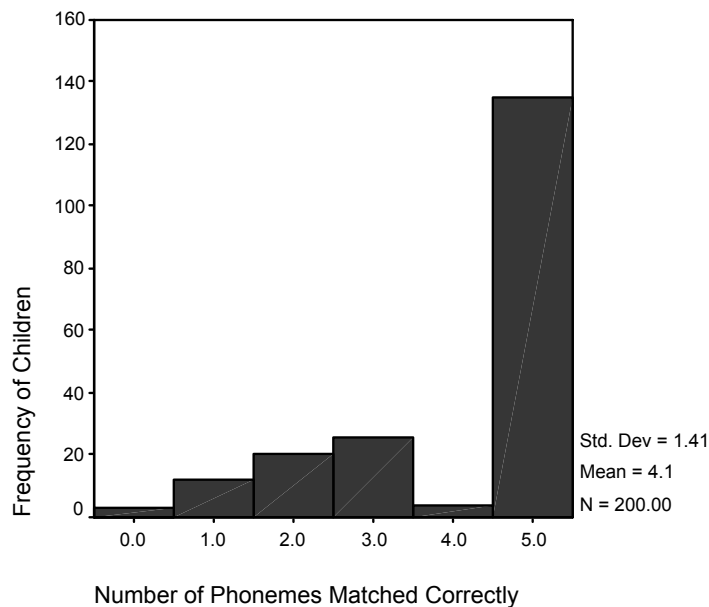
Number of Words	Frequency	Percent
0.00	5	2.5
1.00	11	5.5
2.00	13	6.5
3.00	23	11.5
4.00	48	24.0
5.00	100	50.0
Total	200	100.0

Initial Phoneme Matching Task

For initial phoneme matching task the mean was 4.10 (SD =1.40) as indicated in Figure 2. The mean for the initial matching phoneme task for the children in the rural area was 3.97 (SD =1.54), while the mean score for urban children was 4.24 (SD =1.24).

Figure 2.

Children's Initial Phoneme Matching Task



Generally, only three children (1.5%) of the children did not match the initial phoneme to any of the items correctly. Twelve children (6%) had one sound identified. Twenty children (10%) were able to identify two items with same initial matching sounds. While 26 children (13%) identified three items with initial sounds, 4 children (2%) had four words with same phoneme identified correctly. Further, 135 children

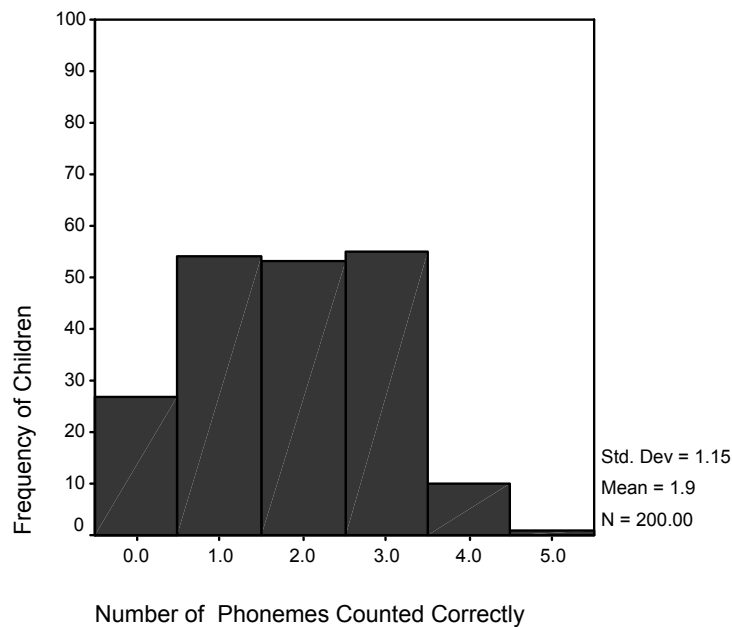
(67.5%) were able to match the initial phonemes in the five words provided. In general, the children showed some concept of the knowledge of sound matching in the initial position.

Phoneme Counting Task

In phoneme counting task the mean score was 1.85 (SD =1.15). Children were asked to identify the number of phonemes in each of the five words. Out of 200 children, 27 children (13.5%) were not able to count the phonemes in any of the items. 54 children (27%) could count only one item correctly, while 53 children (26.5%) were able to count the phonemes in two out of the five items that were provided.

Figure 3.

Children's Phoneme Counting Task



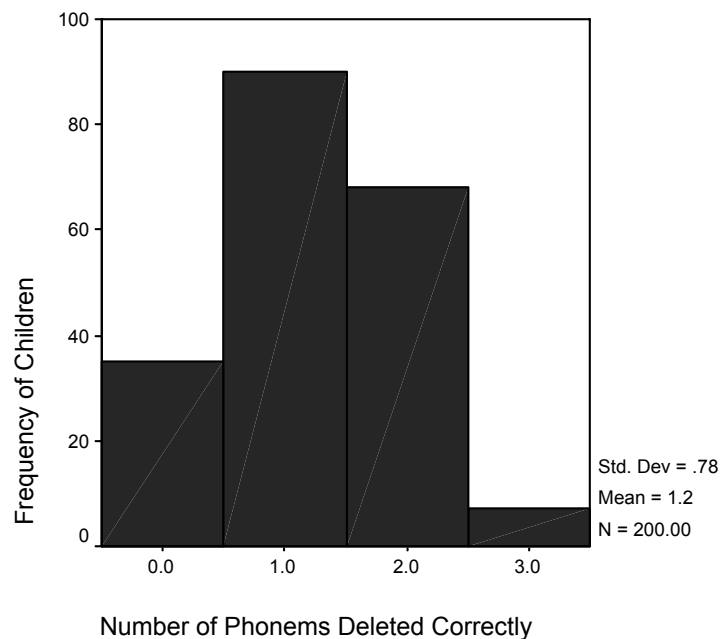
Furthermore, 55 children (27.5%) were able to count phonemes correctly in three out of the five words, while 10 children (5%) were able to correctly count phonemes in four items as shown in Figure 3. Notably, only one child (.5%) successfully counted the phonemes in all five words. There was a statistical significant difference ($t(199) = 22.82, p < .05$), with the urban children performing better than the rural children.

Phoneme Deletion

Descriptive statistics revealed a mean score of 1.23 (SD = .776). In the phoneme deletion task 35 children (17.5%) could delete no phonemes. Out of 200 children, 90 children (45%) were able to delete one item out of five items presented, while 68 children (34%) correctly deleted two words out of five.

Figure 4.

Frequency of Children's Deletion Performance



Further, 7 children (3.5%) correctly deleted three words out of five as shown in Figure 4. No child had four or five words deleted correctly. The scores on phonemic deletion cast some doubt with regards to why out of 200 children no child was able to correctly delete all five words in the task given.

Orthographic Awareness Task

For the children's orthographic test, the children were to identify and underline the wrongly spelled words.

Table 11

Children's Orthographic Awareness Performance

Number of Items Scored Correctly	Frequency	Valid Percent	Cumulative Percent
0.00	1	0.5	0.5
1.00	1	0.5	1.0
2.00	1	0.5	1.5
3.00	3	1.5	3.0
4.00	4	2.0	5.0
5.00	5	2.5	7.5
6.00	3	1.5	9.0
7.00	14	7.0	16.0
8.00	22	11.0	27.0
9.00	22	11.0	38.0
10.00	18	9.0	47.0
11.00	23	11.5	58.5
12.00	22	11.0	69.5
13.00	17	8.5	78.0
14.00	15	7.5	85.5
15.00	8	4.0	89.5
16.00	11	5.5	95.0
17.00	8	4.0	99.0
18.00	2	1.0	100.0
Total	200	100.0	

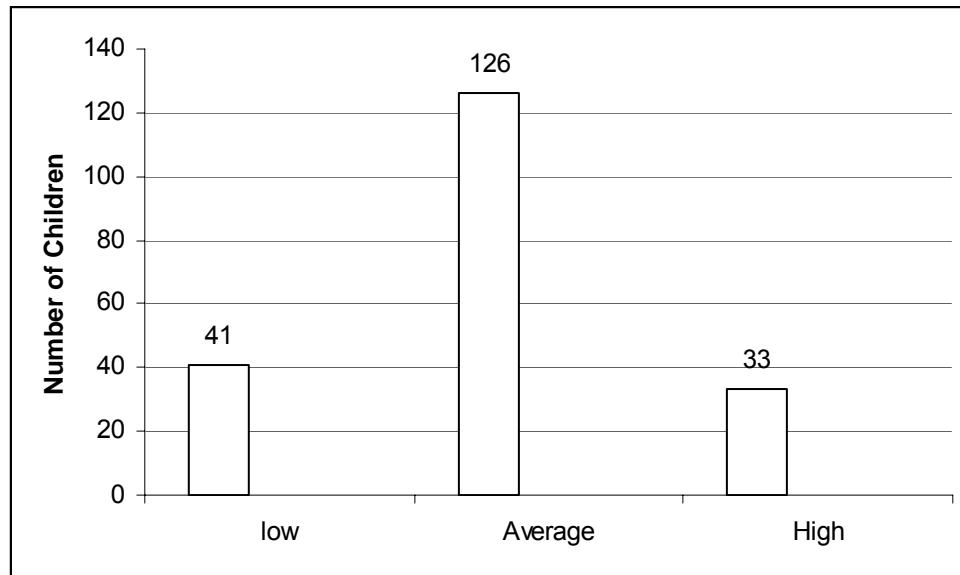
Descriptive analysis showed a mean of 10.69 (SD =3.52). More specifically, the urban children had a mean score of 11.4 (SD =3.6), and rural children had a mean score of 9.92 (SD=3.3). Table 11 shows the performance in orthographic awareness subtest. It was observed that 32 of the participants (16%) had from zero word to seven words, identified as wrong from a group of three words, and 124 children (62%) scored between eight to thirteen words properly.

In the orthographic awareness test, 44 children (22%) scored from 14 to 20 words correctly, as seen in the analysis displayed in Table 9. Those with scores one standard deviation below and above mean were considered average performing students. While those with scores that were two standard deviations below mean were low performing and two standard deviations above the mean were considered high performing. The orthographic task showed a statistically significant difference ($t(199) = 42.9, p < .05$) between the children in the rural and those in the urban schools.

Morphological Awareness Task

Furthermore, the children's performance on morphological tasks revealed no outstanding difference between the children taught in the rural and the urban schools (see Table 9). The mean score for the morphological awareness task was 8.15 (SD = 4.77) for urban students, and for rural students the mean was 7.35 (SD = 4.26).

Figure 5.

Children's Morphological Awareness Performance

Some 13 children (6.5%) were unable to give the right derivatives of any of the words given (see Appendix E for the list of words). However, 28 children knew how to form words on one to three of the words. The bulk of the children (63%) correctly derived words from four to twelve words. Out of 200 children, 33 of them (16.5%) were able to appropriately derive and form suffixes in 13 to 18 words and these were considered high performing. An ANOVA showed there was no statistical significant difference ($F(1,198) = 1.562, p > .05$) between the urban and rural children in this task. The total percentage scores are shown in Figure 5.

Contrary to expectations, it was interesting to find that the children in both the rural and the urban schools did better on this subtest than on the other tests. One would usually consider morphology to be a higher level of phonological awareness assessment

because it involves more analytical concepts of language and has been found to be more challenging to young readers (Fox, 2004).

Spelling Test

According to Manning and Manning, (1994) (as cited in Robinson, McKenna, & Wedman, 1996) children should be encouraged to spell phonetically whenever they write as a way of introducing them to represent sounds on a systematic basis. They held that some invented spellings are better approximation of conventional spellings than others. Also, Read's (1971) early observations on first spelling was scored depending on how phonetically correct the words were spelled, rather than on a right or wrong basis. However, for this test, children were first scored on a right and wrong basis and no variance was found in the scores. As a result, a qualitative spelling analysis was used and responses were scored on a six-point scale based on the different developmental levels of spelling (Tangel & Blachman, 1995). For example, words spelled at the pre-communicative level with no letter-sound correspondences were graded with a zero. Words spelled at the semi phonetic stage were scored with one point if the word had a phonetically related letter other than the initial sound of the word. Scores of two were given if the words had initial phonemes represented with the correct letter. Words spelled in the semi phonetic stage with more than one phoneme represented phonetically but not as in the conventional spelling of the word were scored with three points. Further words spelled at the phonetic stage were scored with four points. These words had the sounds represented with related and conventional letters. Words at the transitional stage were scored with five where the words had consonants, phonemes, and vowels

represented and with conventional letters. Lastly, words spelled correctly earned a score of six. Total points earned were calculated. The scores ranged from zero through 119 out of 120 points. Out of 20 items, the results showed a mean score of 32.3 (SD = 27.77).

Figure 6.

Children's Spelling Performance

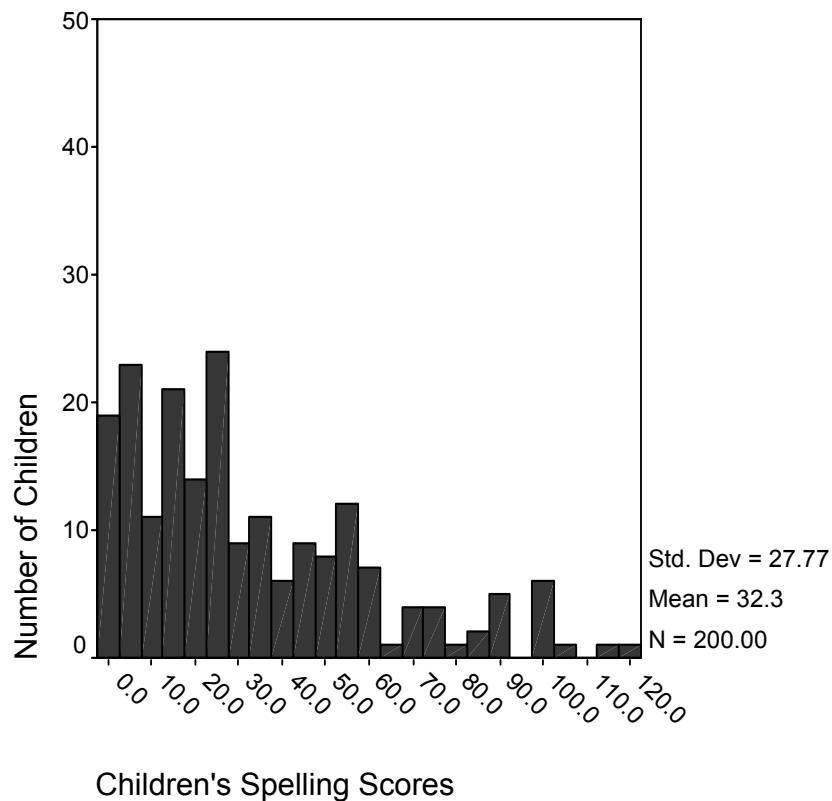


Figure 6 shows graphically that it was a positively skewed distribution with fewer scores at the high end of the histogram. It was observed that 68 % of the children spelled poorly and these were children who scored between zero to forty points in the

test. In addition 24 % of the children performed averagely scoring between 41 to 80 points, while 8 % of the children spelled the words correctly as would be expected for their grade level. Furthermore, a t-test revealed a statistically significant difference ($t(199) = 16.48, p < .05$) between the spelling performance of the rural and urban children. The urban children had a mean score of 47.459 (SD=30.13) while the children in rural schools performed poorly with a mean of 17.140 (SD=13.34) as compared to their counterparts in urban schools.

Table 12.

Spelling Performance of Children in Region

Region	Number	Mean	SD
Urban	100	47.4500	30.13618
Rural	100	17.1400	13.34016
Total	200	32.2950	27.77002

Despite the qualitative method used 13 children (6.5 %) scored zero in the test. The spelling performance indicated that children needed more instruction on phonological processing. Spelling of words did not indicate that children were aware of the analogy between words of the same grammatical categories.

In summary, it is worth noting that there was variability in the types of knowledge the children in both regions exhibited (see Table 13). They had some rudimentary knowledge, as was shown in their ability to count syllables. The task of

counting syllables was performed better than that of counting phonemes. Disturbingly, children in both the urban and the rural schools performed very poorly at the task of counting and deleting of phonemes. While there was similar performance in morphological task among rural and urban children in the task of phoneme deletion in particular not even one out of the 200 children studied could score all five items correctly. Finally their spelling performance was not impressive, as the bulk of the children who spelled at the 25th percentile could be considered poor spellers.

Table 13.

Means and Standard Deviation of Children Scores in Region

Variables	Region	Mean	SD	Variance
Rhyme Detection	Rural	1.93	1.166	1.359
	Urban	2.46	1.518	2.291
Syllable Counting	Rural	4.15	1.149	1.321
	Urban	3.84	1.466	2.237
Phoneme Matching	Rural	3.97	1.547	2.393
	Urban	4.24	1.248	1.558
Phoneme Counting	Rural	1.63	1.089	1.185
	Urban	2.07	1.166	1.359
Phoneme Deletion	Rural	1.00	7.395	0.545
	Urban	1.47	0.745	0.555
Orthography	Rural	9.94	3.287	10.804
	Urban	11.45	3.602	12.977
Morphology	Rural	7.35	4.260	18.149
	Urban	8.15	4.777	22.816
Spelling	Rural	3.36	3.010	9.061
	Urban	6.63	5.146	5.1456

CHAPTER V

DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

This study focused on first examining teachers' linguistic knowledge and children's literacy achievement. The teachers' knowledge (n=100) was examined in order to discern how much content and pedagogy knowledge Cameroon teachers have in teaching reading. The selected sample was teachers from both rural (n=50) and urban (n=50) schools comprising a large geographical region of the North West region of Cameroon.

Results of Research Findings

Research Question One

What levels of linguistic knowledge do the Cameroon primary school teachers of North West Province possess which are associated with the effective teaching of reading?

The teachers were given 40 item multiple choice to examine the level of their linguistic knowledge. The questions focused on content about phonology, phonics, orthography, and morphology. Data results show that some teachers do have some linguistic knowledge, because 61% of teachers had scores that classified them in the medium range, 18 % had high scores and only 21 % had low scores. The questions analyzed indicate that teachers do not have enough linguistic knowledge, because 92 % of teachers did not know the definition of "phonics" and 48 % could not define "phonemic awareness". Also, 71 % of teachers were not able to identify consonant blends, and 77 % did not know to identify consonant digraphs in written words. Furthermore, while 51 % could identify speech sounds in the words provided, 49 %

found the task challenging. Only 56 % knew that “ck” is used in spelling, immediately after a short stressed vowel. Teachers also showed very little ability to answer questions that involved morphology. Fascinatingly, 40 % were unable to identify that “nameless” is a derivational suffix and “remembered” an inflected verb. This finding supports previous research in this domain (Bos et al., 2001; Moats, 1994; Spear-Swerling & Brucker, 2004) where teachers showed insufficient knowledge in language structure. The result of this study is relatively similar to Moats (1994)’s study. Moats gave 15 questions to 89 teachers and found that 10 % could explain Greek spelling, 27 % could identify the components of morphemes of transparent words and 25 % knew “ox” has three speech sounds.

The analyses of the experiences of the teachers, their qualifications, and their input in professional development do indicate that teachers in Cameroon need more motivation and enthusiasm to become effective teachers. In addition, the teachers’ scores indicate the level of the content knowledge they possess. This researcher concluded, based on the results, that these teachers had a very inadequate level of linguistic knowledge for teaching reading and writing, because the bulk of the teachers (44%) had scores in the medium range. In addition, the fact that the majority of scores plunged in the middle may mean that the teachers were all equally ignorant. Along this line of thought, if this percentage (44%) were representative of teachers with high scores, one would have to emphatically conclude that they had enough linguistic knowledge to effectively teach reading but this was not the case.

Summary of Teachers' Findings

Survey Form B collected demographic background information on the participants. The ages of the teachers analyzed ranged from 18 to 60 years. Some teachers did not answer this question because, culturally, many Cameroonians do not like revealing their age. It is considered private and personal information. Even though many factors may contribute to teachers' indifference and lack of enthusiasm, such as low salary, and job dissatisfaction, one thing is clear that the children are the ones who are negatively affected in their academic progress.

During this researcher's visits to the various schools, teachers were not very enthusiastic about completing the survey. Many wanted compensation or reparation because teachers are lowly paid and in desperation will manipulate situations to obtain money. It was disheartening when many teachers adamantly said if they were not well paid by the government, children would continue to have poor performance. Teachers expressed that they had been teaching for years and that there was nothing new that could change their old and cherished methods. This was made evident by the poor attendance in seminars held to instruct teachers on new and innovative teaching methods. Nevertheless, some teachers expressed gratitude that the survey might encourage them to revisit their books, and to read more about their chosen profession.

The demographic information regarding teachers' qualifications revealed one crucial factor to this researcher. Interestingly, out of 100 teachers, 65 % had a Grade One certification. Although it is a required certification for teaching at the elementary school level, it is also important to understand the course contents covered in the preparatory

program for teachers. In addition to the Grade One certificate, teachers need to have more professional development sessions in order to stay abreast with recent findings in literacy and the new types of methodology being advocated. Unfortunately, this was not the case with Cameroonian teachers.

Nonetheless, the teachers who possess a First School Learning Certificate (FSLC) should not be allowed to teach students in the first years of elementary school. Early literacy development is crucial in these early years of children's acquisition of knowledge (Snow et al., 1998), and expert teachers should be the ones to teach them. Given the nature of the FSLC certification, teachers who possess this qualification have had no formal teacher training regarding the basics of teaching, and having 5 % of the teachers falling into this category and teaching at the elementary level means a disservice is being done to the children. In addition, only 3 % of the teachers had a Bachelor of Arts degree. More teachers with a higher degree than the FSLC and grade two certification would be ideal for staffing teachers in the early elementary school levels, but they are instead employed to teach in the secondary schools.

Furthermore, there was no great disparity in qualifications between rural and urban teachers. In that case, it becomes clear to this researcher what the attributes of the performances of the teachers were in the test assessment, and how those attributes related to the institutions that prepared them. Barely 22 % of the teachers having scores that could be classified as high was not impressive. However, on a positive note, 44 % were classified as mediocre, which hopefully means that more instruction or training on the importance of phonological, orthographic, morphologic, and phonemic awareness

could improve teachers' linguistic knowledge (Carlisle, 2003; Moats, 1999; Spear-Swerling & Brucker, 2004).

As regards to the number of years teaching, the scores of experienced teachers did not show that experience provided any advantage over novice teachers. This was surprising because while some older teachers in the field felt they did not need to attend seminars or learn new methods, they also did not perform better than novice teachers. In all, there was no substantial difference between the knowledge of experienced and novice teachers, which indicates that whether one is an experienced or new teacher, ongoing professional development is essential as a forum to exchange ideas and share experiences. It is critical because through seminars, teachers can learn helpful ways to modify instruction and stay abreast of changes in pedagogical practice. It is important to remark that knowledge about the structure of language is of intrinsic interest and great consideration should be given to it.

Teachers who had a lengthy career in teaching did not do well in answering questions on phonological awareness, any more than novice teachers did. This would imply that there might be some resistance to change, as indicated by low seminar attendance by experienced teachers. In the task designed to assess teachers' knowledge of orthography, only 46 % of the teachers could correctly answer the questions that were designed to find out the regular and irregular spelling patterns of words. In this study, participants were asked to give responses to questions such as: "How do you promote print awareness in your classroom?" Some teachers (54%) answered: "Teach them games and songs; provide a variety of opportunities to read" while 46 % gave a more

acceptable answer, “To reinforce the forms and functions of print found in classroom, such as labels, logos, and signs”. Another question asked was: “What does invented spelling indicate to you?” 66 % gave unacceptable responses such as: “The children’s fluency is not increasing, and it should be treated as erroneous spelling,” while 34 % correctly indicated, “it showed children need more phonics instruction to develop conventional spelling.”

While it is encouraging that some teachers were aware of linguistic concepts, the bulk of the teachers expressed openly that they were never taught these aspects of language instruction during their training years. The implication of these results indicates the need to have more qualified teachers in the primary schools that are very knowledgeable and able to disseminate and improve literacy skills.

In sum, despite a relatively good performance by teachers in the counting of syllables or adding of affixes, overall there was no adequate evidence to suggest that teachers had a sufficient mastery of linguistic knowledge. This finding is similar to those of earlier researchers (Mather et al., 2001; Moats, 1994; Spear-Swerling & Brucker, 2004) who found that teachers do not have sufficient linguistic knowledge to teach.

Research Question Two

To what extent do the levels of linguistic knowledge vary in the rural and urban teachers?

There was some difference in performance between rural and urban teachers. The urban teachers did better than the rural teachers, as was expected given the fewer opportunities afforded teachers in rural areas (Ekangaki, 1998). To ascertain the degree

of difference, an effect size (Cohen's d) was calculated, which showed an effect size of $d = 0.898$, which is high because it accounts for 89 % of the variability in the teachers' scores in the regions. An item analysis further revealed a reliability of .5642 (using Cronbach's coefficient alpha). The reliability may be lower to that reported by other researchers (Moats, 1994; Spear-Swerling & Brucker, 2004) but the varied sample and conditions under which these teachers teach is different from those of the participants in previous studies. Bos et al., 2001 used 26 items with 286 teachers and had an internal consistency of .60 and Mather et al., (2001) also used 25 items that was administered to 41 practicing educators. The reliability was .74 (Cronbach's coefficient alpha).

Research Question Three

What are the various levels of spelling, phonological, orthographical, and morphological awareness skills noted for the class four primary children?

The purpose of the analysis was to ascertain children's acquisition of literacy skills at the grade level. The spelling skills of the children were not impressive as a whole, and this may be attributed to inability to process language (Moats, 1994). Most children at risk of reading failure have been taught to read. They have been trained to know that spoken language is made up of sounds and taught how to break apart and manipulate these sounds. While many children come to school with some knowledge of phonological awareness, others come without any form of phonological awareness and rely on explicit systematic instruction from their teachers on concepts of letter sound correspondence, phonics, and phonemic awareness (Snow et al., 1998).

According to Nunes, Bryant, and Bindman, (as cited in Treiman, 1997) the spelling of most words in English depends on their grammatical status. They confirmed that there was a relationship between grammar and spelling. The words spelled in their study were differentiated by their singular or plurality status and concluded that early grammatical awareness significantly predicted children's later success in spelling regular past tense words. Further, Muter and Snowling, (as cited in Treiman, 1997) noted that awareness of the morphemic structure of words helps in orthographic knowledge and they showed that "children's awareness of grammatical relations influence their orthographic skills in spelling" (p.407). Grammatical knowledge of words will enable children to know which word is a noun and a verb and will facilitate the spelling skills of children.

The qualitative analysis procedure provided a better view of children's ability to spell words. The scores from zero through six were assigned on how close the words were spelled correctly. Joshi (2005) noted that the ability to spell words fall on a continuum and should not be "dichotomized as right or wrong" (p.39), as it gives a false notion of the children's spelling. This was evident for this test. When the spelling test was first graded on right and wrong basis there was no variance found in the scores and 112 children (56 %) had no words scored correctly while in the qualitative analysis 13 children (6.5 %) had no words scored correctly. From the analysis of the children's spelling, there was evidence of the lack of grammatical knowledge as the children spelled some of the words without following spelling conventions in English.

Most children spelled words that did not even start with the initial consonant letter of the word. For instance some spellings noted were, "fellegis", "reimsiu" to spell the word "villages"; words such as "tifi", "craf" for "drive" another embarrassing spelling was "rooh" for "cold". Many spellings such as the examples shown were common in students' scripts. This indicated they did not know to match written words to the corresponding spoken word and what those words represent. Children did not show mastery either of knowledge of phonics or the letter-sound correspondence in words. In spelling the word "cattle" for instance, many children were unable to spell the word phonetically correctly. Generally observed in the spelling pattern of the children was omission of vowels, lack of letter sound knowledge and inadequate knowledge on initial and medial vowel sounds. This was not impressive for their grade level.

The phoneme counting analysis showed that the children studied had not mastered this skill at all. Given that only 8 % of children were able to correctly count four items and only one child was able to count all items in all five words properly, one must suggest that it is important that teachers focus more on phonics and phonemic awareness in the early grades of literacy development. In the phoneme deletion task the children found it challenging to the idea of deleting a phoneme from a word. Five words required deletion of the phoneme at the beginning, or middle of the word. To say, "drove" without the /r/ was problematic to most of the children. These findings once more show that many children may not be familiar with the concept that spoken language is made up of sounds (phonemic awareness).

The children were good at rhyme detection tasks, but research shows that skills in detecting rhymes is considered to be of a lower level on the continuum scale while tasks such as segmentation of phonemes are considered higher on the continuum because they “involve an analytical attitude and an explicit representation of phonetic segments” (Silva, 2002, p. 466).

Other Findings from Children’s Spelling

For the children’s testing in spelling and orthography, the urban children performed better than the rural, while the rural children performed better than the urban in syllable and rhyme detecting. The results, therefore, cannot be considered conclusive enough to say that children in rural areas are more or less prepared than urban children. However, in all, children exhibited many specific problems that were due to certain phonological and morphological word features, and they may need help clarifying the confusions shown in spelling words, such as “cobot”, for “cupboard”; “Keygin” for “kitchen”; “ceartn” for “carpenter”; “berete” for “bright” and “mylirey” for “malaria”; “derif” and “dariv” to spell “drive”.

Dialectal Influence

Further analysis of the children’s spelling showed some influence of the local dialects. The Aghem dialect lacks the /r/ sound and elites from this area will often pronounce words with /r/ as /l/. Examples of such intrusion was noticed with the children from this area who spelled words such as “marelia” and “malela”, for malaria and “delif” for drive, “bliht” for bright. Other words spelled indicated the influence of the pidgin language as it showed the way it is spoken in pidgin, This was evident in words

spelled such as “darif”, for drive; “capenta” for carpenter, “trouza” and “tousis” for trouser, “passenja” for passenger and “lada” for ladder. The Bansa dialect which is a popular dialect in the North West province has problems pronouncing words with the /u/ and /i/ sounds. Accordingly, spelling such as “nuspapa” and “nus peper”, for newspaper, “cood” and “coud” for cold, and “goot” for goat are typical ways of pronouncing such words by elites from this region.

In summary, teachers indicated insufficient grasps of linguistic knowledge and part of it may be reflected in the children’s lack of phonological recoding in their performance in the subtests. There was lack of knowledge to hear and match sounds. If children knew the alphabetic principle of learning and understood the sounds in words they would have written the words better by applying phonological strategies of word identification to any unknown word they encountered. In addition, grammatical awareness is crucial in spelling skill. If children know and understand the relationship among words it will greatly enhance their knowledge of English spelling. Unfortunately this was not the case. It only denotes that much practice on these linguistic concepts needs to be taught to children in order to close the gap between the high and low performing students. Further, the general results indicate the need to improve children’s literacy skills by identifying weaknesses in their linguistic knowledge while they are attending the primary schools of the North West Province. This researcher concluded based on the analyses that children’s outcome did indicate the need for more instruction in phonological, morphological, and orthographical awareness skills. Based on the responses of the teachers to the survey it was determined that there were no ambiguities

apparent in the questions but a general lack of linguistic knowledge. One teacher added the following comments on the survey form, which was interesting to this researcher.

Phonetics and phonology is not taught in primary and secondary schools as a subject. What is done at the aforementioned levels is pronunciation of sound in accordance with the grammar text to be treated. Hence, in teachers' training colleges and seminars, teachers are orientated only on pronunciations and the teaching methodology. In actual fact, phonetics and phonology is studied in Cameroon, in most cases as a degree course in the universities and other higher learning institutions. This explains why it has been very difficult for us to answer most of the questions accurately and why others were not attempted. However, I hope that the little effort made would be of added advantage to help enhance your project (Anonymous Teacher, 2005).

Limitations of Study

It is important to observe that there were some limitations to this study. The teachers who participated might not be a true representation of the teacher population in the North West Province of Cameroon. Though the teachers who participated voluntarily completed the survey, it was difficult to say if all teachers responded to the survey with some commitment.

There is an assumption that the teachers would be eager to answer the survey questions honestly, but some teachers may have misrepresented what they practice and believe in as they teach. The formatting and the number of total questions (58) may have seemed overwhelming for teachers who are not used to answering survey questions. Teachers with limited attention spans may have found the questions bothersome or of insufficient interest to command their attention for an hour. Also, given the frustration, stress, and other adverse conditions experienced by Cameroonian educators, some

teachers may have read their questions with little attention and less interest than was necessary for accuracy, or simply answered the questions at random.

The project was perceived as a source for this researcher to better her quality of life in the future, and some of the teachers were resentful about “surveys without compensation” although they knew this was a strictly voluntary project with no monetary compensation. Allusions such as these leave this researcher to believe that such teachers might answer the survey questions without much thought with regards to what they were doing.

The sample size was small, and therefore it was not possible to perform an item analysis to know which questions were easier than others. As a result, all items were given equal weight in this analysis. In retrospect, in question 13 (See Appendix A) the use of “all of the above” should not have been included. It did not give a true reflection of the idea that the teachers did not know the answer to this question and was consequently thrown out.

The literature review was limited for this study. No study of this nature has been done in Cameroon, and it was difficult to find information that pertained to teachers and children’s respective performances in elementary schools.

A final limitation is that the results of this study can only be generalized to include the population of this region, given that children and teachers in this context may face different socio-economic, political, and cultural factors from other nations in the world.

Implication for Practice

In addition to the grade one certification, teachers should be mandated to take other reading courses that will focus on phonology, orthography, and morphology. Although the grade one certification is the required certification to teach, the quality of the content in the preparatory course and duration may need revision. The teachers with FSLC should not be allowed to teach the first crucial years of literacy development because they have had no formal training. The maxim that anyone can teach reading is outdated, and educators should know that teaching reading involves a complex and difficult process that requires extensive and specific training (Moats, 1994).

Teachers should be encouraged to attend seminars or professional development workshops to enrich themselves and the pedagogical experiences of those children they teach. New teachers in the field can feel confident and secure in their practice if they meet in seminars and interact with experts in their field. Education is dynamic, and a high-quality training institution for teachers will result in positive literacy outcomes. Good teaching by qualified teachers has an enormous impact on the outcome of children's learning experiences. Such relationship between students' growth and students' outcome will depend on how teachers teach and what they teach (Taylor, Peter, Pearson, & Rodriguez, 2002).

Teachers need motivation, because low teacher motivation can have substantially detrimental effects on children. Highly motivated teachers pass on the desire to learn when they give children the opportunity to experience quality education. Most importantly, it is absolutely necessary to improve upon teachers' status and salaries in

Cameroon. Such motivation will result in more committed teachers in the field. Without a doubt, improving job satisfaction, remuneration, and the accessibility of schools and classrooms to make them more conducive for learning will emotionally boost both the teachers and the children, and as a consequence will lead to greater literacy achievement.

In addition, in the entire province there are no standardized test instruments for use by teachers for children. The Ministry of National Education should take the challenge to develop some form of standardized assessment tools to diagnose literacy problems children may be facing. Designing such tools that take into consideration the socio-cultural aspects of this population will be a great resource for future researchers in the country.

The problem of large class size (often reaching to 80 children) frustrates teachers, may result in less effective teaching. Reducing class size to 60 children would be a good start, though it might mean that more teachers need to be recruited and therefore increase cost for the government, nonetheless it will be beneficial to the children as their individual needs will be better met specifically when dealing with “struggling readers” and “at-risk.” children. These types of labels may make children lose self-esteem and hate school.

The quality of teachers is a subject of great importance in the 21st century. Effective teachers, who are knowledgeable in their subject matter and pedagogical methodology, are ideal teachers. Consequently, better teacher education programs and training can prepare confident and knowledgeable teachers in literacy development.

Specifically, confident teachers will be those who have knowledge of morphology and who know the variations of spelling certain words, as well as possess knowledge of phonics contents, syllable patterns, and syllabication, and who are able to immediately give corrective feedback to their students (Moats, 1994).

Recommendations for Future Research

With the existence of 260 dialects, it will be ideal, to study the linguistic differences that may impede literacy achievement for children from a particular school population for example, children from Aghem and Boyo divisions substitute /r/ for /l/ and they will pronounce “river” as “liver,” “road” as “load.” Further, the Bafmeng children have a dominant /b/ sounds in their dialect and often face difficulties with the /p/ sound. Training teachers with similar dialects with children can help identify some of the literacy problems children encounter.

The attitude of lack of accountability (Tambo, 1995) allows teachers to be absent for as long as they want without being reprimanded. This needs to be examined by the Ministry of National Education so that children get the right education intended for their academic year.

It is crucial to re-examine the course contents of teachers’ training schools (Ecole Instituteurs) and see how they can be updated to meet the standards of instruction suggested by recent research (NICHD, 2000). Teacher preparation programs should foster content and pedagogic expertise and include these essential features in literacy instruction, such as Lyon (1999) indicated: phonemic awareness, phonics, fluency comprehension, and vocabulary

In sum, although poverty has been found to correlate with poor achievement at school, children from these backgrounds can succeed if they have a caring, competent knowledgeable, empathetic, and qualified teacher. English is fast becoming a language of wider communication and used for a variety of purposes (McKay, 2002), and in Cameroon English serves as a second language to many Anglophones. Understanding and appreciating the cultural differences of diverse learners can make substantial difference to children. As a consequence Cameroonian children should be able to fit into the global depiction of language usage if they are well instructed.

Conclusion

Given the powerful role of literacy in society it is crucial that standards of literacy should be a concern for educators. With the increased uses and functions for literacy it is obvious that children need to obtain higher values of literacy to be more functional in the society. In the introduction part of this study, many social problems were mentioned as factors that may impede literacy acquisition, such as large class size, poor teacher training programs, low parental involvement in children's education, no libraries, and textbooks as factors that impede literacy acquisition. In the midst of these problems, teachers can still make a difference in students' literacy achievement.

Despite the fact that research has shown the most effective teaching practices and students' skills for learning to read, teachers have repeatedly demonstrated limited knowledge of such concepts in their teaching. As a result students do not get the kind of instruction necessary for them to read and succeed in life. This instruction should start early on because as indicated, "quality classroom instruction in the kindergarten and the

primary grades is the single best weapon against reading failure” (Snow et al., 1998, P. 343).

The results of this study suggest that North West teachers in Cameroon did not possess adequate linguistic knowledge to teach reading effectively. It calls for a greater focus on the qualification of those who teach in the primary schools. As foundational builders, teachers need to examine what is necessary for children’s literacy growth, they (teachers) need to be well trained, reflective, knowledgeable, and well informed about the structure of the English language in order to teach linguistic knowledge to children. Consequently, teachers with the FSLC should not be allowed to teach in the primary schools.

There are numerous reasons for teachers to possess sufficient linguistic knowledge. It will enable them to know their children’s level of literacy development and to modify their instructions. As noted in the introduction, the key to successful literacy achievement is the teacher. As a result, no teacher should be left behind. Attending seminars and professional development sessions will allow older teachers in the field to update the materials and methods they use in teaching because better learning can be fostered by good quality instruction. The most important factor in raising standards should be the quality of the teaching of literacy which children experience during the early elementary school years. High quality literacy means high quality literacy teachers. Any educational system should as a matter of precedence attempt to maximize the expertise of teachers in teaching literacy (Medwell et al., 1998).

Finally, it is important that teachers have a good grasp of their content knowledge (Grossman, 1990) so they can enhance children's literacy development. As stated earlier, the acquisition of reading skills does not come naturally like spoken language does, and as a result, children need teachers with comprehensive knowledge necessary to teach children the literacy skills they need to function in society.

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APPENDIX A**TEST FOR TEACHERS: SURVEY FORM A****Questions on Teacher's Background Information**

Directions: **Answer each question by underlining or circling the appropriate answer on the sheet provided.**

1) Age Group

- a) 18 to 25
- b) 26 to 40
- c) 41 to 60
- d) 61 and above

2) Gender

- a) Male
- b) Female

3) Highest academic qualification

- a) General Certificate of Education Ordinary level
- b) General Certificate of Education Advanced level
- c) First school leaving certificate (F.S.L.C)
- d) Other (specify)

4) Professional Certificate

- a) Teachers Grade I certificate
- b) Ecole Normal Superieur certificate
- c) Teachers Grade II certificate

d) Other (specify)

5) Circle the number of years of teaching experience from 1 to 35

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

6) Circle the number of hours spent in teaching reading per week.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

7) How long have you been a member of the Cameroon English Language Teacher Society (ELTS)?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

8) How many professional developments (seminars) have you attended from 1 to 20 times?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

9) Where did you learn the most about reading?

10) How do you promote print awareness in your class?

- a) Make children understand the importance of writing letters to their friends
- b) Reinforce the forms and functioning of print found in classroom labels, logos, calendars, and signs
- c) Teach them games and songs
- d) Provide children with a variety of opportunities to read for pleasure

11) Which is one way of decoding instruction you use in your class?

- a) Provide children with structural analysis practice
- b) Ask them to practice reading silently
- c) Provide children with reflective thinking skills
- d) Involve children in debatable topics

12) Indicate how you can promote phonological awareness instruction in your class.

- a) Give a set of regular words in a reasonable order
- b) Use segmentation and blending of onset and rimes
- c) Use a sequence of letter instruction to meet the needs of children
- d) Assist children to create sentences that contain new words

13) How do you extend students meaning vocabularies?

- a) By using a variety of quality languages activities
- b) Encouraging wide reading
- c) Providing explicit instruction
- d) Using all of the above strategies

14) The following are ways to increase reading fluency

- a) More practice on writing and reading of complex phonics items.
- b) Repeated readings of easy texts
- c) Use of round robin reading
- d) All of the above

15) When should a teacher not be concerned with children's miscues?

- a) When miscues do not change meaning of sentence

- b) When miscues are only phonetically used
 - c) When miscues are related to the first language interference
 - d) When miscue can hinder the comprehension of text
- 16) How do you determine the children's knowledge of phonics?
- a) By counting the miscues when they read a familiar story
 - b) By noticing how many sight words they know
 - c) By analyzing how they spell words in their writing
 - d) By observing how they use self-monitoring strategies
- 17) What does invented spelling of children indicate to you?
- a) That children's fluency is not increasing
 - b) They need more phonics instruction to develop conventional spelling
 - c) It should be treated as erroneous spelling to be corrected with beginning readers
 - d) Children are ready to compose a creative story
- 18) What in your opinion leads to success in early literacy achievement?
- a) Children's peer cooperative skills
 - b) A conducive classroom environment
 - c) The children's chronological age
 - d) The type and quality of instruction and quality of teacher

APPENDIX B**TEACHER KNOWLEDGE ASSESSMENT: SURVEY FORM B**

Directions: Read the questions and circle or underline the right answers.

- 1) A Phoneme refers to:
 - a) A grapheme
 - b) A single unit of meaning
 - c) A single speech sound
 - d) A single letter

- 2) Phonemic awareness is best defined as:
 - a) The ability to appreciate letters in spoken language
 - b) The ability to segment words
 - c) Oral language skill characterized by the ability to recognize, manipulate the
smallest sound in a word
 - d) All levels of phonological awareness

- 3) A pronounceable group of letters containing a vowel sound is a:
 - a) Morpheme
 - b) Syllable
 - c) Phoneme
 - d) Grapheme

- 4) What is the third speech sound (phoneme) in the word patchwork?
 - a) /e/ b) /t/ c) /ch/ d) /r/

5) A combination of two or three consonants when pronounced each letter keeps its own identity is known as:

- a) Consonant blend
- b) Consonant digraph
- c) Silent consonant
- d) Diphthong

6) Circle the number of speech sounds in the following words.

- | | | | | | | |
|------------|---|---|---|---|---|---|
| a) Fix | 1 | 2 | 3 | 4 | 5 | 6 |
| b) Know | 1 | 2 | 3 | 4 | 5 | 6 |
| c) Singing | 1 | 2 | 3 | 4 | 5 | 6 |
| d) Ring | 1 | 2 | 3 | 4 | 5 | 6 |

7) Two combined letters that represent one single speech sound is called:

- a) Consonant blend
- b) Schwa
- c) Digraph
- d) Diphthong

8) Identify the pair of words that begins with the same sound

- a) Chip – chemist
- b) Joke – goat
- c) Shoe-chef
- d) Giant- quiet

9) A soft “C” is found in the word

- a) City
- b) Cake
- c) Cat
- d) Calabash

10) Underline the word with a hard /g/ sound

- a) Germ
- b) Gate
- c) Ginger
- d) Gentle

11) A reading method that focuses on teaching the application of speech sounds to letters is called:

- a) Phonemics
- b) Phonetics
- c) Phonics
- d) Orthographic

12) Which of these words has a short vowel sound?

- a) Got
- b) Tape
- c) Wine
- d) Cute

13) Identify the word that has a long vowel sound

- a) Mate
- b) Hop
- c) Tap
- d) Mad

14) What is phonemic segmentation?

- a) The combining of phonemes to form a word
- b) The substitution of phonemes in a word
- c) The separation of sounds in a word
- d) The adding of a phoneme to an existing word

15) Underline the word that does not rhyme with the others.

- a) Chair
- b) Hair
- c) Fair
- d) Grain

16) Which word rhymes with 'woods'?

- a) Water
- b) Yelled
- c) Goods
- d) Wept

17) Write the number of syllables in the following words

- a) Population
- b) Degeneration
- c) Vacation
- d) Napkin

18) What is the second sound in the word “queen?”

- a) /u/
- b) Long / e/
- c) /k /
- d) /w/

19) Underline the schwa vowels in these words

- a) Melody
- b) Sofa
- c) About
- d) Effect

20) What sound do you hear in “rope” that is lacking in “row”?

- a) /p/
- b) /w/
- c) /l/
- d) /o/

21) What sound do you hear in “days” that is missing in “day”?

- a) /d/
- b) /z/
- c) /s/
- d) /ai/

22) Which word contains an R-controlled vowel?

- a) Bread
- b) Dry
- c) For
- d) Friend

23) Circle the nonsense word that does not follow the English spelling pattern

- a) Clow
- b) Toyn
- c) Squire
- d) Shease

24) Underline the word that has a prefix and suffix?

- a) Unable
- b) Misunderstand
- c) Uncontrollable
- d) Rebuild

25) When a word has a pattern of vowel-consonant-consonant-vowel, where should it be divided?

- a) Before the first consonant
- b) After the first vowel
- c) Between the two consonants
- d) Before the last vowel

26) Underline the word that is an example of the “y rule” for adding endings

- a) Hoping
- b) Enjoyable
- c) Lazier
- d) Baked

27) Circle the word that is an example of a diphthong

- a) Gone
- b) Bread
- c) Boil
- d) Grate

28) An example of a compound word is:

- a) Although
- b) Selfish
- c) Bookshelf
- d) Stolen

29) Which word begins with a long vowel open syllable?

- a) Banish
- b) Promote
- c) Rabbit
- d) Comment

30) Underline the consonant digraphs in these words.

- a) Theme
- b) Smooth
- c) Church
- d) Crash

31) Underline the blends in the following words.

- a) Blast
- b) Twig
- c) Reflex
- d) Grove

32) Underline the roots in the following words.

- a) Remove
- b) Perform
- c) Midnight
- d) Sunny

33) Which word is of Latin origin?

- a) Psychology
- b) Inspector
- c) Philosopher
- d) Chorus

34) Which word does not have a suffix, root, and prefix construction?

- a) Predictable
- b) Uneventful
- c) Anxiety
- d) Multicultural

35) Underline when a “ck” is used in spelling

- a) At the beginning of words
- b) When a /k/ sound follows a stressed long sound
- c) Immediately after a short stressed vowel
- d) Before a long vowel

36) Identify the word with a Greek origin

- a) Eruption
- b) Contradict
- c) Telephone
- d) Recommend

37) Which of these words is not magic –e syllable pattern?

- a) Confine
- b) Hope
- c) Peace
- d) Drive

38) How many meaningful parts (morphemes) are there in the word ‘retractable’?

- a) One
- b) Two
- c) Three
- d) Four

39) Circle the word that does not follow a spelling pattern?

- a) Receive
- b) Conceive
- c) Weird
- d) Ceiling

40) From the list below, give an example of each of the following:

Scarecrow, Nameless, terrible, phonogram, remembered, weakly, tables

Inflected verb -----

Compound noun-----

Derivational suffix-----

Bound root-----

Thank you for taking the time to complete this survey.

APPENDIX C

ORTHOGRAPHIC AWARENESS TEST

Children are instructed to identify and underline the word that is wrongly spelled in a group of three words. This was modified from Olson, Forsberg, Wise and Rack (1994), as a useful way to assess word recognition and orthography of children. There were 20 words for this task. The children were given examples and then asked to do the same for the twenty words.

Example: Book, Man, Nam

- | | | |
|------------|--------|--------|
| 1) Through | threw | thruo |
| 2) Smell | simell | small |
| 3) Hear | here | heye |
| 4) Their | their | there |
| 5) Com | come | cone |
| 6) Find | fynd | fine |
| 7) Bright | brite | blight |
| 8) Sew | sow | soe |
| 9) Weak | waeke | week |
| 10) Grate | great | graat |
| 11) Fare | fair | faire |
| 12) Noss | nose | noose |
| 13) Route | roof | ruote |
| 14) Idol | idle | idel |

15) Role	rool	roll
16) Peace	piece	pease
17) Peep	peel	pielle
18) Scene	sin	sceen
19) Herde	head	heard
20) Steel	steal	stille

APPENDIX D

MORPHOLOGICAL AWARENESS TEST

Children were given 20 words to form other words that make sense with the sentences given. The words and the sentences were read to the children and they had to write the correct form of the word.

Example: A) Brave: John was awarded for his -----bravery-----

B) Encourage: Mary needs a lot of-----encouragement---

Now do the following.

- 1) Protect: The gun was bought for self ---- -----
- 2) Dance: The Edwondos are great -----
- 3) Equal: African men do not treat women with -----
- 4) Long: The boys measured the snake's-----
- 5) Eat: Monkeys are good banana -----
- 6) Appear: She worried about her -----
- 7) Permit: The teacher refused to give Ida -----
- 8) Teach: My sister is a wonderful -----
- 9) Active: The youth week has a lot of -----
- 10) Major: The SDF party won the vote by a -----
- 11) Perform: Everyone loved his -----
- 12) Act: I love good -----
- 13) Farm: My father is a -----

- 14) Bore: The story was -----
- 15) Beg: He worked hard because he did not want to become a-----
- 16) Discuss: Peter hates long -----
- 17) Compete: Carol came first in the -----
- 18) Assist: The men will give them -----
- 19) Present: The audience was waiting for the -----
- 20) Behave: You get in trouble when you have bad -----

APPENDIX E**SPELLING TEST****Direct Instruction Went as Follows**

“I am going to ask you to spell some words. Try to spell them the best way you can. Some of the words will be easy to spell some will be more difficult. When you do not know how to spell a word, spell it the best you can; write down all the sounds you hear”.

- 1) Cold: During the dry season, it is very cold in the morning. (Cold)
- 2) Villages: There are more villages than towns and cities. (Villages)
- 3) Goats: Some people keep a few animals like goats and pigs. (Goats)
- 4) Passengers: The taxi is allowed to carry five passengers. (Passengers)
- 5) Exercises: She does her exercises regularly. (Exercises)
- 6) Drive: I do not know how to drive a car. (Drive)
- 7) Kitchen: We cook in the kitchen. (Kitchen)
- 8) City: Douala is a big city not a village like Wum. (City)
- 9) Ladder: The ladder is used to climb to the roof. (Ladder)
- 10) Bright: It is a bright day. (Bright)
- 11) Growing: Villages in Mamfe are famous for growing oranges. (Growing)
- 12) Milk: Children should drink lots of milk. (Milk)
- 13) Newspaper: My brother sells the Tribune newspaper. (Newspaper)
- 14) Cupboard: We keep our plates and cups in the cupboard. (Cupboard)
- 15) Carpenter: Peter wants to be a carpenter. (Carpenter)

- 16) Palace: The Bafut palace is traditionally designed. (Palace)
- 17) Trousers: Most boys have at least three pairs of trousers. (Trousers)
- 18) Malaria: She was absent because she had malaria fever. (Malaria)
- 19) Uniform: The school uniform is brown and white in color. (Uniform)
- 20) Cattle: The Fulani people are cattle breeders. (Cattle)

APPENDIX F**PERMISSION FORM**

Dear Mary,

You certainly have my permission to use and adapt these instruments.

There is nothing sacred about them. All the items need to be studied. We are beginning to get some data on item correlations, etc., but this is hardly a science, yet. I'm so glad you are passionate; we need a whole new generation of leaders in education who are willing to specifically define the relevant content knowledge base for teaching reading, spelling, writing, and language, and then to stand up for the importance of licensing requirements.

You may be interested in contacting Dr. Jeannette Cornier, who just finished her doctorate from the University of Denver, and who did a study of teacher knowledge. She might be willing to share her items and her results with you. I am copying her on this message.

Good luck!

Louisa Moats

APPENDIX G**PERMISSION FORM**

Dear Mary,

Forgive me for not replying sooner. I've been traveling too much.

You are more than welcome to use the PA assessment in Adams et al. It is very thoughtful of you to ask, and I appreciate it. Since it is your thesis, then I will tell you that in my opinion, it is not as good an assessment as ideal. We tried to stick very closely with what had been used by Lundberg et al in Denmark.

What do you plan to do with it?

best,

mja

APPENDIX H

CONSENT FORM

Examining Aspects of Linguistic Knowledge of Anglophone Primary School Teachers of North West of Cameroon in Relation to Children's Literacy Achievement

I have been asked to participate in a research study to examining aspects of linguistic knowledge of Anglophone primary school teachers of Cameroon in relation to children's literacy achievement. I was selected to be a possible participant because I am a primary school teacher and teachers were randomly selected. A total of 100 teachers have been asked to participate in this study. The purpose of this study is to examine the linguistic knowledge of elementary classroom teachers and how it impacts children's achievement in literacy skills in the northwest region of Cameroon, where English is the predominant language of instruction in schools. Children are not much exposed to spoken English at home, especially in rural areas. Thus, the teachers and children from both rural and urban areas will be compared. If it is found that teachers' linguistic knowledge affects children's literacy skills, then it is the wish of this researcher that the Ministry of National Education (MINEDUC) in Cameroon can use the findings from this study, to make administrative decisions regarding the teacher education programs, and to provide teachers with the expertise they need in order to teach. If I agree to be in this study, I will be asked to answer questions relating to my background experience in teaching and questions on my linguistic knowledge. I understand there will be no video or audiotaping.

This study will only take about an hour to complete the survey, and this will also be during my break or free time. The risks associated with this study are very minimal. I could get frustrated with the questions in which case I am free to discontinue answering the survey questions. There are no direct benefits to me and no compensation is paid for participation in the study.

This study is anonymous and I have been told not to write my name on the answer sheets. The records of this study will be kept private. No identifiers linking me to the study will be included in any sort of report that might be published. Research records will be stored securely and only the researcher and Texas A&M University will have access to the records. If I decide to participate, I am free to refuse to answer any of the questions that may make me uncomfortable. I can withdraw at any time without my relations with the University, job, benefits, etc., being affected. If at any time I have questions regarding this research or my participation in it, I can contact Mary Njang Ghong, who must answer my questions at (979) 693 3071 (mnghong@netscape.net) or the advisor Dr. Malt Joshi, Telephone (979) 862-8228 (mjoshi@coe.tamu.edu.). This research study has been reviewed and approved by the Institutional Review Board- Human Subjects in Research, Texas A&M University. For research related problems or questions regarding subjects' rights, the Institutional Review Board may be contacted through Dr. Michael W. Buckley, Director of Research Compliance, Office of Vice President for Research at (979) 845-8585 (mwbuckley@tamu.edu).

I have read the above information. I have asked questions and have received answers to my satisfaction. I have been given a copy of this consent document for my records. By signing the document, I consent to participate in the study.

Signature ----- Date-----

Signature of Investigator-----Date-----

APPENDIX I**LETTER TO PARTICIPANTS**

Dept. of Teaching and learning & Culture

College Station TX, 77840-4232

October 10, 2005

Dear Teacher,

I wish to carry out a study on teachers' linguistic knowledge and how it impacts children literacy achievement in the northwest province of Cameroon. It will entail asking some questions about your educational background and teaching experiences. Because you are a primary school teacher, you are eligible to take part in this research, which will be carried out in your school. The study will take about an hour of your time.

Enclosed is a consent form. Read through carefully. If you wish to participate, please do sign and return the form to me during the scheduled time in you school. If you have any questions I could be reached at telephone # (237) 7-61-73 -44.

Yours sincerely,

Mary Ghong

APPENDIX J**PARENTAL PERMISSION FORM**

Dear Parent,

Your child's headmaster and classroom teacher have agreed to participate in a research study conducted by Mary Njang Ghong, doctoral student from Texas A&M University. Participation in this project may help educators learn how to increase the literacy skills of young children and insure that all children encounter success early in school. The purpose of this letter is to describe the research study, explain the procedures involved, and request permission for your child to participate in the study.

The purpose of this project is to examine aspect of linguistic knowledge of anglophone primary school teachers of Cameroon in relation to children's literacy achievement. If you give permission for you child to participate in the study, your child will be given a series of short tests to assess his or her literacy skills. This will include testing your child on different aspects of the English language such as, spelling of words, usage and meaning of words

Your child's literacy skill will be assessed for about an hour and thirty minutes. Children in class four are eligible for this study. That is why your child has been selected. All the assessment activities are used in schools and there is no known risk associated with their use. Information gained from this study will be shared with the teachers and the Ministry of National Education.

Participation in the study presents minimal risk for you child, as the work being conducted is similar to what takes place in the classroom all the time. However, your child may become a bit anxious as a result of the frequent monitoring of literacy skills by someone other than his or her classroom teacher. I will attempt to lessen this risk by explaining to children that their skills are being measured so that we can better understand the progress of children from both the rural and urban areas and how they are affected by their teachers' linguistic knowledge. Children will also be informed that they may withdraw from any activity without penalty. The child can discontinue the activities if a child verbally or non-verbally indicates that he or she does not want to continue with the activity.

Your child will not write his/her name on the answer sheets. I will use code numbers rather than using the actual names of the children and school setting. If the information is published I will use pseudonyms, rather than your child's name, teacher's name, or school. Upon completion of the study, all identifiable data will be destroyed.

Your consent to allow your child to participate in the study is completely voluntary.

If you give permission for your child to participate, you are free to withdraw your

consent at any time without penalty to you or your child.
I will be glad to answer any questions you may have regarding this study. Please contact
Mary Njang Ghong (237 761 73 44) or my supervisor, Dr. Malt Joshi, (979 862-8228)
(mjoshi@coe.tsmu.edu) at Texas A&M University.

Your signatures means that you have read and understood the information provided
above, that you agree to have your child participate voluntarily, and that you may
withdraw consent and discontinue your child’s participation at any time without penalty.
Please return this form to your child’s teacher in the envelope provided. Thank you for
your time and cooperation.

Consent for Participation in the study

Yes, I have read and understood the description of the study involving teachers’
linguistic knowledge and children’s literacy achievement and I give my permission for
my child to participate.

Your Child’s Name -----

Name of Parent -----

Signature of Parent-----

Date-----

I would like a copy of this letter for my records Yes No

APPENDIX K**SCRIPT: TO BE READ TO CHILDREN****Examine aspect of linguistic knowledge of anglophone primary school teachers of Cameroon in relation to children's literacy achievement.**

I would like for you to be part of a research project. You will be assessed on spelling of words, the usage and meaning of words in the English language.

The number of participants for the research will be two hundred children. Your participation is absolutely voluntary. If you refuse to participate it will not affect your grades or class in any way. No punitive measures will be taken against you.

On the other hand, nothing risky will happen if you take part in the research. There will be neither benefit nor compensation to you for participating in the research.

If you have any questions you can contact me at this address:

Mary N. Ghong, Foncha Street, Nkwen –Bamenda,

North West Province, Republic of Cameroon.

Telephone: (237) 7 617344

Signature of Investigator-----

Date-----

VITA

Mary Njang Ghong received her Bachelor of Arts degree in modern languages from the University of Yaounde, Annex -Bambili, in 1984 in the Republic of Cameroon. She taught English language, English, and African literature, for fifteen years in the Government Technical High School (GTHS) Bamenda in the North West Province of Cameroon. She moved to the United States in October 1998 and in spring of 2000 she enrolled in the College of Education in Texas A&M University where she obtained the Master of Education degree in curriculum and instruction in December 2001. Her research interests include early stages of reading development, reading comprehension, teacher education, and literacy acquisition by second language learners. Her passion in these domains was a key factor to enroll into the doctoral program in Texas A&M University in the spring of 2003. She received her Ph.D. in December 2006, in curriculum and instruction. She strongly believes that teaching and research must be integrated and that every child can learn given the opportunity. Ms. Ghong may be reached at TLAC Dept. Texas A&M University, College Station, TX 77843-4232. Her email address is mnghong@netscape.net