RELATIONSHIP BETWEEN PHONOLOGICAL AWARENESS AND READING ABILITY IN SELECTED PRIMARY SCHOOLS IN SOLWEZI DISTRICT.

BY

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A Dissertation Submitted to the University of Zambia in Partial Fulfillment for the Award of the Degree of Master of Education in Literacy and Learning

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AUTHORS DECLARATION

I, Lukama, Kamalata declare that this dissertation was written through personal reading and scientific research. It represents my own work and has not in part or in whole been presented as material for the award of any degree at this or any other University before. Where other people's work has been cited, acknowledgement has been made by use of complete reference.

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CERTIFICATE OF APPROVAL

This dissertation by Lukama, Kamalata is approved as fulfilling part of the requirements for the degree of Master of Education in Literacy and Learning.

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ABSTRACT

The purpose of the study was to establish the relationship between phonological awareness knowledge and reading ability in a transparent orthography. A sample comprising of 105 participants (15 teachers and 90 pupils) was drawn from three schools in Solwezi District, North Western Province. The participants were randomly (pupils) and purposively (teachers) selected for the study. The study used a mixed method and employed the Concurrent Triangulation Design. Information was obtained from participants using interviews guides, classroom observations check lists and tests in reading and phonological awareness.

In order to achieve the study objectives, tests were administered in phonological awareness and reading in Kiikaonde to establish the relationship between phonological awareness knowledge and reading ability. Interviews with teachers and classroom observations were conducted to find out the components of phonological awareness being taught in schools and the strategies being used to teach phonological awareness skills. Interviews with teachers were also conducted to find out if teachers had received training in phonological awareness either in college or in service workshops. Both qualitative and quantitative data analyses were used. Qualitative data was analysed using thematic analysis while quantitative data was analysed using Excel, 2010 where both descriptive and inferential statistics was used.

The study revealed that there was a significant and positive correlation between phonological awareness knowledge and reading ability more so in grade two than grade one learners. The study also revealed that blending, substitution and sound identification (isolation) were the components of phonological awareness that teachers were teaching during literacy lessons. The study also revealed that teachers were using teacher centred strategies when teaching phonological awareness during literacy lessons. It was also revealed in the study that teachers had not received training in phonological awareness during pre- service training but some had received this training in Continuous Professional Development Meetings. Based on the findings, the study recommends that the teaching of phonological awareness should be incorporated in the syllabus being followed by primary teacher training colleges. Secondly, Continuous Professional Development Meetings such as Teacher Group Meetings should be strengthened in schools so that teachers are trained to use a variety of teaching strategies when teaching.

DEDICATION

I dedicate this report to Muzan'alu my daughter and Kuwunda. This is what made you remain behind when I and your mother were away. My mother and father took care of you better than I would have done and my brother Bwite took you to school every morning.

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LIST OF ACRONYMS

SACMEQ	Southern African Consortium for Monitoring Education Quality
P L P	Primary Literacy Programme
P R P	Primary Reading Programme
MESVTEE	Ministry of Education, Science, Vocation, Training and Early Childhood Education.
M O E	Ministry of Education.
UNESCO	United Nations Scientific and Cultural Organization.
MDG	Millennium Development Goal.
EGRA	Early Grade Reading Assessment
NBTL	New Breakthrough To Literacy
SITE	Step In To English
ROC	Read On Course
NR C	National Reading Committee

CHAPTER ONE
INTRODUCTION

1.0 Introduction

This chapter presents the background to the study, statement of the problem, purpose of the study, research questions, general objective, specific objectives, significance of the study, theoretical framework, limitations of the study and operational definitions.

1.1Background to the Study

The Government of the Republic of Zambia through the Ministry of Education, Science Vocational, Training and Early Childhood Education (MESVTEE) is concerned with the low levels of literacy in the country. This is mainly because literacy or the ability to read and write is a critical component to learning across the curriculum. It is also important because a literate individual can actively participate in political, economic, social and cultural issues. The government has also considered literacy as a vehicle for attaining the Millennium Development Goal (MDG) number two (2) of achieving Universal Primary Education by 2015(MESVTEE, 2013). In its quest to attain the Millennium Development Goal number two (2), on Universal Primary Education by 2015, the Zambian government through the Ministry of Education has increased access to schooling for its citizens. However, despite making positive strides in access to schooling, evidence indicates that student achievement is very low (World Bank, 2006). Some studies which have been carried out in Zambia and given as examples have revealed that learners reading and writing levels are low. For example, a Grade Five National Assessment Survey conducted in 2006 and 2008 reported learning achievements below 40% and to be specific 35.3% in English and 39.4 in Zambian languages (National Institute of Literacy, 2008). Recent studies such as the Grade 5 National Assessment Survey and the Early Grade Reading Assessment Survey (EGRA) which were conducted in 2010 also revealed poor reading and writing abilities among learners as only 24% of those tested were able to read. Further, the Southern Africa Consortium for Monitoring Education Quality (SACMEQ, III), after testing Grade 6 learners also revealed that only 27.4 % were only able to read at basic competence level (MESVTEE, 2013).

The Government of the Republic of Zambia is also concerned because, literacy in many countries is regarded as a human right, a tool for personal empowerment and educational opportunities depend on literacy (UNESCO, 2014). Since educational opportunities depend on literacy, reading is a foundational skill for learning across subject areas. Children who are able to read have no problems in learning content subjects. They also become independent learners for life. However, if children fail to learn to read in the early grades, they fall behind and are likely to drop out of school (MESVTEE, 2013).

Due to the value attached to reading by the Zambian government, literacy is at the heart of basic education for all and is essential for eradicating poverty, reducing child mortality, curbing population growth and achieving gender equality and ensuring sustainable development, peace and democracy (MOE, 1996). Learning how to read however, does not happen in a vacuum but involves learners acquiring certain skills. According to the United States National Reading Panel (2000), these skills are phonological awareness, phonics, oral reading fluency, vocabulary and comprehension. The same skills mentioned above have been adopted in the current Primary Literacy Programme (PLP) and one of its goals is for learners to be able to read simple sentences by the end of Grade 1(MESVTEE, 2013). This programme replaced the Primary Reading Programme (PRP).

Phonological awareness is among the skills needed for one to learn initial literacy and should be taught first before the other skills. Phonological awareness refers to the ability to perceive and manipulate the sounds of spoken words (Goswami & Bryant, 1990). It is awareness of the basic units of language such as phonemes, rhymes and syllables. Phonemic awareness is a subset of phonological awareness and refers to the ability to focus on the separate individual sounds in words (Konza, 2006). Phonological Awareness enhances word attack skills. Since it is taught orally, it prepares learners to read and write words in a much natural way. Phonemic awareness is also a useful decoding skill which supports literacy development in learners.

It is claimed that if taught to learners, phonological awareness skills are important to learning how to read in any language using the alphabetic writing system. On the contrary, if phonological awareness is not taught, learners may have problems breaking through to literacy.

1.2 Statement of the Problem

Much of the research in reading has been done in European languages and in particular English. Some research seem to suggest that the acquisition of phonological awareness skills in pre-school is a strong predictor of reading success for children learning to read in languages with less transparent orthographies such as that of English than in transparent ones. Even though the Ministry of General Education has incorporated skills of phonological awareness in the teaching of initial literacy, it is not known if there is a relationship between phonological awareness and reading ability in a transparent orthography like Kiikaonde. Stated as a question, the problem under investigation was: What is the relationship between phonological awareness and reading ability? Does it predict better reading ability?

1.3 Purpose of the Study

The purpose of the study was to establish the relationship between phonological awareness and reading ability in selected primary schools of Solwezi District.

1.4 General Objective

The general objective of the study was to establish the relationship between phonological awareness and reading ability in Kiikaonde in selected primary schools of Solwezi District.

1.5 Specific objectives of the Study

The objectives of the study were to –:

1. Establish the relationship between phonological awareness knowledge and reading ability in a transparent orthography of Kiikaonde.
2. Identify components of phonological awareness that teachers teach during literacy lessons.
3. Ascertain which strategies were being used to teach phonological awareness activities.
4. Find out if teachers had received training in phonological awareness either in college or in service workshops.

1.6 Research Questions

1 Is there a relationship between phonological awareness knowledge and reading ability in a transparent orthography of Kiikaonde?

2 Which components of phonological awareness activities do teachers teach?

3 Which strategies are teachers using to teach phonological awareness activities?

4 Have teachers received training in phonological awareness in college or in-service workshops?

1.7 Significance of the Study

This study is important as it may contribute to the literature on the relationship between phonological awareness and reading ability in a transparent orthography since to my knowledge, this topic has not been fully researched in Bantu languages. Findings of the study may inform policy makers and other stake holders on the importance (or lack of) phonological awareness teaching in schools.

1.8 Theoretical Framework

The Constructivist theory forms the basis of phonological awareness and reading instruction. Constructivism is an epistemology of learning fixed on the basis that reflection on experiences while constructing our own understanding of the world allows learners to formulate a more concrete meaning of the subject matter. Constructivism as a theory deals with the cognitive processes in which the learner develops his or her knowledge. Jerome Brunner the proponent of the theory argues that learning is an active process in which learners select and transform information (Brunner, 1966).In our case, it has to do with how children learn to connect phonological awareness tasks to decoding letters. This theory falls in the cognitive domain and learners are considered to be creators and thinkers through the use of inquiry, and the role of experience in learning. The theory also suggests that opportunities should be created for learners to construct new knowledge and new meaning from authentic experiences.

Some of the implications of the constructivist theory on the teaching of phonological awareness are that the instructions given to learners should be appropriate to their level. This means that the teacher should plan and prepare appropriate materials in phonological awareness according to the

difficulty that matches the learner's level. Secondly, the content or material should be presented to learners in a sequence so that they have an opportunity to construct and acquire knowledge. Teachers should assist learners in building their knowledge until this assistance becomes unnecessary. Since teachers have to assist learners in acquiring phonological awareness, they should possess this knowledge themselves.

1.9 Delimitation of the Study

Heppner and Heppner (2004) defined delimitations as the parameters that a researcher chooses to place on the study. Delimitations are used to describe the limits of the study. The study was conducted in Solwezi District of North Western Province of Zambia.

1.10 Limitations of the Study

One limitation to this study was that the research findings may not be generalized to other parts of the country because the study was conducted in one district among many districts in Zambia. Secondly, the sample size was small and drawn from three schools hence the findings may not be generalized. The study mainly focused on establishing the relationship between phonological awareness and reading ability and other factors may have been overlooked.

1.11 Operational Definitions

In this study, the following terms should be interpreted as follows;

i. **Phonemic awareness** -The ability to manipulate sounds or phonemes in spoken words.
ii. **Phonological Awareness** - The ability to perceive and manipulate sounds in spoken words and awareness that language is made up of words, syllables, rhymes and Sounds (phonemes).
iii. **Literacy** - The ability to read and write.
iv. **Initial Literacy** - Learning to read and write the first time and usually happens when the child is enrolled in school.
v. **Phonological Awareness Instruction** - Any teaching, explanation, advice and help given to a learner by a teacher in phonological awareness.

vi. **Basic Education** -The education that a learner receives from Grade 1 to 9.

vii. **Teaching** -The process or imparting knowledge and skills to learners

1.12 Summary of the chapter

This chapter presented an introduction to the study by outlining the major features of the study. The background to the study was given and the statement of the problem was stated. The chapter also presented the purpose of the study followed by specific objectives and research questions. The significance of the study and theoretical framework were discussed. The delimitations and limitations of the study were explained. For a better understanding of the study, operational terms have been defined.

The chapter that follows provides a review of relevant literature to the problem under discussion.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction to literature Review

This chapter reviews relevant literature on the relationship between phonological awareness and reading ability. This literature review was used by the researcher as a tool to identify gaps that exist in the studies conducted by others. This section also provides a critique of the material under review. The literature is reviewed according to the objectives of the study. The review is subdivided into the following categories-:

(i) Components of Phonological and Phonemic awareness.
(ii) Relationship between Phonological Awareness and Reading ability.
(iii) Effective teaching strategies in relation to Phonological Awareness
(iv) Teacher knowledge in Phonemic and Phonological awareness.

2.1 Components of Phonemic and Phonological Awareness

Phonemic awareness is a component of phonological awareness and it refers to knowledge of words at the level of individual sounds – how to segment, blend or manipulate individual sounds in words (Adam et al, 1998). Goswami & Bryant (1990) define phonological awareness 'as the ability to perceive and manipulate the sounds of spoken words'. It includes awareness of the basic units of a language such as phonemes, rhymes and syllables. Phonological awareness has been understood primarily by the components or tasks that have been used to measure it. These components are segmentation, blending, substitution and deletion. According to Bruce (1964), phonemic deletion tasks involve presenting someone with a spoken word and asking them to delete a particular sound in the word. Segmentation involves breaking whole words down into their constituent sounds. Blending on the other hand constitutes being able to combine isolated sounds together to form whole words. Castles (2003) suggested that awareness of phonological tasks such as segmentation, blending, deletion and substitution will not make children to be able to read but that it makes them to be better at learning to read at a later date.

According to Adams et al (1998), children who come to school with a well-developed phonological awareness have a head start making sense of how sounds and letters operate in print. He argued that a child's level of phonological awareness is one of the strongest predictors of future reading success in grade one and beyond. Skills in phonemic and phonological awareness can be developed in a child through teaching instructions in phonological awareness. Children who have problems in phonological awareness can often learn phonics (knowledge of letters and sounds) but they have difficulties using this knowledge as they read and spell (Adams et al, 1998). Therefore, if students are to use letters and sounds as a source of information to read and spell in any alphabetic language, they should develop phonemic and phonological awareness.

The question that has arisen in many studies relates to aspects of phonological awareness that predict reading and spelling acquisition. Wagner et al (1994, 1997) conducted a study on phonological awareness and reading in which he sought to find out which sub-skills (segmentation, blending, deletion and substitution) related more to later reading and spelling development. Using a single structural equation model with pre-existing reading ability and spoken vocabulary controlled for, their findings were that sound deletion, categorization and segmentation (phonological analysis) had a unique influence on first grade reading and sound blending had a unique influence on second grade reading. Therefore, their findings seemed to suggest that segmentation skills are important in early reading acquisition and blending skills for later acquisition.

Perfetti et al (1987) however, contradicted Wagner's findings. Perfetti et al (1987) conducted a study in which they sought to examine the relationship between two phonemic awareness sub skills (deletion and blending) and learning to read in a group of 82 first grade English children. After comparing both the two phonemic awareness skills and reading skills at two points in a year, they found that phoneme deletion skills were a product of reading ability while phoneme blending seemed to support later reading. Therefore, the two studies discussed above seem to suggest that all the phonological awareness components make a contribution to literacy acquisition.

The studies conducted by Wagner et al (1994) and Perfetti et al (1987) are relevant because they informed our study that all the phonological awareness components (sub skills) make a contribution to reading ability. This study also investigated to some extent which components of Phonological awareness predicted reading acquisition. We also wonder which phonological awareness sub skills (components) are being taught in schools found in Solwezi. This study aims to fill this gap

2.2 Relationship between Phonological Awareness Knowledge and Reading Ability

A number of studies which have been carried out in English and other inconsistent orthographies suggest that there is a relationship between phonological awareness training in leaners and future success in reading. For example, Share et al (1984) assessed English kindergarteners on many variables such as phonemic segmentation, letter name knowledge, memory for sentences, vocabulary, fathers' occupational status, parental reports of reading to children and television watching when they entered school. Using regression analysis, they examined which of these variables best predicted how well children will be reading at the end of Kindergarten and at the end of first grade. The findings in this study were that phonemic awareness which is a component of phonological awareness was the top predictor of reading along with letter knowledge. The correlation between phonemic awareness and reading achievement in kindergarten was 0.66 while that in first grade learners was 0.62.

Lundberg et al (1988) trained 235 Dutch kindergartners in 12 different classrooms in Denmark. The children were drawn from a lower socio-economic working class population and trained in phonemic awareness. These six- year- old children were trained in phonological awareness for 15 to 20 minutes for the whole academic year. A control group of 155 children from different kindergarten classrooms was also drawn from the same socio-economic background as experimental children. However, these children were not included in the training programme. All the children were pretested on a number of phonemic awareness tasks at the beginning of the kindergarten year. After 8 months, all children were given a reading achievement test and results showed that children who had received training in phonemic awareness in Kindergarten significantly outperformed those children who had not participated in the training. The study also revealed that children who were trained in phonological awareness were superior spellers.

Snider (1997) also conducted two longitudinal studies among English Children and sought to examine the relationship between phonemic awareness and reading achievement in the early grades. In the first study, he compared scores on a test in phonological awareness given to kindergaden learners with scores of a standard reading achievement test given to the same learners in second grade. The test in phonological awareness was administered to each student individually. The reading achievement test was administered to second grade learners as a group by their classroom teacher. A series of stepwise regression analyses were done and the findings revealed that there was a significant correlation between performance in phonemic awareness tasks and reading achievement in second grade. In the second study, a 3 year follow up was made on the same children who scored in the lowest quartile in phonological awareness tasks and it was established that most of these students could not read fluently. The learners who scored in the lowest quartile were the only ones who were tested in the second study to demonstrate that early identification of children who lacked phonological awareness is useful for providing appropriate interventions to learners at risk. Those learners who performed poorly in phonological awareness in kindergarten were not fluent in reading even after a 3 year follow up was made. The results of this research agreed with previous research by confirming the role phonemic and phonological awareness plays in later reading achievement.

Matafwali (2005) conducted a research and one of the objectives was to ascertain the role of phonological awareness in the acquisition of reading skills. The study wanted to find out if phonological awareness is the major predictor of reading success or failure .One hundred and six Grade Three learners who were randomly selected in four schools in Lusaka and Chongwe, (Zambia) were tested using the Basic Skill Assessment Tool (BASAT) to measure among others phonological awareness in the learners. The BASAT instrument is composed of subtests in alphabetic principle, phonological awareness, working memory and reading comprehension. The phonological awareness tasks included syllable segmentation, identification of initial and ending sounds in words and blending sounds in words. The learners exhibited poor performance in syllable segmentation as only 25% of the 106 tested managed to segment words into syllables. Further, 43.3% of the learners were able to identify initial sounds and 34% were able to identify ending sounds. Out of the 106 children, only 18.9 % of the learners were able to blend sounds into words while 36.8% scored zero. Further, correlation analysis was used to investigate the

underlying relations between variables which are attributed to reading acquisition and it was found that variations in phonological awareness strongly correlated with variations in reading and spelling ability. Overall, the study revealed that children showed significant weakness in phonological awareness, word reading, reading comprehension and spelling skills. Her study also confirmed claims made by other studies that phonemic and phonological awareness is important for the development in learning to read and spell words. The study conducted by Matafwali informed our study on the role of phonological awareness in the acquisition of reading skills. In this study however, we were interested in finding out if there was a relationship between performance of learners in phonological awareness tasks and reading ability.

Although studies have revealed that phonological awareness is a strong predictor of reading success in English, other scholars have argued that learning to read and write in transparent languages such as Greek seems to differ from learning to read and write in English (Porpodas, 2001; Seymour et al, 2003).A transparent language is one that has a one -to - one correspondence between a letter and a corresponding sound. English has an inconsistent grapheme - phoneme relationship because one sound can be represented by several letters of the alphabet while Finnish, Italian, Greek have a writing system which is consistent or transparent (Porpodas, 2001). Languages such as Greek which have a one -to-one correspondence between a letter and a sound are said to have a "shallow" orthography while English language is said to have an inconsistent or 'deep' orthography because there is a less correspondence between letters and the sounds they represent. Due to different orthographies between English and Greek, Seymour et all (2003) argued that the processing strategies that young Greek -speaking children use in reading may be different from those used by English Speaking Children. It is against this background that there has been some debate over the relevance of phonological awareness instruction in learning to read and write in languages that have a one - to - one correspondence between letters of the alphabet and the sounds they represent. Their argument is that in transparent languages, learners do not get confused recognizing the sounds which letters of the alphabet represent because there is a one - to - one correspondence. This is not the case with languages such as English which do not have a one - to - one correspondence between a letter and sound.

Among those that support the view that phonological awareness is relevant only in learning to read in languages with consistent orthographies include Landerl. Landerl (2000) conducted a

study in which he wanted to find out the contributions of orthographic consistency to learning to read by comparing English and German children. Seventy six (76) children from both languages were sampled for the study. Both German and English children had received instruction in their native language. These Grade One learners with ages ranging from seven to eight were given a reading task which was developed by Wimmer and Goswami (1994) and translated in the two languages. Learners were asked to read non-words, number words and numerals. The findings were that German children who had received instruction in a language with a transparent orthography performed better than English children in reading accuracy and speed. The study also found that English children had more difficulties with phonological decoding than German children indicating a relevant influence of orthographic consistence. It was deduced from this study that it was the English children who needed phonological awareness and not the German children. Phonological decoding involves two things namely knowing the grapheme - phoneme correspondence and the ability to blend the translated phonemes into syllables (phonological assembly).

Huang and Hanley (1995) also carried out a comparative study on the factors underlying reading acquisition in Chinese and English. They studied the relationship between phonological awareness, visual skills and reading ability in children living in Hong Kong and Taiwan learning to read Chinese and a group of British children who were learning to read English. They found that the strongest predictor of reading development in Chinese children were visual skills. On the other hand, the strongest predictor of reading development for British children was performance in phonological awareness tasks (rhyme and phonemic segmentation). This study suggested that the nature of the relationship between phonological skills and reading development varies with the transparency of the orthography that is being learnt. It should also be mentioned that Chinese has a different writing system and Chinese characters represent morphemes or syllables but English uses an alphabetic system. Other studies conducted by Georgiou, Parrila & Papadopoulos (2008); Mann & Winnmer (2002) also found that phonological awareness was only important in languages with an opaque orthography such as English and not in other languages such as German or Greek.

However, Johannes et al (2010) conducted a study in which they sought to shed new light on whether predictors of reading development varied with orthographic transparency. They also

wanted to find out if phonological awareness was the universal predictor of reading development. The study was conducted in five European countries namely Finland, France, Hungary, Netherlands and Portugal and involved the languages spoken there. A sample of 1,265 Grade Two children was drawn from all the five countries. The sample consisted of 166 Finnish children, 181 French children, 139 Hungarian children, 597 Dutch children and 182 Portuguese children. These children had mean ages ranging from 92.4 months to 107.6 months. The children were tested in word reading, phonological decoding and phonological awareness. The tests were conducted in the second half of the year. After regression analyses were done on the results, it was found that phonological awareness was a key component of reading acquisition and decoding in all languages they investigated although its influence was weaker in transparent than in opaque writing systems.

Since Kiikaonde, like other Zambian languages, has a transparent orthography, it would be interesting to see whether findings from our study would confirm the above findings. Johannes et al (2010) also concluded that predictors of reading performance, at least in alphabetic languages are relatively universal although their precise weight varies systematically as a function of script transparency.

The research conducted by Johannes et al (2010) could not entirely confirm the claim by Caravola et al (2005) that phonological awareness is the most important factor in all languages because it was the most important factor in only four out of five languages considered in their study. Furthermore, the research also indicated that the significant influence of phonological awareness in all languages they researched on refuted previous claims that phonological awareness plays little or no role in transparent languages such as French and Portuguese which have a transparent orthography.

Other scholars who supported and reported that phonological awareness had influence across languages are Petel et al (2004) and Caravolas, Volin & Hulme (2005). Caravolas & Bruck (1993), Hulme and Snowing (2006) and Papadopoulus (2001) also demonstrated in their studies that phonological awareness is a strong predictor of children's progress in reading regardless of the languages in which they are learning to read.

Conclusions drawn from the studies discussed above suggest that while phonological awareness is considered to be important for learning to read in opaque orthographies such as English, other studies suggest that it may not be the case with languages with transparent orthographies such as Greek. The findings from the current study, therefore, may contribute to this debate regarding the contribution of phonological awareness to reading ability.

2.3 Effective Teaching Strategies in Relation to Phonological Awareness.

The teaching of phonological awareness is important for the successful acquisition of reading and writing skills. Teresa et al (2000) states that phonological awareness instruction is most effective when students are involved in a variety of fun and engaging activities that enhance the notion of oral language play. These activities work well when they are tied to classroom literacy experiences. Lungberg (1995) also suggests that explicit instruction in phonological awareness prior to or alongside reading instruction generally develops segmentation and deletion skills which are critical for reading and writing. He further suggested that the teaching of phonological awareness should focus on teaching learners to segment, blend, delete and substitute sounds as they play with words. Teresa et al (2000) also argues that teachers should ensure that learners participate in a variety of reading, writing and oral language activities if phonological awareness is to develop in them. The call for learners to be involved in the learning process is also supported by other scholars such as Brunner.

According to Brunner (1961), Constructivism holds the view that in the teaching process, the teacher is a facilitator of learning while the learner constructs knowledge through activities in the classroom and experience. The learner is treated as a participant in the learning process and not a passive listener. Munsaka (2011) also says that teachers need to ensure that learners remain at the centre of the teaching- learning process. Learners should be viewed as active participants in the learning process and not passive receivers of information. Therefore, the teacher should not dominate the class but use learner – centred approaches were his/her instructions in class take into account the learners as partners in classroom activities.

The various reading, writing and oral language activities that learners should participate in include teacher read a louds, shared reading, shared writing and interactive writing. Teachers can choose appropriate books for read – a louds after which they can focus on the identification of

syllables and sounds to be learnt at that time. During shared reading and when the teacher is introducing a story, poem or song, he/she can ask learners to listen for words that all start with a particular sound to be taught. Learners can also work together in pairs or with the teacher to write letters and their corresponding sounds. When learners are involved in these various reading, writing and oral activities, their levels of phonological awareness also improves (Yopp, 1995).

For example, Teresa et al (2000) conducted a study in which they examined the teaching of phonemic awareness through conversations embedded within meaningful literacy experiences of shared reading and writing. The study was a group experimental design. Thirty six (36) children aged five to six from four early childhood programmes participated in the study and all the children were considered non-readers because they had scored a raw score of less than two on the Clay (1979) Quick Screen Test. Eighteen (18) children were exposed to treatment while the other eighteen (18)were not. All the children in both the treatment and no treatment group continued to receive their normal kindergarten activities. The eighteen (18) children in the treatment group were taught phonemic awareness in conversations during book reading and writing for 30 minutes, three times a week in a period of seven weeks. After seven weeks, the thirty six (36) children were tested in first sound identification, last sound identification, sound segmentation and sound deletion The results of this research showed that the instruction given to the treatment group led to gains in their phonemic awareness compared to the no –treatment group.

Another important aspect in the teaching of phonological awareness is that teachers teaching phonological awareness should be effective and resourceful. This is mainly because the quality and effectiveness of the teaching process depend on the competence, resourcefulness and commitment of teachers. What is meant by being resourceful is that the teacher is aware of the many teaching strategies/ techniques at his/her disposal and employs the most effective and suitable at the right time during the teaching of phonological awareness. Some of the strategies that can be employed during the teaching of phonological awareness include demonstrations as learners are shown how to blend words in group or pair work during shared reading (Yopp, 1995).

Kayungwa (2002) also mentions that an effective teacher is one who is knowledgeable, understands learners, involves them in the learning process and is able to adjust teaching to their abilities. This study aims to establish the strategies that teachers are using to teach phonological awareness in schools.

2.4 Teacher Knowledge in Phonemic and Phonological Awareness

Teacher knowledge in literacy skills such as phonological awareness is very important if effective teaching is to take place. Teachers who have knowledge in the subject area they teach are likely to carry out the teaching task effectively .Further, a successful literacy programme largely depends on the teacher's role in the delivery of quality instructions in literacy (MESVTEE, 2013). Therefore, student teachers in colleges and universities should be equipped with the necessary skills and knowledge needed to teach initial literacy in schools. Many studies such as the one conducted by Borko et all (1988) found that student teachers who had a strong subject knowledge tended to plan lessons well and were more responsive to the needs of particular groups of pupils. Grossman, Wilson & Shulman (1989) also found that student teachers with specialist knowledge tended to teach it in a way which encouraged children to develop complex conceptual structures on their own. It is however, worth mentioning that although many studies have indicated that teacher knowledge is important for effective teaching of literacy, this knowledge cannot be acquired if teachers are not trained. It is for this reason that this study wanted to find out teacher's knowledge in the area of phonological awareness.

Phonemic and phonological awareness knowledge is also very critical to a teacher because these skills are a foundation for building reading skills (MOE, 2013). For example, a study conducted by Duhaze (2014) in West Africa wanted to find out whether training teachers in using scientific research on phonological awareness and letter names to resolve reading difficulties for students had an effect on learners. The findings showed that the training of teachers had real effects on pupils. The results obtained suggested that the training of teachers from West Africa had a measurable impact on learners. Learners who were taught by these teachers who were trained improved in their reading levels. The current study intends to establish whether teachers in Solwezi have been trained in phonological awareness.

There are many other scholars that have contributed to literature on the need for pre- service and in-service teachers to have knowledge in the subject they teach. Washburn (2011) conducted a survey in which he wanted to examine elementary school pre service teachers' knowledge of basic language constructs related to literacy (phonological awareness, phonics, morphology) and their perceptions and knowledge about dyslexia. After examining ninety-one pre - service student teachers, findings from the study indicated that pre service teachers on average were able to display implicit skills related to certain basic language constructs such as syllable counting but failed to demonstrate knowledge of others such as the phonics principle. One implication of the finding was that educators involved in the preparation of pre - service teachers should know that content knowledge learned in pre service preparation programmes plays a role in later in service planning and implementation of the curriculum and assessments (Darling- Hammond, 2000).

Related to the same on the need for teachers to be trained, Al-Otaiba & Luke (2007) and Spear –Swerling & Bruce (2004, 2006) also examined the effect of University course work on pre service teachers' knowledge. Their findings were that pre - service teachers who had received instruction in basic language constructs (phonological awareness, phonics and morphology) related to word structure and who were engaged in tutoring elementary aged struggling readers did significantly better on counting syllable types than pre service teachers who did not receive instruction.

Lyon (1999) states that due to the vast knowledge on the importance of teaching phonological awareness to children learning initial literacy, teacher preparation programmes should ensure that teachers possess the foundational knowledge necessary for providing early systematic reading instructions. If a teacher has to teach effectively, he/she needs to possess the necessary knowledge in phonemic and phonological awareness. There was a study that was conducted by Lyon regarding perceptions and knowledge of teachers in phonological awareness .Lyon (1999), recommended that teacher preparation and professional programmes must develop preparation programmes to foster the necessary content and pedagogical expertise at both pre service and in-service levels in order for them to deliver effectively.

Swerling et al (2005) also proposes that investigating knowledge that teachers have in literacy is vital because it has obvious implications for teacher education and professional development in

the field of literacy and this is the basis of their study. Their study assessed teacher's literacy - related disciplinary knowledge and self-perceptions in relation to their preparation and experience. Using 132 participants, the study sought to find out if well prepared or experienced teachers perceived themselves as more knowledgeable than teachers with less preparation and experience. After these teachers were tested and a regression analysis done, the research findings were that high background (experienced) teachers scored below average on the five knowledge tasks which included phonemic awareness. This study demonstrated that even experienced teachers who perceive themselves as more knowledgeable can perform poorly if they are not trained in the area they are teaching. The study further revealed that some of these teachers were specialists who were even helping other teachers teach reading.

The studies conducted by Washburn (2011) and Swerlling et al (2005) informed our study on the need to train teachers in the subject areas they teach. Despite informing our study on the need to train teachers in the areas they teach, their studies did not establish whether teachers had received training in phonemic and phonological awareness at college or during their in-service period. We wonder whether these teachers were trained in phonological awareness and this forms the basis of our study. This study intends to fill these gaps.

2.5 Summary of the Chapter

This chapter has reviewed literature relevant to the relationship between phonological awareness and reading ability. A brief background was given followed by a review of literature related to the components of phonemic and phonological awareness. The relationship between phonological awareness and reading ability was discussed with reference to scholarly research findings and recommendations. Finally, literature related to effective teaching strategies in relation to phonological awareness and teacher knowledge was reviewed.

CHAPTER THREE

METHODOLOGY

3.0 1ntroduction to Methodology

This chapter outlines the proposed methods which were used in the study. According to Kothari (2004), research methodology is a way to systematically solve the research problem. It can be viewed as a science of studying how systematically research is done. In this study, the methodology includes the research design, study population, study sample, sampling procedure, and data collection instruments and data analysis. Further, other important aspects such as the reliability and validity of the instruments have been explained. Ethical issues in the study have also been discussed.

3.1 Research Design

Kothari (2004) defines a research design as the conceptual structure within which research is constituted; it provides the blue print for the collection, measurement and analysis of data. This study used a mixed method and employed the Concurrent Triangulation Design. According to Creswell (2009) the Concurrent Triangulation Design is a design were both qualitative and quantitative data is collected concurrently and the two data basses are compared to find if there are convergences, differences or combinations. In this design, both qualitative and quantitative data is collected concurrently or at the same time and then this data is integrated in the discussion phase. The data collected from tests in reading and phonological awareness (quantitative) and that collected from interviews and observations (qualitative) was integrated in the discussion phase. One of the reasons why the Concurrent Triangulation design was used was to enable us to have a better understanding of the research problem by converging both quantitative trends and qualitative views of the problem under investigation.

3.2 Target Population

Mc Millan and Schumacher (2001, 67) defines a population as “a group of elements or cases, whether individuals, objects or events that confirm to specific criteria and to which researchers

intend to generalize the results of the research". White (2003, 56) also defines a population as "a universe of units from which the sample is to be selected". The target population was drawn from all primary schools in Solwezi District. The target population consisted of teachers teaching lower primary (Grade 1-4), Grade One and two learners.

3.3 Sample size

According to Leedy (2005), a sample is a subset of a population. A sample size may be defined as the size of the subset of a population. Khotari (2004) states that a sample of a research should be truly representative of population characteristics without any bias so that it may result in valid and reliable conclusions.

In the study, three primary schools were selected in Solwezi District and all of them were urban schools. This was so because they were easy to access and all the teachers in these schools were believed to be implementing the Primary Literacy Program using the National Literacy Framework of 2013. From the three schools, 15 teachers teaching lower primary were sampled for interviews, meaning 5 teachers from each school. All teachers teaching Grade One in each of the three schools were among the teachers who were sampled. Teachers teaching Grade One were sampled because they are the ones involved in teaching initial literacy at the earliest stage.

90 Grade One and Grade Two learners were also sampled for a test that is 30 pupils from each of the three schools. Of the 30 pupils sampled in each of the three schools, 15 were Grade 1 learners and 15 were Grade 2 learners. In total, out of the 90 pupils sampled in all the three schools, 45 were Grade One learners while 45 pupils were Grade two learners. The total population of the participants in the study was 105 as shown in Table 1.

Table 1: Distribution of Sample Size by Gender

Category of Sample Size	Female	Male	Total
Teachers	15	-	15
Pupils(Grade 1)	21	24	45
Pupils (Grade 2)	24	21	45
Total	**60**	**45**	**105**

3.4 Sampling Procedure

Both simple random and purposive sampling were used in the study. Simple random sampling was used to come up with the three schools. According to White (2003), simple random technique is a selection technique that provides each population element an equal chance of being included in the sample. This was done by getting a list of urban primary schools and conducting a raffle draw to come up with the three. Simple random sampling was also done to come up with the 30 pupils who were sampled for the test from each school. Lists of pupils' names present on that day were obtained and written on pieces of paper. A ruffle draw was conducted to come up with the pupils who were tested.

Purposive sampling was used to come up with teachers teaching Grade One. According to Kothari (2004), purposive or deliberate sampling involves deliberate selection of particular units of the universe for constituting a sample which represents the universe. The researcher used purposive sampling because in this method, the researcher was targeting a group of people believed to be reliable for the study (Kombo & Tromp, 2006) .Secondly, the choice of teachers who teach Grade One was because these teachers were directly involved in the teaching of initial literacy.

3.5 Research Instruments

Data was collected using interview guides, lesson observation check lists and tests as instruments.

3.5.1 Semi structured interview guides

Semi structured Interview guides were used to solicit views on whether teachers' had received training in phonemic and phonological awareness at college part of continuous professional development. Semi structured interviews were used because, according to Kombo and Tromp(2006) they are flexible and consist of both open and closed -ended questions. While closed ended questions were aimed at getting in -depth information, open ended questions enabled the researcher to ask follow up questions. By using semi structured interviews, which have open and closed –ended questions, the researcher hoped to get a complete understanding of the issue under investigation. Refer to appendix C for the interview guide.

3.5.2 Tests

A test is an instrument used to measure a specific task. The tests which were administered were aimed at finding out how much learners know in phonological awareness and reading. Tests in phonological awareness and reading were used to establish the relationship between phonemic awareness knowledge and reading ability. The test in phonological awareness was composed of three tasks namely sound identification, syllable counting and segmentation. The sound identification task involved identifying the first and last sounds. The syllable counting task involved counting the number of syllables in spoken words while the segmentation task involved segmenting words. The reading test was composed of two sections. The first one involved pupils reading words made up of one, two, three and four syllables. The second section involved reading simple sentences. Refer to appendix F and E for the reading and phonological awareness test respectively.

3.5.3 Lesson Observation Checklist

According to Kombo and Tromp (2006), an observation is a tool that provides information about actual behaviour. Lesson observation checklists were used to record the teaching strategies teachers were using to teach phonemic and phonological awareness. The observations were structured and only those aspects which were appearing on the observation check list were recorded. Lesson observation checklists were also used to establish if teachers are teaching phonological awareness and record the component of phonological awareness that teachers were teaching during lessons. Refer to appendix D for the lesson observation check list.

3.6 Validity and Reliability of Instruments

According to Khotari (2004) validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested. Khotari (2004) also states that a reliable instrument is one that provides consistent results. To ensure validity and reliability of the study and instruments, the following were done. The interview guide and observation check list were first discussed with the supervisor to ensure their appropriateness (Polit et al,2001).Secondly, multiple uses of data collection strategies and data sources or triangulation were used by the researcher in order to obtain a more complete picture of what was being studied and to cross- check information. The test instrument was also pre tested at a school which had similar characteristics with the schools where the research was conducted to look for weaknesses in the instrument. Further, the split –half reliability procedure was done by taking half of the test scores and analyzing that half as if it were the whole thing. The results were compared with the overall analysis and they were similar to what has been presented in this study.

3.7 Data Collection Procedure

According to Kombo and Tromp (2006), Data collection refers to the gathering of specific information aimed at proving or refuting some facts. The purpose of collecting data was to help the researcher clarify the facts.

Permission was sought from relevant authorities at the District Education Board Secretary (DEBS) of Solwezi to carry out the research in schools. The researcher later reported to the Head

teachers of the schools where data was to be collected. A letter of permission from the DEBS office was presented to the Head teacher of the school after which permission was granted. The participants were briefed about the nature of the study. This was followed by the seeking of informed consent from the teachers. The teachers were requested to sign informed consents on behalf of the pupils. The researcher then started collecting data using lesson observations checklists where notes were taken. The purpose of conducting these observations was to capture the strategies that teachers were using to teach phonological awareness. Secondly, observations were also used to establish the components of phonological awareness which teachers were teaching. Later, two tests in phonological awareness and reading were administered to the learners. The test in phonological awareness was administered to learners in a quite class by the researcher after which the reading test was administered individually to the learners. The purpose of administering these tests was to establish whether there was a relationship between knowledge in phonological awareness tasks by learners and their reading ability. Later on, interviews were conducted with the teachers to establish whether teachers had received training in phonemic and phonological awareness.

3.8 Data Analysis

Data analysis refers to examining the information collected in a research and making inferences and deductions (Kombo & Tromp, 2006).Both qualitative and quantitative methods of data analysis were used in the study. A qualitative approach was used to analyse verbal information that was collected from interviews with the teachers. From the interviews, the data gathered was grouped into identified themes and categories. Based on the identified themes and categories, interpretations and discussions were made. Some direct quotations from respondents' responses were included in the text. The lesson observations were also transcribed and presented verbatim. This helped to establish the strategies that teachers were using to teach phonemic and phonological awareness.

Data from the test were analyzed quantitatively using Excel 2010. Both descriptive and inferential statistics were used to analyse the data. Descriptive statistics were used to calculate means and standard deviations. A Simple Regression analysis was done to establish the relationship between phonological awareness knowledge and reading ability. According to

Kothari (2004), regression is the determination of a statistical relationship between two or more variables. In this research, a simple regression analysis was done because only two variables were being considered at first. The equation used was $Y=\beta_1 X_1 +\beta_0$ where y= reading scores, β_0 = intercept, β_1 =coefficient and X_1 =Phonological Awareness scores. The independent variable was phonological scores in Grade 1 and 2 learners. The dependent variable consisted of reading scores of Grade 1 and 2 learners. A multiple regression analysis was also done to establish which phonological awareness task accounted more to reading ability. The equation used was $Y=\beta_0 +\beta_i X_1 +\beta_2 X_2+ \beta_3 X_3+\varepsilon$ where Y = reading scores, β_0 = intercept, $X_{1=}$ sound identification, $\beta_{2\,=}$ syllable counting and $\beta_{3\,=}$ segmentation. To test for multi collinearity, the VIF value was calculated using the tolerance formula which is:

$$TOL = \frac{1}{VIF_j} = (1 - R_j^2)$$

The R_j was 0.06 (See appendix K). Therefore, TOL is 1 – 0.06 = 0.94. This figure of the TOL (0.94) is closer to 1 indicating that there was less or no multi collinearity.

3.9 Ethical Considerations

According to Leedy and Ormrod (2005), whenever human beings are the focus of investigation, it is important to closely look at the ethical implications of what we are proposing to do. Ethical issues mostly seek to find out how participants are going to be protected from harm, their right to privacy and informed consent. In order to uphold ethics, the researcher asked for approval from the District Education Board Secretary's' Office, Head teachers of schools and teachers to collect data. Ethical issues such as confidentiality, informed consent and participants' right to privacy were upheld. Data collected was not exposed to unauthorized persons and participants names or personal details were not captured as the interest of the study was the information. All participants were briefed about the purpose of the research and those who wished to withdraw at any time were not going be forced to change their positions.

3.10 Summary of the Chapter

An in –depth overview of the research methodology used in the study has been provided in this chapter. The research design, target population, sample size, data collection procedure, data preparation, data analysis and ethical considerations have been explained in this chapter. The next chapter provides the research findings.

CHAPTER FOUR

PRESENTATIONS OF FINDINGS

4.0 Introduction

The methodology which was adopted in this study was discussed in the previous chapter. This chapter presents the findings of the study .The chapter first presents the qualifications of the teachers and then the findings are presented in accordance with the research questions. These were:

(i) Is there a relationship between phonological awareness and reading ability in a transparent orthography of Kiikaonde?
(ii) Which components of phonological awareness activities do teachers teach?
(iii) Which strategies are teachers using to teach phonological awareness activities?
(iv) Have teachers received training in phonological awareness in college or in-service workshops?

A summary of the chapter will be given at the end of the chapter.

4.1 Qualifications of Teachers

Of the fifteen teachers interviewed, the largest proportion of the teachers 9 (60 %) had certificates in Education and 5 (33.3 %) had Diplomas in Education while 1 (6.7 %) had a bachelor's degree in Primary Education.

4.2 The Relationship between Phonological Awareness and Reading Ability

The first question sought to establish the relationship between phonological awareness knowledge and reading ability in Grade 1 and 2 learners. To answer this question, learners were tested in reading and phonological awareness. The results obtained by learners were presented in form of descriptive statistics such as performance scores, means and standard deviations. Further, a regression analysis was conducted on the test scores of 90 Grade 1 and 2 learners in reading and phonological awareness using the equation $Y=\beta_1 X_1 +\beta_0$. Phonological awareness was the independent variable while reading was the dependent variable. A multiple regression

was also conducted to establish which phonological awareness task predicted reading ability. The results will be presented in the order described above.

4.2.1 Performance Scores of Learners in Reading

Ninety (90) Grade 1 and 2 learners sampled from three schools were tested in reading. The learners were expected to read words with one, two, three and four syllables. Further, learners were expected to read simple sentences. The test was out of 25 and the results have been summarized in the Figure 1 below.

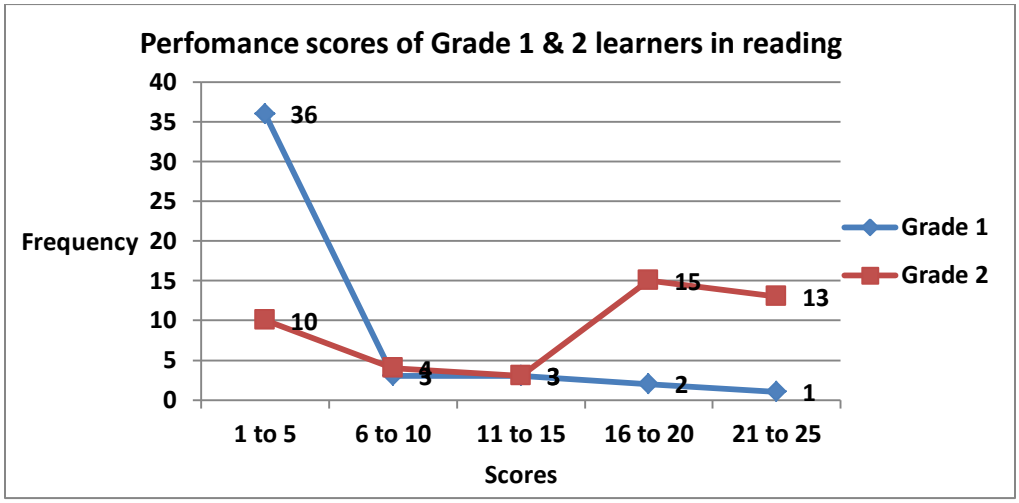

Figure 1: Performance Scores of Grade 1 & 2 Learners in Reading

Figure 1 above shows that while 36 Grade 1 learners scored between 1 and 5 in the reading test, only 10 Grade 2 learners scored in the same range out of a total score of 25. While 13 Grade 2 leaners scored between 21 and 25, it was only one (1) Grade 1 learner who scored in the same range.

4.2.2 Mean Scores and Standard Deviations for Reading

Mean scores and corresponding standard deviations were calculated from the test scores of reading. Out of a maximum score of 25 and a minimum score of 0, the overall mean score in reading in all Grade 1 and 2 learners were 3.75(S.D =5.45) and 15.17(S.D =8.14) respectively. The table below displays the means and standard deviations for learners in all the three schools.

Table 2: Means & S.D for Reading in Learners

	School A		School B		School C		Overall			
	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Min	Max
Grade 1	1	0.93	6	7.28	4.2	5.02	3.73	5.45	0	25
Grade 2	14	8.75	15.8	9.22	15.73	6.67	15.17	8.14	0	25

4.2.3 Performance Scores of learners in Phonological Awareness

Ninety (90) Grade 1 and 2 learners were tested in phonological awareness. The test was composed of three tasks namely sound identification, syllable counting and segmentation. The test was out of 35 and performance scores have been summarized in figure 2 below.

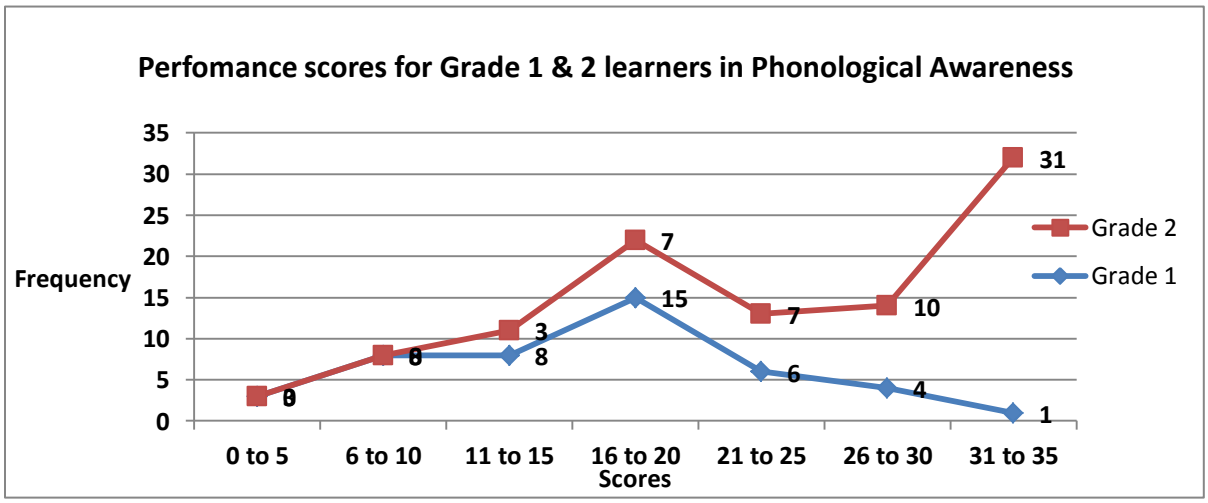

Figure 2: Performance Scores for Grade 1& 2 Learners in Phonological Awareness

Figure 2 above also shows that while 11(eleven) Grade one leaner scored between 1 and 10, there was no Grade 2 learner who scored between the same ranges. All Grade 2 learners scored above 11 out of a total score of 35 in the phonological awareness test. While 31 Grade 2 learners scored between 31 and 35, 1t was only one (1) Grade 1 learner who scored between the same ranges.

4.2.4 Mean Scores and Standard Deviations for Phonological Awareness

Mean scores and corresponding standard deviations were calculated from the test scores of phonological awareness. Out of a total of 35 marks, the overall mean scores for phonological awareness in Grade 1 and 2 learners were 15.98(S.D =7.65) and 26.6(S.D=6.43) respectively. Table 3 below displays the means and standard deviations for all learners in the three schools.

Table 3: Mean Scores & S .D for Learners in Phonological Awareness

	School A		**School B**		**School C**		**Overall**			
	Mean	**S.D**	**Mean**	**S.D**	**Mean**	**S.D**	**Mean**	**S.D**	**Min**	**Max**
Grad 1	13.47	4.12	17.93	9.01	16.53	8.64	15.98	7.65	0	35
Grad 2	24.2	7.01	20.6	6.51	29	5.09	26.6	6.43	0	35

4.2.5 Mean Scores and Standard deviations for Phonological Awareness Tasks

In the phonological awareness test, learners were tested in three tasks namely sound identification, syllable counting and segmentation. In the sound identification task, learners were expected to identify the first and last sounds in spoken words. The task was out of 10 marks. In the second task, learners were expected to count the number of syllables in spoken words. This task was out of 10 marks as well. In the last task, learners were required to segment words. The mean scores and standard deviations obtained by learners in the three schools have been summarized in the table 4 below.

Table 4: Means & S.D in Phonological Awareness Tasks

		School A		School B		School C		All Schools	
Tasks	**Grade**	**Mean**	**S.D**	**Mean**	**S.D**	**Mean**	**S.D**	**Mean**	**S.D**
Sound	**1**	7.2	1.32	5.4	2.47	7.7	2.08	6.6	2.43
Identification	**2**	8.27	0.85	6.87	1.78	8.33	1.62	7.82	1.62
Syllable	**1**	6.2	3.52	8.1	3.27	4.86	3.89	6.38	3.81
Counting	**2**	8.45	2.31	9.87	0.34	8.53	2.09	8.95	1.92
	1	0.73	0.68	4.2	4.45	4.53	4.92	3.15	4.22
Segmentation	**2**	7.47	4.83	9.8	5.44	11.8	3.62	9.69	5.01

4.2.6 Relationship between Phonological Awareness and Reading Ability

A linear regression analysis was carried out on test scores of phonological awareness and reading ability to establish if there was a relationship between these two variables and the results are presented in table 5 and 6 below.

Table 5: Regression Results for Grade 1 Learners

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***	***Upper 95%***
Intercept	**-3.89**	**1.42**	**-2.74**	**0.001**	**-6.74**	**-1.03**
Phon/ Aware	**0.48**	**0.080**	**5.94**	**<0.001**	**0.32**	**0.64**

R^2= 0.451; r = 0.671, p-value < 0.001

Table 5 above, shows that the results from the linear regression were significant. There was a positive correlation between phonological awareness and reading ability in Grade 1 (r =.67, p value < 0.001). The coefficient of determination was R^2 =0.45 suggesting that phonological awareness accounted for 45% of the variation in reading among Grade 1 learners.

Table 6 below presents results of the regression analysis carried out on test scores of phonological awareness and reading among Grade 2 learners.

Table 6: Regression Results for Grade 2 Learners

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	**-13.21**	**2.84**	**-4.65**	**<0.001**	**-18.94**	**-7.48**
Phon/ Aware	**1.07**	**0.10**	**10.27**	**<0.001**	**0.86**	**1.28**

R^2 =0.710; r = 0.843, p-value < 0.001

Table 6 above shows that the results from the linear regression were significant. There was a positive and strong correlation between phonological awareness and reading ability in Grade 2 learners (r = 84, p value < 0 .001). The coefficient of determination was $R^{2 =}$ 0.71 suggesting that phonological awareness accounted for 71% of the variation in reading among Grade 2 learners.

4.2.7 Phonological Awareness Tasks which Predict Reading

The study also established which phonological awareness task predicted reading ability in learners. In order to answer this question, multi regression analyses were conducted on the scores obtained by Grade 1 and Grade 2 learners in the three phonological awareness tasks namely sound identification, syllable counting and segmentation as independent variables and the findings are presented in the tables 7 and 8 below :

Table 7: Multiple Regression Results for Grade 1 Learners

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 99.0%*	*Upper 99.0%*
Intercept	**0.558**	**1.535**	**0.364**	**0.718**	**-3.588**	**4.704**
Sound ID	**-0.165**	**0.219**	**-0.752**	**0.456**	**-0.756**	**0.427**
Syllable coun	**0.166**	**0.135**	**1.226**	**0.227**	**-0.200**	**0.531**
Segmentation	**1.015**	**0.127**	**7.999**	**0.000**	**0.672**	**1.358**

r =0.81, R^2 = 0.65

Table 7 above shows that there was a relationship between all independent variables (sound identification, syllable counting and segmentation) and reading ability in Grade 1 learners as r =0.81. The coefficient of determination was 0.65 suggesting that the three independent variables accounted for 65% of the variation in Grade 1 learners. Although there was a relationship between all phonological awareness tasks with reading ability, it is the segmentation task that predicted reading ability as p-value < 0.001.

Table 8: Multiple Regression Results for Grade 2 Learners

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 99.0%*	*Upper 99.0%*
Intercept	**-9.490**	**4.654**	**-2.039**	**0.048**	**-22.061**	**3.082**
Sound Id	**0.763**	**0.415**	**1.839**	**0.0731**	**-0.358**	**1.883**
Syllable Count	**0.799**	**0.358**	**2.228**	**0.0314**	**-0.170**	**1.767**
Segmentation	**1.192**	**0.139**	**8.549**	**0.000**	**0.815**	**1.569**

r =0.86 , R^2=0.73

Table 8 above shows that the results from the multiple regressions were significant. There was a positive and strong correlation between all independent variables (sound identification, syllable counting and segmentation) and reading ability in Grade 2 learners (r = 0.86). Although there was a positive relationship between all independent variables (tasks) with reading ability, it is the segmentation task that predicted reading ability as p-value < 0.001.

4.3 Components of Phonological Awareness taught in Schools.

The second question of the study was to identify which components of phonological awareness activities were taught by teachers during literacy lessons if any. To answer this question, interviews were conducted with teachers. The interviews were recorded and transcribed. Lesson observations were also done for purposes of triangulating the information given by teachers during interviews.

(a). Findings from Oral Interviews.

Figure 1 below gives a summary of phonological awareness skills taught in schools as reported by the teachers interviewed.

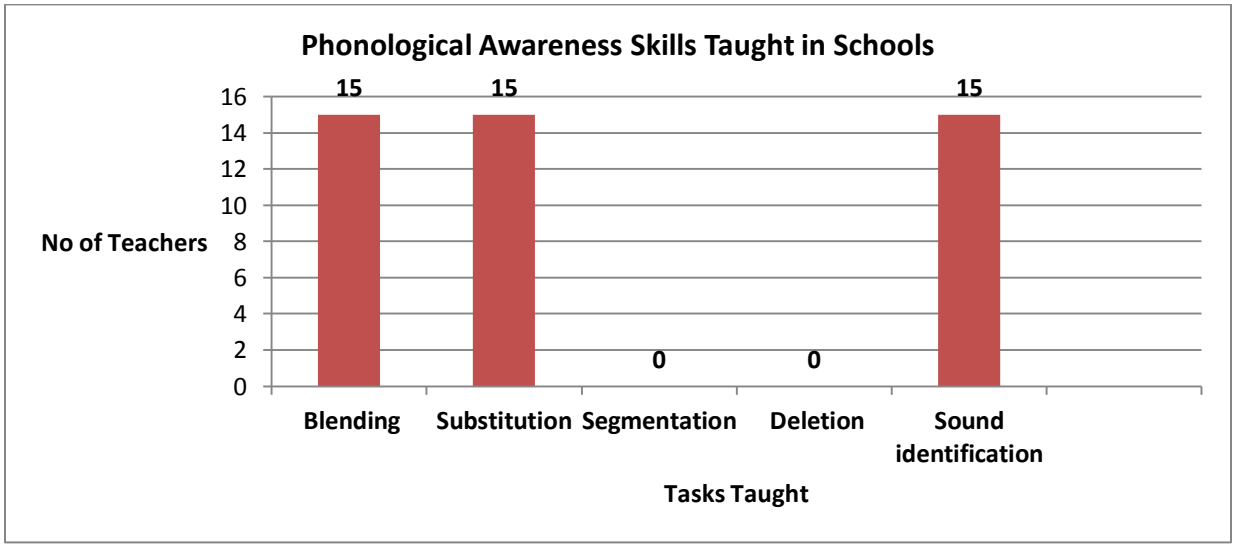

Figure 3: Phonological Awareness Skills taught in Schools

From figure 3 above, Fifteen (15) teachers interviewed mentioned that they teach blending, substitution and sound identification activities in literacy lessons. None of the teachers mentioned anything about segmentation and deletion activities. When asked what was meant by blending activities, one of the respondents said:

> *'Blending as an activity is where you combine two or more sounds to form syllables. Sometimes, you can combine syllables to form words. During literacy lessons, I teach learners to combine or blend sounds which they have learnt to form syllables. Syllables are also combined to form words. This is what I meant when I said blending'.*

Another respondent when asked about what she meant by substitution and sound identification, she said,

> *"Substitution is an activity in literacy where we substitute sounds in place of other sounds. For example, a learner can be asked to substitute the first syllable in the word 'teema' with 'mee' for example to make a new word 'meema'. This is done when we want to build new words from the sounds they have already learnt. Identification of sounds is an activity which involves identification of the first or last sounds in words".*

From the description made by these teachers, we can tell that the teachers were only teaching blending, substitution and sound identification or isolation. Asked about any other tasks used in

teaching phonological awareness, most of the teachers responded that the three were the components of phonological awareness they were teaching.

(b). Findings from Lesson Observations.

The following figure (Bar Graph) below gives a summary of phonological awareness skills taught in schools from the observations conducted.

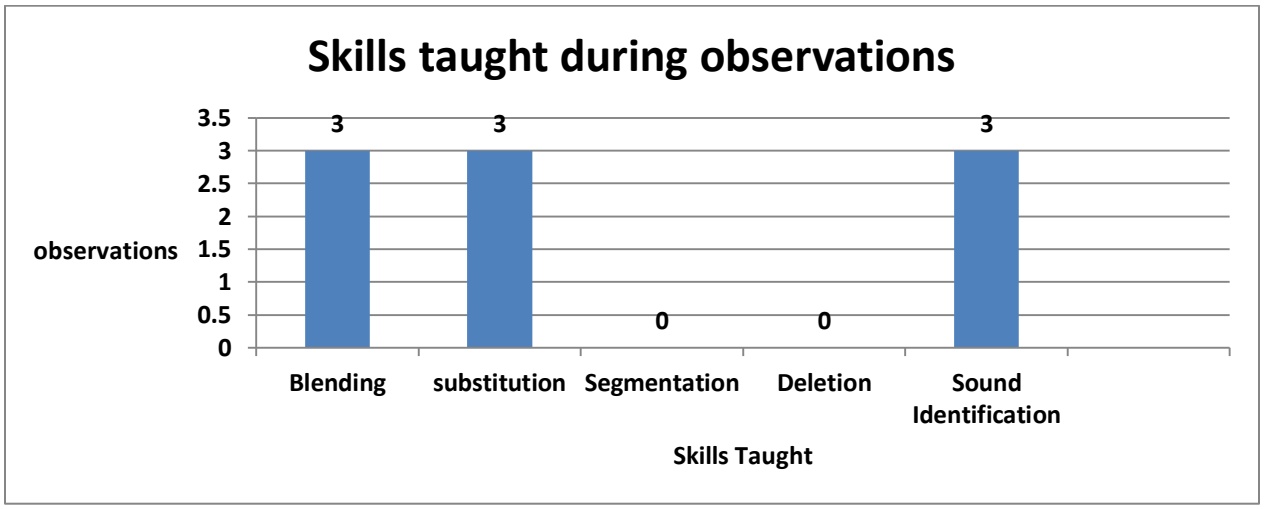

Figure 4: Phonological Awareness Skills Taught in Schools (Observations)

From the three lesson observations done in the three (3) schools, blending, substitution and sound identification activities which are sub skills of phonological awareness were being taught as shown in figure 4 above. In school A, an activity involving substitution was observed during the lesson. In this activity, the teacher with pupils substituted the vowel sound attached to the diagraph /*nd/* with other vowel sounds to come up with the syllables *nda, nde, ndi, ndo and ndu* (Kiikaonde). During the course of the lesson, the syllables were combined or blended to form words. For example, the syllables *ndo + chi* were blended to form *"ndochi*" ('dirty'). The same pattern was seen in the other schools. Lesson observations confirmed what the teachers claimed they were doing.

4.4 Strategies teachers are using to teach Phonological Awareness Activities.

The third question sought to escertain which strategies were teachers using to teach phonological awareness activities. In order to get this information, lesson observations were conducted in all the three schools. From the observations conducted, important information pertaining to lesson

procedure ,creativity on the part of the teacher, medium of instruction and availability of P L P learning and teaching materials was also gathered and is part of the findings presented below.

The following table presents results of teaching strategies being used in all the three schools.

Figure 5: Teaching Strategies Used in Schools

Name of School	Teaching strategy Employed
School A	Question & Answer, Lecture
School B	Question & Answer, Lecture, Demonstration
School B	Question & Answer ,Lecture

School A

The question and answer strategy was used by the teacher during the observation. The strategy involved the teacher asking learners questions based on what they had learnt from earlier discussions and activities and also from what they were learning. For example, the teacher asked learners to tell her the syllables they had learnt in the previous lesson. The other strategy that was used to teach phonological awareness was the lecture strategy. The teacher passed on knowledge to the learners in a direct and logical way..

School B

The question and answer strategy was used by the teacher when teaching literacy. Just as mentioned earlier, the strategy involves the teacher asking learners questions based on what they had learnt from earlier activities and what they were learning. For example, after revising on work previously learnt on syllables, the teacher asked them to construct words by making syllables (e.*g Nga + la = Ngala*).The teacher also used the lecture and demonstration strategy. During demonstrations, the teacher asked learners to walk to the board and point at the syllable, sound or word that was mentioned. This was done after the teacher and pupils had worked together to form syllables and sang a song on the syllables and words formed.

School C

The lecture strategy was used. The question and answer strategy was also used by the teacher. The teacher asked questions to find out how much learners had understood about the syllables learnt in the previous lesson

In conclusion, the teaching strategies which were being used in the three schools to teach phonological awareness for Grade 1 learners at the time of data collection in term 3 were lecture, question and answer and demonstrations.

(a). Lesson Procedure

In all the three schools, teachers whose lessons were observed were following the lesson procedure as outlined in the Grade 1 Literacy Teachers' Guide. They began with either a song or game to capture the learners' attention. This was followed by revising the syllables learnt in the previous lesson. The new lesson was introduced by the teacher uttering words that had the sounds or diagraphs to be taught on that day. The teacher asked learners to identify the first sound and once identified wrote it on the board in capital and small letters. This was followed by revision of the vowel sounds which the learners had learnt earlier. The teacher and pupils started blending the diagraphs with vowels leading to the formation of different syllables. After examples were given, learners were asked to make words from syllables orally. Further, the teacher and pupils made simple sentences from the words formed. The teacher concluded the lesson by asking learners to read the syllables, words and sentences formed which were written on the board. Generally, this pattern was followed in all the three schools.

(b).Creativity on the part of the teacher

The teachers in the three schools followed the lesson procedure as prescribed by the literacy teachers' guide. In School A, the teacher taught the lesson as it was outlined in the teacher's guide. The teacher in School B had included a number of oral language activities such as songs in her lesson. At the beginning of the lesson, learners sang a song. The teacher and learners also sang a song which had sounds which they were going to learn that day. After the diagraphs were blended with vowels to make syllables, a song which had syllable sounds learnt on that day was sung. Further, the teacher used teaching aids to teach. She had written the syllables to be learnt

on a chart. She also made syllable cards in advance. This helped her to save time. In School C equally, songs were sang and a story read that had syllables to be learnt that day.

(c).Materials for Primary Literacy Programme

In all the three schools, there was a shortage of materials for the Primary Literacy Programme which was introduced in 2013. At the time, data was collected, each school had only a copy of the PLP Teacher's Guide which was photocopied and distributed among teachers for Grade 1.The schools did not have pupil's books. This meant that all the exercises were written on the board by the teacher and this was time consuming.

(d).Medium of Instruction

Figure 6 below presents the percentage of learners who were able to understand lessons in Kiikaonde as a medium of instruction and those who have difficulties following lessons in the same language.

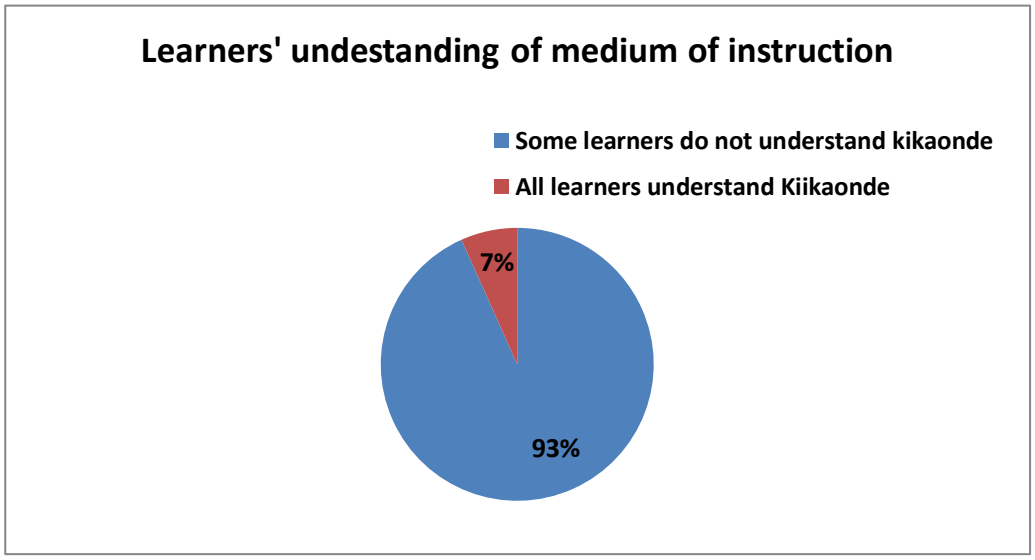

Figure 6: Learner's Understanding of Medium of Instruction

Fourteen out of fifteen respondents (93.3%) said that there were some learners who did not understand the medium of instruction (Kiikaonde) used in the area. One of the respondents said that Solwezi was attracting many people because of the mines and some learners coming into the

school were not familiar with Kiikaonde. She further revealed that she would use Lunda, Bemba or English to explain to such pupils since most of them know more than one language. Another responded intimated that she always taught in Kiikaonde regardless of whether some learners understood or not because most learners understand more than one language in the area. One out of fifteen respondents (6.7%) said that all the learners in her class understood the medium of instruction used in the area.

4.5 Phonological Awareness Training for Teachers Teaching Literacy

The fourth question was aimed at finding out if teachers had received training in phonological awareness during their pre service training or during Continuous Professional Development (CPD) meetings. The findings presented below present two sets of information. These are findings from those teachers who had not received any training both from colleges where they were trained and in C P D meetings and those who had received training in workshops (Teacher Group Meetings (T G M) and Continues Professional Development Meetings) but not in the colleges where they trained from .

Figure 7 below present's results of phonological awareness training among teachers

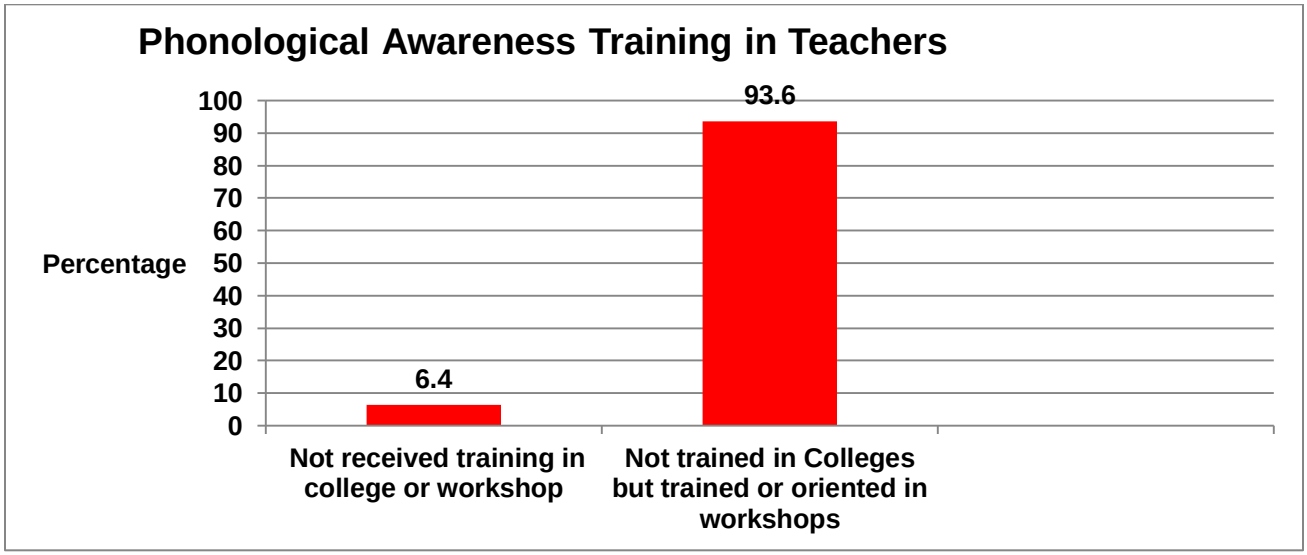

Figure 7: Phonological Awareness Skills in Teachers

4.5.1 Not received training both in colleges and workshops.

As shown in Figure 7 above, one out of fifteen respondents (6.6%) said that she had not received training in phonological awareness both at the college where she was trained and in Continuous Professional Development Meetings at the school she was teaching. She said that her lecturers at college only talked about phonics and not phonological awareness. She also mentioned that she had not yet received any orientation or training in phonological awareness in the Teacher Group Meetings because she had missed the meetings due to circumstances beyond her control.

4.5.2 Received Training in Workshops and not in College

Fourteen out of fifteen respondents (93.4%) mentioned that they had only received training in phonological awareness in workshops, teacher group meetings and school in-service teacher meetings. One of the respondents said, "*I was oriented in phonological awareness in a T G M when the Primary Literacy Programme was introduced.*" Other teachers said that they had not received any training in phonological awareness in colleges where they did their training. One of the respondents said," *The concept is quite new to me and I only knew about it in T G Ms."* She further mentioned that she came to know about phonological awareness fully at the time she was being oriented with the Primary Literacy Programme by her friends who had attended the workshop.

Another respondent said:

> *"I can't remember phonological awareness being taught. What I remember being taught is phonics. The word became common during orientation workshops for the new literacy curriculum. Phonological awareness is now commonly used in literacy assessments by the Government and Kansanshi Foundation."*

4.6 Summary of the Chapter

The findings of the study regarding phonological awareness and reading ability in selected schools in Solwezi District were presented in this chapter. Qualitative data were coded and themes were generated while quantitative data were presented in the form of tables. After regression analysis was done, statistical findings showed that there is a strong and positive relationship (correlation) between Phonological Awareness knowledge and reading ability more so in Grade Two than Grade One learners. The study revealed that sound identification, blending

and substitution were the main tasks of phonological awareness being taught in schools. Furthermore, the study found that teachers had not received training in phonological awareness during their pre- service training but were instead trained or oriented in workshops and teacher group meetings. The findings of the study are discussed in the next chapter.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

The purpose of the study was to establish the relationship between phonological awareness and reading ability in selected primary schools of Solwezi District. The previous chapter presented findings of the study. This chapter discusses the findings of the study. The discussion was guided by the research objectives which were:

i. To establish the relationship between phonological awareness knowledge and reading ability in a transparent orthography (Kiikaonde).
ii. To identify components of phonological awareness that teachers were teaching during literacy lessons.
iii. To establish which strategies are being used by teachers to teach phonological awareness activities.
iv. To find out if teachers had received training in phonological awareness during pre - service or in service workshops.

5.1 The Relationship between Phonological Awareness Knowledge and Reading Ability.

Other than discussing the relationship between phonological awareness and reading ability, the overall performance of learners in reading and phonological awareness is also discussed.

5.1.1 Performance of Learners in Reading.

The performance of learners in reading was generally poor for Grade 1 learners. The mean score was 3.75 (S.D =5.75) out of a maximum score of 25. Out of a total of 45 Grade 1 learners, 36 scored between 1 and 5. One the other hand, Grade 2 learners performed better than Grade 1 learners with a reading mean of 15.17 (S.D =8.14). Even though Grade 1 leaners performed poorly in the reading test, Grade 2 learners performed well in the test indicating that reading ability was developing among learners as they progressed in grade. This was the trend in all the schools sampled for the study. The performance of the learners in reading could have been better than what is reported if they had teaching and learning material for P L P. Teachers were following the literacy teacher's guide strictly even if it gives them some freedom to use other

strategies that can complement what is provided for in the same guide. Creativity was lacking among teachers and as Teresa et al (2000) pointed out that teachers should be creative and use various strategies that make learners actively participate in the learning process if reading is to improve.

The standard deviations for reading among Grade 1 learners show that reading scores were spread and not clustered around the mean. This variation could not be explained but may be due to the fact that some of the learners were exposed to pre –school education before entering school but we are also mindful that English is the medium of instruction in most pre- schools in Solwezi. The scores in reading among Grade 2 learners were not spread but clustered around the mean. This was expected considering that the learners had been in school for some time and had matured and gone through the initial literacy.

5.1.2 Performance of learners in Phonological Awareness

Grade 2 learners performed better than Grade 1 learners in phonological awareness. The mean score for Grade 2 learners was 29.9 (S.D= 6.43) compared with 15.98(S.D = 7.65) obtained by Grade 1 learners out of a total score of 35. Further, there were thirty -one Grade 2 learners who scored between 31 and 35 in phonological awareness compared to one Grade 1 learner who scored in the same range. This shows that learners were getting better in phonological awareness skills as they continued to receive instruction. This further confirms Lorenzo (2014) who stated that phonological awareness is learnt and not acquired naturally. The mean scores obtained by leaners in all the three schools are more or less the same.

While all learners performed well in the sound identification and syllable counting task, it was not the same in the segmentation task especially for Grade 1 learners with mean score 3.15 (S.D =4.22) out of a total of 15. Despite the low performance recorded in segmentation by Grade 1 learners, there is an improvement in Grade 2 learners. Segmentation requires one to read and then segment the parts. It may have been low in Grade 1 learners because they had not fully known how to read like Grade 2 learners. Grade 2 learners may have learnt how to segment as they blended syllables to build words. This further indicates that phonological awareness improves as one continues receiving instruction. Segmentation tasks were not being taught at this point. While segmentation is taught at phoneme level in languages such as English, what was

tested in this study was at word level in Kiikaonde, a Bantu language. How these independent variables (Sound Identification, Syllable Counting and Segmentation) predict reading will be discussed later.

5.1.3 Relationship between Phonological Awareness and Reading ability

The results of this investigation showed that there was a positive relationship between phonological awareness and reading ability. The results from the regression analysis showed that the correlation between phonological awareness knowledge and reading ability in Grade 1 learners was 0.671 while in Grade 2 learners, it was 0.843. The results also showed that the correlation is much stronger in Grade 2 learners (r = 0.843) than Grade 1 learners (r = 0.671. Further, the results of this investigation showed that 45% of phonological awareness and 71% of the same accounted for the variation in reading in Grade 1 and 2 learners respectively. This shows that phonological awareness improves as learners advance in grade. It is also worth mentioning that 55% of the variation in reading at Grade 1 was attributed to other factors other than phonological awareness. However, it is only 29% of the variation in reading at Grade 2 which was attributed to other factors. This may indicate that phonological awareness develops along with reading.

A number of lessons can be drawn from these findings. The first one is that there is a relationship between phonological awareness and reading ability in children. These findings may suggest that the relationship between phonological awareness and reading ability might not be causal but may be bidirectional. Successful reading development improves phonological awareness and high levels of phonological awareness facilitate reading development. The findings of this study seem to agree with that of Perfetti, Bech, Bell and Hugher (1987) who reported that the link between phonological awareness and reading is bidirectional.

Secondly, the relationship between phonological awareness and reading is common across alphabetic orthographies more so with languages that have a deep or inconsistent orthography. This research also agrees with findings reported by Coravolas & Brunk, 1993, Cardoso – Martins,1991, Hulme and Snowing,2006, Papadopoulus,2001 that phonological awareness is a strong predictor of children's progress in reading and writing regardless of the languages in which they are learning to read and write and as long as they are alphabetic languages. This

study further supports the view by Goswami (2010) that phonological awareness has a weaker though significant association with reading in languages with a transparent orthography than it does in languages with deep orthographies such as English. Furthermore, the findings in this research agree with previous researchers that reported that phonological awareness has influence across languages (Patel, Snowling & de Jong, 2004).

The result of the regression analysis also supports the view of Lorenson (2014) that phonological awareness is not a developmental milestone in children but rather requires training as could be seen in the performance of learners. Learners should be phonetically aware before they are able to read an alphabetic orthography. As was seen from the results, learner performance in phonological awareness for Grade 2 learners was better than Grade 1 learners. The implication is that the longer learners continue receiving instruction in phonological awareness and reading, the more they get better at these skills. The results also showed that the skills in the learners were growing and the correlation was becoming stronger as learners received more instruction.

5.1.4 Which Phonological Awareness Tasks Predicted Reading

In Grade 1 learners, the results of the multiple regression showed that there was a relationship between all independent variables (Sound identification, syllable counting and segmentation) and reading ability. The correlation coefficient was 0.81 and the coefficient of determination was 0.65 suggesting that 65% of the three independent variables accounted for the variation in reading among Grade 1 learners. Even though there was a relationship, sound identification had a negative correlation while syllable counting and segmentation had a positive correlation. For every one (1) unit increase in sound identification, there was a -0.165 decrease in reading. On the contrary, for every one (1) unit increase in syllable counting and segmentation, there is a 0.166 and 1.015 increase in reading respectively. These results imply that it was the segmentation task which predicted reading ability in Grade 1 learners as p-value < 0.001. The implication of the above findings is that segmentation tasks are very important to learners if they are to learn how to read quickly. They are more related to reading or decoding.

For Grade 2 learners, the results of the multiple regression showed that there was a positive and strong relationship between all independent variables (sound identification, syllable counting and

segmentation) and reading ability. The correlation coefficient between all independent variables (sound identification, syllable counting and segmentation) and reading ability in Grade 2 learners was ($r = 0.86$) meaning it was higher than that in Grade 1 learners. The coefficient of determination was 0.73 meaning that 73 % of the three independent variables accounted for the variation in reading among Grade 2 learners. All the three independent variables had a positive relationship with reading.

For every one (1) unit increase in sound identification, there is a 0.763 unit increase in reading and for every one unit increase in syllable counting, there is a 0.799 increase in reading while for every one unit increase in segmentation, there was a 1.192 increase in reading. At 95% confidence level, the syllable counting and segmentation tasks predicted reading ability as the p – value < 0.05. However, it was the segmentation task which contributed more to reading ability at 99% confidence level as p-value < 0.001.

While the findings from this regression point out syllable counting and segmentation as contributors to reading ability, it is segmentation that predicted much. Some learners performed well in the sound identification task but failed to read. This means that the ability to identify first sounds does not translate into reading because reading involves combining all sounds in words. On the other hand, learners who performed well in the segmentation task also did well in the reading task. One who does not know how to read cannot segment words and vice versa. The findings tie with those of Lorenson (2014) who also found that segmentation had a huge influence on learner's ability to read.

5.2 Phonological Awareness Tasks Taught by Teachers

The study revealed that blending, substitution and sound identification were the components of phonological awareness that teachers were teaching during literacy lessons. According to Adam et al (1998) phonological awareness is divided into four main components namely segmentation, blending, substitution, deletion and sound isolation (identification). However, it was found in this study that only three components were being taught. The question that has arisen in previous studies relate to aspects (components) of phonological awareness that predict reading and spelling acquisition.Wagner et all (1994, 1997) who conducted a similar study in English found that sound deletion, categorization and segmentation had a unique influence on first grade

reading and sound blending on the other hand had a unique influence on second grade reading. Perfetti et all (1987) also found that phoneme deletion skills were a product of reading ability while phoneme synthesis (segmentation) seemed to support later reading. In our study, it was segmentation that had a strong relationship to reading ability. It was a good predictor of reading.

5.3 Strategies Teachers are using to teach Phonological Awareness activities

The teachers followed what was recommended in the teaching materials. It was revealed in this this study that the commonest teaching strategies used by teachers in the three schools were the question and answer and lecture strategy followed by demonstrations which were used in one school. The strategies that teachers were using to teach phonological awareness lessons were teacher- centred and perhaps they lacked creativity to make lessons learner centred. The teacher should have used many other strategies which take into consideration the participation of learners. Teresa et al (2000) says that teachers should insure that learners participate in a variety of reading, writing and oral language activities if phonological awareness is to develop in learners. Lack of teaching materials may also have hindered teachers to use learner centred strategies.

What was found in this research was that there was a heavy reliance on what is proposed in the teachers' guide even though it gives some freedom to allow creativity. For example, the lecture strategy, despite having the advantage of the teachers' ability to cover a lot of material in a period of time has a number of weaknesses. Firstly, learners are not required to be active participants during the lesson but instead listen to the teacher. Secondly, because learners spend most of the time listening to the teacher, it lessens the opportunity for the learner to 'learn by doing'. The strategy does not guarantee understanding because the pace of the teacher may not appeal to all the learners. This strategy may not work effectively for the learners because their concentration span is low.

Demonstrations were only used in one school out of the three. One of the advantages of demonstrations is that it requires learners to act and do. To learn skills, it is important that learners practice. Through doing, learners learn to follow correct procedures.

The question and answer strategy was used in all the schools. Although it is known to be an effective teaching strategy because of its interactive nature, it was used in a teacher centred

manner as the teacher was the one asking questions and learners were on the receiving end. One advantage with this strategy is that the teachers can know what learners have learnt from earlier discussions. On the other hand, learners can clarify their doubts by asking their teacher questions in order to enhance their understanding of the subject matter.

From the discussion above, it can be concluded that the strategies which were being used by teachers, although they were more than one could not constitute a learner – centred lesson. Teachers were not creative to use other strategies other than those proposed by the teacher's guide to ensure active participation of learners. The findings of the study do not tie with Teresa et al (2000) who say teachers should use various strategies that make learners actively participate in the learning process if phonological awareness is to improve .The implication of these findings is that learners were not benefiting fully from the teaching because they were not active participants.

Lesson Procedure

The study revealed that teachers were following the lesson procedure as stipulated in the teacher's guide. However, following the procedure of the lesson does not inhibit a teacher from being creative because the teacher's guide gives some suggestions for teachers to add some extras. The same pattern of teaching was observed in all the three schools where lessons were observed.

Teaching and Learning Materials

There was a shortage of teaching and learning materials in all the selected schools. The teachers' guide was a photo copied one and sometimes shared among teachers. The schools also did not have pupil's books and this made teachers to write all exercises for the learners on the chalk board. If these books were available, teachers were just going to instruct learners to write the exercises from the book. This state of affairs meant that time was lost cleaning the board and examples which learners were given by the teacher were also rubbed. Further, the time lost meant that teachers were also unable to complete the work which was to be covered on that particular day. Lack of readers also meant that learners had no practice reading stories. The implication of this finding is that teachers are not likely to finish teaching all the work they have

planned to teach in a term or year and secondly, lack of teaching and learning materials in the schools may have also contributed to the poor results in reading among the learners as presented in the findings.

Medium of Instruction

With regards to learners understanding of the medium of instruction, the study established that 93% of the respondents revealed that some learners in the classes they taught did not understand Kiikaonde as the language of instruction. Asked about what they did to ensure that these learners were also taught, they revealed that they used other languages such as Lunda, Bemba or English to explain to such pupils. What these teachers were doing is not in line with the guidelines put in place by the National Literacy Framework. The National Literacy Framework (2013) states that a familiar local language used in the area should be used as the medium of instruction from Grade 1 to 4. This state of affairs is worrying because by constantly codes switching from one language to another during the teaching process, learners were going to take a long time to understand things. The use of many languages by teachers can also cause confusion in the learners. The implication of this finding is that learners were going to take a long time to learn how to read because of the use of many languages in the teaching process. Teachers were supposed to strictly adhere to using the local familiar language used in the area as the medium of instruction.

5.4 Teachers Training in Phonological Awareness

The study findings revealed that the majority of the teachers interviewed (93.6) had not received training in phonological awareness during their pre – service training. Instead, these teachers received this training in phonological awareness during in –service workshops such as Teacher Group Meetings. It is worth pointing out that the time spent on orienting or training teachers in workshops and teacher group meetings is short and usually not enough thus making teachers not to fully benefit from such trainings. One of the respondents mentioned that she was oriented to teach phonological awareness by another teacher who had attended a workshop on the same. Among other factors that were not considered in this study, one assumption made by the researcher was that the lack of training of teachers from the colleges they were trained from could be one of the factors which explained the poor performance of learners in reading. For example, the overall Mean score for Grade 1 learners in reading was 3.73 out of a total score of

25. This was too low. The findings of the study tie with Duhaze (2014) position to the effect that training of teachers had a measurable impact on learners as the learners taught by these trained teachers improved in their reading levels.

One of the implications of the findings of the study conducted by Washburn (2011) was that if pre service student teachers are not trained before completing their training, they were going to have serious challenges teaching basic language constructs related to literacy. Our present study revealed that no teachers had received pre – service training in phonological awareness in college. This means that most teachers started teaching without any knowledge in phonological awareness. Even though phonological awareness is not the only literacy component that influences reading ability, its' significance cannot be underestimated and skills such as fluency and comprehension come later. The implication of the finding is that these teachers did not understand phonological awareness until such a time when they were oriented or trained during in – service workshops. This state of affairs impacted negatively on the learners because they were missing one component which is critical in the learning of literacy. Secondly, even if some of them attempted to teach phonological awareness, they were having serious challenges.

The study also revealed that one teacher (6.7%) had not received training both during workshops and the time spent at college. This respondent mentioned that she had missed all literacy related workshops because of circumstances beyond her control. The teacher did not look confident and was not willing to have her lesson observed. The implication of this finding is that learners taught by this particular teacher were either not learning phonological awareness or learning it in a wrong way. The foregoing finding was in line with the views of Darling-Hammond (2000) to the effect that pre –service student teachers not trained before completing their training were going to have serious challenges teaching basic language constructs related to literacy.

5.5 Summary of the chapter

In this chapter, the findings regarding the relationship between phonological awareness and reading ability in selected primary schools was discussed. To recap the salient points thus far:

There is a relationship between phonological awareness and reading ability across alphabetic languages, though this relationship varies with orthographic depth.

Since phonological awareness is a strong predictor of reading, all components of phonological awareness should be taught to learners so that learners fully benefit from it.

Phonological awareness is not a developmental milestone in children but rather requires training. Teachers also should receive training in phonological awareness if they have to teach learners effectively.

The conclusion and recommendations made in light of the findings are presented in the next chapter.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

The previous chapter discussed the findings. This particular chapter consists of the conclusions drawn from the research. It further makes recommendations and proposes areas for further study based on the findings of the study.

6.1 Conclusion

A number of conclusions can be drawn from the discussion of the findings with regard to The Relationship between Phonological Awareness and Reading Ability in selected primary schools of Solwezi District.

. Using the research objectives and questions, the following are the conclusions of the study:

6.1.1 There was a significant and positive correlation (relationship) between phonological awareness knowledge and reading ability more so in Grade Two than Grade One learners. This relationship between phonological awareness and reading ability is across alphabetic languages even though it varies with orthographic depth. The learners were tested in Kiikaonde which has a transparent orthography.

6.1.2 Teachers were not teaching all the components of phonological awareness skills to learners. The skills which were being taught were blending, Sound Identification and substitution. Segmentation and deletion activities were not incorporated in literacy lessons. The study found that segmentation task predicted reading more than other tasks.

6.1.2 Teachers were using teacher –centred strategies to teach phonological awareness during literacy lessons.

6.1.3 Teachers had not received training in phonological awareness during their pre-service training. However, they had received training in workshops and teacher

group meetings. This knowledge acquired in these workshops and teacher group meetings is not enough because of the limited time spent on such meetings.

It can be concluded therefore that there is a positive relationship between phonological awareness and reading ability even though a language has a transparent orthography.

6.2 Recommendations

The recommendations arising from this study are based on the conclusions discussed above and are as follows:-

6.2.1 The study concluded that teachers had not received training in phonological awareness from the colleges where they were trained from. Following this finding, it is recommended that phonological awareness should be incorporated in the syllabus being followed by primary teacher training colleges.

6.2.2 This study has revealed that teachers were not using many learner centred strategies in the teaching of phonological awareness during literacy lessons. It is also recommended that Continuous Professional Development Meetings such as Teacher Group Meetings should be strengthened in schools so that teachers are trained to use a variety of learner centred strategies.

6.2.3 It was revealed in the study that not all the components of phonological awareness were being taught in schools. It is recommended that teachers should start teaching all the components of phonological awareness skills so that learners fully benefit from them.

6.3 Recommendations for Future Research

Phonological awareness is a vast area of study. This study concentrated on the relationship between phonological awareness and reading ability in selected primary schools in Solwezi. The following areas could be investigated further-

6.3.1 The Primary Literacy Framework names phonological awareness, phonics, vocabulary, comprehension and fluency as key in literacy. There seems to be lack

of common understanding on which one of these skills contributes more to reading in transparent orthographies.

6.4 Summary of the Chapter

This chapter presented conclusions drawn from the study. It also made recommendations based on the findings of the study.

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APPENDICES

Appendix A: Time Line

	Jun 2015	Jul 2015	Oct 2015	Nov 2015	Dec 2015	Feb 2016	Feb-May 2016
Present topic to Department							
Submit proposal to Department							
Submit to REC,REC review & Approval							
Enroll Participants & Collect data							
Analyse Data							
Write dissertation							
Submit Final Dissertation							

Appendix B: Budget for the Study

Item	Unit Cost (ZMK)	Quantity	Amount ZMK
Transport for Researcher	2000	1	2000
Accommodation for Researcher	250	4	1000
Food and Refreshments	500	1	500
Refreshments for participants	7	129	903
Reams of paper	40	4	160
Printing	5	300	1,500
Research assistant	500	2	1000
Memory stick	100	2	200
Communication	500	1	500
Participation fee	20	100	2000
Contingency	10%		976.3
Total			**10,739.3**

Appendix C: Interview Guide for Teachers

Dear Respondent,

You have purposively been selected to take part in this study because you are directly involved in the teaching of literacy to Grade 1 learners. Be as free and truthful as you respond to the questions.

Date of Interview : _____ Term: _____

Name of School : _____

Teacher Gender : _____ Teacher Qualification: ____

NB : Reponses should be expanded on a separate sheet to accommodate as much information.

1 .In your training, did they talk about phonological awareness?
2 Why are you teaching it?
3 What type of activities or sub skills do you teach in phonological awareness?
4 Do all learners in your class understand the language of instruction?
5 How do you deal with learners who do not understand the language of instruction?

Appendix D: Lesson Observation Sheet

School Name : _____ TERM : _____

Grade Observed : _____ Teacher Gender : _____

No of Learners : _____ Teacher Qualification: _____

Observation Component

1 **Teaching and Availability of Teaching Materials.**

(a) Is phonological awareness being taught during literacy lessons? _____

(b) What sub skills of phonological awareness are being taught? _____

(c) Is the teacher following the lesson Procedure? _____

(d) Is their creativity on the part of the teacher? _____

(e) Does the teacher have materials for P L P? _____

2 **Teaching strategies Used by Teacher**

(a) _____

(b) _____

(c) _____

(d) _____

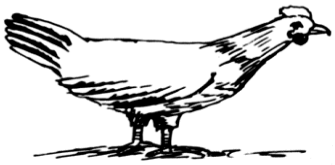
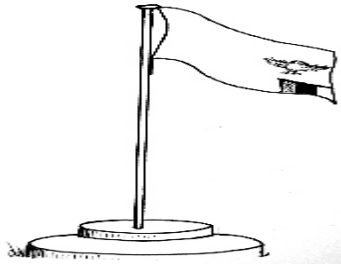
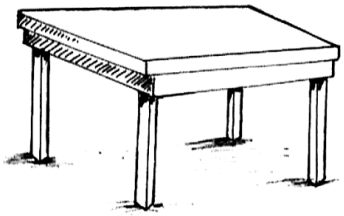
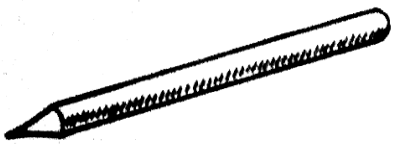
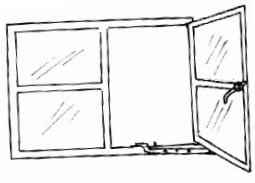
(e) _____

(f) _____

Appendix E: Phonological Awareness Test

1. **Recognising initial sounds.**

Tick the picture that begins with the sound I will say. Listen carefully to the instructions I will give you. The first one has been done for you. (Kyonga kipikicha kyatendeka na kilulumo kyo nsakwamba. Munvwishe bulongo kumikambizho yo nsakwimipa. Nsakukumbula jipuzho jitanshi nobe kimweesho)

1			
2			
3			
4			

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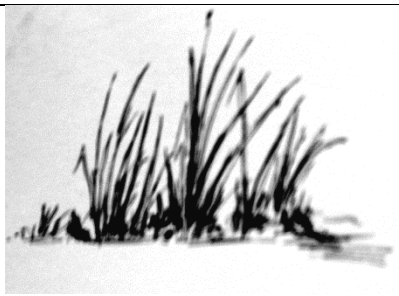
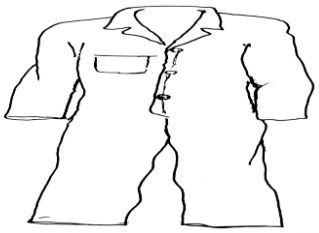
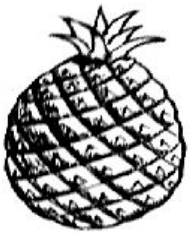
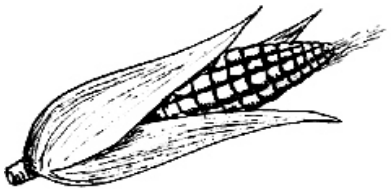
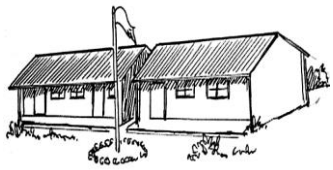
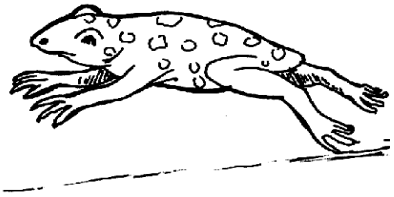
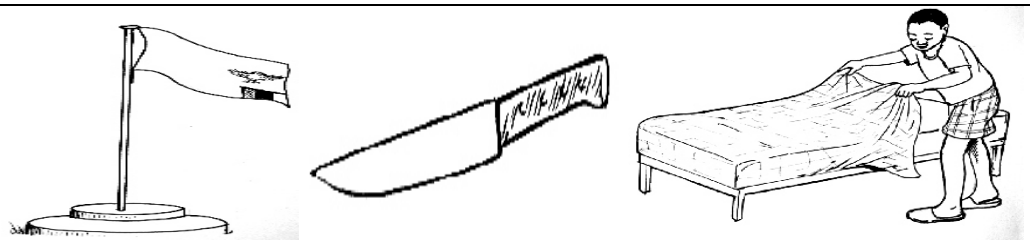
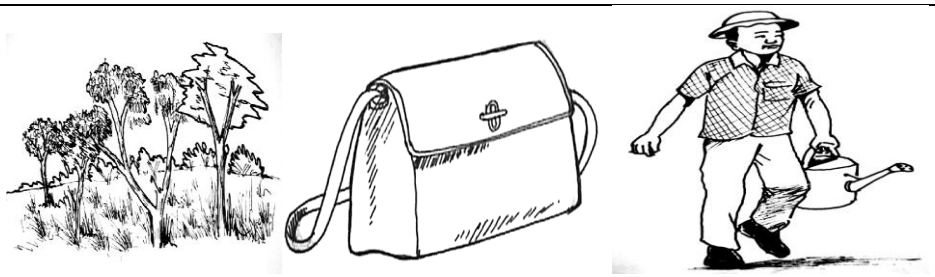
6	  

2.Recognising final sounds :

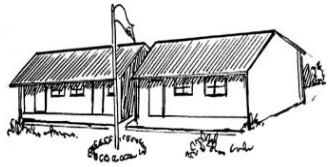
Tick the picture that ends with the sounds beside the pictures. (Kyonga kipikicha kyapwa na kilulumo kyo nsakwamba. Munvwishe bulongo kumikambizho yo nsakwimipa. Nsakukumbula jipuzho jitanshi nobe kimweesho)

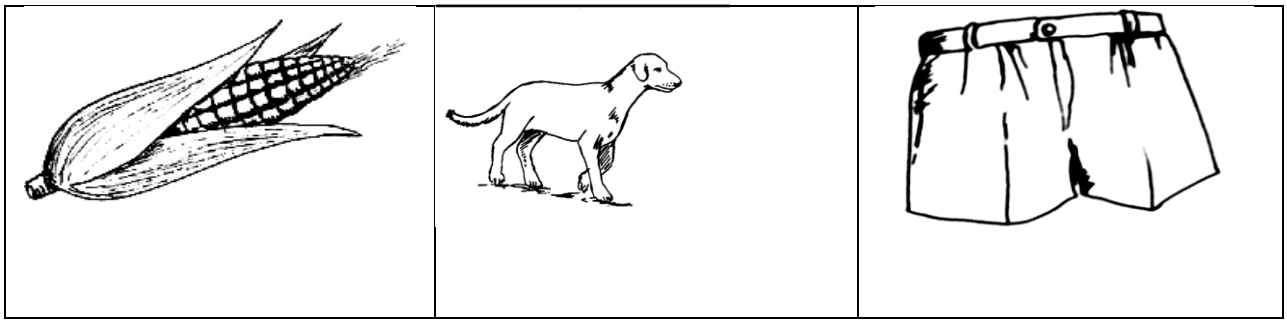
1	  
2	  

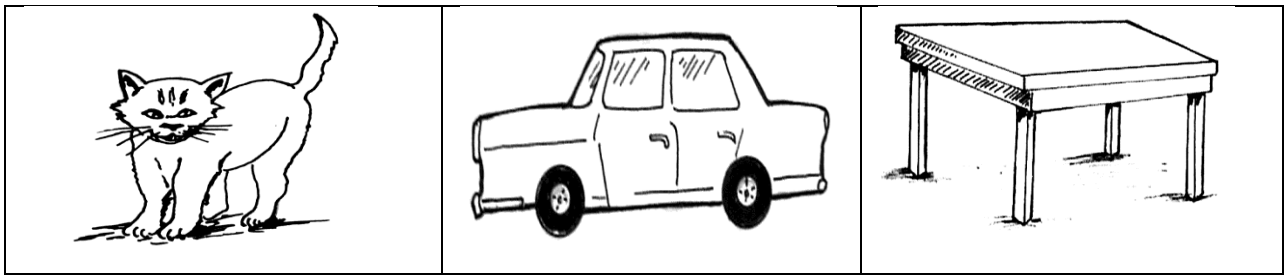
3	
4	
5	
6	

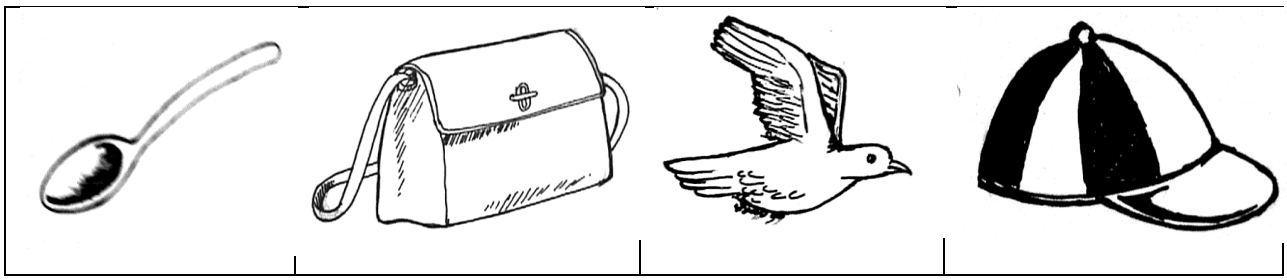
3.Syllable Counting Task:

Count Syllables in the words represented in the pictures. After I give examples, you will count silently the number of syllables in each picture and write it on the spaces provided. (Penda bipimvwa byambo biji mu byambo byaimenako mubi pikiture. Nsakwimupa kimwekesho apa biino mupende bipimvwa byambo nekunemba numbala.

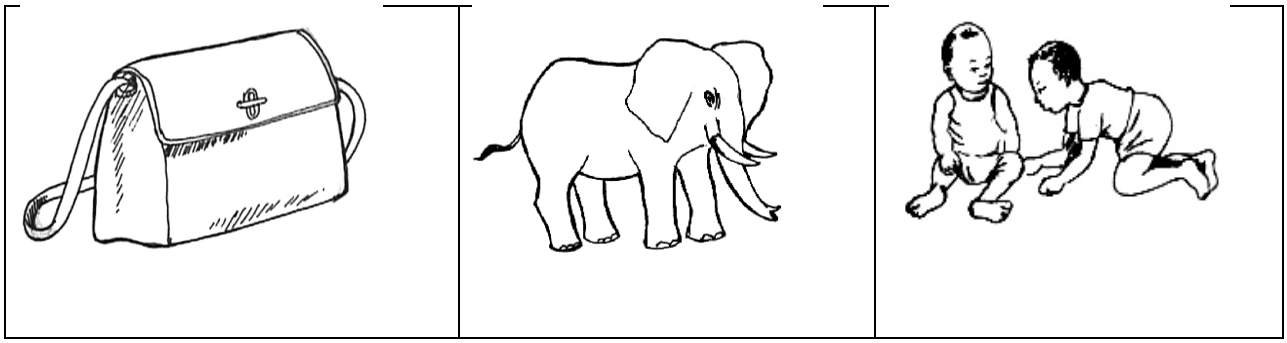
 2	 3







4. Segmentation.



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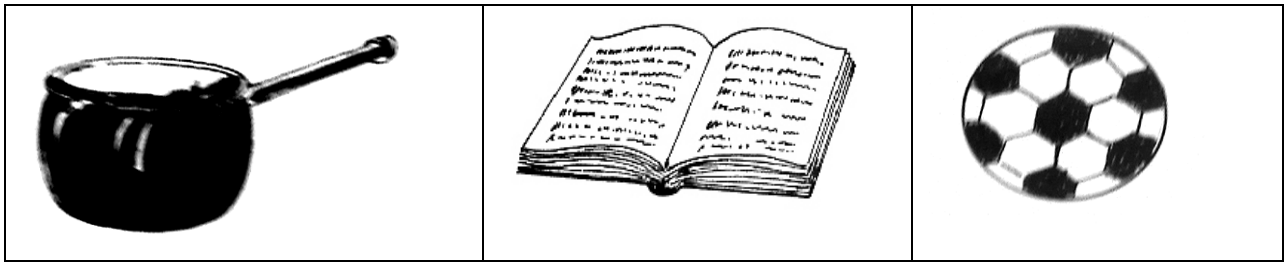
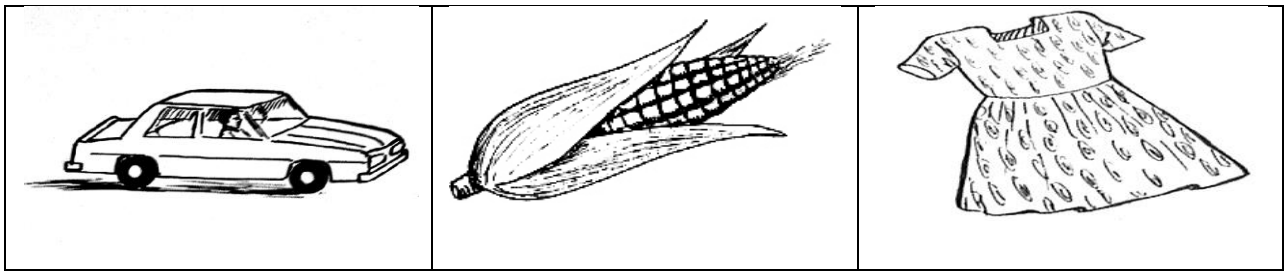
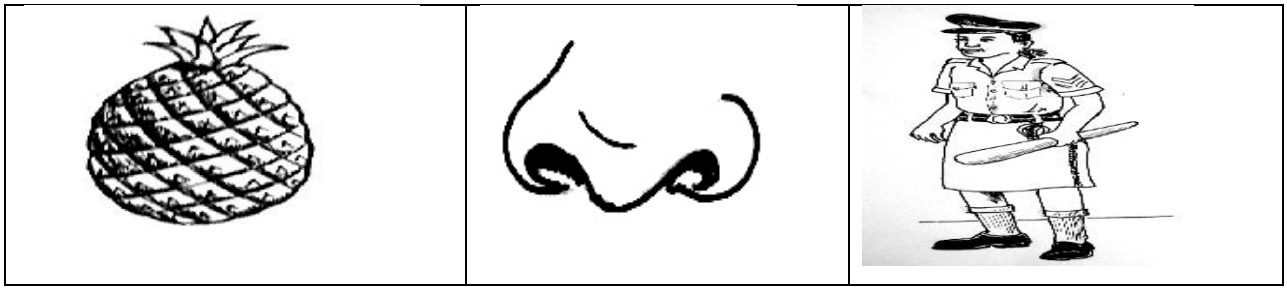


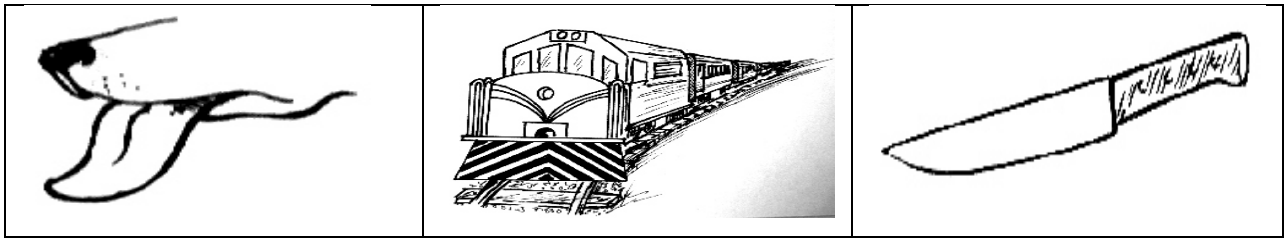
Bolampotobuuku



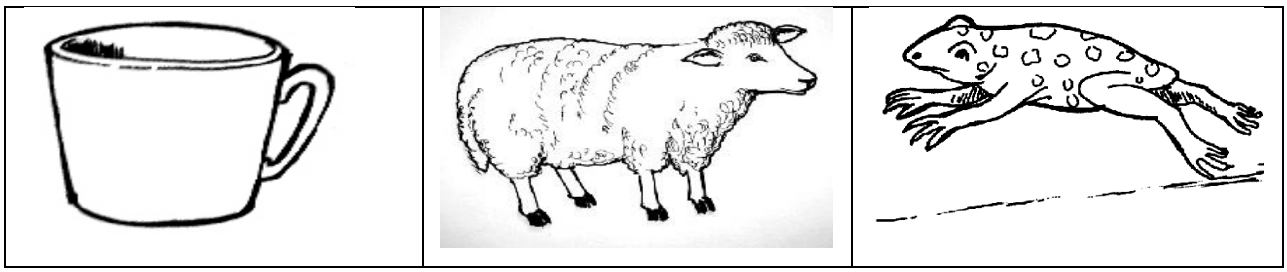
Jitabamotookajilaya



Kinanazikapokolamoona



Mupenyilujiimishitima



Kaapubombwemukoko

Appendix F: Reading Test

Instructions : Kuumbula onse meepuzho (Answer all questions)

Section A : Taanga biino byambo . (Read these words) 10 marks

1. Ma
2. Kya
3. lwina
4. Mweela
5. kiimbo
6. Jiitaba
7. Bamaama
8. Kujimuka
9. Bafunjishi
10. Kutobala

Section B : Tanga biino bipelu . (Read the following sentences) 15 marks. 1 mark for each correct word.

1. Meema aji mukikopo.
2. Bamaama babena kuja nshima.
3. Mfuko wateemwa ntamba.
4. Kweenda panshi kukokesha baana basukulu.

Appendix G: Regression Results for Grade 1 Learners

Grade 1

Regression Statistics	
Multiple R	0.67
R Square	0.45
Adjusted R Square	0.44
Standard Error	4.07
Observations	45

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	585.87	585.87	35.34	0.00
Residual	43	712.93	16.58		
Total	44	1298.8			

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***	***Upper 95%***
Intercept	-3.885	1.418	-2.740	0.009	-6.74	-1.03
Phon/ Aware	0.477	0.080	5.944	0.000	0.32	0.64

Appendix H: Regression Results for Grade 2 Learners

Grade 2

Regression Statistics	
Multiple R	0.84
R Square	0.71
Adjusted R Square	0.70
Standard Error	4.43
Observations	45

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2071.84	2071.84	105.46	0.000
Residual	43	844.74	19.65		
Total	44	2916.58			

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 95%***	***Upper 95%***
Intercept	-13.212	2.842	-4.648	0.000	-18.944	-7.480
Phon/ Aware	1.067	0.104	10.270	0.000	0.858	1.277

Appendix I: Multiple Regression Results for Grade 1

Multiple Regression :Grade 1

Regression Statistics	
Multiple R	0.809
R Square	0.654
Adjusted R Square	0.629
Standard Error	3.308
Observations	45

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	850.053	283.351	25.89	0.000
Residual	41	448.747	10.945		
Total	44	1298.800			

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 99.0%***	***Upper 99.0%***
Intercept	0.558	1.535	0.364	0.718	-3.588	4.704
Sound ID	-0.165	0.219	-0.752	0.456	-0.756	0.427
Syllable count	0.166	0.135	1.226	0.227	-0.200	0.531
Segmentation	1.015	0.127	7.999	0.000	0.672	1.358

Appendix J: Multiple Linear Regression Results for Grade 2

Multiple Linear Regression

Grade 2

Regression Statistics	
Multiple R	0.856
R Square	0.732
Adjusted R Square	0.712
Standard Error	4.366
Observations	45

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	2134.93	711.64	37.33	0.000
Residual	41	781.65	19.06		
Total	44	2916.58			

	Coefficients	***Standard Error***	***t Stat***	***P-value***	***Lower 99.0%***	***Upper 99.0%***
Intercept	-9.490	4.654	-2.039	0.048	-22.061	3.082
Sound Id	0.763	0.415	1.839	0.0731	-0.358	1.883
Syllable Count	0.799	0.358	2.228	0.0314	-0.170	1.767
Segmentation	1.192	0.139	8.549	0.000	0.815	1.569

Appendix K: Regression Analysis for Testing Multi collinearity

Regression Statistics	
Multiple R	0.255993
R Square	0.065532
Adjusted R Square	0.021034
Standard Error	1.624273
Observations	45

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	7.770674	3.885337	1.472687	0.240907
Residual	42	110.8071	2.638264		
Total	44	118.5778			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	8.300061	1.165012	7.124441	9.65E-09	5.948971	10.65115
Syllab Count	-0.14017	0.131547	-1.06554	0.292719	-0.40564	0.125304
Segmentation	0.080241	0.050369	1.59307	0.118644	-0.02141	0.18189

Appendix L: Informed Consent Form

The University of Zambia

School of Education

Department of Languages and Social Sciences Education

Please read this document carefully. Sign your name below only if you agree to participate in the study and you fully understand your rights .Your signature is required for your participation in this project. You must be a teacher teaching Grade 1 learners selected to participate in the study.

Introduction

This study is entitled "**Relationship between Phonological Awareness and Reading Ability in Selected Primary Schools of Solwezi District**". This research is directed by a Masters student in Literacy and Learning at the University of Zambia. This document defines the terms and conditions for consenting to participate in the study.

Description of the Study

You are invited to participate in the study on the effectiveness of Phonological Awareness Instructions. This study is investigating the teaching of phonological awareness.

Time Frame of the Study

The process of data collection will take approximately two weeks.

Risks and Benefits

- You may feel uncomfortable being observed and as the researcher tests your pupils.
- You may not get direct benefits but you will have an opportunity to contribute to a study that may change practice in the area of phonological awareness teaching.

Confidentiality

All information obtained from interviews and observations shall not be linked to any school or individuals. No names will be taken down and the information will not be shared with the

school administration or the Ministry of Education. The interview guide will not have any identification information of participants to enhance confidentiality.

Participation Rights

- Participation in this study is purely voluntary. If you decide to withdraw at any point, there will be no consequences to you.
- All personal identifying information will be kept confidential and information collected during interviews and observations will be kept under key and lock in accordance with the standards of the University of Zambia. In case of publication of the study findings, your identity will still private.

Voluntary Consent

I have read (or have had the information explained to me) the information about this research as contained in the Participant Information Sheet. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.

I now consent voluntary to be a participant in this project and understand that I have the right to end the interview at any time, and to choose not to answer particular questions that are asked in the study.

My signature below shows that I am willing to participate in this research:

Participant's name (Printed) _____

Participant's signature: _____ Consent Date: _____

Researcher Conducting Informed Consent (Printed) _____

Signature of Researcher: _____ Date: _____

Name of Witness: _____

Signature of Witness: _____ Date: _____

Contacts

If you have any further questions about this research, please contact:

The Supervisor	or	**The Principal Investigator,**
Dr J. M Mwansa,		Kamalata Lukama,
University of Zambia,		University of Zambia,
Phone: 0971938757		Phone : 0977 889520

Appendix M: Introductory letter from DRGS

Appendix N: Letter of permission from DEBS- Solwezi