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Reading Readiness of Kindergarten Students in a Lebanese School

By

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DEDICATION

This thesis is dedicated to my mother and father who have been a source of encouragement and inspiration to me. I also dedicate my thesis to my precious children whose love, understanding and support strongly contributed to make this thesis possible. I am also grateful for my respected advisor who guided me, supported me and trusted my efforts. Finally I thank my closest friends who endured this long process with me, always offering support and love.
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Reading Readiness of Kindergarten Students in a Lebanese School

Maha F. Bdeir

ABSTRACT

A growing body of research highlights the importance of the preschool period in preparing skilled readers. Phonological awareness is considered one of the key precursor skills to conventional literacy that develop during the preschool period. The purpose of the study is to investigate the impact of a systematic teaching of phonological awareness skills on the pre-reading skills of KG3 students in a private Lebanese school. Four KG3 sections, a total of 107 students, participated in the study. Two sections were selected to be the experimental group and received a twelve weeks intervention; the other two sections were the control group who were not taught phonological awareness skills. The design is quasi experimental; pre-tests were administered to the experimental and control groups. The former received the treatment; the latter did not. Post-tests were given to both groups in order to compare the results which revealed that all children in the experimental group exhibited significant improvement in all phonological awareness skills unlike those in the control group. Students’ results in the experimental group also showed substantial improvement compared to their initial baseline performance results. Findings provide early childhood educators with an understanding of phonological awareness skills, ways of promoting their development at the preschool level and phonological age appropriate instruction to be integrated in the preschool curriculum. The benefit is for students to learn to read earlier and better in order to prevent reading difficulties at later stages.

Key words: Phonological Awareness, Phonemic Awareness, Systematic Teaching, Phonics and Kindergarten.
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Chapter One

Introduction

1.1 Background of the study

A growing body of research highlights the importance of the preschool period in preparing skilled readers. Children’s development in the areas of oral language, phonological awareness and print knowledge is predictive of how well students will learn to read once they are exposed to formal reading instruction in elementary school (Lonigan, Allan, & Lerner 2011); therefore the key early literacy predictors of reading and school success include oral language, phonological awareness and print knowledge.

The types of instructional practices related to reading fall under two categories: either practices that promote letter knowledge and phonological awareness (i.e. code-related skills) or practices that promote the skills associated with oral language and comprehension (i.e., meaning-related skills) (Lonigan et al., 2011).

Studies have shown that phonological awareness is important because it is the basis of reading. Many research studies have focused on the pedagogical aspect of phonological awareness in children’s early literacy development. According to Phillips, Clancy-Menchetti, and Lonigan, (2008), “Phonological awareness is considered one of the key precursor skills to conventional literacy that develops during the preschool period” (p.3). Likewise, the National Early Literacy Panel (2008), state that preschool children have the ability to identify and manipulate the sounds structure of words. This ability is a strong predictor of conventional literacy skills in kindergarten and elementary school.

According to Lonigan, Phillips, and Menchetti (2006), evidence also reveals the presence of phonological abilities in preschool children and these abilities are predictive of beginning reading. In other words, children who show easiness in recognizing and
manipulating the sound structures in spoken words, learn to read earlier and better than other peers who are less able. Furthermore, a critical problem for most children who experience reading difficulties involves early and continuing problems in word identification more specifically in phonological analysis skills and the ability to associate letter and sounds (Torgesen, 2002).

1.2 Statement of purpose

According to O’Leary, Cockburn, Powell, and Diamond (2010), phonological awareness is a skill that can be taught and changed. They argue that teaching phonological awareness is best applied in following a developmental continuum which starts with the capacity of manipulating words in a sentence, to the syllable level and finally to the phonemes. In this study, I will attempt to contribute to the growing body of evidence that supports the positive effects of phonological awareness for preschoolers following a clear hierarchical progression. Thus the purpose of the study is to investigate the impact of a short, systematic and explicit teaching of phonological awareness skills on the pre-reading skills of KG3 students in a private Lebanese school.

1.3 Hypothesis and questions

The hypothesis of the study is: Systematic teaching of phonological awareness program in KG3 accelerates the development of phonological awareness resulting in better pre-reading skills in children.

The questions of the study are the following:

1) How effective is a twelve-week intervention of a systematic phonological awareness teaching on the phonological awareness development and performance of KG3 experimental group?

2) What differences in pre-reading skills exist between the experimental and the control group?
1.4 Significance of the study

According to the National Early Literacy Panel (2008), phonological awareness (PA) is the “ability to detect, manipulate, or analyze the auditory aspects of spoken language, including the ability to distinguish or segment words, syllables, or phonemes independent of meaning” (p.7). Some practitioners still confuse phonological awareness with phonics. While phonological awareness is a measurable capability that each child can possess in different amount, phonics is a method of reading instruction that focuses on the association of letter sound with printed letters. (Linnea, 2003). Therefore the significance of this study lies in providing early childhood educators with a clear understanding of phonological awareness skills and ways of promoting their development and instruction at the preschool level.

1.5 Definition of terms

The definitions of the key terms used in this paper are the following:

**Phonological Awareness: (PA)**

“Ability to detect, manipulate, or analyze the auditory aspects of spoken language, including the ability to distinguish or segment words, syllables, or phonemes, independent of meaning” (National Early Literacy Panel, 2008, p.7). It is working with sounds separately from written symbols.

**Phonemic awareness:**

The term phonemic awareness is confused by many educators with the term phonological awareness. Phoneme awareness is a more specific ability under phonological awareness and it focuses on attending to or manipulating the single, individual phonemes or sounds within words or syllables.
Systematic teaching:

A direct and explicit teaching of a phonological awareness intervention program that takes into account the progression of PA skills (words, rhymes, syllables and phonemes), designed by me, the researcher and based on *the phonological awareness of speech sounds* by Roth, and Worthington (2009) and *the phonemic awareness in young children: A classroom, curriculum* by Adams, Foorman, Lundberg, and Beeler (1998).

**Phonics**

Phonics is a method of instruction that teaches students correspondence between graphemes in written language and phonemes in spoken language and how to use these correspondences to read and spell words (Linnea, 2003).

**Kindergarten**

KG3 students who are between 5 to 6 years old.

**1.6 Division of the study**

This paper is divided into six chapters. Chapter one consists of an introduction that includes the purpose, the significance of the study, and the research questions that will be investigated. Chapter two presents an overview of the literature and previous studies that have been conducted on the topic of phonological awareness at the preschool. Chapter three describes the methodology that I used to conduct the study. Methods, instruments and procedures used are discussed. Chapter four presents the findings of the research and reports the results. Chapter five consists of the discussion and analysis of the findings. Finally, in chapter six, conclusions are drawn, limitations are listed, and suggestions for further research are stated.

After introducing the research context and questions in chapter one, the following chapter will
review the literature on the development of phonological awareness at the preschool and its relationship with early reading skills.
Chapter Two

Literature Review

This chapter introduces reading in general and the approaches used in teaching phonics. It reviews the literature on how phonological awareness is important to reading and the effect of explicit teaching of phonological awareness at the preschool level. It covers also the progression of phonological awareness skills and their relation with teaching phonics.

2.1 Reading and phonics instruction

Reading is a complex process influenced by cognitive, linguistic and affective factors; it is also interactive because it takes place between the text and the reader’s processing strategies and personal experience. It involves a mechanical process of deciphering symbols through the eyes and articulating the words through the speech device and a cognitive process where students are mentally engaged in constructing meaning, analyzing, criticizing and expressing opinions (Frost, Madsbjerg, Nieders, Olofsson & Sorensen, 2005). Reading forms the basic foundation to all academic subjects, yet educators don’t agree on how it should be instructed. The two main approaches to teaching reading are the whole language approach where students only read words in the context of a story rather than segmenting words into letters and sounds and the phonics approach (Maddox, K. and Feng, J. 2013).

McCormack, and Pasquarelli (2010), state that there are three major approaches to teaching phonics: Synthetic approach, analytical approach and analogy based approach. In the synthetic approach, also called inductive or part to whole, students first learn the sounds represented by letters, and then they are taught to blend sounds together to form words. In an analytical approach, also known as deductive or whole to part, students are
first taught words; then, they analyze those words into letters and sounds to learn rules and generalizations. In analogy based approach students are taught to notice patterns in words and to use the words they know to figure out other words. The synthetic approach appears to be mostly used with beginning readers and struggling readers. It is reported that it has more advantages than other forms of systematic phonics reading instruction (Pressley, 2016; Konza, 2010). A synthetic approach teaches the single letters and common letter combinations in a discrete, systematic and explicit manner, and in an order that facilitates blending (synthesizing). The early blending component is critical and begins as soon as the children know letters that can be blended into simple vowel-consonant (vc) or consonant-vowel-consonant (cvc) words. As the letter-sound relationships are learned, they are practiced in easy decodable text. This step is most important for children who do not pick up these relationships quickly, but in fact most beginning readers benefit from immediate practice of their new skills to build automaticity and confidence.

In order to read, students need to master two major sets of skills: A set of word-level skills required for decoding and they are called bottom-up or decodable skills, and a set of reading strategies called top-down skills which are analytical skills that readers use to construct meaning from the text (Lems, Miller, and Soro, 2010). According to Konza, (2010), the effective reading instruction addresses six major components: oral language, phonological awareness, phonic, fluency, vocabulary and comprehension. Oral language refers to the fact of exposing children to rich and increasingly complex conversations in order to have an advantage in vocabulary development and in understanding the structures of language. Phonological awareness focuses on the sounds of speech as opposed to its meaning. It has a number of different levels or components. Phonics refers to the teaching of letter-sound relationship. Vocabulary is a key component of reading for meaning because when children know the meaning of a word, they are far more likely to be able to read it and make sense of it within a sentence. Vocabulary is learned through repeated exposures to new words in conversations and by listening to stories. Fluency reflects a pivotal point in reading development. It encompasses more than reading rate, it also includes appropriate phrasing and intonation, which reflect
comprehension of the material being read. Comprehension is the culminating goal of reading, and it is achieved when all the other components are present.

Although all of the above skills are important aspects of reading successfully, my current research focuses on one of the main components of reading which is the phonological awareness and seeks to discover how vital phonological awareness is for beginning readers.

2.2 Development of emergent literacy at preschool

Children usually follow a developmental course in learning to read that begins well before they arrive to school. This early process is described as the emergent literacy where children develop a growing understanding of print awareness, phonological awareness and oral language development, which are the three areas that play a crucial role in the acquisition of reading (McCormack, & Pasquarelli, 2010). At preschool, children start to learn a great deal about books, print and writing of different kinds through their experience of environmental prints, signs and labels. Big books or stories are used to teach students vocabulary, listening comprehension as well as about book handling (left to right, top to bottom) turning pages (left to right) and meaning-bearing print that letters and words convey messages (McCormack, & Pasquarelli, 2010).

Children learn about the sound structure of language as a result of their biological predisposition to acquire a spoken communication system. Sensitivity to the sound structure begins early in life when infants start to discriminate their mother’s voice from other female voices and to distinguish the utterances, recognize syllables and detect intonation (Gillon, 2004). All this occurs at an unconscious level but phonological sensitivity originates in the preschool period, and research studies show that students are developmentally ready to be taught PA skills. The latter requires from children to make explicit and conscious knowledge about word’s sound structure (Gillon, 2004).


2.3 Phonological awareness and pre-reading skills

When reviewing the literature, a theoretical foundation revealed that phonological awareness skills begin to develop at the preschool age and that it is linked to language development and pre-reading skills (Turan & Gul, 2008; Eyres, 1995). Research has identified the significant role of PA instruction in developing children’s reading abilities. According to Lonigan et al., (2006), evidence show that phonological abilities are present in preschool and these abilities are predictive of beginning reading. Moreover, there is a reciprocal and interactive relationship between phonological awareness and early reading skill, and the gains in one area leads to gains in the other, as stated by Morris, Bloodgood, Lomax, and Perny (2000).

Research studies mention that children begin to develop early forms of phonological awareness as young as two and a half to three years of age where they are capable of indentifying, discriminating and reproducing different sounds and rhymes. However, it is important to recognize that when we speak of phonological awareness in very young children, we are speaking of very different levels of this ability than the PA exhibited by kindergarten or grade one students (Torgesen & Mathes, 2001). The National Reading Panel’s 2000 report to the U.S. Congress, which described a meta-analysis of 52 controlled experimental studies published in peer-reviewed journals, concluded that phonological awareness instruction has moderate and statistically significant effects on reading and spelling abilities and that explicit instruction is beneficial for typically developing children, for young children at risk for reading difficulties, and for poor readers. Lems et al., (2010), further stated that there is a reciprocal relationship between phonological awareness and reading. Being able to detect and manipulate phonemes in spoken language helps a child to read, and the act of reading promotes growth in phonemic awareness. Therefore, myriad studies have established a strong positive relationship between phonological awareness and success in early reading, and several studies based on training teachers have suggested a possible causal connection (Adams et al., 1998; National Institute of Child Health and Human Development, 2000; Eyres, 1995).
Research studies show that the relationship between phonological awareness and reading is predictive, preventive and causal. Predictive in a way that direct instruction of PA can predict positive effects in reading skills, preventive in a way that direct instruction in PA can prevent poor reading skills and causal in a way that good reading skills are directly linked to good phonological awareness and poor reading skills are directly linked to poor phonological awareness; hence students who experience early success in reading also demonstrate high level of phonological awareness which serves to facilitate the reading process (Eyres, 1995; Cunningham, 1989).

2.4 Importance of phonological awareness in reading

Why is phonological awareness important for reading? As it is already established, PA is the realization that a continuous stream of speech can be separated into individual words, that those words can also be broken up into one or more syllables, and that syllables are made up of separate, single sounds or phonemes. The importance of phonological awareness in reading lies in helping children to understand the alphabetic principle i.e. the correspondence between letters and their sounds. It helps in understanding how the words from their oral language are represented in print (McCormack, & Pasquarelli, 2010).

Phonological awareness is important for reading due to the process decoding and encoding. In reading, decoding refers to the process of converting the letters of the word into sounds and combing those sounds to form a word. Encoding is the opposite process it involves determining the sounds in a verbal word, and then mapping those sounds onto a letter sequence in order to spell out the written word. In both encoding and decoding, phonological awareness is needed because the child must know the sounds in the words in order to relate them to their letters (Reading Rockets@weta.org).

The early stages of the acquisition of reading skills require learning the correspondence between the visual and auditory forms of verbal units, i.e. between letters and sounds. When children learn to read, they must learn how to identify printed words and they must learn how to comprehend written material (McCormack & Pasquarelli, 2010).
According to Lems et.al, (2010), when using a synthetic approach of teaching reading, (part to the whole) students first learn the sounds represented by letters then they are taught to blend those sounds together to form words. When students read, they learn to perform several steps rapidly. First they identify the first letter of the word and try to find a matching phoneme, then working left to right they match the rest of the graphemes and phonemes of the word. Holding the sounds in the working memory, they recombine them to form a mental representation that they attempt to match with a word from their vocabulary. Thus, they can access its meaning and they can pronounce the word if they are reading aloud. If children cannot segment spoken words into phonemes, they will be unable to exploit the alphabetic code and to match letters in printed words to their corresponding sounds; therefore, pronouncing written words or phonological decoding is a vital skill for beginning reader and most powerful predictors of reading success. (Lems et. al., 2010).

Research studies reveal that students may find some difficulties in hearing the separate phonemes because the continuous nature of speech that compresses them into a series of overlapping sounds. Phonemes or speech sounds are difficult to perceive; people do not attend to the sounds of phonemes when they speak or when they listen to people speaking, instead, they process the phonemes automatically directing their active attention to the meaning. Phonemes fuse or blend together within a spoken syllable; therefore if students cannot separate sounds, they cannot relate those sounds to letters and if they cannot break up words apart orally, they have a difficult time taking words apart when they see them in print and will struggle with learning to read (McCormack & Pasquarelli, 2010). As it is clear from this analysis, phonemic awareness has its primary impact on reading growth through its effect on children’s ability to phonetically decode words in text. Phonemes are not detected easily in the speech stream and need to be explicitly taught. Although phonetic decoding skills should never be considered the end goal of reading, research shows that, for most children, acquiring these skills is a critical step toward effective reading (Lems, et. al., 2010).
2.5 Explicit teaching of phonological awareness at preschool

Although a substantial corpus of research studies have investigated the importance of developing phonological awareness at preschool, and although it is established that phonological awareness is a precursor for early reading, a systematic teaching of phonological skills is still lacking at the preschool level and educators don’t pay much attention to it as they pay attention to oral language or print knowledge.

Crim, Hawkins, Thornton, Rosof, Copley, and Thomas, (2008) and Al-Hilawani, and Alghazo, (2010), argue also that many early childhood educators are not adequately prepared to teach young children how to identify syllables and phonemes. Therefore; it is recommended that teachers receive a systematic and ongoing professional development to increase their understanding of phonological awareness and its critical role in early literacy skills. To investigate the lack of a systematic phonological awareness teaching program at the preschool level, Justice, Kaderavek, and Bowles, (2005) conducted a study in which they documented the benefits of integrating systematic and direct phonological awareness in reading. The experimental group of children was engaged in PA tasks (rhyme awareness and sound awareness) at the end of storybook reading, whereas, in the comparison group, activities related to vocabulary building were applied. Results of this study showed that implementation of PA tasks accelerated children’s phonological awareness. Children in the experimental group made significant gains in rhyme from pre-test to post-test. These results were not present in the comparison group.

In their article, Ryder, Tunmer, and Greaney, (2007), studied whether an explicit instruction in phonemic awareness and phonemically based decoding skills would be an effective intervention strategy for children with early reading difficulties. Twenty-four 6 year old struggling readers were randomly assigned to an intervention in addition to a control group that was not included in the program. This intervention program was carried out over a period of 24 weeks and comprised lessons in phonemic awareness and alphabetic coding skills. The post-tests results showed that the intervention group significantly outperformed the control group on measures of phonemic awareness,
pseudo-words (words that have no meaning) decoding, context free word recognition, and reading comprehension. Two-year follow-up data indicated that the positive effects of the intervention program were not only maintained but had generalized to word recognition accuracy in connected text.

De Witt, and Lessing, (2016), examined whether the phonological awareness of preschool children improve after the application of an intervention program called *Growing to Read*, their findings indicate an improvement in the language and phonological awareness skills of the children who participated in the program when compared to children who did not follow the program.

The efficacy of PA interventions with preschool-age (three-five years) children has been well-documented. According to Bailet, Repper, Murphy, Piasta, and Zettler-Greeley, (2013) and NELP (2008), Intensive, systematic PA training to groups and individual students over short periods (from as little as six weeks), was found to improve the phonological awareness skills of preschool-age children. On average, children from preschools and daycare centers benefited from more teaching sessions over a short period, which was reflected in increased gains on rhyming, alliteration, print, and letter knowledge tests. Moreover, Bailet et al. (2013) found that interventions impacted significantly on at-risk preschool students' performance in a range of phonological and literacy outcomes (rhyming, alliteration, print, and letter knowledge skills).

An effective preschool PA program would help children progress from larger units of sound to smaller units of sound, and students should be placed in a PA program according to their developmental level, as it is unlikely that children would be able to complete more complex skills at the phoneme level, without first mastering easier skills at the syllable level. The goal of such a program should be to move children quickly to the phoneme level, where they are better placed to learn to read in the early years than those students who can only perform skills with larger linguistic units (Callaghan, & Madelaine, 2012).
2.6 Progression of phonological awareness skills

Several studies investigating phonological awareness at the preschool level have suggested that the development of phonological awareness follows a certain sequence and progression. In their article, Carroll, Snowling, Hulme, and Stevenson, (2003), examined the influences of language development and letter knowledge on the development of phonological awareness in a group of 3 and 4 year old children and examined whether the development of phonological awareness follows a certain progression. The results of the study showed that children tend to develop syllable and rhyme awareness before phoneme awareness because syllable and rhymes tasks were easier than the initial phoneme tasks. Development occurred as a progression from large units (syllables and rhymes) to awareness of small units (phonemes).

According to Anthony, Lonigan, Driscoll, Phillips, and Burgess, (2003), children become increasingly sensitive to smaller parts of the words as they grow older. First, children can detect or manipulate syllables before they can detect or manipulate onsets and rimes, and they can detect or manipulate onsets and rimes before they can detect or manipulate individual phonemes within word units. Second, children can detect similar and dissimilar sounding words before they can manipulate sounds within words, and children can generally blend phonological information before they can segment phonological information of the same linguistic complexity. The findings of Anthony et.al (2003), suggested also that preschool phonological awareness can be divided to early implicit sensitivity to sounds and a later explicit awareness of phonemes. The implicit sensitivity is a skill that comes out from a normal language development whereas the explicit awareness of phonemes depended more on the development and accuracy of children’s articulation skills. This implicit sensitivity to sounds supports studies which revealed that phonological awareness develops at the preschool level.

Lopez (2012) also mentioned that tasks in phonological awareness follow a continuum from easy to more complex abilities. The easier tasks involve manipulating longer strings of phonemes, such as words, whereas harder tasks include manipulation at the individual phoneme level. Tasks requiring discrimination of phonemes are more difficult than the discrimination of words or syllables, or a combination of phonemes. Sounds are
easier for young children to pronounce when they are attached to other sounds (Lopez 2012; Phillips, Menchetti & Lonigan 2008; Nelson, Sanders & Gonzales 2010). One of the early signs of emerging sensitivity to the phonological structure of words is the ability to play rhyming games. In order to tell whether two words rhyme, the child must attend to the sounds in the words rather than to the meaning of the words. In addition, the child must focus attention on only one part of a word rather than on the way it sounds as a whole. As children grow in awareness of the phonemes in words, they become able to judge whether words have the same first or last sounds. With further development, they become able to isolate and pronounce the first, last, or middle sounds in words. As sounds become shorter, it becomes more difficult for children to pronounce these individual sounds.

According to Cassady, Smith, and Putman, (2008), when instructing students in PA, three distinct developmental tasks should be taken into consideration: task difficulty (e.g. the task of identification of sounds is easier than manipulation of sounds and blending sounds is easier than segmenting sounds), linguistic complexity (syllables are easier to identify than onset-rime than phonemes) and phoneme position in words (isolating the beginning sounds in words is easier than the ending sounds which is easier than the middle sounds).

Although Lopez, (2012) stated that children’s ability to comprehend the structure behind rhyming is one of the first steps in their grasping of the early reading skills but tasks that assess a more general level of phonological sensitivity (such as awareness of syllables or sensitivity to rhyme) are not as predictive of reading growth as are measures that specifically assess awareness of phonemes in words. Thus, programs that only teach rhyme or syllable awareness will not be as effective as those that help children to become aware of individual phonemes in words.

Research shows that various types of PA tasks not only differ in the level of complexity and cognitive task required but also in their potential to predict early reading improvement. The accumulated research indicates that measures of phonemes or smaller phonological units are more predictive of early reading skills than are larger
phonological units such as syllables, onset-rime and rhymes (National Early Literacy Panel, 2008; Mann, & Foy, 2003). The NELP (2008) meta-analysis found rhyme, which is considered the easiest skill within the hierarchical sequence of phonological skills, to be a poor predictor of subsequent decoding skills. Likewise, Mann and Foy (2003), found that rhyme awareness in 99 preschoolers did not impact on the development of early reading skills, whereas phonemic awareness was a contributing factor. The gains were dramatic at the phonemic level and the risk of teaching skills only at the word and syllable level means students' levels of phonological awareness may remain shallow. Furthermore, Smith (1998), stated that when students find difficulty to break down the words into their individual sounds with all the sounds in the right order, given that nothing is wrong with their ability to hear, this means that they have problem with phonemic awareness competency.

2.7 Phonological awareness skills across languages

Several studies also investigated the relationships between phonological awareness and reading skills within and across languages, and they have suggested that phonological awareness is related to and best predictor of reading abilities in bilingual children both within and across languages (Branum-Martin, Mehta, Fletcher, Carlson, Ortiz, & Carlo, 2006; Kang, 2012). PA is universal across languages; the development of PA is not strictly language specific; rather the cognitive process in one language can be applied to other alphabetic languages. Acquisition of PA skills in one language that is based on the alphabetic principle is likely to transfer to another language (Gillon, 2004).

2.8 Phonological awareness and phonics

O’Leary et al., (2010) reported in their study the views of Head Start Teachers who described their experiences and challenges in teaching sounds and words. Head Start Teachers differed in their views on whether sounds and letters should be taught
sequentially or concurrently. Many teachers believed that letters identification should be a prerequisite to phonological awareness. Others thought that teaching sounds should be prior to letter names. In terms of assessing children’s phonological awareness, some teachers reported using standardized assessment tools in their programs; others reported that they simply ask children to identify letter sounds.

It is established that children’s preliterate phonological awareness and the phonological awareness they develop while learning the sounds of letters and their name, help children learn to read. Pre-readers have demonstrated that phonological awareness training, especially when combined with instruction in letter knowledge, i.e. phonics, leads to longstanding improvements in phoneme awareness, reading, and spelling (Anthony & Francis, 2005). This facilitative effect of phonological awareness is strongest during the period in which children learn to “break the alphabetic code” which normally takes 1 to 3 years depending on the orthographic transparency of the written language. In turn, reading and writing provide feedback that influences individuals’ phonological awareness development (Anthony & Francis, 2005).

Similarly, Ball, and Blachman, (1991) in their research, evaluated the effects of training in phonemic segmentation and of instruction in letter names and letter sounds on kindergarten children's reading and spelling skills. Ninety students from three urban public schools in the U.S. were randomly assigned to one of three groups. The first group received training in segmenting words into phonemes, as well as training in correspondences between letter names and letter sounds (phoneme awareness group). The second group received only the training in letter names and letter sounds (language activities group). The third group received no intervention (control group). Results indicated that phoneme awareness instruction, combined with instruction connecting the phonemic segments to alphabet letters, significantly improved the early reading and spelling skills of the children in the phoneme awareness; however, instruction in letter names and letter sounds alone did not significantly improve the segmentation skills, the early reading skills, or the spelling skills of the kindergarten children who participated in the language activities group. Therefore, good training in phonological awareness should be combined with systematic instruction in phonics to make a strong early reading
curriculum. Phoneme awareness is an auditory skill that is considered a critical first step in learning to read and a precursor to phonics which is visual and auditory (Hiskes, 2005).

2.9 Importance of phonological awareness in writing

Studies also show the importance of phonological awareness to the learning of writing. For children to learn to read and write, it is necessary for them to understand the grapheme-phoneme relationship. Grapheme is a letter or number of letters that represent a phoneme. In their study, Rosal, Cordeiro, Da Silva, Silva, and De Queiroga, (2016) stated that the progression of age, and especially of the school years, influences the development and improvement of phonological awareness skills that depend, in part, on the contact with written and formal learning. Older children have more contact with the concepts of grapheme and phoneme; they have consequently gained a higher level of phonological awareness. When students acquire phonemic segmentation skill, knowledge of grapheme-phoneme correspondences, and familiarity with common spelling patterns, and as they practice reading and writing words, they become more able to remember correct spellings (Linnea, 2003). Since significant correlations exist between phonological awareness skills, rapid serial naming and writing, these skills should be part of the set of aspects to be observed for purposes of monitoring the early learning of writing in early childhood education.

2.10 Oral language and early reading skills

While it is established that phonological awareness is a strong predictor of early reading skills, it is considered necessary but not sufficient for learning to read. Some studies showed that oral language is also an influential factor (Prior, Bavin, & Ong, 2011). With respect to reading comprehension, the requirements to comprehend a text involve both the ability to decode and translate written symbols into meaningful words. In other words, while good phonological awareness is a precursor to decoding skills,
good oral language skills are a precursor to understanding what one reads. Therefore, Kendeau, White, Broek, and Lynch (2009), revealed in their findings that oral language skills as well as decoding skills are strongly interrelated in preschool and they both predict reading comprehension. One would argue then, that a good preschool literacy program should also include teaching oral language skills through shared book reading or other oral language intervention.

According to NELP (2008), reading anticipates that students who are deficient in decoding need to be taught strategies such as PA and phonics that support decoding, it also assumes that students deficient in linguistic (or listening) comprehension skills need to learn skills that improve listening comprehension, such as oral language skill. NELP (2008) found teaching PA skills to young children through code-based interventions had only a small impact on oral language skills, but had a moderate to large impact on measures of conventional literacy skills (reading and spelling). A rich language environment helps young children acquire vocabulary in the preschool years. During the school years, reading a text becomes progressively more complex as students encounter more difficult words. A good oral vocabulary is necessary for students to make the transition to understanding written vocabulary (National Institute of Child Health and Human Development, 2000). If students have a limited vocabulary on school entry but develop good decoding skills, they may be able to read easier decodable text or vocabulary-controlled text in the early years but a limited vocabulary will eventually impede reading comprehension as text becomes more sophisticated. Shared book reading provides a good framework for teaching oral language skills to young children. However, as stated by Callaghan and Madelaine, (2012), dialogic reading, a more interactive reading style, was found to be more effective in improving expressive language skills. It also provides a good opportunity to communicate the grammatical and syntactical structure of oral language to young children; therefore; phonological awareness instruction must be viewed as just one aspect of skill development within a balanced literacy framework and is not meaningful in itself.

It is evident that phonological awareness instruction is insufficient in improving oral language skills in young children, and that other teaching methods are required. In my
study, I chose to focus on phonological awareness because after a thorough and extensive search, I found that the majority of the literature review favors phonological awareness because phonological sensitivity originates during the preschool period and preschoolers are developmentally ready to be taught PA skills. In addition, while language comprehension and vocabulary are part of the regular curriculum in the preschool where my research is taking place and in most of the schools, direct teaching of PA is not part of the regular program and it is worth to investigate. Thus, the current research is expected to add to the supporting evidence that a systematic PA instruction has positive effects on the early reading skills of preschool students.

In summary, it is already established through research that phonological awareness is a precursor for early reading and is an important determiner of success in learning to read. Strong readers have strong phonological awareness, and poor readers have poor phonological awareness skills. The relationship between reading and PA is preventative, causal, and remedial. According to research, PA is an ability that develops during the preschool period and it is possible to stimulate growth in phonological awareness by explicit instruction; however, systematic programs of teaching phonological awareness at the preschool level are still considered scarce and many instructors are still lacking the knowledge, skills and practice in this area. My research explores what impact a twelve-week intervention of a systematic phonological awareness teaching has on preschool children. The coming chapter explains the methodology I used in order to conduct my research.
Chapter Three

Methodology

3.1 Research design

This research falls under the quasi experimental design, I used groups that are already established which are classrooms in a school. Quasi-experimental research is a form of experimental research in which the researcher does not have control over assignments of participants, but uses already established groups (Lodico, Spaulding & Voegtle, 2010). According to Fraenkel, Wallen, and Hyun, (2012), in the quasi experimental design the following steps are followed:

1) An experimental group and a control group are set up on some basis other than random assignment.

2) Pre-tests and post-tests are given to both.

3) The experimental group gets the treatment or intervention, the control group gets no special treatment.

4) Post-tests are given to both groups (Robson, 2002).

A systematic phonological awareness intervention is applied to one group already being formed which is the experimental group. There is a comparison between the pre-tests and post-tests results within the experimental group itself in order to check any gain or development after intervention, and a comparison between the post-tests results of the experimental group and the control group in order to check whether the explicit teaching of PA had an impact on PA development.
3.2 Participants and sampling procedures

Sampling

The sampling is considered non-random, i.e., it is convenient and homogeneous. All the participants were available and they all come from the same lower to middle socio-economic backgrounds. The school site was determined and I gained access and permission to it. The study took place in a private school located in the suburbs of Beirut.

Participants

Students from four KG3 sections were the participants in the study: a total of 107 KG3 students participated (28 students in every section). Two KG3 sections were selected to be the experimental group and received the intervention in addition to the regular school program and the other two sections were the control group who were taught the regular program only. The school KG3 program includes phonics teaching, print knowledge, vocabulary and listening comprehension but doesn’t include teaching of phonological awareness skills.

The participants are defined as learning English as a second language, they come from the same low to middle socioeconomic status and they had no noticeable visual, auditory or articulation deficit that might interfere with their learning. Prior informed consent was obtained from the parents. To control the variables related to teachers, I chose two teachers, who had considerable teaching experience, each one of them taught one section from the experimental group and another section from the control group.

3.3 Intervention

The study was conducted during the academic year 2015-2016, from January 2016 till April 2016. It consisted of a twelve-week intervention that included teaching
two KG3 sections systematic activities related to phonological awareness. The PA activities followed a certain sequence of skills as stated by research; they begin with the concept of sentences and words, then rhymes, syllables, and phonemes. The intervention was administered to the whole class; tasks were applied with whole class group, and individually. The control group didn’t receive any intervention; instead it adopted the regular program that is used in the school for KG3 students which doesn’t tackle any phonological awareness skill, although it teaches phonics and uses decoding skills to teach early reading. It is also worth to mention that both experimental and control group continued the meaning-focused instruction of reading that has vocabulary and comprehension components.

The teachers who participated in the study received prior training to acquaint them in the knowledge and skills of developing phonological awareness in children. I, as a researcher, met with the two teachers involved in the study prior to the intervention to do the training. The training was in a form of a workshop that covered the following topics: the approaches of teaching reading, the components of reading, the development of PA in the preschool period and the sequential PA skills: (awareness of words, awareness of rhymes, awareness of syllables, and awareness of phonemes). I also explained the P.A.S.T. test for teachers and how it should be administered to students without giving any hint for the answers. I also clarified that the whole test is an oral task; students are not required to write anything on the test and that the teacher is responsible for checking, writing and grading the answers of the students. At the end of the workshop, the teachers applied some of the PA activities that are found in the program in an attempt to familiarize themselves with the nature of the activities and the key terms related to them.

The teachers were asked not to use any of the PA activities with students of the control group instead they continued teaching the regular school program for both the experiment and control groups. Teachers were also asked to abide by the content of the lesson plans already prepared for all the activities and to use the exact wordings and vocabulary used by the intervention because improvising may lead to mistakes in segmenting syllables of words, or manipulating phonemes or even suggesting complex terms that may not be appropriate for the student’s age level.
3.4 Instruments

The instruments that I used to conduct this study were the following:

3.4.1. Phonological Awareness Intervention Program

The Phonological Awareness Intervention Program designed by me in reference to two programs: the phonological awareness of speech sounds (Roth, and Worthington, 2009) and the phonemic awareness in young children: A classroom, curriculum (Adams et al. 1998).

The program can be described as comprehensive; with direct and explicit instruction of phonological awareness activities for KG3 students. It is aligned with the Common Core State Standards for English Language Arts, specifically in phonological awareness of the kindergarten level. It is age appropriate to fit KG3 students. It includes short, direct, and oral activities that motivate young students to rhyme, blend, segment and delete syllables and phonemes. The program consists of 50 oral activities that were applied daily in class through a period of twelve weeks. Each activity was applied in 10 to 15 minutes duration; none of the activities required any letter knowledge and participants were not required to do writing task. Although the activities were all oral and relied on listening, the program also contained four activity sheets, one in each part, and they were considered as evaluation sheets. The program was divided into four parts which highlighted the hierarchy of phonological skills that are known and established through research.

The first part is the “concept of sentences and spoken words” which includes three activities. The aim of this section is to introduce children to three basic properties of sentences: 1) Sentences convey thoughts. 2) Sentences are composed of strings of separately speakable, meaningful words. 3) The meaning of a sentence depends on the words it contains, as well as on the specific order of these words. The focus of the first part is also to clarify children's concepts of words. Several of the activities are designed to develop the children's ability to analyze sentences into their separate words.
The second part is the “rhyme awareness” which includes eight activities. The purpose of this section is: 1) to develop the children's attention to the sounds of language and to similarities and differences in the sounds of words. 2) to explore student’s listening powers and to practice focusing their attention on particular sounds of interest. 3) to identify rhyming words. Students can train their ears for the sounds of words by hearing and using rhymes. In this part, students recognize rhymes, discriminate between words that rhyme and those they don’t; they also complete and produce rhymes.

The third part is the “syllable awareness” which includes sixteen activities. The purpose of this section is: 1) to identify syllables and 2) to blend, segment and delete syllables. Blending means putting together sounds and segmenting means breaking a complete word into parts. Segmenting is a harder skill than blending. Deleting means taking away a sound and getting a new word. Once the students have established that sentences are made of words, it is time to introduce them to the idea that words are, themselves, made of syllables. Syllables are strings of units of speech smaller than words but unlike words, syllables are meaningless. It is unlikely that the children have ever noticed or thought about them before. Yet, the successive syllables of spoken language can be both heard and felt: They correspond to the sound pulses of the voice as well as to the opening and closing cycles of the jaw. Each syllable has only one vowel sound. Syllables are introduced by asking the children to clap and count the pulses of their own names. By extending this challenge to a variety of different words, the children's concept of the syllable is then strengthened and enriched. In this part, children were provided familiar words used in the activities, for it is very difficult to remember the sounds of an unfamiliar word and teachers were asked to pronounce the syllables clearly and distinctly.

The fourth part is the “phoneme awareness” which includes twenty three activities. The purpose of this section is to isolate the phoneme of initial sound, isolate the phoneme of final sound, blend phonemes, segment phonemes, and substitute phonemes. Phonemes are the smallest functional units of speech, which may be one of the reasons that they are so hard to notice and are the most difficult skill of the PA progressive continuum yet a most critical skill for reading. Unlike words, phonemes are meaningless; therefore, it is
unnatural to lend them active attention in the course of typical speaking or listening. Unlike syllables, phonemes cannot be easily distinguished in running speech. The activities in this section are designed, first, to lead the children to discover that words contain phonemes and, second, to help them begin to learn about the phonemes' separate identities so that they can recognize them and distinguish them one from another. The twenty three activities engage children in exploring, comparing, and contrasting the phonemes' place and manner of articulation. The initial phonemes of words are easier to distinguish and attend to than medial or final phonemes. The activities in this section focus on the first and last phonemes in words which are age appropriate to kindergarten students. It is important to note that the activities designed and applied at the phoneme awareness level are more than the activities of the previous skills, since the research studies state that instruction at phoneme level is directly linked to reading success (NELP 2008, Mann & Foy, 2003). The activities of the program begin with simple recognition tasks, like recognizing rhyming words; they advance to activities that require completion task i.e. the teacher says a word and asks students to complete the task by giving another word that rhymes with the word suggested by the teacher. The activities end with the most difficult task which is the production skill i.e. the student generates by him/herself two words that rhyme without any help from the teacher.

Following also the Pre-Reading Inventory of Phonological Awareness (PIPA), the program is designed to follow three levels: the Ability to detect, isolate and manipulate the units at each special skill (Hayward, Stewart, Phillips, Norris & Lovell, 2008); therefore in the “syllable awareness” part, the activities fall under the three progressive levels: blending syllables to form words, segmenting syllables to understand that words are divided into parts and deleting syllables to say the word with one syllable deleted.

In the “phoneme awareness” part, the activities fall under five progressive levels: phoneme isolation of initial sound (i.e. detect the beginning sounds in words), phoneme isolation of final sound, (i.e. detect the ending sound in words), phoneme blending (blending sounds to form words), phoneme segmentation (to break the word into sounds) and phoneme substitution (to replace a sound with another sound to form a new word).
All the fifty activities of the program were prepared as complete lesson plans readymade for the teachers. Each lesson plan includes the following headings: name of the activity, learning objective, materials, teaching steps, and application. All the fifty lesson plans were bound and organized in a booklet and a copy was given to each teacher.

3.4.2. Phonological Awareness Skills Tests (P.A.S.T)

The PAST test (Wright, 2005) is an adaptation from the test originally published in the book “Sounds in actions” by Yvette Zgonec (2000). It is designed as an informal individual assessment, it is comprehensive and it evaluates 14 aspects related to phonological awareness. All skills evaluated are typically mastered by kindergarten students but some skills are more difficult than the others. To obtain validity, the test content was sent to three academic specialists to check whether the test items measure information related to phonological awareness. As a result of their feedback and after amending some items, content validity was obtained. I adapted the test and used it as pre-test and post-test. The changes made to the test are as follows: I replaced the proper noun “Terry” mentioned in the test by the name “Hadi” to better fit the Lebanese culture. I also replaced the word “ship” by the word “rat” and the word “tooth” by the word “top” in the “phoneme isolation” part, as the sounds /sh/ and /th/ are not familiar to kindergarten children. I also changed the four letter words into three letter words because it is more age appropriate for KG3 students to blend, segment or manipulate three letter words than four letter words. In administering the test, the teachers used a pencil to check or write student’s responses. The entire test was done orally and students didn’t write anything. The test is composed of 14 sections with six items under each section, making a total of 84 items. Each section took four to five minutes; hence the whole test took approximately between 20 to 30 minutes to be completed by every child. The fourteen sections covered the following skills: concept of spoken words, rhyme recognition, rhyme production, syllable blending, syllable segmentation, syllable deletion, phoneme isolation of initial sounds, phoneme isolation of final sounds, phoneme blending, phoneme segmentation, phoneme deletion of initial sounds, phoneme deletion of final sounds, phoneme deletion of first sounds and phoneme
substitution. According to the author of the test, a skill is considered mastered when a student gets five correct answers out of six. The test was administered individually to each student in both experimental and control groups as pre-test and post-test.

3.4.3 Observations

Three observations were conducted by me, in each of the experimental classes and two observations were conducted in each of the control classes. The observation checklist (Appendix B) was also presented to the three academic specialists in order to obtain validity. In the experimental classes, I used an observation checklist that was divided to two parts, one part aimed to check some aspects in teacher’s performance while teaching PA activities and the other part was to check student’s performance and their understanding of the PA skills. In the control classes I used the general observation checklist pertaining to the school.

3.4.4 Evaluation sheets

Four activity sheets, one for every section of the intervention program were also designed. They aim at evaluating student’s performance and keeping track of their progress in the concept of words, rhyming awareness, syllable awareness, and phoneme awareness. Each sheet was administered to students, who were taught the program, at the end of each section as a formative assessment. Each worksheet has 5 questions with a score of one point each. The teachers were asked to re-teach the related skill if students receive a grade of 2 out of 5 in the worksheet. Only 2 students got 2 in all the worksheets and teachers repeated the related activities for them.

3.4.5 Interviews

The teachers come from the same background; they both have a university degree in English literature from the Lebanese university, they have at least seven years
of teaching experience in Kindergarten (KG3 classes) and they are approximately the same age. Their opinions were taken into consideration; therefore a semi-structured interview was conducted with each one of them. The teachers were also asked to fill in the written form of the interview in order to minimize data loss that may happen from an oral interview. Teachers expressed their views about the program itself and its impact on students’ phonological awareness development and their performance in general.

### 3.5 Procedures

The steps used in implementing the program are the following:

1) A pre-test was administered to students of both groups in order to establish pre-treatment baseline performance for each child. The tests were adopted from the Phonological Awareness Skills Tests (P.A.S.T) (Wright, 2005).

2) The twelve week program for the experimental group was implemented in two sections while the other two sections continued to use the regular program assigned by the school.

3) The student’s progress was monitored through observations. As a researcher, I conducted 3 observations in each of the classes where the intervention is applied using observation checklists with defined rubrics that tackle phonological awareness skills and 2 other observations in the regular classes to monitor how students are dealing with the regular program in terms of letter knowledge and phonics.

4) Ongoing assessment activities in a form of four activity sheets were applied with the experimental group to keep track of student’s performance and their phonological awareness development.

5) Semi structured interviews were conducted with the teachers to get their feedback about the impact of the program on student’s performance.
6) Post-tests were administered at the end of the intervention to both groups in order to
determine the performance gains of the experimental group and the difference in pre-
reading skills between the control and experimental group.

3.6 Validity and reliability

Different steps were taken to ensure validity of the research. According to
Cohen, Manion, & Morrison, (2000), to obtain content validity, instruments must show
that they “cover fairly and comprehensively” what they are supposed to cover. (p.109).
For data to be examined in terms of accuracy and reality, pre-test/post-test content was
sent to three academic specialists to check whether the test items measure information
related to phonological awareness. As a result of their feedback and after modifying
some items, content validity was obtained. The observation checklist and the interview
questions were also presented to the three specialists who were asked to check the
phrasing of the items and whether they were in line with what they were supposed to
measure. Teachers were also trained to apply the PA activities before the intervention
started. The principle of triangulation is a powerful way to demonstrate validity.
Triangulation is defined as the use of two or more methods of data collection (Cohen, et
al., 2000). In order to study the results from different perspectives, both qualitatively and
quantitatively, I used triangulation to check alignment in the results obtained from the
tests, observations and interviews.

For a research to be reliable, it must demonstrate that if it were to be carried out on a
similar group of respondents in a similar context, then similar results would be found
(Cohen, et al., 2000). So, consistencies in the answers of the same questions in both
sections in the experimental group and both sections in the control group showed that
the study was reliable.


3.7 Ethics in research

This research followed the ethical aspects in education and has been approved by the Lebanese American University, Institutional Review Board (IRB). According to Robson, (2000), three main ethical aspects should be taken into consideration when conducting a research: consent, privacy and risks as related to benefits. I carefully attended to these three aspects and to the IRB requirement whereby all the individuals engaged in the research adhered to the research protocol.

My study involved kindergarten children who are considered vulnerable population; therefore a written consent was taken from their parents who signed the parental consent form, allowing their children to participate in the study. I also took the consent of the two teachers who voluntary accepted to participate in the research study as well as the school principal consent to gain access to the school and collect data for my research. All individuals involved knew that confidentiality was granted, since all the data and the results obtained remained anonymous and didn’t affect children’s school records or teacher’s career at school. Children’s and teachers’ names were not written on any document. Only the researcher had access to records, data was treated as confidential, findings were reported anonymously and data was discarded once the study was done. The participants were also informed about the purpose of the study, that this research was conducted for educational purpose and that no risks were associated to the study, instead possible educational benefits would develop. Teachers would enhance their knowledge and skills and students would gain more benefits in relation to the topic.

After clarifying my research design, sampling and the instruments used to collect my data, and after stating how validity, reliability and ethical issues were ensured, the following chapter covers the results that were concluded after completion of the treatment period and after using all the instruments already mentioned.
Chapter Four

Results

4.1 Findings

In this chapter, I state the results collected from each instrument and I discuss them. The instruments I used in data collection are: the pre and post tests, the observations and the interviews with the two teachers.

4.1.1 Phonological Awareness Skills Tests (P.A.S.T.)

The P.A.S.T. is the test used as pre-test and post-test. The pre-test was conducted with both experimental and control groups in order to establish baseline information about student’s knowledge of the subject and to measure where students stand in relation to the phonological awareness skills. To analyze the data, and since the variables are quantitative, the Statistical Package for the Social Science (SPSS) was used. A T-Test was also developed in order to compare the two groups.

Table 1 shows the pre-test results of both experimental and control groups.
Table 1: Pre-test results of experimental and control groups in all 14 questions of the test.

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<tr>
<th>Questions</th>
<th>Groups</th>
<th>Mean</th>
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<tbody>
<tr>
<td>Pre-test - Q1: concept of words</td>
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<td>6.5</td>
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<tr>
<td></td>
<td>Control</td>
<td>5.5</td>
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<tr>
<td>Pre-test - Q2: Rhyme recognition</td>
<td>Experimental</td>
<td>5.6</td>
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<tr>
<td></td>
<td>Control</td>
<td>6.5</td>
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<tr>
<td>Pre-test - Q3: Rhyme production</td>
<td>Experimental</td>
<td>3.2</td>
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<td></td>
<td>Control</td>
<td>3.3</td>
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<td>Pre-test - Q4: Syllable blending</td>
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<td>7.2</td>
</tr>
<tr>
<td>Pre-test - Q6: Syllable deletion</td>
<td>Experimental</td>
<td>6.4</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>6.0</td>
</tr>
<tr>
<td>Pre-test - Q7: Phoneme isolation/initial</td>
<td>Experimental</td>
<td>8.9</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>7.9</td>
</tr>
<tr>
<td>Pre-test - Q8: Phoneme isolation/final</td>
<td>Experimental</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>5.4</td>
</tr>
<tr>
<td>Pre-test - Q9: Phoneme blending</td>
<td>Experimental</td>
<td>6.2</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>5.6</td>
</tr>
<tr>
<td>Pre-test - Q10: Phoneme segmentation</td>
<td>Experimental</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>4.6</td>
</tr>
<tr>
<td>Pre-test - Q11: Phoneme deletion/initial</td>
<td>Experimental</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>1.8</td>
</tr>
<tr>
<td>Pre-test - Q12: Phoneme deletion/final</td>
<td>Experimental</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>4.5</td>
</tr>
<tr>
<td>Pre-test - Q13: Phoneme deletion/first sound</td>
<td>Experimental</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>1.2</td>
</tr>
<tr>
<td>Pre-test - Q14: Phoneme substitution</td>
<td>Experimental</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>2.9</td>
</tr>
<tr>
<td>Total percentage</td>
<td>Experimental</td>
<td>53.9</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>50.6</td>
</tr>
</tbody>
</table>

Table 1 shows the pre-test results of both groups in each of the 14 questions of the test. Each question of the test was graded over 5, but in order to facilitate reading the results, the means were calculated out of 10. The total percentage grade is mentioned at the end of the table. A quick look at the means in table 1 shows that scores of both experimental
and control groups were very close. Thus, there was no difference between the experimental and control groups at the start of the research. The grades of both groups were relatively low, which makes sense because PA skills are not part of the school program; students are only exposed to phonological awareness involuntary while learning about the letters. The lowest grades were at the phoneme level, especially at the deletion and substitution of phonemes, although the skill “phoneme isolation of the initial sound” scored the highest (8.9 for the experimental and 7.9 for the control group). The reason for this high grade competency is attributed to the fact that students were taught this skill while learning phonics and alphabet knowledge at the beginning of their school year and even during the previous KG2 academic year. The reason of the low grades in all other skills is attributed to the lack of previous direct and explicit phonological instruction.

In order to measure the improvement that happened after the intervention program, the pre-test and post-test scores were compared in order to analyze the gains that have happened. Table 2 compares the means scores of the experimental group in the pre-test and post-test of the first skill “the concept of spoken words”.

**Table 2:** Comparison between the pre-test and post-test of the experimental group (Concept of spoken words).

<table>
<thead>
<tr>
<th>Questions</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=54</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Pre-test-Q1-Concept of word</td>
<td>6.54</td>
</tr>
<tr>
<td>Post-test-Q1-Concept of word</td>
<td>8.96</td>
</tr>
</tbody>
</table>

Table 2, question 1: Concept of words. The mean scores reveal that the experimental group improved in that skill. The improvement is from 6.54 in the pre-test to 8.95 in the post-test.
Table 3: Comparison between the pre-test and post-test of the experimental group (Rhyme awareness)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=54</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Pre-test-Q2 Rhyme recognition</td>
<td>5.67</td>
</tr>
<tr>
<td>Post-test-Q2-Rhyme recognition</td>
<td>9.52</td>
</tr>
<tr>
<td>Pre-test-Q3- Rhyme production</td>
<td>3.22</td>
</tr>
<tr>
<td>Post-test -Q3- Rhyme production</td>
<td>8.70</td>
</tr>
</tbody>
</table>

Table 3, Questions 2 & 3: Rhyme awareness. The mean scores reveal that the experimental group improved in that skill in both competencies: recognition and production. In rhyme recognition, the improvement is from 5.67 on the pre-test to 9.52 on the post-test. At this rhyme level also, students improved tremendously in rhyme production from 3.22 on the pre-test to 8.70 on the post-test. This means that the intervention program improved students skills in producing rhyming words of their own, without the help of the teacher, as opposed to just identifying if two words spoken by the teacher rhyme or don’t rhyme. Thus rhyme production is a higher level skill in rhyme awareness that students learned and developed during the intervention program.

Table 4: Comparison between the pre-test and post-test of the experimental group (Syllable awareness)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=54</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Pre-test-Q4- Syllable blending</td>
<td>7.43</td>
</tr>
<tr>
<td>Post-test -Q4 -Syllable blending</td>
<td>9.63</td>
</tr>
<tr>
<td>Pre-test-Q5- Syllable segmentation</td>
<td>7.81</td>
</tr>
<tr>
<td>Post-test -Q5-Syllable segmentation</td>
<td>9.46</td>
</tr>
<tr>
<td>Pre-test-Q6-Syllable deletion</td>
<td>6.43</td>
</tr>
<tr>
<td>Post-test -Q6- Syllable deletion</td>
<td>9.31</td>
</tr>
</tbody>
</table>
Table 4, questions 4, 5 and 6: Syllable awareness: blending, segmentation and deletion. The table shows the increase of the mean scores from the pre-test to the post-test. Results reveal that the experimental group improved in that skill in the three competencies of blending, segmentation and deletion. In syllable blending, the improvement is from 7.43 in the pre-test to 9.63 in the post-test. In syllable segmentation, the improvement is from 7.81 in the pre-test to 9.46 in the post-test. In syllable deletion the improvement is from 6.43 in the pre-test to 9.31 in the post-test.

Table 5: Comparison between the pre-test and post-test of the experimental group (Phoneme awareness)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=54</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Pre-test-Q7 Phoneme isolation/initial</td>
<td>8.91</td>
</tr>
<tr>
<td>Post-test-Q7 Phoneme isolation/initial</td>
<td>9.65</td>
</tr>
<tr>
<td>Pre-test-Q8 Phoneme isolation/final</td>
<td>5.63</td>
</tr>
<tr>
<td>Post-test-Q8 Phoneme isolation/final</td>
<td>9.07</td>
</tr>
<tr>
<td>Pre-test-Q9-Phoneme blending</td>
<td>6.24</td>
</tr>
<tr>
<td>Post-test-Q9-Phoneme blending</td>
<td>9.09</td>
</tr>
<tr>
<td>Pre-test-Q10-Phoneme segmentation</td>
<td>4.96</td>
</tr>
<tr>
<td>Post-test-Q10-Phoneme segmentation</td>
<td>8.43</td>
</tr>
<tr>
<td>Pre-test-Q11-Phoneme deletion/initial</td>
<td>1.83</td>
</tr>
<tr>
<td>Post-test-Q11-Phoneme deletion/initial</td>
<td>7.52</td>
</tr>
<tr>
<td>Pre-test-Q12-Phoneme deletion/final</td>
<td>4.59</td>
</tr>
<tr>
<td>Post-test-Q12-Phoneme deletion/final</td>
<td>8.57</td>
</tr>
<tr>
<td>Pre-test-Q13-Phoneme deletion/first</td>
<td>1.96</td>
</tr>
<tr>
<td>Post-test-Q13-Phoneme deletion/first</td>
<td>7.22</td>
</tr>
<tr>
<td>Pre-test-Q14-Phoneme substitution</td>
<td>4.26</td>
</tr>
<tr>
<td>Post-test-Q14-Phoneme substitution</td>
<td>7.69</td>
</tr>
</tbody>
</table>
Table 5, questions 7, 8, 9, 10, 11, 12, 13 and 14 (Phoneme awareness: isolation, blending, segmentation, deletion and substitution). The table shows the increase of the mean scores from the pre-test to the post-test. Results reveal that the experimental group improved in that skill in the following competencies of the phoneme awareness skill.

- Phoneme isolation/initial (from 8.91 in the pre-test to 9.64 in the post-test)
- Phoneme isolation/final (from 5.63 in the pre-test to 9.07 in the post-test)
- Phoneme blending (from 6.24 in the pre-test to 9.09 in the post-test)
- Phoneme segmentation (from 4.96 in the pre-test to 8.43 in the post-test)
- Phoneme deletion/initial (from 1.83 in the pre-test to 7.52 in the post-test)
- Phoneme deletion/final (from 4.59 in the pre-test to 8.57 in the post-test)
- Phoneme deletion/first (from 1.96 in the pre-test to 7.22 in the post-test)
- Phoneme substitution (from 4.26 in the pre-test to 7.69 in the post-test)

Table 6: Comparison between the pre-test and post-test of the experimental group (Total percentage)

<table>
<thead>
<tr>
<th>All questions</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=54</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Total percentage of the pre-test</td>
<td>53.91</td>
</tr>
<tr>
<td>Total percentage of the post-test</td>
<td>88.06</td>
</tr>
</tbody>
</table>

Table 6, total percentage. There is an increase in the total percentage of the mean scores from pre-tests to post-tests in the experimental groups. This reveals that there is a significance difference in the development of all the phonological awareness skills due to the intervention program. Students achieved significant gains in these PA skills. The total percentage of the pre-test improved from 53.91 to 88.06 on the post-test.
In order to find out the differences that may have occurred between the experimental and the control groups, I compared the results of the post-tests in both groups.

**Table 7:** Comparison between the post-tests of control and experimental groups (Concept of spoken words)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Groups</th>
<th>Mean</th>
<th>S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-test -Q1: Concept of words</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test-Q1:Concept of words</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7 shows the difference in means between the experimental and the control groups as well as the significance. When comparing the post-tests of both groups in the “concept of words” competency, it is clearly shown that the experimental groups had more gains than the control groups. The difference is significant because its value is 0.00.

**Table 8:** Comparison between the post-tests of control and experimental groups (Rhyme awareness)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Groups</th>
<th>Mean</th>
<th>S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-test –Q2: Rhyme recognition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test-Q2:Rhyme recognition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.51</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.13</td>
<td></td>
</tr>
<tr>
<td>Post-test –Q3: Rhyme production</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test –Q3: Rhyme production</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.70</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.01</td>
<td></td>
</tr>
</tbody>
</table>

Table 8, questions 1 and 2: Rhyme awareness. This table shows the difference in means between the experimental and the control groups as well as the significance. When comparing the post-tests of both groups in “rhyme recognition and rhyme production”, it is clearly shown that the experimental groups had more gains that the control groups. The difference is significant because the value of it is 0.00. It is important to note the scores in the rhyme production competency between the control and the experimental group. The difference is significant and it is about 5 points (from 3.01 to 8.70). This
shows that rhyme production is a skill that students learned and developed during the intervention, it required explicit teaching; otherwise students wouldn’t have learned it.

Table 9: Comparison between the post-tests of control and experimental groups (Syllable awareness)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Groups</th>
<th>Mean</th>
<th>S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-test –Q4: Syllable blending</td>
<td>Experimental</td>
<td>9.62</td>
<td>7.50</td>
</tr>
<tr>
<td>Post-test –Q4: Syllable blending</td>
<td>Control</td>
<td>7.50</td>
<td></td>
</tr>
<tr>
<td>Post-test –Q5: Syllable segmentation</td>
<td>Experimental</td>
<td>9.46</td>
<td>7.24</td>
</tr>
<tr>
<td>Post-test –Q5 Syllable segmentation</td>
<td>Control</td>
<td>7.24</td>
<td></td>
</tr>
<tr>
<td>Post-test –Q6: Syllable deletion</td>
<td>Experimental</td>
<td>9.31</td>
<td>6.18</td>
</tr>
<tr>
<td>Post-test –Q6 Syllable deletion</td>
<td>Control</td>
<td>6.18</td>
<td></td>
</tr>
</tbody>
</table>

Table 9, questions 4, 5 and 6: Syllable awareness: This table shows the difference in means between the experimental and the control groups as well as the significance in questions 4, 5 and 6. When comparing the post-tests of both groups in “syllable blending, segmentation and deletion”, it is clearly shown that the experimental groups had more gains that the control groups. The difference is significant because the value of it is 0.00. These competencies developed tremendously in students of the experimental group but remained almost the same in students of the control group.
**Table 10:** Comparison between the post-tests of control and experimental groups (Phoneme awareness)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Groups</th>
<th>Mean</th>
<th>S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-test – Q7: Phoneme isolation/initial</td>
<td>Experimental Control</td>
<td>9.64</td>
<td>8.79</td>
</tr>
<tr>
<td>Post-test – Q7: Phoneme isolation/initial</td>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test – Q8: Phoneme isolation/final</td>
<td>Experimental Control</td>
<td>9.07</td>
<td>5.75</td>
</tr>
<tr>
<td>Post-test – Q8: Phoneme isolation/final</td>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test – Q9: Phoneme blending</td>
<td>Experimental Control</td>
<td>9.09</td>
<td>5.98</td>
</tr>
<tr>
<td>Post-test – Q9: Phoneme blending</td>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test – Q10: Phoneme segmentation</td>
<td>Experimental Control</td>
<td>8.42</td>
<td>4.20</td>
</tr>
<tr>
<td>Post-test – Q10: Phoneme segmentation</td>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test – Q11: Phoneme deletion/initial</td>
<td>Experimental Control</td>
<td>7.51</td>
<td>2.24</td>
</tr>
<tr>
<td>Post-test – Q11: Phoneme deletion/initial</td>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test – Q12: Phoneme deletion/final</td>
<td>Experimental Control</td>
<td>8.57</td>
<td>5.62</td>
</tr>
<tr>
<td>Post-test – Q12: Phoneme deletion/final</td>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test – Q13: Phoneme deletion/first</td>
<td>Experimental Control</td>
<td>7.22</td>
<td>2.60</td>
</tr>
<tr>
<td>Post-test – Q13: Phoneme deletion/first</td>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test – Q14: Phoneme substitution</td>
<td>Experimental Control</td>
<td>7.68</td>
<td>3.98</td>
</tr>
<tr>
<td>Post-test – Q14: Phoneme substitution</td>
<td>Control</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 10, questions 7, 8, 9, 10, 11, 12, 13, and 14: Phoneme awareness: This table shows the difference in means between the experimental and the control groups as well as the significance. When comparing the post-tests of both groups at the phoneme level, it is clearly shown that the experimental groups outperformed the control group in all the questions.

Q.7: Phoneme isolation of the initial sound. The experimental group improved from 8.9 in the pre-test to 9.6 in the post-test and the control group improved from 7.9 in the pre-test to 8.9 in the post-test. This is a competency where both groups score high in the pre-test because students practiced it while learning their regular phonics program at the school; nevertheless, the experimental group made more progress in this competency after the intervention and outperformed the control group.

Q.8: Phoneme isolation of the final sound. This competency is more difficult than isolating phoneme of the initial sound. The experimental group improved tremendously after the intervention, from 5.6 in the pre-test to 9.07 in the post-test. But when looking at the scores of the control group in this competency, the improvement from the pre-test to the post-test was not significant. (From 5.4 in the pre-test to 5.75 in the post-test). This competency is also taught to KG3 students while learning their regular phonics program at the school. This means that phonological awareness intervention contributed positively also to phonics teaching.

Q.9: Phoneme blending. This competency is also taught to KG3 while learning phonics at their school. The experimental group outperformed the control group in the post-tests with a significant difference, from 6.24 on the pre-test to 9.09 on the post-test. While the control group improved from 5.6 on the pre-test to 5.9 on the post-test.

Q.10: Phoneme segmentation. This competency is also taught to KG3 while learning phonics. The experimental group outperformed the control group in the post-tests with a significant difference from 4.9 on the pre-test to 8.42 on the post-test. While the control group showed a slight regression from 4.6 on the pre-test to 4.2 on the post-test.
Q. 11: Phoneme deletion of the initial sound. The experimental group outperformed the control group in the post-tests with a significant difference, from 1.8 in the pre-test to 7.51 on the post-test. While the control group improved from 1.8 in the pre-test to 2.24 on the post-test.

Q. 12: Phoneme deletion of the final sound. The experimental group outperformed the control group in the post-test with a significant difference, from 4.5 in the pre-test to 8.57 on the post-test. While the control group improved from 4.4 on the pre-test to 5.62 on the post-test.

Q. 13: Phoneme deletion of the first sound. The experimental group outperformed the control group with a significant difference, from 1.9 on the pre-test to 7.22 on the post-test. While the control group improved from 1.2 on the pre-test to 2.6 on the post-test.

Q. 14: Phoneme substitution. The experimental group outperformed the control group with a significant difference, from 4.2 on the pre-test to 7.6 on the post-test. While the control group improved from 2.9 on the pre-test to 3.98 on the post-test.

**Table 11:** Comparison between the post-tests of control and experimental groups

<table>
<thead>
<tr>
<th>All questions of the post-test</th>
<th>Groups</th>
<th>Mean</th>
<th>S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total percentage</td>
<td>Experimental</td>
<td>88.05</td>
<td>2.59</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>55.09</td>
<td>2.81</td>
</tr>
</tbody>
</table>

Table 11: Total percentage. Table 11 shows that the experimental group outperformed the control group in all the questions of the post-test with a significant difference of 88.05 for the experimental group and 55.09 for the control group.

### 4.1.2 Observations

My observations in the classes were ten in total and they are as follows:

- 3 observations in each of the two experimental KG3 sections (A & D)
- 2 observations in each of the two control KG3 sections (B & C)

My observations in the experimental classes covered three activities. The first activity was related to rhyme awareness (Detecting rhymes), the second one was related to syllable awareness (blending and segmenting syllables) and the third activity was related to phoneme awareness (Phoneme blending and segmentation). Both teachers were doing the same activity every day; therefore, I observed the same activities in both sections of the experimental group (A and D). I filled the observation checklists to keep record of the observations. In the control group, I observed an activity related to phonics (letter M) in both sections (B and C) and another activity related to blending CVC words in both sections as well. I also filled the observation checklists (the form used in the school) to keep record of the observations.

After collecting and analyzing the data of the observation sheets, the results were as follows:
In terms of the common aspects observed in both experimental and control group, I noticed that students in all sections were actively engaged with the teachers; they were attentive, and demonstrated understanding of the activity. It is worth mentioning that each of the two teachers involved in the study instructed one section from the experimental group and another section from the control group. Both teachers in all sections were well-prepared, explained clearly, encouraged students to answer questions, applied the activities as assigned by the regular program or the intervention, they used suitable teaching aids and they managed their classroom effectively.

In terms of the differences in the experimental group and the control group, here are some observations to mention.

a. Students in the experimental group learned to practice their auditory skills and developed sensitivity to the sounds of the spoken language and became quick in detecting sounds in words.
b. Students in the experimental group recognized that the spoken language is made up of sentences, which are made of words, that are composed of syllables that can be break apart into phonemes; they learned the PA related terms and they used many strategies like counting, clapping, snapping syllables and phonemes.

c. Students in the experimental group learned not only to recognize words that rhyme but also to produce their own rhyming words without the help of the teacher (pseudo words i.e. words that have no meaning were allowed to be used for students to practice and master the skill).

d. When observing students in the experimental group applying an activity at the phoneme level, I noticed that they can identify the beginning sound of any spoken word whether they are familiar with that word or not, and regardless of their knowledge of the letter; students in the control group could only identify the beginning sound of the word only if they have learned its letter and only with familiar words.

e. Students in the experimental group could blend sounds to form words (given that words are suitable to their age level i.e. CVC words) and they could segment words into their sounds by only hearing the word orally; regardless if they are familiar with the word or not; whereas, students in the control group could only do these skills if the letters to be blended or the words to be segmented are seen visually, written on the board and only if they have learned the letters of these words.

In conclusion, while observing students in both experimental and control sections, I noticed that student’s performance in the experimental group during the intervention demonstrated easiness in detecting sounds and mastery in manipulating the sounds of the words orally (through isolating, blending, segmenting, deletion and substitution). This capability confirmed the progress that the experimental group had over the control group at all levels of phonological awareness and even at the phonics level when students started to associate the letters with their sounds and read CVC words. In fact the treatment that the students received in phonological awareness paved their way for phonics teaching and to reading in general and led to better results at the phoneme levels.
which corresponds to what Anthony and Francis (2005) stated in their study. This also coincides with the results of the post-tests, where students in the experimental group outperformed students in the control group in competencies such as isolating the beginning or ending sounds, blending sounds to make words and segmenting sounds of the words. These competencies are taught for all the students in the regular program of the school and they intersect with phonics teaching. Nevertheless the results of the experimental sections in these competencies were far ahead.

4.1.3 Teachers’ interviews

I used a semi-structured interview which is a qualitative method of inquiry that combines a predetermined set of open-ended questions where the questions are determined in advance and the interviewers are asked the same questions, which facilitates comparability of responses (Cohen, Manion & Morrison, 2000). The purpose of the interview is to communicate with the teachers in order to get feedback about the impact of the phonological awareness (PA) intervention program on students’ performance in specific and on the teaching-learning process in general. The teachers were briefed about the nature of the interview. The interview was a social encounter with each teacher alone and it was conducted after all post-tests have finished. Both teachers answered the same questions and I asked them to write their answers on the interview sheets in an attempt not to lose data.

Here are the results of the interview which covered nine questions:

1) Do you consider this intervention program to be beneficial for students? In what way? Give examples.

Both teachers agreed that this intervention program is beneficial for students. One said that because it helped them to “segment words into sounds”, “blend and read words easily in a flexible way.” The other teacher said it helped students to “understand the relationship between letters and their sounds”. Both teachers could note the logical chain or causality between the PA intervention and early reading skills.
2) **What were the most significant challenges you faced in applying the PA program?**

Teachers interpreted this question differently. One said that the most significant challenge was time and being able to apply the intervention as well as the regular program at the same time. The other teacher mentioned that students were not engaged during the first week of the intervention and that was a challenge for her. She said that after the first week, students started to like these oral activities and became interactive.

3) **Do you consider that the PA tasks you applied follow a sequence and transcend from easy to difficult?**

Both teachers agreed that the activities followed a sequence and transcended from easy to difficult. Students first started to discover sounds around them, and then they ended up blending sounds to make words. They both agreed that the syllable level is easier than the phoneme level and that the competencies inside each level follow also a sequence from the easiest to the most difficult. A teacher said that “isolating the initial phoneme was much easier than substituting a phoneme with another phoneme to form a new word”

4) **What were the easiest PA tasks applied and the most difficult ones?**

Teachers interpreted this question similarly and reasonably. Both teachers stated that the easiest task was rhymes as well as blending and segmenting phonemes because students are familiar with these activities from the regular school program. The most difficult activities were the ones related to deletion of the beginning sound, deletion of the ending sound and substituting sounds with other sounds to form new words.

5) **Do you think that all students attain the objectives and mastered the skills taught?**

Both teachers agreed that all students in the experimental group attained the objectives and mastered the skills at various degrees due to some individual differences.

6) **Do you think that the tasks, games and activities applied were age appropriate?**

Both teachers agreed that the activities were age appropriate because students were interested in all the activities and showed engagement while participating.
7) Did you use language 1 (Arabic tongue) to clarify and explain some instructions for the students? Give examples.

Both teachers agreed that there was no need to use the Arabic language. English was used all the time. All activities were oral, easy to use activities. Instructions were well understood by students and this was clear from their correct answers.

8) Do you consider that the PA intervention was beneficial in enhancing others skills (listening skills, vocabulary, comprehension etc…)

Both teachers agreed that the intervention program had a positive impact on other skills taught in kindergarten, especially on listening skills as the program was based on oral activities. Students were attending to the sounds of the language all the time. One of the teachers further stated that the program enhanced vocabulary and oral communication as well as cognitive skills such as analyzing and synthesizing especially in segmenting and blending competencies.

9) Did this intervention add some gains to your teaching experience? In what way?

Both teachers expressed their positive attitude toward the program. One said that it “added a magic touch to my experience as a teacher.” Both mentioned that the program improved their teaching and added to their knowledge in reading skills. One of them said it is a “prerequisite” to reading and it gave insights on how to improve students’ pre-reading skills. Both also said that they admired the way the activities were presented to students in a form of game or a challenge which was interesting to students.

In short, chapter four stated the results collected from each of the three instruments: the tests, the observations and the interviews. Results of the three instruments were harmonious and in favor of the PA intervention. The post-tests revealed significant gains in PA skills of the experimental groups. The observations confirmed the results of the post-tests and revealed the progress that students in the experimental group had over the control group. Teachers’ interviews also corroborated the test results and the observations, as teachers’ views favored PA instruction in kindergarten. Discussions of these results will take place in the following chapter.
Chapter Five

Discussion

5.1. Discussion of findings

The study examined the importance of phonological awareness in pre-reading skills of Kindergarten students. Two research questions governed the study and they are the following:

1) How effective is a twelve-week intervention of a systematic phonological awareness teaching on the phonological awareness development and performance of KG3 experimental group?

2) What differences in pre-reading skills exist between the experimental and the control group?

In addressing the first research question, results of tables 2,3,4,5 and 6 are used to figure out the answer. Tables 2, 3, 4, 5 and 6 make a comparison between the pre-test and the post-test of the experimental group. The tables cover the four PA skills (concept of words, rhyme awareness, syllable awareness, phoneme awareness) and table 6 covers the total percentage in all the previous parts. The results of post-test in the experimental group are substantially superior to their initial baseline performance results. The notable gains in rhyming, blending, segmentation and deletion demonstrate that phonological awareness gains were due to intervention and not to the general maturation of the students or other factors. The impact of the intervention was tremendously obvious at the rhyme production level where students developed the capability of producing rhymes by themselves without teacher’s help, as well as the phoneme deletion of the initial sound where students developed the capability of figuring out a word after deleting its initial sound. After the completion of the intervention program, children exhibited an
immense growth in all PA skills compared to the group who did not receive the intervention, which means that this significant difference on the development of PA is due to the intervention program. These findings coincide with Justice et al., (2005) whose results showed that the implementation of systematic and direct of PA tasks accelerated children’s phonological awareness and that children in the experimental group made significant gains in rhyme from pre-test to post-test. The findings also coincides with Ryder et al., (2007) who studied whether an explicit instruction in phonemic awareness and phonemically based decoding skills would be an effective intervention strategy for children with early reading difficulties. Their post-tests results showed that the intervention group significantly outperformed the control group on measures of phonemic awareness, pseudo-words (words that have no meaning) decoding. Results of tables 2, 3, 4 5 and 6 reveal that the explicit and direct instruction of PA tasks that the experimental group received along 12 weeks was effective and improved the PA skills of students.

These findings corroborate the results of De Witt, and Lessing, (2016) who examined whether the phonological awareness of preschool children improve after the application of an intervention program called Growing to Read and their findings indicated an improvement in the language and phonological awareness skills of the children who participated in the program when compared to children who did not follow the program. Bailet et al., (2013) and NELP (2008), further stated that intensive, systematic PA training to individual students over short periods (from as little as six weeks) was found to improve the phonological awareness skills of preschool-age children. In addition to that, teachers’ interviews indicated that they observed an improvement in all the different aspects of students’ phonological awareness that were covered and my observations in classes were in harmony of these findings.

Before addressing the second research question, it is worth mentioning that students in both experimental and control groups learned the following skills while studying their regular school program: (phoneme isolation of initial sounds, phoneme isolation of final sounds, phoneme blending and phoneme segmentation). These skills are the first steps in phonics teaching whereby students learn to distinguish the first sounds in words, then
they learn to associate those sounds to their letters. When students learn the first vowel (e.g. vowel a) they start to blend the sounds to make words (e.g. cat, bat, sat) or segment the sounds in words (c/a/t, b/a/t, s/a/t). The difference between the experimental group and the control group is that the experimental group during the intervention practiced these skills directly, explicitly and orally with different sounds or phonemes regardless of whether they know the corresponding letters or not; whereas the control group practiced those skills only when they learned each letter one at a time.

Tables 7, 8, 9, 10 and 11 show a comparison between the post-tests of the experimental and control group and answer the second research question: What differences in pre-reading skills exist between the experimental and the control group?

In the phoneme isolation of the initial sound, there was no significant difference between the experimental and the control group, both scored high. This skill is the easiest one at the phoneme level and it is a skill that all students studied and practiced it abundantly while applying their regular program. In the phoneme isolation of final sounds, phoneme blending and phoneme segmentation, students in the experimental group outperformed students in the control group with a significant difference. Therefore the difference in pre-reading lies in the ability of students in the experimental group to isolate ending sounds, blend and segment sounds at ease and a way better than the control group. The results reveal that students who received direct instruction in the form of oral activities achieve better results than students who picked up phonemic awareness later through interaction with letters in phonics teaching. Therefore PA instruction accelerates the reading growth of all children, and it is vital in order for of children to acquire useful pre-reading skills.

During observations, students of the experimental groups could identify the beginning sound of any spoken word whether they are familiar with that word or not, and regardless of their knowledge of the letter; they were easily manipulating the sounds of words. This was not the case in the control group.

During the interview, teachers also confirmed that students in the experimental group benefited from PA instruction because it helped them to “segment words into sounds”,

50
“blend and read words easily in a flexible way”. These findings coincide with McCormack and Pasquarelli (2010) who stated that sounds or phonemes are not detected easily in the speech and need to be explicitly taught. Students cannot separate sounds and cannot relate them to letters if they cannot break up words apart orally. They have a difficult time taking words apart when they see them in print and will struggle with learning to read. Lems, Miller, and Soro (2010) agree to these findings and consider that pronouncing written words or phonological decoding is a vital skill for beginning reader and most powerful predictors of reading success, and children who cannot segment spoken words into phonemes they will be unable to exploit the alphabetic code and to match letters in printed words to their corresponding sounds. This explains why students in the control group were behind even in the skills that they have learned in their regular program like blending and segmenting, because they lacked a prerequisite step of manipulating the sounds orally before associating those sounds to their letters.

In short, the intervention program had a noticeable impact on students; there was great improvement in students who received the treatment program in all aspects of PA skills and students in the experimental group outperformed students in the control group. The following chapter is the conclusion; it includes a summary of what has been done in addition to the recommendations, limitations, implications, reflexivity and suggestions for further research.
Chapter Six

Conclusion

6.1 Summary of the study

A growing body of research highlights the importance of phonological awareness in the development of early reading skills. Phonological awareness is considered one of the key precursor skills to conventional literacy that develop during the preschool period, and preschool children have the ability to identify and manipulate the sounds structure of words (N.E.L.P. 2008).

The purpose of the study was to investigate the impact of a short, systematic and explicit teaching of phonological awareness skills on the pre-reading skills of KG3 students in a private Lebanese school. For that reason a twelve weeks intervention program was taught to a sample of KG3 experimental group who received the treatment as opposed to a control group who were taught the regular school program which doesn’t include phonological awareness skills. The results revealed a significant increase in students’ phonological awareness performance after instruction. Their scores in the post-tests were substantially superior to their initial baseline performance; their results revealed significant improvements in their rhyming, blending, segmenting and deletion abilities than children who are in the control group; therefore the intervention is considered effective with a significant positive impact on student’s pre-reading skills.

In conclusion, the study contributes to the literature in identifying phonological awareness as an important predictor of reading among young students learning. The findings provide early childhood educators with a clear understanding of phonological awareness skills and ways of promoting their development at the preschool level. They also reveal that a phonological age appropriate instruction should be integrated in the
preschool and kindergarten curriculum as part of the broader literacy program in order for students to learn to read earlier and better and in order to control and prevent reading difficulties at later stages

6.2 Recommendations

Since it is established that PA is a skill that develops at the preschool, and since the application of PA program for preschool children shows positive results in terms of the improvement of their phonological awareness skills, it is recommended that pre-reading skills and phonological awareness should be emphasized in preschool programs.

6.3 Limitations

One of the limitations of the study is the relatively small size of the sample chosen to be given the intervention in one school only. Another limitation is the power issue and being able to negotiate and apply the intervention without any bias in a place where I as a researcher and the teachers work everyday. Two students did the pre-tests but failed to do the post-tests and this is considered also a limitation.

6.4 Implications

The intervention program offers knowledge and understanding for preschool teachers regarding developing PA skills during the preschool period. The study also offers promising effects in terms of preparing skillful readers as well as preventing possible reading problems.

6.5. Reflexivity

If I were to reflect on this research, I would say that my work experience have led me to work on this topic and to explore the impact of PA instruction on preschoolers. The results contributed to the literature and convinced me to supplement our school
programs with direct and explicit PA instruction which should be part of a pre-reading instruction for every child.

6.6 Suggestions for further research

Further studies may explore the long term effects of the early reading skills with the same students who were subject to the intervention, when they are in grade one where reading starts to emerge, in order to have a deeper insight about the importance of this early PA intervention. Another comparison may be conducted between the same groups at the elementary level to find if this intervention can lead to better results in reading or can prevent reading problems.
References


Readingrockets@weta.org, Phonological and Phonemic Awareness.


Appendices

Appendix A: Pre-test and Post-test (PAST)

Name--------------------------- Date-----------------------------
Teacher------------------------ Grade-----------------------------

**Concept of Spoken Word**
Tell the student you are going to play a game with words and colored chips. Use the sentence "Sara likes cake" as an example. As you say each word of the sentence, push a colored chip forward—one chip per word. Then ask the child to do it. Once he/she understands the skill, read each sentence to the student and ask him/her to repeat the sentence while pushing up one chip for each word. Put a check in the box to the right of the sentence if the child does it correctly.

1. Tom ran home. (3) ☐
2. I have two pets. (4) ☐
3. Did you eat lunch? (4) ☐
4. What are you doing? (4) ☐
5. Hadi loves to play soccer. (5) ☐
6. Yesterday it rained. (3) ☐

Total-----------------------------

**Rhyme Recognition**
Tell the child that two words that sound alike at the end, such as hat and sat are rhyming words. Ask if sit and bit rhyme. (Yes.) Then ask if chair and boy rhyme. (No.) If the child appears to grasp the skill, do the same for each of the following pairs of words. Put a check in the box to the right of the pair if the child answers correctly.

1. bed-fed (yes) ☐
2. top-hop (yes) ☐
3. run-soap (no) ☐
4. hand -sand (yes)  □
5. funny -bunny (yes)  □
6. girl-giant (no)  □

Total----------------------------------

**Rhyme Production**
Tell the child that you are going to say a word, and he/she is to tell you a word that rhymes with it. The answer can be a real word or a nonsense word. Ask the child to tell you a word that rhymes with *sit*. Possible answers include *bit, fit, mit, pit, dit, and jit*. Put a check in the box to the right if the child answers correctly. Write down the child’s answers on the lines provided.

| 1. pain □ -----------------------------  | 4. see □ ----------------------  |
| 2. cake □ -------------------------------  | 5. dark □ ----------------------  |
| 3. hop □ ------------------------------  | 6. candy □ ---------------------  |

Total----------------------------------

**Syllable Blending**
Tell the child you are going to say a word in a funny way. The job of the student is to put the parts together and say the whole word. Give these examples, pausing between syllables: *out-side (outside), ro-bot (robot)*. Have the child say the sample words normally. Then do the following words and put a check in the box to the right if he/she says them correctly.

| 1. pen-cil □  | 2. rain-bow □  | 3. pop-corn □  | 4. black-board □  | 5. side-walk □  | 6. pa-per □  |

Total----------------------------------
**Syllable Segmentation**
Tell the student that you are going to say a word and then break it into parts, or syllables. First, say *rainbow* normally. Clap out the two parts in rain-bow while saying each part. Then push up a chip as you say each syllable. Read each of the following words and ask the child to push up a chip while saying each syllable. It is not necessary to clap the syllables again unless the skill needs to be retaught. Put a check in the box to the right if the child does it correctly.

1. sometime (2) □
2. basket (2) □
3. bedroom (2) □
4. fantastic (3) □
5. maybe (2) □
6. helicopter (4) □

**Total** ---------------------

**Syllable Deletion**
Tell the student you are going to play a game with words where one part of the word is left out. For example, *sunshine* without *shine* is *sun*. Ask the student to say *airline* without *air*. He/she should say *line*. Using the words below, tell the child the syllable to leave off. Use this sentence structure: "Say (down) town without *down.*" Put a check in the box to the right if the student deletes the correct syllable.

1. (down)town    town □
2. (in)side       side □
3. for(get)       for □
4. bas(ket)       bas □
5. af(ter)        af □
6. (skate)board   board □

**Total**---------------------
**Phoneme Isolation of Initial Sounds**
Tell the child you are going to say a word, and he/she is to tell you the first sound of that word. Ask the child what the first sound is in the word *top*. The child should say /t/. Do the same with the words below and put a check in the box to the right if the child says the first sound correctly.

<table>
<thead>
<tr>
<th>Word</th>
<th>Initial Sound</th>
<th>Correct?</th>
</tr>
</thead>
<tbody>
<tr>
<td>big</td>
<td>/b/</td>
<td></td>
</tr>
<tr>
<td>land</td>
<td>/l/</td>
<td></td>
</tr>
<tr>
<td>farm</td>
<td>/f/</td>
<td></td>
</tr>
<tr>
<td>apple</td>
<td>/a/</td>
<td></td>
</tr>
<tr>
<td>desk</td>
<td>/d/</td>
<td></td>
</tr>
<tr>
<td>rat</td>
<td>/r/</td>
<td></td>
</tr>
</tbody>
</table>

**Phoneme Isolation of Final Sounds**
Tell the child you are going to say a word, and he/she is to tell you the last sound in the word. Ask the child what the last sound is in the word *pot*. The child should say /t/. Do the same with the words below and put a check in the box to the right if the child says the sound correctly.

<table>
<thead>
<tr>
<th>Word</th>
<th>Final Sound</th>
<th>Correct?</th>
</tr>
</thead>
<tbody>
<tr>
<td>pick</td>
<td>/k/</td>
<td></td>
</tr>
<tr>
<td>ran</td>
<td>/n/</td>
<td></td>
</tr>
<tr>
<td>fill</td>
<td>/l/</td>
<td></td>
</tr>
<tr>
<td>bug</td>
<td>/g/</td>
<td></td>
</tr>
<tr>
<td>same</td>
<td>/m/</td>
<td></td>
</tr>
<tr>
<td>top</td>
<td>/p/</td>
<td></td>
</tr>
</tbody>
</table>

Total------------------
**Phoneme Blending**
Tell the student that you are going to separate all the sounds in a word, and he/she is to say the whole word. Do these examples by segmenting each sound and having the student say the whole word; for example, /s/ /i/ /t/ is sit, and /m/ /a/ /n/ is man. Read each word in segmented fashion. Put a check in the box to the right if the student says the whole word correctly.

1. /m/ /e/  
2. /b/ /e/ /d/  
3. /h/ /a/ /t/  
4. /f/ /i/ /t/  
5. /a/ /t/  
6. /h/ /o/ /p/  

**Phoneme Segmentation**
Tell the student that you’re going to play a game with all the sounds in the words below. As an example, show the student the three sounds in cat. Push up a chip for each sound you say /c/ /a/ /t/ Ask the student to try it with the word hat. Read each of the following words and ask him/her to push up a chip for each sound. Put a check in the box to the right if he/she does it correctly.

1. in (2)  
2. at (2)  
3. nap (3)  
4. tub (3)  
5. sock (3)  
6. fig (3)  

Total -------------------------
**Phoneme Deletion of Initial Sounds**

Tell the child you will be playing a word game where the beginning sound of a word is left off. For example, *bed* without /b/ is *ed*. Ask the child to say *can* without /k/. The answer is *an*. Read each word below and tell the child the beginning sound to leave off. Put a check in the box to the right if the child does it correctly.

1. (s)un          un  □
2. (p)ig          ig  □
3. (m)op          op  □
4. (n)eck        eck  □
5. (b)at          at  □
6. (t)ape        ape  □

**Phoneme Deletion of Final Sounds**

Tell the child that in this word game, the final sound of a word is left off. For example, *goat* without /t/ is *go*. Ask the child to say *meat* without /t/. The answer is *me*. Read each word and tell the child the ending sound to leave off. Put a check in the box to the right if the child does it correctly.

1. ma/t/        ma  □
2. lea/f/        lea  □
3. boa/t/        bo  □
4. sea/t/        sea  □
5. moo/n/        moo  □
6. ro/ck/        ro  □

Total-----------------------
**Phoneme Deletion of First Sounds**
Tell the student to make new words by taking the first sound off a consonant blend. Example: The word *cot* without /k/ is *ot*. Ask the student to say *sit* without /s/. The answer is *it*. Do the following words with the student and put a check in the box to the right if he/she does it correctly.

1. Say car without /k/. ar □
2. Say lap without /l/. ap □
3. Say rat without /r/. at □
4. Say bin without /b/. in □
5. Say hot without /h/. ot □
6. Say fan without /f/. an □ Total-------------------

**Phoneme Substitution**
Tell the child you will be playing a very different game with sounds of words. You are going to ask him/her to take off the first sound of a word and replace it with another sound. Example: Replace the first sound in *pail* with /m/. The new word is *mail*. Ask the child to replace the first sound in *top* with /hv/. The answer is *hop*. Ask the child to do the same with the rest of these words; if he/she answers correctly, put a check in the box on the right.

1. Replace the first sound in *man* with /k/. can □
2. Replace the first sound in *pig* with /d/. dig □
3. Replace the first sound in *sack* with /t/. tack □
4. Replace the first sound in *well* with /f/. fell □
5. Replace the first sound in *bed* with /r/. red □
6. Replace the first sound in *top* with /h/. hop □

Total---------------------------------
Appendix B: Class observation checklist

Teacher: ---------------------------------------------------------
Observer: -----------------------------------------------Title of the activity: -------------------
Observation #:-----------------------------------------------Duration: -----------------------------

<table>
<thead>
<tr>
<th>Teacher’s performance</th>
<th>M</th>
<th>S</th>
<th>R</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>The activity is announced to the students</td>
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<tr>
<td>The activity is aligned with the lesson plan</td>
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<tr>
<td>The materials are prepared and suitable for the activity</td>
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<tr>
<td>The activity is suitable for the developmental age of the</td>
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<tr>
<td>students</td>
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<tr>
<td>The time allotted for the activity is appropriate</td>
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<tr>
<td>The teacher encouraged students to answer questions</td>
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<tr>
<td>The teacher provided assistance for the students</td>
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<tr>
<td>The teacher used appropriate language and terms</td>
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</tr>
<tr>
<td>The teacher asked appropriate questions</td>
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<tr>
<td>The teacher used appropriate lead in for the activity</td>
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<tr>
<td>The teacher linked activity with prior knowledge</td>
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<tr>
<td>The teacher progressed from easy to difficult</td>
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<tr>
<td>The teacher explained clearly and gave enough examples</td>
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<tr>
<td>The teacher demonstrated understanding of the program content</td>
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<tr>
<td>The teacher used repetitions and re-teaching to tackle low achievers</td>
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<tr>
<td>The teacher allowed time for students to answers questions</td>
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<tr>
<td>The teacher alternated between whole and small group instruction</td>
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<tr>
<td>The teacher was organized and managed the classroom effectively</td>
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<table>
<thead>
<tr>
<th>Student’s performance</th>
<th>M</th>
<th>S</th>
<th>R</th>
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<tr>
<td>Students were attentive during teacher’s explanation</td>
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<td>Students demonstrated understanding of the questions</td>
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<td>Students were actively engaged in the activity</td>
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<td>Students demonstrated understanding of the concepts of words</td>
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<tr>
<td>Students demonstrated understanding of the concepts of sentences</td>
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<tr>
<td>Students can recognize rhyming words</td>
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<td>Students can produce rhyming words</td>
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<td>Students demonstrated understanding of syllable blending</td>
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<td>Students demonstrated understanding of syllable segmentation</td>
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<td>Students demonstrated understanding of syllable deletion</td>
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<td>Students can recognize beginning sounds and ending sounds</td>
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<td>Students can blend phonemes</td>
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<tr>
<td>Students can segment phonemes</td>
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<tr>
<td>Students can delete and substitute phonemes</td>
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M= majority of the time     S= some of the time     R=rarely     N=not observed
Appendix C: Teachers’ interview

Teacher’s interview

Objective:
The purpose of the interview is to informally communicate with the teachers in order to get feedback about the impact of the phonological awareness (PA) intervention program on student’s performance and on the teaching-learning process.

1) Do you consider this intervention program to be beneficial for students? In what way? Give examples.
   Sure, it is beneficial for students in many ways. It helps students how to segment words into sounds and learn to read the words easily and in a flexible way depending on their prior knowledge and their familiar background such as introducing sounds around them, segmentation, etc.

2) What were the most significant challenges you faced in applying the PA program?
   Students were motivated in each activity and they wanted to learn more. In the beginning of the program, they were not engaged but with the change of activities, they became more involved and motivated.

3) Do you consider that the PA tasks you applied follow a sequence and transcend from easy to difficult?
   Sure. It followed a scaffolding sequence and transcended from easy to difficult. Students, at the beginning, learned more about sounds and then discovered sounds; then they were able to cut sounds, delete, isolate, etc.

4) What were the easiest PA tasks applied and the most difficult ones?
   The easiest PA tasks were segmentation and blending phonemes because they were familiar to them. But the most difficult ones were isolation and deletion.

5) Do you think that all students attain the objectives and mastered the skills taught?
   Most of the students attain the objectives and mastered the skills taught, depending on students’ abilities and individual differences.

6) Do you think that the tasks, games and activities applied were age appropriate?
   The tasks, activities, and games applied were age appropriate because students were interested in all of them. Games and activities and the results showed their encouragement.
7) Did you use language 1 (Arabic tongue) to clarify and explain some instructions for the students? Give examples.

I didn't use language 1 to clarify and explain some instructions because all of the activities were performed as games such as introducing syllables, students used to clap the syllable of each word.

8) Do you consider that the PA intervention was beneficial in enhancing others skills (listening skills, vocabulary, comprehension etc.)

Of course it was so beneficial especially in listening skills because the program depends on listening. It helped students learn to read and identify sounds.

9) Did this intervention add some gains to your teaching experience? In what way?

The program added a magic touch to my experience in a way that it combined fun with learning and teaching strategies in explaining new concepts and getting more from life.
Appendix D: Phonological intervention program

Outline

1- Title of the program

2- Purpose of the program

3- Components of the program

4- Target skills

5- Target learners

6- The program: Teacher’s guide + application sheets
Title of the program
Phonological awareness intervention program

Purpose:
Many research studies highlighted the importance of developing phonological awareness at the preschool level. It is also established that phonological awareness is a precursor of early reading, but a systematic teaching of phonological skills is still lacking at the preschool level. Therefore, I decided to develop a program that focus on a systematic and explicit teaching of phonological at the preschool level. Since phonological awareness is defined as the ability to detect, manipulate, or analyze the auditory aspects of spoken language (National Early Literacy Panel, 2008, p.7), the materials developed are oral and based on listening skills. The purpose of the program is to guide preschool teachers in teaching phonological awareness activities to preschoolers including the ability to distinguish or segment words, syllables, or phonemes.

Components of the program:
The components are as follows:

- A teacher’s guide which includes step by step, systematic and sequential teaching ideas with complete and detailed lesson plans that guide teachers on how to teach the lessons and apply the tasks with students. The guide is divided to four parts which represent the four decoding skills that the program revolves around. At the beginning of every part there is a clear description of the objectives to be achieved and some training tips for teachers in order to improve their knowledge and skills in children’s phonological awareness.

- Sheets and exercises that serve as application and assessment activities.

- A Phonological Awareness Skills Tests (P.A.S.T) (Wright, 2005) that serve as a pretest and will be administered to students to establish pre-treatment baseline
performance for each child using rhyming, blending, segmentation and deletion activities. The same test also serves as posttest and will be administered at the end of the intervention in order to determine children’s performance and their gains.

- A puppet named “Dogy” that will assist the teacher and engage children throughout the program intervention.

**Target skills:**

The activities focus on the following phonological awareness skills: (Decoding skills)

- Concept of Spoken Word (Sentence segmentation)

- Rhyme awareness (recognition, completion and production)

- Syllable awareness (blending, segmentation and deletion)

- Phoneme awareness: (phoneme isolation of initial sound, phoneme isolation of final sound, phoneme blending (onset and rime)

**Target learners:**

A sample of 60 KG3 Lebanese students, who are 5 years old, learning English as a second language at Al-Mahdi school, Beirut, Lebanon.
Teacher’s guide
The aim of this section is to introduce children to three basic properties of sentences:

1. Sentences convey thoughts.
2. Sentences are composed of strings of separately speakable, meaningful words.
3. The meaning of a sentence depends on the words it contains as well as on the specific order of these words.
I-Concept of spoken words

Activity’s name: The idea of a sentence

Objective: To identify the notion of a sentence

Materials: Dogy the puppet

Note: Introduce the puppet Dogy to children and allow him to greet every child.

Teaching steps:

- Begin by presenting the children with a simple explanation of a sentence. For example, explain that a sentence is like a very short story. And just like a story, a sentence has to tell something and has to name who or what it is telling about.

- Give some examples of sentences using the names of your students as subjects (e.g., "I eat apples, the boy drinks milk, Ali has a school bag, Fatima has new boots, Hasan is wearing a red shirt"). After each example, repeat that this is a sentence and ask children to repeat the word "sentence" loudly.

- To clarify, you should also give some sentences without subjects (e.g., listen to what Dogy the puppet will say: "has brown eyes," "is wearing pink socks"). After asking if each is a sentence, explain that such phrases cannot be sentences because a sentence must name who or what it is about. Then ask Dogy to complete the sentence (e.g., "Ali’s mother has brown eyes," "Zina is wearing pink socks").

- Similarly, to show that a sentence needs a predicate, ask whether the following are sentences: "the children," "Ahmad." Then explain that these cannot be sentences because, even though we know who they are, they do not tell us anything about them. Ask students how we can make a complete sentence. (e.g. “The children draw, Ahmad paints, Mariam sleeps etc…."

Application:

After sharing a few such examples, invite children to share their own sentences.

Ask children to judge your statements as sentences or nonsentences by "thumbs up" or "thumbs down." If they identify a nonsentence, encourage the children to complete the sentence or to describe why it is incomplete. (Use 6 examples, 3 are sentences and 3 others are not; ask students to make them complete sentences)
Appendix E: IRB Approval

NOTICE OF IRB APPROVAL

To: Ms. Maha Bdeir
Advisor: Dr. Rima Bahous
School of Arts & Sciences

Date: December 22, 2015
RE: IRB #: LAU.SOAS.RB89.22/Dec/2015
Protocol Title: Phonological Awareness At The Preschool Level

The above referenced research project has been approved by the Lebanese American University, Institutional Review Board (LAU IRB). This approval is limited to the activities described in the Approved Research Protocol and all submitted documents listed on page 2 of this letter. Enclosed with this letter are the stamped approved documents that must be used.

APPROVAL CONDITIONS FOR ALL LAU APPROVED HUMAN RESEARCH PROTOCOLS

LAU RESEARCH POLICIES: All individuals engaged in the research project must adhere to the approved protocol and all applicable LAU IRB Research Policies. PARTICIPANTS must NOT be involved in any research related activity prior to IRB approval date or after the expiration date.

PROTOCOL EXPIRATION: The LAU IRB approval expiry date is listed above. The IRB Office will send an email at least 45 days prior to protocol approval expiry - Request for Continuing Review - in order to avoid any temporary hold on the initial protocol approval. It is your responsibility to apply for continuing review and receive continuing approval for the duration of the research project. Failure to send Request for Continuation before the expiry date will result in suspension of the approval of this research project on the expiration date.

MODIFICATIONS AND AMENDMENTS: All protocol modifications must be approved by the IRB prior to implementation.

NOTIFICATION OF PROJECT COMPLETION: A notification of research project closure and a summary of findings must be sent to the IRB office upon completion. Study files must be retained for a period of 3 years from the date of notification of project completion.

IN THE EVENT OF NON-COMPLIANCE WITH ABOVE CONDITIONS, THE PRINCIPAL INVESTIGATOR SHOULD MEET WITH THE IRB ADMINISTRATORS IN ORDER TO RESOLVE SUCH CONDITIONS. IRB APPROVAL CANNOT BE GRANTED UNTIL NON-COMPLIANT ISSUES HAVE BEEN RESOLVED.

If you have any questions concerning this information, please contact the IRB office by email at christine.chalhoub@lau.edu.lb

Dr. Costantine Daher
Chair, Institutional Review Board

2 2 D E C 2 0 1 5
APPROVED

Institutional Review Board
Lebanese American University

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