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The Effectiveness of Phonological Awareness Instruction in Improving Reading Scores

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The College at Brockport

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The Effectiveness of Phonological Awareness Instruction
in Improving Reading Scores

by

Gwendolyn Elizabeth Hamilton

August 2007

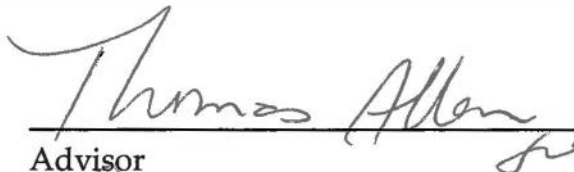
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Department of Education and Human Development of the
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Master of Science in Education

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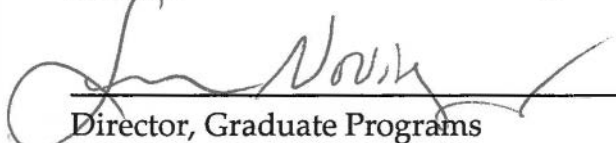
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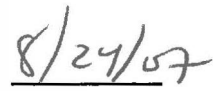
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Chapter I

Introduction

Currently in education, most professionals believe that phonological awareness plays a role in the development of beginning readers and writers. However, there are differing views regarding the issue. Some educators believe that phonological awareness is a skill that needs to be developed before a student can maximize their success in reading. Others believe that phonemic awareness comes as a result of early reading practice. One of the purposes of conducting this research was to find out more about the relationship between the two for myself.

According to some scholars, to make the transition from oral language to literacy, children must first become aware of the sound structure of language (Berg & Stegeman, 2003). Similarly, Chard & Dickson (1999) concluded that phonological awareness can be developed before reading mastery, and that it facilitates the subsequent acquisition of reading skills. However, some scholars have a different opinion. Based on research conducted by Edlen-Smith (1999) many regular education teachers who are being trained from the holistic approach are not convinced of the importance

of phonemic awareness instruction. Some of those teachers believe that as children learn to read and write, their phonemic awareness will gradually develop (Manning, 2006). The gap lies between educators who believe students cannot reach their fullest potential as a reader unless he/she has had instruction in phonemic awareness, and those that believe phonemic awareness comes as a result of reading development.

There can be a middle ground however. Many educators are now realizing that phonemic awareness is a contributor to reading success as well as a result of it. As Yopp & Yopp (2000) remark, while sensitivity to the sound basis of language, or phonemic awareness, supports literacy development, it is also an outcome of literacy experiences. They go on to say that phonemic awareness instruction should be viewed by educators as only one part of a much broader literacy curriculum, and that an overemphasis of phonemic awareness in the first years of education would limit children's opportunities for more comprehensive literacy development. It is also important to note that researchers such as Katch (2004), Center, Freeman and Robertson (2001), agree that phonemic awareness is only important in the context of meaningful reading and writing. With this background in mind, I investigated the effectiveness of phonemic awareness instruction.

Problem Statement

Currently, there is an informal study going on at my elementary school that is looking at students who do not meet the kindergarten reading benchmarks. Staff are monitoring below average students as they continue through first and second grade to see if they ever catch up to their peers. A few years ago, it was agreed upon as a grade level to raise the standard for kindergarten student's reading level to a DRA 3. One of the main arguments was that the students who do not meet the benchmark by the end of kindergarten usually do not meet the benchmarks as they continue on in first grade. Those same students continue to get Academic Intervention Services (AIS) throughout the first grade year, but still do not typically catch up to their peers.

For the past few years I have been looking for new ways to teach my below average students so that they get a better grasp on the skills necessary for them to excel in reading. Currently the AIS program provides small group instruction from a reading teacher four times a week, in addition to what the classroom teacher provides daily. Although the effort is great, it is not entirely effective in bringing below average students up to grade level.

The purpose of this paper was to investigate the effect direct instruction in phonological awareness would have on struggling readers and writers.

Significance of the Problem

Much of what drives instruction today is assessment. Even in kindergarten, teachers are under pressure to get their students to read at a certain level (DRA 3) by the end of the school year. Chances are, the students who do not meet the benchmarks in reading throughout kindergarten, first and second grade will struggle throughout their education. In light of all the publicity over phonological awareness, I sought to discover the relationship phonological awareness instruction has to reading development.

To do so, I conducted pre-assessments and post-assessments on a group of five students, who received direct instruction in phonological awareness, using the Developmental Reading Assessment. I also conducted a pre-assessment and post-assessment using the DRA on a group of five students who did not receive direct instruction in phonological awareness. I used the results from the two groups to assess the effectiveness the intervention had on improving reading levels. After the pre-assessment, I provided direct instruction in phonological awareness over a period of four weeks, four to five times per week for twenty minutes at a time to the experimental group

(see Appendix A). The instruction included lessons in auditory discrimination, sequencing, rhyming, syllabication, beginning sounds, segmenting, and phoneme manipulation. I provided relevance for these isolated skills for the students through the use of literature.

In addition to the DRA, I gave pre-assessments and post-assessments in writing. By analyzing writing samples through student invented spelling, I looked for evidence of growth in the control students had over the written language. Also, to determine the effectiveness of this intervention I used a Phonological Awareness Assessment (see Appendix B). I used the results from each group's pre and post assessment to further evaluate the intervention.

Rationale

Through direct instruction in phonological awareness, I was able to provide my group of struggling readers with some of the skills they needed to gain success in reading. The intensity and design of my intervention emphasized areas for the students to build lasting reading and decoding strategies.

I also gained a first hand look at the reality of what phonological awareness instruction can do for struggling readers. After hearing so much

about its importance, but not seeing many clear cut examples throughout my school building, I was eager to explore the matter of how effective it really was. It was my desire to help my students build a solid foundation upon which they would be able to stand to catch up to their peers. The reality of what the statistics say about students who struggle throughout kindergarten, first and second grade, and how they will continue to struggle throughout their education, was a frightening thought and became one of the main driving forces behind my research.

My journey to discover innovative methods that could potentially secure my struggling student's success, would not let me sidestep the area of phonological awareness. The following chapter analyzes the current research on phonological awareness instruction. In the literature review, I discuss current and effective literacy teaching practices, explain the role of phonological awareness instruction in the classroom, review supplemental reading instruction, and explore the connection between emergent reading and writing.

Definition of Terms

DRA – Developmental Reading Assessment, a standardized method for assessing reading development and progress over time including the use of running records to record reading behaviors, students are evaluated on accuracy, fluency, rate, phrasing and retelling

Phonological Awareness – the knowledge that words are made up of individual sounds, the understanding of the sound structure of language

Phonemic Awareness - the ability to hear, identify, and manipulate individual sounds (phonemes) in spoken words, also the understanding that words are made up of speech sounds or phonemes

Phoneme – the smallest unit of speech that affects the meaning of a word, a sound unit

(the /c/ in cat and the /m/ in mat are phonemes)

Chapter II

Literature Review

Effective Literacy Teaching Practices

Literacy instruction in the primary grades continues to be a controversial and intensively researched area of education. Since the late 1960's, opinions on teaching methods have been highly polarized, particularly in terms of how to teach children to 'crack' the written alphabetic code (Context for, 2005). There is disagreement between educators who advocate a whole-language approach, and those that believe in the phonics or word level approach to teach beginning reading.

This is an especially important debate for kindergarten teachers across the country who are coming under increased pressure to have their students reading by the end of the kindergarten school year. The demands are also becoming even more overwhelming for children who are being asked to become proficient at the art of reading and all that goes along with it, as well as the math and writing skills that are required. Acknowledging that the foundation for academic success is established before the age of five, Center, Freeman & Robertson (2001) recognize that some students arrive at school with a less than desirable skill set. This makes most school tasks difficult for

them to conquer and therefore, they become a part of the at-risk population. To accentuate this deficit, Katch (2004), demonstrates that there is a widening gap between the achievement of boys and girls that may be a result of trying to teach skills to students that are not yet developmentally ready.

Recently, there has been a call for more evidence based research to provide insight into this controversy. According to Foorman and Torgensen (2001), one large scale, federally funded study found that classroom approaches that emphasized systematic phonics, reading for meaning in controlled text, and writing, produced superior achievement compared to whole language methods that used basal readers. This study supported the growing consensus that instruction which builds upon phonemic awareness instruction is generally more effective than instruction that does not.

Further investigation into evidence based research revealed that phonological awareness instruction results in improved phonemic awareness, reading, and spelling. Foorman and Torgensen (2001) noted that phonological awareness instruction is most effective when provided in small groups (three to five students), while including alphabetic letters and fewer phoneme manipulations. In addition, Center, Freeman and Robertson (2001)

identified the importance of quality whole class instruction in the early school years as well as specific intervention strategies for at risk students.

One intervention that has gained success in Australia is a program that provides early literacy instruction for students at risk. The curriculum is known as the Schoolwide Early Language and Literacy (SWELL) program. A study that examined the success of SWELL, which is a code-oriented program stressing explicit phonological awareness and the alphabetic code in context, was conducted a few years ago. According to Center, Freeman and Robertson (2001), results indicated that students in SWELL classes significantly outperformed their peers on tests that measured decoding, reading connected text, invented spelling and overall reading ability.

Similar programs in the United States provide evidence that at-risk students can be assisted by positive and intentional experiences in the classroom, and can result in literacy acquisition. Bialystock (1996 as cited in Center, Freeman & Robertson, 2001) discovered that providing these at-risk students with appropriate instruction in print concepts, story language discourse, phonological processing, and phonological recoding skills, in the early school years, will reduce difficulties with reading, spelling, and writing later on.

Whitaker, Harvey, Hassell, Linder and Tutterrow (2006), have also noted a teaching strategy called FISH that isolated the phonemic awareness skills of onsets and rime. They found that by drawing attention to these attributes in words, which are considered to be among the earliest skills to be developed, it helped students recognize similar patterns in familiar and unfamiliar words.

The FISH Strategy provides a framework for students to decode new words that are difficult for them. First, students are instructed to *Find* the rime in the word (the first vowel and the rest of the word). Next, students *Identify* the rime or a word they know that ends like it. Then students *Say* the rime. Lastly, students *Hook* the new onset (beginning sound) to the rime. Whitaker, Harvey, Hassell, Linder and Tutterrow (2006) contend that the use of the FISH strategy equipped students with a systematic approach to decoding unknown words through relating prior knowledge to and using onsets and rimes.

Another example of a widely used literacy teaching practice is the Reading Recovery model. Center, Freeman and Robertson (2001) indicated that Reading Recovery has been highlighted as the main intervention program for at-risk students in first grade among Departments of Education.

Although Reading Recovery has many strong points and is a popular curriculum among school districts nationwide, it has received mixed reviews. Since the program follows more of a whole-language approach, it fails to provide the precise instruction in the alphabetic principle that at-risk students have difficulty discovering on their own. As stated by Center, Freeman and Robertson (2001), the omission of explicit instruction in the areas of phonological analysis and alphabetic coding are critical in reading acquisition and has been criticized by Shanahan and Barr (1995) in their extensive review of the Reading Recovery Program.

The Role of Phonological Awareness Instruction

Current literature, including the research of Leafstedt, Richards and Gerber (2004), on remediation and prevention of reading difficulties indicates that phonological awareness is an important component of early reading development. Leafstedt, et. al. (2004), have also suggested that students with phonological deficits have difficulties understanding that words can be broken into individual phonemes and therefore cannot act on that knowledge. This poses a large problem in a society that, according to Whitaker, et. al. (2006), expects children to recognize over 80,000 words by sight by the end of third grade.

With that in mind, and given the complexity of our language, beginning learners must come to an understanding of language and the rules for ordering and combining its sounds to be successful communicators (Wolf, Vellutino & Burko-Gleason (1998) as cited in Hester & Hodson, 2004). In addition, to truly master the language, a child must become skilled at reading and writing the written word. This is an overwhelming task for some students who lack the skills and intuition to put everything they are learning together.

Therefore, the importance of becoming a skilled reader is critical to a student's success throughout every phase of education. Berg and Stegeman (2003), argue that there is no single skill taught that is more central to learning than reading, which is the major route through every content area. However, reading and writing come with much more difficulty than oral language, and must be taught explicitly. In order to use reading effectively as a tool, Hester and Hodson (2004) believe that children must have an explicit level of phonological awareness.

Common phonological awareness activities have been placed on a continuum that ranges from the least to the most complex activities. Beginning with the least complex, rhyming, sentence segmentation, syllable

segmentation and blending, onset-rime, blending and segmenting, and the most complex is blending and segmenting individual phonemes. Through exposure to books that are based on rhyme and alliteration, most children begin to show initial phonological awareness before they enter kindergarten as their language development thrives. Adams (1990 as cited in Chard & Dickson 1999) contends that it is a child's phonemic awareness upon entering school that is most closely related to success in learning to read.

One of the most central components of phonological awareness for children to grasp is the alphabetic principle, which is the idea that letters represent sound and that printed letters can be turned into speech. In doing so, they must come to the understanding that there is a predictable relationship between the sounds of language and the letters used to represent those sounds. However, according to Berg and Stegelman (2003) nearly 50% of students will fail to learn from instructional strategies that assume they have the ability to recognize the alphabetic principle intuitively.

The failure of instructional strategies that are currently being used poses a large problem for primary teachers that are charged with the responsibility of imparting effective reading strategies to their students. Phonological awareness instruction can fill in the missing links for those

students who are not able to inherently pick up on the alphabetic principle. For instance, Neuman (2004) observed that educators have recently recognized the importance of phonological awareness instruction plays in providing playful language activities while learning to read through lessons in rhyming, alliteration, and syllabication. Phonemic awareness is also regarded as one of the most direct routes to ensuring improved reading competencies throughout the remainder of a student's education. For this reason alone, phonemic awareness instruction should be a central component of supplemental reading instruction in the primary grades.

Whitaker, Harvey, Hassell, Linder and Tutterrow (2006) found that students at risk of reading failure do not seem to discover what teachers sometimes leave unsaid about the complexities of learning words. Students that struggle with reading often do so because they are unable to make sense of what their peers understand quickly. They need more explicit and direct instruction to help them fully grasp the fundamental concepts that are sometimes taken for granted. Berg and Stegelman (2003) emphasized that the ability to process these fundamental concepts, such as the phonological components of language, is a critical precursor to understanding letter-sound

relationships. As a result, it is important for teachers to provide specific strategies for learning words.

Supplemental Reading Instruction

With the knowledge that phonological awareness instruction can have the power to improve student reading and decoding skills, it is beneficial to consider successful models of intervention. Some successful models as outlined by Foorman and Torgensen (2001) mention that effective instruction for students that are struggling to learn to read, must include explicit and comprehensive instruction, as well as more intensive and supportive instruction than that which is required by the majority of the class. Also, they found that instruction that builds on phonemic awareness and decoding, fluency in word recognition and text processing, construction of meaning, vocabulary, spelling and writing skills is most effective. Overall, direct, systematic and comprehensive instruction that builds on phonemic awareness and phonemic decoding skills will make the most significant impact.

Another important aspect to think about when considering phonological awareness intervention is that it needs to naturally fit into instruction. Teaching isolated skills is more difficult for students to retain out of context.

Instead, Edelen-Smith (1999) suggests exposing students to word play through the use of literature that deals playfully with speech sounds through rhymes. Utilizing literature that is interesting to students can be used to increase their awareness that words are made up of individual speech sounds, and that those sounds can be produced in isolation. Beginning to draw student attention to all parts of words can be done through literature that emphasizes rhyming, alliteration and syllabication.

When determining what students are candidates for phonological awareness intervention, educators need to consider students that are at risk for reading failure. It is understandable that a student in jeopardy of failure has needs that are much different from his/her peers. An "at risk" student may have more working against him/her than simply not understanding the content, or strategies being taught. The difficulties they face may run deeper and be difficult to overcome. Petrill, Deater-Deckard, Thompson, DeThorne and Schatschneider (2006) investigated the connection between genetic influences and reading skills in early literacy, and have indicated that there is a strong correlation between the two. They came to the conclusion that genetic influences are relevant in relation to reading ability and, more specifically, phonological awareness.

It is important to keep these elements in mind when developing an appropriate intervention strategy in order to ensure every student's success. Foorman and Torgensen (2001) suggest that a child at risk for failure needs more emotionally and cognitively supportive instruction. Also, they recommend additional positive emotional support from the teacher. A teacher who seeks success with these students will provide appropriate instruction that will challenge students but not frustrate them. It will also be necessary for the teacher to demonstrate patience with and confidence in the students so they feel supported and safe as learners. It is logical that these children will lack the confidence they need to take risks as they learn to read. A child that is afraid of failure will not be able to make as many gains because of the fear of embarrassment or criticism that could come along with making mistakes. Therefore, continual support should be provided in the form of encouragement, feedback and positive reinforcement.

In terms of grouping students for intervention, McIntyre, Jones, Powers, Newsome, Petrosko, Powell, and Bright believe that it is most beneficial for students to participate in small groups or receive one-on-one focused attention on specific literacy needs with students of like ability (2005). If working in small groups, it is recommended that the group size remain

between three to five students. It is important to note, however, that in a study conducted by McIntyre, et al. (2005), comparing the effectiveness of small group intervention to one-to-one tutoring, students who received one-to-one tutoring outperformed those that received small group or whole group instruction. In addition, many educators, such as Berg and Stegelman (2003), recommend that providing 15-30 minutes three to four times per week is enough to make a significant difference in a student's understanding of the speech and sound structure of language.

In addition, Leafstedt, Richards and Gerber (2004), indicated that interventions involving direct instruction in phonological awareness are effective for students across all ability levels. The interventions they described were focused on students identifying, manipulating, and producing sounds in words. They found that all ability groups progressed as a result of the intervention. Overall, current data reported by Flanigan (2006), suggests that phonological awareness is not simply correlated with early reading achievement, but that it indeed plays a fundamental role in learning to read.

Reading, Writing and Phonological Awareness

Another relationship that should not be overlooked is the relationship that exists between early reading and writing. Silva and Martins (2003) believe that a child's pre-emergent writing is an accurate indicator of future success in reading. However, this relationship has not always been well established. For example, Rieben, Ntamakiliro, Gonthier and Fayol (2005) reported that reading and writing were taught separately in Western cultures during the 16th and 17th centuries, and only a very small percentage of people who learned to read at that time also learned to write. It was not until the 1970's that researchers such as Chomsky (1971, 1979 as cited in Rieben, Ntamakiliro, Gonthier & Fayol, 2005) proposed that children could and should write before they are able to read. Chomsky (1971, 1979 as cited in Rieben, et. al., 2005) believed that it was more natural for children to write first and then learn to read by reading their own writings rather than reading someone else's writing.

A child's beginning writing attempts are referred to as invented spelling, and develop as a result of an attempt to spell an unknown word based on the writer's knowledge of the spelling system and how it works. Silva and Martins (2003) suggest that a child's invented spelling prior to

formal education constitutes a way of developing phonological awareness, and consequently favors the acquisition of literacy. In addition, training studies acknowledged by Rieben, et. al (2005) support this notion by providing results that indicate phonemic awareness instruction significantly improves invented spelling skills.

Invented spelling can reveal a great deal about a student's language and reading development, as well as reveal their ability to analyze the phonological components of words through their pre-conventional writing. For example, Ferreiro (1991 as cited in Silva & Martins 2003) believes that students must become aware of the properties of a sound sequence as a means of dealing with the problems they come up against when writing.

Silva and Martins (2003) also advocate the early stimulation of invented spelling activities as a means of promoting both phonological awareness and the gradual learning of the alphabetic principle. They provide evidence to suggest that invented spelling activity simultaneously develops phonological awareness as well as promoting understanding of the alphabetic principle. As teachers promote the understanding that the sounds they hear and say are represented by letters, they help children discover this principle. Foorman and Torgensen (2001) also claim that it is only after the emergence

of a student's alphabetic understanding that it becomes readily apparent in their early writing.

The reality that reading and writing are interdependent is becoming increasingly obvious as researchers continue to investigate their relationship. Rieben, et. al. (2005) further illustrate this relationship by demonstrating that invented spelling is highly correlated with phonemic awareness, is a strong predictor of reading achievement, and possesses instructional value for reading.

Overall, research has demonstrated not only a predictive relationship between phonological awareness and reading and writing success, but also a causal relationship (Edelen-Smith, 1999). By incorporating phonological awareness activities into everyday classroom routines, struggling students can benefit greatly. Edelen-Smith (1999) also believes that as students become aware of the sounds within their language through the use of big book read-alouds, predictable charts, and language games, they will gain a lifetime of reading benefits.

Chapter III

Applications and Evaluation

Introduction

The members of the target group for this action research project were kindergarten students in a rural school district in upstate New York. The district is one of the oldest centralized districts in the state, and covers over 72 square miles near the shore of Lake Ontario. Part of the mission of the district was to provide a supportive and creative learning environment, which challenged all of its students to achieve excellence as a way of life, as well as encouraging students to become lifelong learners and independent thinkers who accepted and appreciated individual differences.

The central purpose of this action research study was to assess the impact direct instruction in phonological awareness could have on reading levels in kindergarten students who were achieving below grade level. Another goal of this study was to determine if the same direct instruction in phonological awareness could also positively impact student writing.

Participants

The study included two groups of five kindergarten students each from the same classroom, and one kindergarten teacher. One group was

considered the experimental group (Group A), which received direct instruction in phonological awareness four to five times a week for four weeks. The other group (Group B) received regular daily instruction, with both groups given pre and post assessments to determine the effectiveness of the implementation.

There are approximately 525 students enrolled in the school, which is the only kindergarten and first grade school in the district. Of those students, approximately thirty-five percent receive free or reduced lunch, corresponding to the poverty rate within the district. Every student in Group A, consisting of four girls and one boy, fit into that category. Group B, with three girls and two boys, consisted of four students below the poverty rate and one that was not. The school has twelve kindergarten classes and twelve first grade classes, and also has ample resources targeted at the kindergarten – first grade level.

Procedures

The end of the year reading benchmark for kindergarten students in the district is for them to read independently at the DRA level 3. The students were selected for Group A because they did not meet the reading benchmark on the winter assessment, which is reading independently at DRA level 1.

The purpose of the intervention was to determine if direct instruction in phonological awareness could provide them with enough skills to meet the end of the year benchmarks.

Through reading and researching effective practices in phonological awareness instruction, I developed a four-week unit for the study (see Appendix A). The unit included lessons in auditory discrimination, rhyming, syllable and sentence segmentation, blending, onset-rime relationships, and blending and segmenting individual phonemes. The lessons consisted of engaging activities that focused on the five tiers of phonological awareness and were taught from least to most complex.

Group A met in a small group for direct instruction four to five times a week for twenty minutes a session. This group focused on the targeted skills through the use of engaging literature such as picture books, short stories, poems, and songs. In addition, they were taught skills in isolation such as auditory discrimination, sequencing, rhyming, syllabication, beginning sounds, segmenting, and phoneme manipulation. Group B received instruction in phonological awareness as a part of the everyday experiences of kindergarten. Experiences such as writing the morning message, shared

reading, and poetry, exposed students to phonological awareness in a whole group setting.

Instruments of Study

At the outset and conclusion of the intervention the students from Group A and Group B were assessed to determine its effectiveness. Each student was given a pre and post-test using the DRA, as well as the Phonemic Awareness Skills Assessment (see Appendix B). Each assessment was conducted as a one-on-one (teacher-student) assessment. The teacher communicated directions orally, and recorded answers when necessary.

Writing samples were also collected from both groups to analyze each student's invented spelling. Not only was student journal writing assessed, but the student's ability to write five dictated words was assessed as well. The words net, rug, sad, lip and job, were selected to include each vowel sound as well as ten consonant sounds.

The pre and post-test results for each assessment were analyzed to determine how successful the intervention was in establishing a greater knowledge base and ultimately improving Group A's reading scores and writing ability. The results provided substantiation to form a conclusion on

the effectiveness of direct instruction in phonological awareness and its ability to improve reading scores in students below grade-level.

Chapter IV

Results

Student Achievement

Before the intervention began, the students from Group A and B were given pre-assessments to get a baseline for what they knew going into the intervention. Upon completion of the intervention, the students in Group A and Group B were re-assessed using the DRA and the phonemic awareness skills assessments. Their writing was also analyzed for evidence of improved phonological awareness within their spelling. The DRA assessed student ability to apply their skills by using them effectively to decode leveled texts well enough to comprehend what they read. The results of the DRA for Group A are reported in Table I below.

Table I : Group A Reading Levels Based on the Developmental Reading Assessment

	Pre-Intervention Reading Levels	Post-Intervention Reading Levels
Student 1A	1	3
Student 2A	A	1
Student 3A	A	1
Student 4A	1	1
Student 5A	1	2

According to Table I above, the students who received the four-week intervention experienced mixed results. Student 1A improved two reading levels after the intervention. Students 2A, 3A, and 5A improved one reading level, and student 4A made no growth in reading level according to the DRA assessment during the intervention. Even though Group B did not receive the same direct instruction in phonological awareness that the intervention provided for Group A, they also showed some growth over the four-week intervention time period. The results of their pre and post DRA assessments are reported in Table II below.

Table II : Group B Reading Levels Based on the Developmental Reading Assessment

	Pre-Intervention Reading Levels	Post-Intervention Reading Levels
Student 1B	3	3
Student 2B	3	3
Student 3B	2	3
Student 4B	2	3
Student 5B	3	4

The students in Group B expanded their knowledge at approximately the same rate as the students from Group A that received the intervention. Student 1B and 2B remained the same according to the DRA reading levels. Students 3B, 4B and 5B improved their reading level ability by one level.

The student that made the most progress according to the DRA was student 1A from Group A, who moved up two reading levels after the intervention, and was the only student in her group that met the end of the year benchmark. Each group had three students move up one DRA reading level within the given amount of time. In addition, Group B had two students show no growth after the four week time period, while Group A only had one student show no growth based on the DRA. However, the post-intervention DRA assessment was not the only instrument used to measure each student's growth throughout the intervention.

The Phonemic Awareness Skills Assessment, which assessed skills in isolation, measured student ability in four categories, rhyme, oral blending, oral segmentation, and phonemic manipulation. After the intervention, each segment of the test was given orally, and to each student individually. Each segment had twelve questions. The results for each sub test for Group A are reported in Table III below.

Table III : Phonemic Awareness Skills Assessment Results for Group A

	Pre-Assessment P.A.S.A. Averages	Post-Assessment P.A.S.A. Averages
Rhyme	38%	63%
Oral Blending	60%	67%
Oral Segmentation	54%	63%
Phonemic Manipulation	0%	8%

As indicated in Table III, Group A made progress in all areas, although not proportionately. The students from Group A made the most gains in the area of rhyme, as they answered 25% more of those questions correctly. They also gained seven percentage points in oral blending, as well as answering 9% and 8% more of the questions correct in the areas of oral segmentation, and phonemic blending respectively. The average score for the post-test in its entirety for the students from Group A was 51%. Student 1A earned the highest score of 69%, and student 3A earned the lowest score for the test which was 17%. Group B scores for the Phonemic Awareness skills Assessment are shown below in Table IV.

Table IV: Phonemic Awareness Skills Assessment Results for Group B

	Pre-Assessment P.A.S.A. Averages	Post-Assessment P.A.S.A. Averages
Rhyme	73%	92%
Oral Blending	82%	85%
Oral Segmentation	72%	81%
Phonemic Manipulation	10%	15%

Table IV illustrates the growth that was made by Group B, which was the group that did not receive any direct instruction in phonological awareness. Group B improved nine percentage points in regard to their

rhyiming ability. They were also more proficient in the areas of oral blending and oral segmentation, in which they answered 3% and 9% more of the questions correct, respectively. On average, Group B also made a 5% gain in knowledge in the area of phonemic manipulation. The average score for Group B for the entire post-test was 69%. The highest score in Group B was earned by student 5B, who received a 79%. The lowest score was earned by student 4B, who earned a 56%.

Student Writing

Student writing was also assessed prior to the intervention as well as at its conclusion. To determine if any growth occurred in phonological awareness, student-writing samples were collected from word dictation assessments. Each student was given a pre and post-test. For each pre and post-test, the students wrote the same five words, which were; net, rug, sad, lip and job. These words were chosen to represent each of the short vowel sounds as well as ten consonant sounds.

To score the assessment, each word was looked at individually. If each sound of a word was represented correctly and the word included no additional letters, each word was worth a total of four points. One point was given for each correct letter of each word, and an extra point was given for

each word if the correct letters were in the correct sequence. For any sound in a word that could be made by more than one letter, either letter was acceptable. For example /j/ in job could have been represented with a j or a g and earned one point. However, if a student wrote 'job' as 'gob', only three points would be awarded for the entire word. Twenty points was the most a student could receive. The word dictation results for Group A are included in Table 5 below.

Table 5 : Word Dictation Assessment Results – Group A

	Word Dictation Pre-test	Word Dictation Post-test
Student 1A	5	18
Student 2A	0	6
Student 3A	0	0
Student 4A	5	9
Student 5A	8	15

Student 1A earned thirteen more points in the post-test than in the pre-test, and made the most growth in Group A. Student 3A scored a zero on the pre-test and the post-test, which was also the lowest score in Group A. In addition, student 2A received six more points on the post-test than the pre-test. Students 4A and 5A earned four and seven more points on the post-test respectively.

Student 1A transitioned from writing only the first letter of each word, with the exception of 'rug', for which she wrote the first and last letter, to writing four words completely correct, and one with two letters correct.

Student 1A's pre and post-writing assessments follow.

Word Dictation Pre-Test for student 1A

W RUG C L G

Word Dictation Post-Test for student 1A

WAT RUG SAG LIP LUG

Based on the word dictation assessment, student 1A made the most progress in Group A. The results for the word dictation assessment for Group B are shown in Table 6 below.

Table 6 : Word Dictation Assessment Results – Group B

	Word Dictation Pre-test	Word Dictation Post-test
Student 1B	9	20
Student 2B	13	14
Student 3B	17	18
Student 4B	12	11
Student 5B	16	20

According to Table 6, student 1B made the most growth from the time of the pre-test to the time of the post-test, which is represented by eleven points. Students 2B and 3B both earned one additional point on the post-test, and student 5B gained four points. Take a closer look at student 4B whose score decreased by one point between the pre and post test.

Word Dictation Pre-Test for student 4B

Nat ROG SaD Lp JOD

Word Dictation Post-Test for student 4B

tec Rog Sep lingP JIB

Overall, the pre and post assessments provided valuable information in order to draw conclusions and make recommendations for future interventions.

Chapter V

Conclusions & Recommendations

The purpose of this research project was to determine the impact direct instruction in phonological awareness would have on improving the reading scores of kindergarten students that were below grade level. After researching phonological awareness and noting its accolades, I wanted to discover its impact for myself. The results of my research lead me to a few conclusions.

After reviewing the data regarding student reading levels, it became evident that Group A, the control group, experienced slightly more growth than Group B, the experimental group. The fact that Group A experienced a greater improvement in their reading scores, validates the current research on phonological awareness which suggests that phonological awareness instruction results in improved phonemic awareness, reading, and spelling. However, there are other factors that can be considered as well.

For instance, the make up of Group A and B was completely different. Even though both groups started out below grade level in the beginning of the year, and for the most part through the middle of the year, the students from Group B began to make academic gains in January, while the students

from Group A continued to struggle. Even though Group A's reading level increased overall, only one student from the group achieved grade level benchmark for the end of the year.

On the other hand, even though the students from Group B did not receive the phonological awareness intervention, they all made the end of the year benchmark in reading. These results caused me to think more critically about each student and what factors influenced their learning. For example, each student in Group A was slated to be tested for a learning disability after they entered first grade. In addition, the students in Group A did not have stable home lives. Student 3A and 4A were in the middle of custody battles and student 1A and 2A both had parents that were drug users and in and out of jail. Student 5A struggled with childhood depression, and there was a restraining order in place to prevent her father from seeing her. These issues left me wondering about the learning potential of each student. To be so young and have so many stresses in life must interfere with learning in many ways. On the other hand, all five students in Group B had stable two parent homes.

Group A's deficits were also noted in the Phonemic Awareness Skills Assessment. On the post-test the highest score in Group A equaled the

average score for Group B. Group A remained behind their classmates even after the intervention. Even though Group A made more progress in each subtest from the pre-test to the post-test than Group B, they ultimately did not reach the levels Group B did, which received no intervention at all. These results were discouraging because the skills that were tested in this assessment were one of the focal points throughout the intervention.

After reviewing the data from the Word Dictation Assessment, some improvement for all students except one from each group was noted. For example, student 3A was overwhelmed by the task overall, and scored a zero on both the pre and post-assessment. In addition, student 4B scored less on the post test than on the pre-test. With that in mind, this was an interesting assessment to analyze for phonological awareness and reading readiness skills. It provided insight to how each student was able to hear each sound in a spoken word and transfer that to writing. It was fascinating to see the transformation in the Group A students who for the most part only wrote the first letter of each word, if any, in the pre-test. After the intervention, those same students heard and wrote the first and last sound of most words and in some cases the middle vowel sound as well. This assessment was a good

indication that the students were applying what they had learned through the intervention to their writing.

Overall, I have come to realize that phonological awareness instruction is a valuable part of every student's educational development. As far as it being the answer to filling all the gaps in primary education, I am not so sure. It was intriguing to see that even though Group A had so much intense and direct instruction, they still did not make the grade level benchmarks.

Through this project I gained a broader perspective of my students and their education in relationship to their lives. The research I did on phonological awareness was very noteworthy and convincing, but there always appeared to be something missing in that the claims often seemed to indicate that phonological awareness intervention was the only way to truly help a struggling student. After conducting my own research with my own students I became more convinced that struggling students are struggling for more reasons than simply gaps in their education. In the future, I would like to study more about the relationship between the stress level and emotional well-being of students and their educational performance.

In addition, I feel that more research needs to be done with regard to the reasons behind some students' lack of phonological awareness when they

enter school. There may be a parallel drawn between the absence of phonological awareness and the lack of family involvement with a student's language and educational development.

This research project was very informative and educational. It caused me to grow as an educator, and I plan to build upon what I have learned in the future. I found that there are definitely benefits to direct instruction in phonological awareness for students that lack the awareness all together. However, for those students who are starting out behind their classmates in kindergarten additional support may also be necessary.

Sadly, there are many students today that have much more on their minds than their education. They have stresses at home and with their family that carry much more importance to them than what they are faced with in the classroom. It would be beneficial to conduct additional research on effective ways to implement successful family support programs to teach families how to begin talking and playing with their children, so that when they enter school their minds are ready to grow.

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Appendix A

Phonological Awareness Unit (Intervention Plan)

Lesson 1: Environmental Sounds

- Play environmental sounds Bingo using animal noises CD and animal picture bingo boards
- Encourage students to listen carefully to animal sounds and determine what animal is making that sound
- Tie into reading by explaining that just as we listen carefully to sounds around us everyday to learn and explore our surroundings, we need to do the same thing when we are reading and writing.
 - Words are made up of different sounds.

Lesson 2: Sound Sequencing

- Use environmental sounds (stapler, toy truck rolling, paper tearing, zippering a backpack, opening lotion, Lego dropping)
 - Have students close their eyes and identify the three items used to make three consecutive noises
 - Have students explain the sequence of noises
 - Make three noises, then make two of the same while leaving one sound out – have students identify which sound was missing
 - Repeat this activity several times, to improve their listening and sound discrimination
 - Explain that just as they are paying attention to the sounds they hear and are able to listen and repeat back the order they heard them in, words are made up of sounds that are in a certain order, and it is important to look/listen for all the sounds in a word when reading and writing

Lesson 3: Introduction to Onset-Rime

- Repeat sound sequencing game (from Lesson 2)
- Play Telephone game to emphasize the importance of listening carefully
- Silly Songs:
 - Mix up common song lyrics for children to use discrimination when listening to figure out what is different about each song
 - Change songs like, I'm a little Teapot, Itsy, Bitsy Spider, Jack and Jill, Old MacDonald, etc.

- Ex. I'm a little leopot, short and pout,
Here is my bandle, here is my mout...
- Allow students to try to make up their own silly lyrics

Lesson 4: Rhyme

- Play "Eeny, Meeny, Miny, Mo" hand game
 - Each player puts two fists in the middle, the leader pounds one fist for every word of the rhyme:
 - Eeny, meeny, miny, mo, catch a tiger by the toe, if he hollers let him go, eeny, meeny, miny, mo
 - If your fist is pounded on a word that rhymes with mo, you put that fist behind your back
 - The person with the last fist in the game wins
 - Emphasize rhyming words
 - Make connection between rhyming and everyday games, activities, fun
- Read Goodnight Moon by Margaret Wise Brown
 - Have children listen for rhyming words
 - After reading give initial rhyme in each pair, then have students give the word that rhymed with it from the book

Lesson 5:

- Sing "Crayons in the Box"
 - "So many crayons in the box for you, red ones, yellow ones, blue ones too. But the one little crayon that rhymes with __(mack)__, is my favorite color, it's the color __(black)__!"
 - Have students guess what the favorite color is based on the first word of the rhyme
 - Repeat through all the colors
 - Emphasize that rhyming words sound the same at the end
- Play rhyming bingo

Lesson 6: Segmentation

- Discuss that sentences are words that are put together to convey thoughts
- They are made up of separate words that each carry their own meaning
- Each sentences meaning depends on the order of it's words and word choice

- Activity – Show the students a picture that depicts action (ex. children at a baseball game, family at a picnic), have students speak in complete sentences to describe the picture (have each student give two sentences)
 - Choose one student sentence to write on sentence strip
 - Cut sentences apart and give each student one word
 - Have students put words back together in the correct sequence and re-read
 - Repeat with more sentences

Lesson 7: Sentence Segmentation

- Use student names and one syllable words cards to make sentences with students (ex. My name is Jack.)
- Emphasize the point that sentences are made up by words that each have their own meaning
- Repeat
- Play “Scrambled Eggs” – give each student a word from the sentence in the incorrect order, then have them arrange themselves in the correct order while holding the words

Lesson 8: Syllabication

- Now that the students have become familiar with the concept of breaking sentences down word by word, teach them to listen for the syllables in each word
- Use each student's name to stomp, clap, snap syllables, and feel under chin to draw attention to each syllable
- Illustrate with more words and discuss the length of different words
- Graph the number of syllables in words (ex. cow, flower, dinosaur, dog, butterfly, giraffe)

Lesson 9: Syllabication

- Read “Tikki Tikki Tembo” with the students, explaining how he doesn't like his name because it is too long
- After reading count how many syllables there are in Tikki Tikki Tembo's name (clap)
- Box Game – have students blindly pick an object from a box of items that contains items with differing numbers of syllables
 - After each child picks an object and tells what it is, have all students repeat the name of the object and clap out the syllables

- Finally, have the students tell how many syllables are in that objects name
- Repeat until every student has several turns

Lesson 10: Elkonin Boxes

- Give each student his/her own Elkonin boxes
- Use bingo chips to push into Elkonin boxes – one chip for each syllable in the given words (ex. donkey, motorcycle, bucket, sandwich, ladybug)
- Count how many syllables each word has
- Then reverse the process - give students a word in parts by pausing between syllables
- Have them push a bingo chip into a box for each syllable the teacher says
- Then ask students to tell what the whole word is
- This is an important skill as students come across new and difficult words in text, to be able to break it down into parts to decode then put it together to make sense of it again

Lesson 11: Onset-Rhyme

- Play “Batman”
 - Sing b-b-b-b-b-b-b-b-b-b-b-b-b-b-b-b-batman then replace the onset with different consonants (ex. c-c-c-c-c-c-c-c-c-c-c-c-c-c-c-c-catman, or f-fatman)
 - Use many different beginning sounds by writing a first letter on the white board and having the students tell how the new letter will change the song
- Word families
 - Use the –an word family to create new words together (man, pan, ran, tan, can, ban)

Lesson 12: Working with Sounds

- Read Goodnight Moon by Margaret Wise Brown
- Using examples from the book, explain that if you take the first sound away from a word, sometimes a new word will be heard
- Give students more examples of words within words and allow them to practice taking the first sound away and discovering the new word within the original word
 - Have students articulate the first sound and eventually separate it from the rest of the word to discover the new word

- Ex. f-f-f- ear - ear, f-f-f -ox – ox, m-m-m -at – at, l-l-l-and – and, Chin-in, farm-arm, fat- at, fold- old, hair- air, heart- art, mask-ask, rice-ice, weight-eight, shin-in, seat-eat, Sam-am, shout-out
- As the students continue to practice with the given words incorporate it into a game by awarding bingo chips to each student each time they find the hidden word, award stickers/prizes for each bingo chip the earned during the game

Lesson 13:

- Go Fishing (using magnetic poles and picture cards) for words
 - Give students clues about the words you want them to find
 - Tell each student the beginning sound of a word you want them to find, once they have fished it out of the “pond” have them tell the group the word as well as it’s beginning sound (onset)
 - Once each student has had enough turns, begin to tell students the rhyme part of a word and have them fish for it (ex. please find a word that rhymes with art – and the student would fish and find heart)
 - Repeat until each student has had plenty of opportunities to fish

Lesson 14: Blending & Segmenting Phonemes

- Play “Stretch & Smash”
 - Provide words aloud for students one at a time and have them stretch the words out with their voices as well as their hands
 - Begin with your palms together, as you say the word slowly, sound by sound, pull your palms farther apart for each sound you say
 - After you have stretched out the word and spoken each sound, smash it back together by saying the whole word and clapping your hands back together simultaneously
- Play “Build It”
 - Give each student three snap cubes (start with them snapped together)
 - Tell them that they are going to build words sound by sound
 - Using the snap cubes, provide students with words that are made up of three sounds each

- The teacher will say cat and the students will repeat the word one sound at a time, taking one cube apart for each sound they say
- Repeat until the students have a good grasp on hearing all the different phonemes in a word

Lesson 15: Blending & Segmenting Phonemes

- Using snap cubes have the students place one on the table for each sound they hear in a given word
- Provide a two or three phoneme word and model the process of placing one snap cube on the table for each phoneme in the word
- Have the students repeat the word and touch each snap cube as they say each sound
- Once the students are comfortable with this, choose a rhyming pair that contains one two phoneme word and one three phoneme word
 - After the students have used the snap cubes to represent each phoneme in the word, tell them the other word in the rhyming pair and have them adjust their snap cubes to make a correct representation of that word (ex. using peach and each, after the students have placed three snap cubes on the table to represent the three phonemes in peach, tell them that you are going to take the first sound away in peach to make each, and that they should change their cubes to show how many sounds are in each – take one away leaving two for the two phonemes in each)

Lesson 16:

- Word puzzles
 - Spread 10-15 picture - word puzzles out on the table (three letter words – one letter on each puzzle piece)
 - Allow students to put puzzles together as they make words
 - After the students create each puzzle, have them point to each letter in each word and say the phoneme aloud, then the whole word together
- Explain that just as we have been practicing making words by using one cube for each sound we hear, we can do the same with letters – each sound has a letter (or letters) that goes with it and when we see the letters in a book, we can know that a sound goes with that letter, and that helps us read.

Appendix B

Phonological Awareness Skills Assessment

Rhyme

A. Ask the student if the following word pairs rhyme

1. cat/hat _____

4. can/man _____

2. pig/wig _____

5. let/pen _____

3. box/lip _____

6. sun/run _____

B. Say the following rhyming pairs. Ask the student to provide another rhyming word.

1. rack, sack _____

4. goat, coat _____

2. pop, hop _____

5. wide, hide _____

3. wing, king _____

6. bake, lake _____

Oral Blending

A. Say the first sound of each word, then the rest of the word. Have the student say the word as a whole.

1. /s/..at _____

4. /l/...ock _____

2. /m/..op _____

5. /t/..ape _____

3. /f/..ish _____

6. /b/..ox _____

B. Say each word sound by sound. Ask the student to say the word as a whole.

1. /m/ /e/ _____

4. /s/ /u/ /n/ _____

2. /s/ /a/ _____

5. /m/ /a/ /k/ _____

3. /f/ /e/ /t/ _____

6. /l/ /a/ /z/ /e/ _____

Oral Segmentation

A. Say each word. Have the student say the first sound he/she hears in each word.

1. bat _____

4. make _____

2. hop _____

5. glass _____

3. red _____

6. leaf _____

B. Say each word. Have the student say each word sound by sound.

1. see _____
2. my _____
3. lake _____

4. take _____
5. glass _____
6. leaf _____

Phonemic Manipulation

A. Say each word. Have the student say the word without the first sound.

1. sun _____
2. mat _____
3. leaf _____

4. ship _____
5. bike _____
6. stop _____

B. Say each word. Have the child replace the first sound in the word with /s/.

1. mad _____
2. run _____
3. cat _____

4. pick _____
5. hand _____
6. chip _____