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The Impact of Explicit Phonemic Awareness Instruction in a Kindergarten Classroom

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The Impact of Explicit Phonemic Awareness Instruction in a Kindergarten Classroom

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Abstract

This action research project involved an investigation of the effects of explicit phonemic awareness instruction on letter-sound fluency. The sample included 16 kindergarten students at a public pre-primary elementary school in the north-central region of the United States. Students participated in daily whole group lessons with explicit phonemic awareness instruction and guided practice. Data tools included pre- and post-assessments in letter-sound fluency, phoneme isolation and manipulation. Standardized assessment data in letter-sound fluency, onset sound fluency compared Fall assessments to Winter assessments and showed the level of risk for later difficulties in reading. Quantitative data showed growth in students' phonemic awareness abilities over the course of the study. Through the action research, it was determined that explicit instruction in phonemic awareness skills was beneficial for students' pre-reading abilities. My action plan includes continued explicit instruction through the duration of this school year and in every year to come.

Keywords: phonemic awareness, kindergarten, early literacy, explicit instruction

Learning how to read is essential to all future academic learning. While pre-reading skills can and should begin at home through reading to children and exposure to language through song, rhyme, and conversation, this isn't always the case for every child. Some students arrive in kindergarten with a strong foundation laid by families who read to their children daily, sing songs together and practice their letters and rhyming. Some students attended preschool for one or more years where they benefited from instruction on alphabetic knowledge and pre-reading skills. But some students come to kindergarten with little knowledge of letters or the sounds they make, they may have had little experience with books and pre-reading skills like phonemic awareness which is the ability to identify and manipulate individual sounds in spoken words (Castle et al., 2018; Heggerty & VanHekken, 2020).

Our kindergarten literacy curriculum emphasized independent reading and self-guided practice and had limited direct instruction. Instruction focused on memorization of letters, sounds, and sight words (or high-frequency words). Predictable and leveled texts were used to support guided reading instruction which were written to encourage students to use the illustrations to support word identification, rather than emphasizing word recognition skills in decoding new words. Where there was direct instruction, there was a heavy instructional focus placed on comprehension strategies.

While phonemic awareness was included in our curriculum it did not follow a systematic approach. In order for students to really understand the code of reading, they need explicit instruction and daily practice to understand each part within a word - the phonemes or the individual sounds that make up our language. Phonemic awareness can

come about naturally, without direct instruction, for some children. However, in order to ensure equity for all students, it is important that explicit and systematic instruction of the most basic parts of language be provided to all children.

FastBridge early reading assessments showed that many of my students were not acquiring the necessary pre-reading skills. Data showed risk in early reading areas for many of my students which included onset sounds, letter sounds, and word segmentation. Phonemic awareness lays the foundation for all future reading and academic learning (Moates, 2020). Students were not showing adequate progress in attaining these fundamental skills through our balanced literacy-based curriculum which focused primarily on comprehension strategies and guided reading through leveled texts which led me to my research question: What effects does explicit instruction (in phonemic awareness) in a kindergarten classroom have on students' letter sound fluency?

Theoretical Framework

The theoretical framework that guided my research is represented by The Science of Reading presented in Moates' (2020) publication of "Teaching Reading *Is* Rocket Science." In this work, The Simple View of Reading is outlined. The Simple View of Reading is a concept that explains the instructional components necessary to prepare students for reading comprehension. Students need both word recognition and language comprehension in order to become successful readers.

The International Literacy Association tells us that systematic phonemic awareness instruction lays the groundwork for all future successes in reading development. Phoneme first instruction helps young readers identify and understand the

most basic parts of our language, the phonemes, before adding the labels or letters (International Literacy Association, 2020; Castle et al., 2020). Students need to be able to hear and identify the sounds and be able to manipulate them like one would when naming rhyming words. Phonemic awareness is completely auditory and is best taught through explicit instruction and guided practice. Once this important foundation is established readers can more easily move onto the other components of literacy development which includes decoding and spelling, reading fluency, and comprehension.

Review of Literature

This literature review investigates the research on phonemic awareness in young learners and the effects of explicit instruction in supporting early literacy learning. Phonemic awareness is strictly auditory and is the ability to identify phonemes, or letter sounds, within words and to be able to add, delete and manipulate them. A brief introduction to the history of research on phonemic awareness and early reading success will be presented. Findings on what disadvantages and issues of equity may inhibit the development and acquisition of these skills will be discussed. Explanations for why phonemic awareness is so vitally important for children to read and effective strategies for explicit instruction in phonemic awareness will be provided by discussing how classroom teachers can effectively provide students with a strong foundation in early literacy development. Doing so will allow most children to begin their educational careers with the necessary skills to become good readers.

History of Research of Phonemic Awareness

Phonemic awareness is not new to researchers and educators as ample research can be taken from sources dating back to the 1980s and earlier. Stanovich (as cited in Heggerty & VanHekken, 2020) states that phonemic awareness is the most critical indicator of future success in reading compared to "tests of general intelligence, reading readiness, and listening comprehension" (p. viii). Advanced technology and investigative techniques used today confirm research findings and effective teaching strategies for teaching reading that were known 20 years ago (Moats, 2020). Even with many years of research, standard literacy practices deviate from what has proven to be the most effective instructional strategies for young learners (Moats, 2017; Spear-Swerling, 2019a). This multi-decade discrepancy between what research says is most effective and common practice in classrooms is often referred to as the "reading war" (Castles, Rastle, & Nation, 2018). The debate has teetered largely between a whole language approach where students are taught cueing systems to help make meaning of words and text including meaning, structure, and visual and a more structured literacy approach where explicit instruction in phonics is systematically implemented when teaching children to read.

Supporting Diverse Learners in the Development of Foundational Literacy Skills

Learning how to read is essential to all future academic learning. It is a complex process that requires explicit and systematic instruction, which begins with phonemic awareness and the ability to identify and manipulate phonemes in spoken words (Castle

et al., 2018; Heggerty & VanHekken, 2020). Moats (2020) asserts that most reading failure is unnecessary and that 95% of all children can be taught how to read by the end of first grade. However, some students face certain disadvantages or have increased risks for underdeveloped phonemic awareness. These disadvantages include students from low-socioeconomic backgrounds, difficulties with speech and language development, or children who have an inherited risk for dyslexia (Hatcher et al., 2006). These disadvantages cause them to have increased risks for underdeveloped phonemic awareness. But according to Heggerty and VanHekken (2020), phonemic awareness instruction is effective for all children, including typically developing children, children at risk for future reading problems, students with reading disabilities, children of various socioeconomic statuses, and English Language Learners. While many children become aware of phonemic-level skills without explicit instruction, it is critical that all children be given the opportunity because phonemic awareness has a direct role in developing many literacy skills and abilities (International Literacy Association, 2020).

Systematic phonics instruction follows close behind phonemic awareness and adds another layer; phonics includes understanding the relationships between the phonemes (sounds) and the graphemes (alphabetic symbols) (Castle et al., 2020). Word recognition and language comprehension pair together to result in reading comprehension. If one area is underdeveloped, the student's ability to comprehend what they are reading will be impeded (Moats, 2020). By providing clear instruction that follows a systematic pattern, students of varying abilities and diverse backgrounds are offered a fair chance and form a strong foundation of early literacy skills. A strong

foundation of phonemic awareness in the early grades ensures future successes in reading and learning for all students.

Phonemic Awareness

Phonemic awareness includes four skills: rhyming, sound isolation or discrimination, blending and segmenting (Yeh, as cited in Burns et al., 2018, p. 410). Phonemic awareness instruction and interventions are auditory and increase students' awareness of the sounds, or phonemes, within a word (Suggate, 2016). The International Literacy Association's Position Statement and Research Brief on Phonological Awareness in Early Childhood Literacy Development (2020) explains that phonemic awareness development in English can be challenging because 44 phonemes are represented by 26 letters. Children naturally focus their attention on the meaning of words and do not often independently note the sounds within words, so explicit instruction of phonemic awareness is recommended, especially for children at risk for reading difficulties. If instruction focuses on print-first teaching of word meanings, it would require the memorization of thousands of printed words (Castle et al., 2020). Instead, systematic phonemic awareness instruction should be viewed as the natural instructional path of phoneme first instruction and practice that has a direct impact on many components of literacy development which includes decoding and spelling, reading fluency, and comprehension (International Literacy Association, 2020; Castle et al., 2020).

Based on the National Reading Panel's meta-analysis of phonemic awareness, Ehri et al. (2001) reports that instruction in phonemic awareness improves students'

reading abilities, and specific factors for increased success are discussed. The meta-analysis found that phonemic awareness is more effective when taught in tandem with letters. Focusing on one or two phonemic skills had greater results than when focusing on three or more skills at one time. Small group instruction had a larger effect than whole group or individual instruction and short bursts of instruction proved to be more beneficial for students rather than long instructional periods (Ehri et al., 2001; International Literacy Association, 2020).

Structured Literacy

Phonemic awareness is but a small piece of a giant puzzle. A Structured Literacy approach to teaching reading provides systematic, explicit instruction and purposeful practice in these critical areas: phonemic awareness, sound-symbol correspondences, word structure and patterns, morphology, semantics, and grammatical structure (Odegard, 2020). Odegard (2020) and Spear-Swerling (2019a) lay out the principles of explicit instruction as the direct teaching of skills and concepts, logical sequencing, active student engagement, deliberate practice, corrective feedback, high level of student-teacher interaction, diagnostic and responsive instruction, and opportunities to apply what has been learned. Furthermore, structured literacy utilizes a variety of methods, programs and materials that clearly and explicitly teaches important literacy skills. Students are not expected to infer necessary skills through exposure or incidental teaching. Instruction is sequential and builds upon necessary previously taught skills (Spear-Swerling, Louise, 2019a). Odegard (2020) assures that a structured literacy approach that includes explicit

instruction in phonemic awareness is beneficial for all children and essential for students with dyslexia.

Learning how to read is the stepping stone onto a child's educational pathway and when we begin with a strong foundation of the most basic elements of the language, children will be better able to acquire literacy skills that will carry them through life as a strong reader. Phonemic awareness is fundamental in that it is auditory and accounts for the smallest parts of language -- letter sounds or phonemes. When children can hear, add, delete, and manipulate sounds in words they are well equipped to continue on to the next steps in literacy development which include decoding, spelling, reading fluency, and comprehension. Through explicit and systematic instruction of phonemic awareness students of all abilities and circumstances can benefit from and learn these skills. The research has been available for a very long time and has proven and re-proven to be efficient in teaching young children the fundamentals for basic literacy development.

After reviewing the literature, research has made it clear that phonemic awareness is essential for all young, developing readers. There has been many years of research stating that phonemic awareness is crucial for future success in reading. But standard practice and curricula have not consistently implemented the explicit and systematic instruction necessary to effectively teach all students the foundational skills in phonemic awareness. It is through these findings that I determined this topic was most important for me to focus on in my action research. By providing my kindergarten students with the necessary phonemic awareness skills, it is my hope that they will be able to move onto first grade with the necessary foundation and know-how to become

strong readers and develop a life-long love of reading. The next section will further explain the methodology for carrying out my research.

Methodology

The research was conducted for eight weeks beginning on November 29th and concluding on February 4th, 2022 to answer the following question: What effects does explicit instruction (in phonemic awareness) in a kindergarten classroom have on students' letter sound fluency? The study took place at a public pre-primary elementary school in the north-central region of the United States. The student population consisted of 16 five-six year olds - 44% male and 56% female. 68% of the student population was white, 13% African American, 13% Hispanic, and 6% Hawaiian/Pacific Islander.

During the first week of research, pre-assessments were given to each child to determine present levels of mastery in letter-sound fluency, phoneme isolation (see Appendix A), and phoneme manipulation (see Appendix B) abilities. This provided baseline data to help form groups for small group interventions and to determine student progress after implementation of the whole group and small group interventions.

Whole group explicit instruction in phonemic awareness activities was a daily practice throughout. Systematic lessons worked on the development of students' phonemic awareness and included modeling and guided practice of rhyming, segmenting, and blending sounds in words, phoneme isolation, and phoneme manipulation. Explicit instruction included consistent hand gestures and motions to indicate the specific phoneme being isolated or manipulated. Students practiced hearing and identifying

individual phonemes using the taught motions. Explicit instruction was also provided in manipulating spoken language by adding, deleting, and changing sounds within words using correlating hand motions with the spoken guided practice. Anecdotal notes (see Appendix C) were taken in an observational journal throughout each week to note and reflect upon student participation, behavior, and level of mastery. Small group instructional opportunities were set to take place weekly but not all students' schedules and/or attendance allowed for consistency. Small group lessons included additional modeling and guided practice in rhyming, segmenting, blending, phoneme isolation, and phoneme manipulation with the addition of multi-sensory tools and manipulatives. In one small group lesson, students used pop-its (sensory toys) to pop or isolate and count each phoneme in a given word. Students then placed a magnetile on the table for each phoneme they counted, wrote the letter that corresponded to each phoneme on a magnetile, and finally allowed the magnets in the tiles to attract and they read the word aloud.

A mid-point assessment was a part of the original research design; however, time constraints and necessary curricular commitments prevented me from being able to complete the assessments. FastBridge Standardized Assessments in letter sound fluency and onset sounds were completed mid-January and were compared to similar assessments administered in the Fall. The study concluded with post-assessments (see Appendix A & B) the week of January 31st to determine students' level of mastery in the same areas assessed at the beginning of the research project which included: letter-sound fluency, phoneme isolation, and phoneme manipulation abilities. The assessments proctored at the

beginning and the end of the research project allowed me to track students' progress both individually and as a whole as well as to determine the effectiveness of the explicit instruction of phonemic awareness. Each of the assessment tools provided quantitative data to further determine the effectiveness of the explicit instruction and are further analyzed in the next section.

Analysis of Data

Multiple data tools were used to assess students' phonemic awareness and progress towards increased letter-sound fluency. Qualitative data was collected through teacher-made assessments in the areas of phoneme fluency (see Appendix A) and phoneme manipulation (see Appendix B). The first assessment was phoneme fluency and provided quantitative data that showed students' ability to isolate individual phonemes within words and tested for onset, final and medial sound identification. A second assessment was conducted in the area of phoneme manipulation and required students to add initial phonemes, delete initial phonemes and substitute initial phonemes providing quantitative data that showed students' ability to manipulate individual phonemes. I performed another assessment where students were shown each of the 26 lowercase letters and asked to say the corresponding letter-sound. This was an untimed test and provided quantitative data to show student growth in their letter-sound knowledge. Each of the above-mentioned assessments was performed before and after the action research project to show student growth and additional need.

A final assessment came in the form of a standardized, timed assessment using FastBridge Assessment software. This assessment was given in January and was

compared to assessment data taken in the fall. The assessment provided a score and level of risk in each of the following areas: onset sound fluency, letter-sound fluency, and general reading or composite score. The quantitative data was used to analyze individual student gains and classwide averages show how the class improved in their phonemic awareness and letter-sound fluency throughout the study.

Qualitative data was gathered in an observational journal and contained anecdotal notes about students' participation throughout the week. Student attendance, behavior, and participation were noted. The notes were analyzed for use in a figure to show and reflect upon student engagement and skill mastery in their phonemic awareness.

Findings

The purpose of this study was to determine the effects of explicit phonemic awareness instruction on students' pre-reading skills. Qualitative data was collected to measure students' progress in attaining necessary pre-reading skills which included letter-sound fluency, phoneme isolation, addition, deletion, and manipulation and a standardized assessment in pre-reading skills. Through an eight week period, students engaged in daily large and weekly small group instructional opportunities that targeted phonemic awareness through explicit instruction and guided practice.

A students' fluency in saying the sound when presented with a corresponding letter is a strong indicator of later reading fluency. The letter-sound fluency assessment was untimed and assessed each student on each of the 26 lowercase letter sounds. Table 1 shows pre- and post assessments in letter-sound fluency. The pre-assessment data showed that 25% of students in the sample group had mastered less than 50% of letter sounds.

Nine of the 16 students in the study reached 100% mastery of lowercase letter sounds by the end of the research project and all students not yet meeting mastery in the pre-assessment showed improvement in their post-assessments, bringing the class average up 7 points.

Table 1

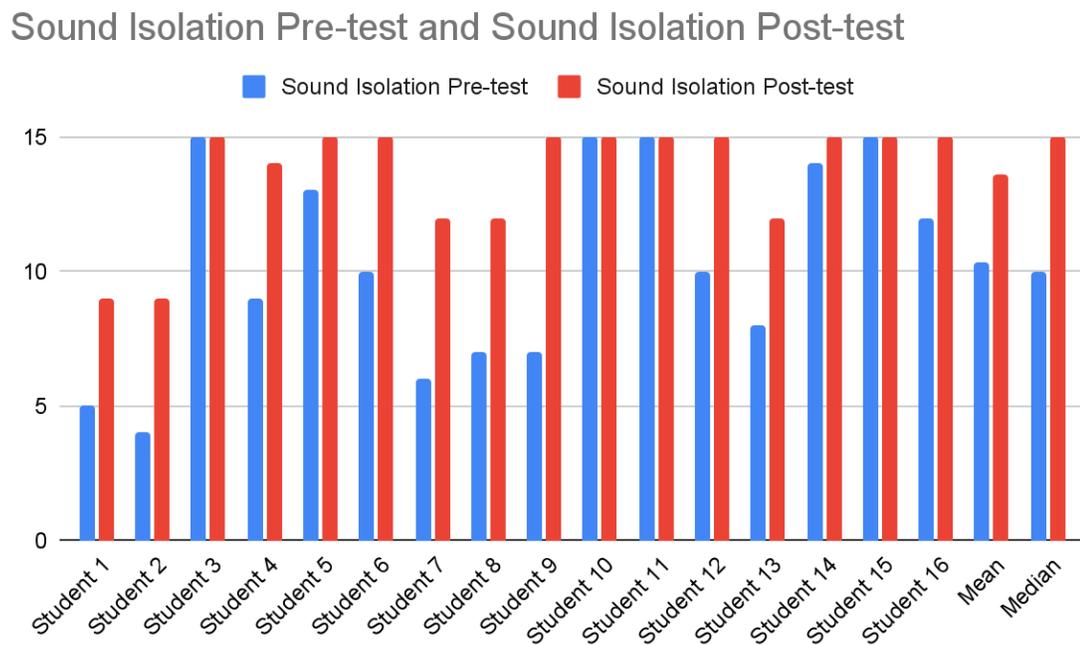
Letter-Sound Fluency pre- to post-assessment

	Letter-sound Pre-test	Letter-sound Post-test
Student 1	8	16
Student 2	8	23
Student 3	26	26
Student 4	24	25
Student 5	19	26
Student 6	19	25
Student 7	11	24
Student 8	14	26
Student 9	2	21
Student 10	26	26
Student 11	26	26
Student 12	19	26
Student 13	18	26
Student 14	26	26
Student 15	20	26
Student 16	17	23
Average	17.6875	24.4375

As students become increasingly aware of individual phonemes they can isolate and identify sounds within words. Figure 1 shows pre- and post-assessment data on students' ability to isolate sounds in words. Students were given consonant, vowel, consonant (CVC) words and asked to identify either the beginning, middle or ending sound. Previous to the research students were averaging 10.68 out of 15 possible points. At the close of the research, the class average was 13.79.

Figure 1

Sound Isolation pre- and post- assessments



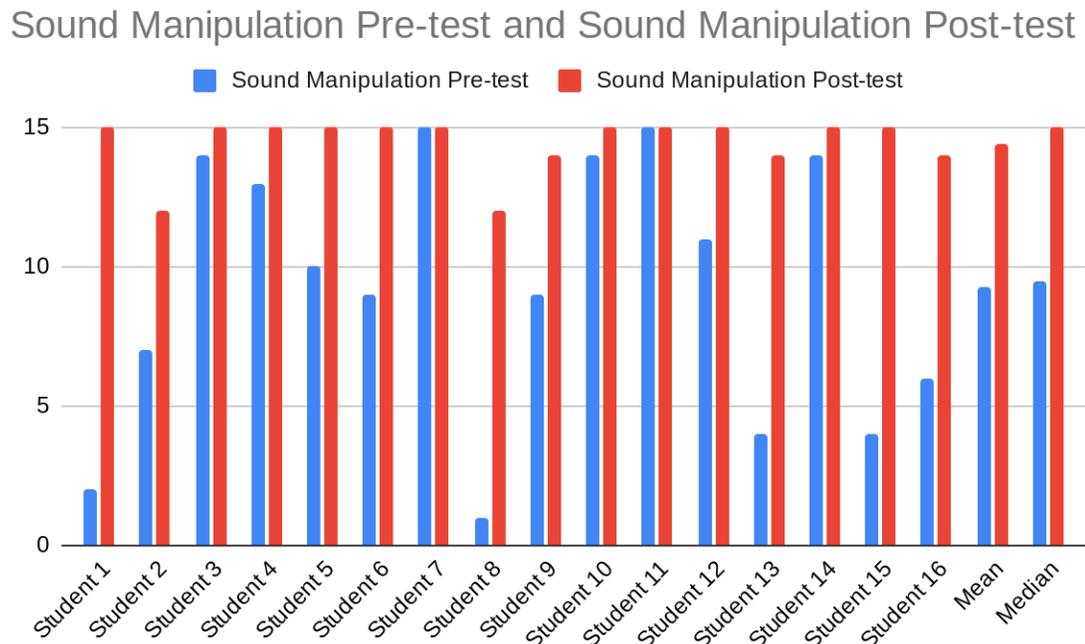
Phoneme manipulation is another skill within phonemic awareness and involves adding a phoneme, deleting a phoneme, or changing a phoneme within a given word.

Figure 2 shows that students demonstrated a larger range of improvement from beginning

to end with an average of 9.25 at the onset of the research to 14.44 at the end of the project.

Figure 2

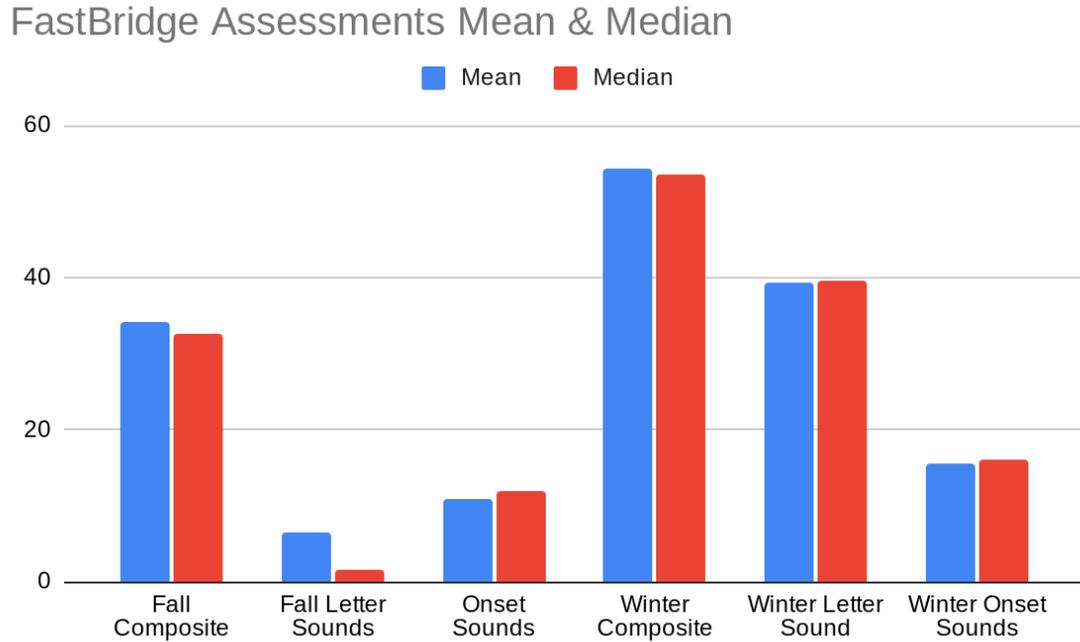
Sound Manipulation Pre- and Post-Assessments



FastBridge Assessments are timed standardized tests that look at pre-reading skills individually and then use the individual assessment scores to calculate a composite score. Scores are marked according to their level of risk for later reading concerns. Based on fall composite scores, FastBridge software identified 6 of the 16 students in the sample as having some risk. Winter composite scores reflected 4 of the 16 students in the sample as having some risk. The letter sounds assessment jumped 33.0804 points from fall to winter. Figure 3 shows improvement on individual subtests in letter sound fluency and onset sound fluency from Fall to Winter.

Figure 3

FastBridge Composite Fall & Winter Composite Scores Mean & Median



Anecdotal notes in the teacher observational journal tracked attendance, behavior, participation and weekly check ins in phonemic isolation or phonemic manipulation across the 8-week project period. Students 11 and 12 had zero absences and performed at a high level in phonemic isolation and manipulation. Students 4 and 9 had more absences than most and were less successful in their phonemic awareness performance.

Multiple data points collected through assessment tools that gathered both quantitative and qualitative information on students’ phonemic awareness progress. After gathering information before, during and after the research project it is apparent that

students gained valuable skills in phonemic awareness and pre-reading skills. In the following section, further conclusions and recommendations will be presented.

Action Plan

In this study, students participated in daily instructional opportunities that explicitly taught phonemic awareness skills through guided practice. Lessons included movement and gestures to help students build their understanding of rhyming, isolating phonemes, segmenting sounds within words, blending sounds together to say words, and manipulating phonemes in words by adding, deleting, or changing a sound. All students in the sample showed growth in pre-reading skills through assessments on letter-sound fluency, phoneme isolation, and manipulation. The fast-paced, short bursts of large group explicit instruction were engaging for students and the predictable movement and routines helped students stay engaged. Simple redirects helped students re-engage when participation or behavior became an issue for individual students.

Pre-tests were helpful in identifying where students were struggling or needed additional practice. This data helped me form small groups based on those needs and additional small group instruction was incorporated for some students. Attendance and scheduling conflicts made it difficult to maintain consistency in small group opportunities for all students. While I was not able to get a mid-point assessment during this 8-week research project, I see mid-point assessments being a helpful tool in the future to check in regularly with my students throughout the school year as they acquire phonemic

awareness skills. These assessments help guide groupings and plans for small group instruction.

The observational journal was challenging to manage with the fast-paced nature of the lessons. If I were to use this again, I would simplify it to only a checklist of students' ability to isolate or manipulate a given phoneme within the lesson. I would leave the notes of participation and behavior off and leave space for general anecdotal notes as needed.

With an increase in phonemic awareness, I also noticed an increase in my students' ability to acquire phonics skills at a more rapid pace than in years past. I think the foundation of phonemic awareness provides equity for all students by laying the groundwork that they need to find further success in phonics and in future reading development. Future action research might include important next steps into phonics instruction.

Next year, I plan to begin with explicitly taught lessons on phonemic awareness from the very beginning and carry them throughout the school year adjusting to student progress as necessary. The routines, movements, and gestures within the lessons will remain as I found them to be particularly engaging for students. They helped students maintain stamina throughout the short lesson and assisted them in transitioning between skills seamlessly. Formative assessments in the way of checklists and pre and mid-assessments will help guide large and small group instruction.

This study is another advocate for structured literacy in the great "Reading War". It further supports the idea that children need explicit instruction in the very basics of our

language, the phonemes, in order to develop the necessary skills in decoding, reading, and eventually comprehending text. Kindergarteners come into school with varying levels of experience and exposure to literacy but regardless of what they arrive with, every child can benefit from explicit instructional opportunities in phonemic awareness.

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Appendix A

Onset fluency: isolate the first sound in a word

Student # _____

Word	Correct Response	Student Response
hat	/h/	
pig	/p/	
map	/m/	
lip	/l/	
wag	/w/	

Final sound fluency: isolate the final sound in a word

Word	Correct Response	Student Response
mat	/t/	
him	/m/	
sad	/d/	
dig	/g/	
pack	/ck/	

Medial sound fluency: isolate the middle sound in a word

Word	Correct Response	Student Response
sip	/i/	
hum	/u/	
rack	/a/	
bog	/o/	
mam	/a/	

Score: _____ / 15 Percentage: _____

Appendix B

Add initial phoneme

Student # _____

Word part/Rime	Add __ to the beginning	Correct Response	Student Response
-at	/b/	bat	
-in	/f/	fin	
-am	/r/	ram	
-it	/s/	sit	
-ad	/m/	mad	

Delete initial phoneme

Word	Without __	Correct Response	Student Response
wig	/w/	-ig	
dab	/d/	-ab	
rib	/r/	-ib	
tap	/t/	-ap	
lid	/l/	-id	

Substitute initial phoneme

Word	Change __ to __	Correct Response	Student Response
pack	/p/ to /r/	rack	
van	/v/ to /m/	man	
hill	/h/ to /p/	pill	
sick	/s/ to /kw/	quick	
mad	/m/ to /s/	sad	

Score: _____ / 15 Percentage: _____

Appendix C
Observational Journal

Date:

Small group / Large group

Student	Attendance	Behavior	Participation	Phoneme Isolation	Phoneme Manip.	Comments
Student 1						
Student 2						
Student 3						
Student 4						
Student 5						
Student 6						
Student 7						
Student 8						
Student 9						
Student 10						
Student 11						
Student 12						
Student 13						
Student 14						
Student 15						
Student 16						