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Multisensory Phonics Added to Systematic and Explicit Phonics Instruction in Kindergarten and First-Grade Classrooms

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Abstract

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by

Olivia Wymer Feldman

MS, Shenandoah University, 2015

BS, Virginia Tech, 2013

Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

There is a gap in practice regarding the influence of multisensory phonics instruction, when used systematically and explicitly, as part of regular classroom reading instruction to improve reading achievement. The purpose of this study was to investigate the difference in reading achievement and automatic word reading accuracy when a multisensory component is added to systematic and explicit phonics instruction in a regular classroom setting of kindergarten and first-grade (K-1) students. Framing this study was LaBerge and Samuels's theory of automatic information processing. The research questions addressed differences in reading achievement and automatic word reading accuracy for K-1 students who did and did not receive multisensory phonics instruction. In this quantitative, causal-comparative study, archival data from the Phonological Awareness Literacy Screening test and the Istation test were used. The data came from 132 K-1 students who received systematic and explicit phonics instruction during the 2016–2017 school year and 132 K-1 students who received multisensory phonics as a component of systematic and explicit multisensory phonics instruction during the 2017–2018 school year. Data were analyzed with Mann-Whitney *U* test, an independent sample *t* test, Kruskal-Wallis *H* test, Cohen's *d*, and Eta squared. Results showed significantly higher scores in the 2017–2018 school year when compared to the 2016–2017 scores and large practical significance. Based on the results, a professional development plan was created as the project deliverable. Results have the potential for positive social change through research evidence for the benefit of adding a multisensory component to systematic and explicit phonics instruction in a regular K-1 classroom setting.

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Dedication

This study is dedicated to my husband, Kyle. Thank you for the love, numerous years of patience, and always supporting my dream even when it did not look possible. I love you.

To my daughter, Collette, who entered the world during my doctoral journey, this study is dedicated to you. May this educational journey show you to always be strong, and there are no limits when it comes to chasing your dreams.

To my parents, Ronald & Regina, you have always showed me the value in education and raised me to see that with hard work anything can be accomplished. Thank you for your endless support, encouragement, and countless babysitting during this journey.

To my friends and family, thank you for loving me at my best and at my worst during this journey. I appreciate all your positive encouragement, unconditional love, and support.

Acknowledgments

But as for you, be strong and courageous, for your work will be rewarded.

2 Chronicles 15:7

I must first thank my Lord and Savior Jesus Christ for guiding me through this journey and keeping my faith strong in some of the hardest times.

To my doctoral chair, Dr. Barbara Schirmer, we have been through so much together. You have stuck with me through just about every life obstacle I could have faced over the past five years. I cannot thank you enough for your knowledge, strength, guidance, and patience to help me achieve this dream.

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Thank you Dr. Zin Htway, thank you for being so knowledgeable, positive, and patient as you helped me make sense out of numerous statistical measures.

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Section 1: The Problem

Phonics instruction is important because it teaches beginning readers to read and spell words (Adams, 1990; Treiman, 2018). A central focus of early reading instruction is to establish foundational knowledge that includes letter names and sounds, phonemic awareness, the ability to distinguish and manipulate sounds, and the application of reading words in text (Ehri & Flugman, 2018). A meta-analysis from the National Reading Panel (2000) and Chai et al. (2015) both found that systematic phonics is more effective than unsystematic or no phonics instruction, especially in the primary grades. However, teaching systematic phonics effectively to beginning readers requires specialized knowledge, training, and programs, which many primary teachers lack (Ehri & Flugman, 2018). Despite a decade of attention to early reading skills, as shown through educational standards initiatives, such as the Common Core State Standards Initiative for English Language Arts (n.d.), and national funding programs, such as the Innovative Approaches to Literacy Program (U.S. Department of Education, 2018), some young children continue to experience delays in reading achievement (Goldstein et al., 2017). Teaching foundational reading skills systematically and explicitly has been found to be an important factor towards the overall improvement of reading outcomes for all students (Van Steensel et al., 2016). However, based on the most recent scores in reading from the National Assessment of Educational Progress (2019), such instruction on foundational reading skills has not been shown to be sufficient because 34% of fourth-grade students scored below the basic level in 2019, 66% scored at or above the basic level, and 35% performed at or above the proficient level).

Teachers are faced with the task of helping all children become successful readers. This responsibility means that teachers may have to supplement language lessons to include systematic phonics instruction. Although the effectiveness of systematic and explicit phonics instruction to improve reading achievement in elementary students is well documented, there is a gap in the practice of multisensory techniques (i.e., incorporation of tactile and kinesthetic modalities in addition to the traditional visual and auditory components) that have been found to be effective when delivered individually with students who have already demonstrated reading difficulties (Magpuri-Lavell et al., 2014). However, there is limited published research on multisensory phonics instruction that is systematic and explicit with children in a whole classroom setting with some students who do and others who do not exhibit reading disabilities (Warnick & Caldarella, 2016). The problem investigated in this study was how the addition of kinesthetic (e.g., tapping out letter sounds through finger taps or fist taps and letter writing in the air) and tactile (e.g., finger writing in sand and writing over a bumpy or friction-based surface) modalities of multisensory phonics instruction to the traditional visual and auditory modalities of systematic and explicit phonics instruction can improve the reading achievement of all children, regardless of reading abilities, during the early stages of reading development when implemented as part of regular kindergarten and first-grade (K-1) classroom reading instruction.

Section 1 includes a description of the local problem in an elementary school in the northeastern region of the United States, the rationale for the problem choice, definitions of terms associated with the study, a description of the significance of the

study problem, and a presentation of the research questions (RQs) and hypotheses. This section also includes a description of the conceptual framework, critical review of the broader problem, discussion of implications for possible project directions, and a summary of key points.

The Local Problem

The problem of children experiencing delays in reading achievement outcomes during the early stages of reading development was also evident in the local school setting of this study. According to 2015 data provided by the central office, the elementary school in this study has been ranked in the bottom 50% of overall state test scores since 2014. Concern by the district about these scores led to implementation of systematic and explicit phonics instruction for the 2016–2017 school year; however, scores did not improve. According to data provided by the central office, the school in this study was ranked in the state at the 32nd percentile in 2016 and the 15th percentile as of the beginning of 2017. These scores have been highlighted in the meetings of the school board, reading curriculum planning team, and local school improvement instructional planning team. Reading test scores have not been above 75% in over 3 years, with 52% of Grade 3 students, 67% of Grade 4 students, and 72% of Grade 5 students passing the state reading test. Low socioeconomic status continues to rise as the percentage of students receiving free and reduced lunches has increased from 38% in 2015 to 44% currently in the local school setting. English language learners comprise 30% of the school's population and the English language learner population has stayed consistent. Data provided by the district's central office to the local community showed

that only 64% of students in Grades 3–5 passed the state Standards of Learning standardized reading test in 2017, which did not meet the school district's reading achievement goal of 80% or higher pass rate or the state's reading achievement goal of 70% or higher on the Standards of Learning test. According to monthly reading assessments provided by the district central office to the teaching staff, over 50% of K-5 students did not meet the district's mandated monthly benchmark scores in phonemic awareness; alphabetic knowledge; and specific skills, including fluency, vocabulary, and comprehension in 2017, and the students who performed below the target reading level for their grade showed decoding as the greatest weakness for K-2 students. Given these assessment results, the district notified staff that a multisensory phonics component would be added to the systematic and explicit phonics program for K-1 students at the beginning of the 2017–2018 school year.

The teachers in Grades K-5 received five 1-hour training sessions presented by the school instructional coach in the steps of teaching multisensory phonics and how to incorporate it within the systematic and explicit phonics they were already using. Lesson modeling was conducted by the instructional coach for 5 weeks, and classroom observations were conducted monthly by one of two school administrators for all the K-1 teachers. All K-5 teachers were trained to enable all teachers to implement instruction for struggling readers, though only K-1 students received multisensory phonics instruction beginning in 2017–2018. Therefore, it is important to determine if adding a multisensory component to phonics instruction in a regular K-1 classroom setting addressed the gap in

practice at the local level by improving the effectiveness of phonics instruction for developing K-1 readers.

Rationale

The problem of children experiencing delays in reading achievement outcomes during the early stages of reading development is evident in the educational profession and the local school setting of the study. Despite the implementation of systematic and explicit phonics instruction since 2016, the school in this study was not on track to meet the district's goal of 95% of students reading on grade level and 80% of students passing the annual state reading test by 2020. Thus, the district announced to the elementary level principals and teachers that multisensory phonics would be added to systematic and explicit phonics instruction beginning in the 2017–2018 school year.

Decoding skills include identifying the letter sounds and letter blends within a word, determining the meaning of words, knowing what part the word plays in the sentence (both grammatical and contextual), and how the word can change by adding prefixes and suffixes (Schaars et al., 2017). Decoding skills are essential to interpreting and analyzing words during reading. Students who do not learn how to decode words can have difficulty with reading fluency and comprehension.

It is important to determine if adding a multisensory phonics component to systematic and explicit phonics instruction program in a regular K-1 classroom setting addresses the gap in practice by improving the effectiveness of phonics instruction for a greater proportion of developing K-1 readers at one elementary school. The purpose of this quantitative, causal-comparative study was to investigate the difference in reading

achievement and automatic word reading accuracy when a multisensory component is added to systematic and explicit phonics instruction in a regular classroom setting of K-1 students.

Definition of Terms

Automaticity: The ability to read words swiftly and with minimal cognitive effort (Young & Rasinski, 2018).

Fluency: The ability to read text quickly, accurately, and with expression (Rasinski, 2017).

Istation: A computer-based reading program that adapts to the learner's academic needs. It assesses each student's particular deficits in phonemic awareness, phonics, fluency, vocabulary, and comprehension (Istation, 2020).

Multisensory instruction: An instructional approach that is systematic, sequential, explicit, direct, and utilizes simultaneous engagement of sensory modalities, such as visual, auditory, kinesthetic, and tactile, to teach reading (Schlesinger & Gray, 2017).

Phonics: The relationship between letters, letter patterns, and sounds in written words that are applied for word recognition (Suggate, 2016).

Phonological Awareness Literacy Screening: A diagnostic and screening literacy instrument used to assess alphabet knowledge, name-writing, print and word awareness, rhyming, and nursery rhyme awareness in prekindergarten to 4-year-old children (Meyer et al., 2019).

Systematic and explicit phonics instruction: An instructional approach involving direct instruction of teaching of letter–sound correspondences in a logical sequence to decode words (Stuart & Stainthorp, 2016).

Significance of the Study

Multisensory phonics instruction, which involves the incorporation of tactile and kinesthetic modalities in addition to the traditional visual and auditory modalities, was added to systematic and explicit phonics instruction for students in K-1 in the 2017–2018 school year at a local elementary school to address concerns about reading achievement scores that had been highlighted in the district's school board meetings, the district's reading curriculum planning teams, and in the local school improvement instructional planning team. It was important to determine if the multisensory phonics components are effective in improving reading achievement and automatic word reading accuracy outcomes and justifies the resources invested by the district for professional development for the teachers using the multisensory curriculum materials. In addition, the study has the potential to contribute to positive social change by determining if the addition of multisensory phonics components to systematic and explicit phonics instruction can increase the proportion of students who meet reading achievement outcome standards and attain the foundational skills needed to read increasingly complex reading texts required throughout all grade levels.

The study findings contribute to social change by showing the benefit of adding a multisensory component to systematic and explicit phonics instruction in a regular classroom setting of K-1 students. The results can allow local district and others beyond

the local setting to invest in a multisensory program and the professional development needed for implementation.

Research Questions and Hypotheses

The purpose of this study was to investigate the difference in reading achievement and automatic word reading accuracy when a multisensory component is added to systematic and explicit phonics instruction in a regular classroom setting of K-1 students. The following research questions and hypotheses guided this study:

RQ1: Is there a difference in reading achievement outcomes as measured by the Istation test for students in K-1 who received systematic and explicit phonics instruction without a multisensory component during the 2016–2017 school year compared to K-1 students who received multisensory, systematic, and explicit phonics instruction during the 2017–2018 school year?

$H_0 1_1$: There will be no statistically significant difference in reading achievement outcomes as measured by the Istation test for students in kindergarten who received systematic and explicit phonics instruction without a multisensory component during the 2016–2017 school year compared to kindergarten students who received multisensory, systematic, and explicit phonics instruction during the 2017–2018 school year.

$H_0 1_2$: There will be no statistically significant difference in reading achievement outcomes as measured by the Istation test for students in first grade who received systematic and explicit phonics instruction without a multisensory component during the 2016–2017 school year compared to

first-grade students who received multisensory, systematic, and explicit phonics instruction during the 2017–2018 school year.

H_a1_1: There will be a statistically significant difference in reading achievement outcomes as measured by the Istation test for students in kindergarten who received systematic and explicit phonics instruction without a multisensory component during the 2016–2017 school year compared to kindergarten students who received multisensory, systematic, and explicit phonics instruction during the 2017–2018 school year.

H_a1_2: There will be a statistically significant difference in reading achievement outcomes as measured by the Istation test for students in first grade who received systematic and explicit phonics instruction without a multisensory component during the 2016–2017 school year compared to first-grade students who received multisensory, systematic, and explicit phonics instruction during the 2017–2018 school year.

RQ2: Is there a difference in automatic word reading accuracy as measured by the Phonological Awareness Literacy Screening test for students in K-1 who received systematic and explicit phonics instruction without a multisensory component during the 2016–2017 school year compared to K-1 students who received multisensory, systematic, and explicit phonics instruction during the 2017–2018 school year?

H_02_1: There will be no significant difference in automatic word reading accuracy as measured by the Phonological Awareness Literacy Screening

test for students in kindergarten who received systematic and explicit phonics instruction without a multisensory component during the 2016–2017 school year compared to kindergarten students who received multisensory, systematic, and explicit phonics instruction during the 2017–2018 school year.

$H_0 2_2$: There will be no significant difference in automatic word reading accuracy as measured by the Phonological Awareness Literacy Screening test for students in first grade who received systematic and explicit phonics instruction without a multisensory component during the 2016–2017 school year compared to first-grade students who received multisensory, systematic, and explicit phonics instruction during the 2017–2018 school year.

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$H_a 2_2$: There will be a significant difference in automatic word reading accuracy as measured by the Phonological Awareness Literacy Screening test for students in first grade who received systematic and explicit

phonics instruction without a multisensory component during the 2016–2017 school year compared to first-grade students who received multisensory, systematic, and explicit phonics instruction during the 2017–2018 school year.

Review of the Literature

I searched for literature published in peer-reviewed, scholarly journals of education in the following databases: Education Source, ERIC, SAGE Journals, Taylor and Francis Online, PsychARTICLES, PsycINFO, Research Starters-Education, and Teacher Reference Center. Filters were selected to include only peer-reviewed research studies published after 2016, except for searches for literature on the conceptual framework and seminal studies. Search terms on the topic of phonics instruction included the following: *multisensory*, *phonics*, *reading*, *reading development*, *Orton Gillingham, elementary*, *without disabilities*, *sensory*, *sensory modalities, sensory integration*, *empower reading*, *analytic phonics*, *systematic phonics*, *whole language*, *Spell Read*, *Wilson reading, sequential phonics*, *scope and sequence reading*, and *general education.* In addition, the Google Scholar search engine and references from pertinent articles were used. I applied the following criteria for selecting articles: peer reviewed, full text, published within the past 5 years, and relevance to the topic.

Theoretical Foundation

The theoretical foundation guiding this study was LaBerge and Samuels's (1974) theory of automatic information processing. According to the theory, when encountering an unknown word, the reader's attention is first focused on visual memory of letters,

letter combinations, and word configurations. The reader then uses phonological memory of sound-symbol relationships to identify the word. The identified word is stored in short-term memory. Relying on short-term memory requires substantial attention to word features, and so, the reader has less attention available for comprehension. For the reader to focus on comprehension, words must be stored in long-term memory. According to the theory, to move a word from short- to long-term memory, the reader must attain word recognition automaticity.

Phonics, phonemic awareness, vocabulary, reading comprehension, and fluency are critical areas to processing information while reading (National Reading Panel, 2000). In the theory, LaBerge and Samuels (1974) suggested that automaticity includes subskills that must be performed with ease and accuracy. As one subskill becomes automatic, the reader's focus is directed to the next subskill. For example, a student will learn the letters of the alphabet with accuracy, then the reader moves to phonemes, then spelling patterns, words, phrases, and sentences. Once the student has moved through each of these subskills, comprehension of the written word follows. Readers will grasp each subskill on the accuracy level and then move to the automatic level (LaBerge & Samuels, 1974).

This theory was relevant to the purpose and methodology of the study because automatic information processing in reading is used to explain how information is understood and processed based on two factors: decoding words accurately and automaticity of word recognition. In the theory, LaBerge and Samuels (1974) explained the connection between decoding words and word recognition at an accurate rate of speed and comprehension. I investigated the differences in reading outcomes when kinesthetic

and tactile sensory modalities are added to visual and auditory sensory modalities during the teaching of phonics for K-1 students. If the K-1 students who received systematic, explicit, and multisensory phonics instruction demonstrated significantly better word recognition automaticity and reading achievement outcomes based on a phonological awareness and reading diagnostic test than the K-1 students without the multisensory phonics instruction, the results would indicate that adding a multisensory component to systematic and explicit phonics instruction decreases the amount of substantial attention to word features in short-term memory. This decrease of attention to word features would facilitate the movement of a word from short- to long-term memory and word reading automaticity, as indicated by the theory of automatic information processing. The theory of information processing has been used for over 3 decades to explain the complex task of reading because it posits how word reading and fluency develop.

In addition to the theory that informs the theoretical foundation, there are elements related to the importance of phonics and phonemic awareness in reading development and the approaches to phonics instruction for reading development that were applicable to this project study. These included phonics and phonemic awareness; forms of phonics instruction with developing readers; forms of phonics instruction with struggling or at-risk readers; phonics instruction with English language learners; a multisensory component added to systematic and explicit phonics instruction; and the attitudes of teachers, parents, and students about phonics instruction. In the following review of the literature, I examined each of these elements and discussed what is currently known in the field regarding this work.

Review of the Broader Problem

I identified two major patterns in the body of research literature on the topic: the importance of phonics and phonemic awareness in reading development and approaches to phonics instruction for reading development. The first pattern involves seminal studies because this body of research focuses on RQs about the role of phonics and phonemic awareness that were addressed before the early 2000s. The second pattern involves recent studies on approaches to phonics instruction because this body of research focuses on contemporary RQs about instructional strategies with the potential to improve word recognition.

Importance of Phonics and Phonemic Awareness in Reading Development

The body of research on phonemic awareness and phonics involves the importance of the ability to recognize and segment phonemes in spoken language due to the strong relationship between phonemic awareness and early reading. The research is largely seminal because the role of phonics and phonemic awareness in reading development has been well established.

Historically, there have been shifts of emphasis in reading instruction over the past 70 years. The Dick and Jane readers began in 1930s to teach the "whole word" or "look-say" method of reading (Shermer, 2003). By 1950, the Dick and Jane readers were used to teach students to read in 80% of primary classrooms in the United States. According to Hiebert (2015), the shift from the whole word method of reading instruction to phonics instruction began in the 1960s. By the 1970s, many educators were concerned that there was too little emphasis on comprehension instruction, which led to the whole

language approach in the 1990s. Whole language was viewed as a top-down approach in contrast to phonics-based approaches that were viewed as bottom up. The whole language approach involved immersing children in print-rich environments of authentic literature that offered frequent exposure to words and the structure of written language in social contexts (Goodman, 1986). The shift back to the inclusion of code-based approaches in the context of what was referred to as balanced reading began in the late 1990s to include a combination of phonological awareness, code-based word recognition, alphabet and vocabulary knowledge, and comprehension through authentic reading and writing experiences (Learning First Alliance, 2000).

Findings from several studies indicated that phonemic awareness is a necessary precursor to applying letter-sound relationships for word recognition. Juel et al. (1986) conducted a longitudinal study and found that without phonemic awareness, exposure to print did little to foster spelling or letter sound knowledge among 80 children who were tested in Grades 1 and 2. Juel (1988) subsequently investigated the effect of daily phonics instruction on the word recognition of 180 first-grade and 80 second-grade students and reported that the students did not acquire spelling-sound correspondence knowledge until a prerequisite amount of phonemic awareness had been attained. Juel concluded that phonemic awareness appears to be necessary if a child is to take advantage of exposure to print and direct instruction in letter-sound relations and without phonemic awareness, exposure to print did little to foster spelling-sound knowledge. Wagner and Torgesen (1987) reported a causal role for phonological awareness in learning to read in their review of a decade of research literature on the relationship between phonological

abilities and early reading skills. Similarly, Allor (2002) discovered that phonemic awareness contributed to growth in word recognition skills for children in kindergarten through Grade 5.

By the late 1990s, several researchers had discovered that readers must progress through phases of development in applying phonemes to word identification. Ehri (1998) noted that only when beginning readers can make connections between all the letters or graphemes seen in the written form of a word and all the sounds or phonemes heard in spoken form, that word learning becomes unconscious and automatic. Based on a review of the research literature, Ehri and McCormick (1998) concluded that readers progress from the earliest phase of reading to the most proficient phase by using context, decoding through use of letter–sound associations, analogy, and sight recognition. This body of research indicated that teaching the knowledge of the application of the rules of phonics is important in moving beginning readers into the next phases. Snow et al. (1998) conducted a synthetic literature review to identify the conditions under which reading skills will develop easily and reported that explicit instruction enables children to direct their attention to the sound structure of oral language and to make connections between speech sounds and written words.

Alphabetical knowledge was also found to be important in reading development in early studies. Stahl and Murray (1994) explained that alphabet knowledge was necessary for children to separate onsets from rimes and that awareness of onsets and rimes was necessary for both word reading and more complex levels of phonological awareness in their study of 113 K-1 children. Evans et al. (2006) similarly discovered that

the 149 kindergarten children in their study used phonological awareness to develop letter-name and letter-sound knowledge.

Knowledge of the application of the rules of phonics is important for word identification because it enables the reader to recognize how letters (i.e., graphemes) are linked to phonemes and apply these letter-sound (i.e., graphophonemic) correspondences to identifying words already in the reader's speaking vocabulary (National Reading Panel, 2000). The seminal research on graphophonemic awareness and the application of phonics has offered strong evidence for the importance of both in reading achievement. According to the theory of information processing, as word identification becomes increasingly automatic, readers can then focus their attention on comprehension (LaBerge & Samuels, 1974).

Approaches to Phonics Instruction

Several approaches to phonics instruction have been used over time in reading instruction (Glazzard, 2017). Systematic phonics instruction, which typically begins during early reading instruction, involves teaching students to identify common letter-sound relationships and then apply these in words through a structured sequence of instruction. In analogy phonics instruction, students are taught to analyze letter-sound relationships and decode words based upon known spelling and letter patterns and their sounds. The child makes a comparison with other words they may know from the same word family. For example, if the child knows "goat," "boat," and "float," then the word "moat" will be identified through the relationship of the new word having the same word family as the known word. Embedded phonics instruction involves teaching phonics

during the reading of text rather than as a separate skill. For example, a student might learn to decode “shark” in the context of a short story in which the letter-sound relationships in the word are taught as part of sight word instruction prior to reading the story. Analytic phonics instruction involves teaching students to recognize the beginning and ending sounds of words without breaking the word down into smaller sounds. In analytic phonics, the student is likely to be taught to manipulate the onset and rime (e.g., b-ack) of a word rather than the individual letters and sounds. For example, a child receiving analytic phonics instruction would be taught initial sound–letter correspondences (e.g., B says /b/) and a corresponding rime (e.g., ACK says /aek/) and then taught other initial grapheme–phoneme correspondences that can be paired with the rime. In analytic phonics, little or no attention is given to blending the individual sounds in words.

Phonics Instruction With Typically Developing Readers. Research on phonics instruction with typically developing readers has been aimed at identifying the conditions under which instruction is more and less effective. Results have shown that systematic and explicit phonics instruction is most effective but that any type of phonics instruction is more effective than no phonics instruction (Duke & Mesmer, 2019; McGeown, 2015; Noltemeyer et al., 2019).

The findings most relevant to the current study are those of Duke and Mesmer (2019) who stated that many phonics programs dedicate too little or too much time on phonics instruction and have limited time to incorporate instruction in the alphabetic principle, concepts of words in print, and letter names. They also reported that some

programs use inappropriate alphabet key words, lack a scope and sequence, and do not incorporate letter-sound relationships for sight word instruction. Their conclusion that systematic phonics instruction with a scope and sequence produces the best outcomes provides support for the importance of the systematic approach included in the current study.

Phonics Instruction With At-Risk and Struggling Readers. Much of the research on phonics instruction has concentrated on younger students who have been assessed as at-risk for reading difficulties and older students who have already demonstrated reading difficulties. For the at-risk students, the goals are similar to those in the current study in providing phonics instruction that enables the children to effectively apply phonics for identifying unknown words in print and to avoid remediation techniques later on when already experiencing word recognition difficulties.

Studies with at-risk and struggling readers have been aimed at determining if specific approaches to phonics instruction can close the gap in reading achievement with typically developing readers. Volkmer et al. (2019) investigated the effect of a 6-week intervention for students identified as at-risk for reading difficulty and reported that though the students demonstrated growth in reading, they did not catch up with the achievement of their typically developing peers. Results of studies with struggling readers have shown that various approaches involving systematic and explicit phonics are effective (Bradley & Noell, 2018; McArthur et al., 2015; Steacy et al., 2016; Van Norman et al., 2018). It is important to note that the measures used in all these studies involved nonsense words or pseudowords to avoid the effect of the students' word

knowledge outside of the experimental condition. However, given the absence of measuring the students' abilities to apply phonics skills to reading authentic words, it is not possible to determine whether the approaches in these studies can improve actual word reading and enable struggling readers to attain reading achievement that is comparable to their typically developing peers.

Phonics Instruction With English Language Learners. The reading development of students who are English language learners is connected to their oral language English proficiency (Jamaludin et al., 2016). As with at-risk and struggling readers, instruction in phonics has been found to improve the word recognition of English language learners and that greater instructional time dedicated to phonics instruction resulted in significantly better progress in word recognition (Robinson, 2018). However, neither Jamaludin et al. (2016) nor Robinson (2018) compared the reading achievement of the English language learners with typically developing readers or whether benefits were sustained over time. In the one recent study that included a comparison of English language learners with typically developing readers, Dussling (2020) concluded that both at-risk, native, English speakers and at-risk, English language learners who received instruction with a supplemental reading program that emphasized phoneme awareness and phonics benefited from the intervention. However, Dussling did not determine if the children in the study improved sufficiently to catch up to their typically developing peers.

Multisensory Component Added to Systematic and Explicit Phonics Instruction. Only one recent study has involved the addition of a multisensory component to systematic and explicit phonics instruction for developing readers. As with

the current study, the multisensory component includes kinesthetic and tactile added to the visual and auditory components of typical phonics instruction. Schlesinger and Gray (2017) conducted a single group experimental study to examine the effect of multisensory language instruction. The sample for the Schlesinger and Gray study included second grade students with typical development or with dyslexia. The students completed six treatment sessions involving structured and multisensory interventions adapted from the Orton-Gillingham program. Results indicated that all students produced better letter name and sound production, word reading, and word spelling with multisensory instruction.

Two recent studies have involved the addition of a multisensory component to systematic and explicit phonics instruction for struggling readers. Snyder and Golightly (2017) and Warnick and Caldarella (2016) both conducted a single subject experimental study to determine the effectiveness of a multisensory a phonics-based reading intervention. Snyder and Golightly used multisensory phonics with a whole-language reading intervention with second grade students who showed deficits in reading. The multisensory phonics lessons were implemented in 14 sessions for 45 minutes each and whole-language lessons were implemented in 35 sessions for 30 minutes each throughout a normal school day. Warnick and Caldarella used a multisensory phonics-based reading remediation program with adolescents classified as poor readers and living at a residential treatment center. Their 30-hour highly structured multisensory phonics reading lessons were implemented over an 8-week period. Significant improvements in reading, comprehension, and word identification were reported in both studies.

Unlike the single subject designs used in the Snyder and Golightly (2017) and Warnick and Caldarella (2016) studies, Henry (2020) conducted an action research study to determine the effectiveness of multisensory phonics instruction with fifth and sixth-grade struggling readers. Henry reported improvements in decoding, word identification, sight word recognition, and reading comprehension though without any comparison groups, it is not possible to determine the influence of other variables in the instructional environment.

Although multisensory components are integral to the Orton Gillingham method, there is relatively little research on the effectiveness of the method. The only recent study was conducted by Ring et al. (2017) to investigate the effectiveness of two Orton Gillingham curricula. The researchers examined longitudinal data from 12 cohorts ranging from ages 7 to 14 years at the start of intervention. Results showed improvement in phonological awareness, phonological decoding, and reading skills. The authors concluded that further research is needed on the efficacy of Orton Gillingham instruction.

Teacher and Student Attitudes. Although evidence for the role of phonics instruction in early reading development has been shown in many studies, other factors influence the effectiveness of instruction. One of these is the importance of teacher, parent, and student attitudes on the effectiveness of phonics instruction. Though there are few recent studies on attitudes, findings support the benefit of positive attitudes towards phonics instruction on students' reading achievement.

Several researchers have focused on the attitudes of teachers toward phonics. Campbell (2018) conducted a mixed methods correlational and qualitative study with 283

early childhood teachers and reported that they believed phonics was best taught incidentally during play-based instruction, However, no measures of early reading achievement were included in the study and so the effectiveness of incidental phonics instruction by these teachers was not provided. Unlike the teachers in the Campbell study, the 69 teachers of Grades K-3 in the Ehri and Flugman (2018) quasi-experimental study were found to have a positive view of systematic phonics instruction at the outset of the study. After participating in a year-long mentoring program that involved training and mentoring to teach a systematic phonics program, their agreement with principles of phonics instruction increased for some and remained strong for all. Similar to the attitudes of the teachers in Ehri and Flugman study, Chapman et al. (2018) reported that 90% of the 665 primary level teachers who responded to a survey questionnaire reported using a phonics program in their Years 1-3 instruction and more than 80% recognized the importance of teaching decoding through phonics. In terms of knowledge of basic language constructs important to literacy instruction, results showed that many of the teachers lacked sufficient knowledge of how to teach phonics effectively.

In the one recent study of student attitudes, Shoaga et al. (2017) conducted a survey study with 300 students from 20 schools in Nigeria to investigate the students' perceptions of the benefits of phonics instruction. Results showed that the students believed phonics had improved their reading ability and enhanced the reading culture.

Methodological Considerations

Most of the research on the addition of a multisensory component to systematic and explicit phonics instruction has involved interventions with older students who

demonstrate serious reading difficulties (e.g., Henry, 2020; Mohamadzadeh et al., 2020; Schlesinger & Gray, 2017; Warnick & Caldarella, 2016). Few researchers have investigated the effectiveness of early reading instruction in regular classroom settings involving the addition of a multisensory component to the traditional visual and auditory modalities in systematic and explicit phonics instruction (e.g., Lee, 2016; Warnick & Caldarella, 2016). It is unknown whether developing readers benefit from regular classroom reading instruction that includes a multisensory component in systematic and explicit phonics instruction.

Implications

This study could contribute to positive social change by providing key stakeholders in the district a professional development project to provide in-depth multisensory phonics instructional training and coaching support to teachers. Findings from the study could inform professional development sessions to help teachers gain the knowledge and skills to implement a multisensory component to daily systematic and explicit phonics instructional strategies already being implemented. These instructional strategies can enable readers to decrease the amount of attention needed to decode words, increase their automatic word recognition, and increase their attention to higher order thinking skills and comprehension processes.

Summary

In Section 1, I presented evidence of the local problem, discussed the rationale for the study, defined important terminology, described the significance of the study, and posed the RQs and hypotheses. After discussing the theoretical framework and providing

a review of relevant literature, I offered methodological considerations and potential implications for using results from the study. The purpose of this quantitative causal-comparative study was to investigate the difference in reading achievement and automatic word reading accuracy when a multisensory component was added to systematic and explicit phonics instruction in a regular classroom setting of K-1 students. The theory of automatic information processing underlies the study because the theory proposes that automatic word recognition occurs through a process of visual memory of word features, phonological memory of sound-symbol relationships, retention in short-term, and then retention in long-term memory. The RQs were used to examine differences in reading achievement outcomes and automatic word reading accuracy for K-1 students who did and did not receive a multisensory component as part of systematic and explicit phonics instruction.

In Section 2, I will describe the research methodology, including the research design and approach, setting and sample, instrumentation and materials, data collection, data analysis, and assumptions, scope, limitations, and delimitations. I will also describe the measures I took for the protection of participants' rights. In Section 3, I will describe the project and in Section 4, I will provide reflections and conclusions.

Section 2: The Methodology

Quantitative Research Design and Approach

In this study, I employed a causal-comparative design to examine if the addition of a multisensory component to systematic and explicit phonics instruction increases word recognition automaticity and reading achievement outcomes compared to systematic and explicit phonics instruction without a multisensory component. According to Creswell and Creswell (2018), a causal-comparative study is used to find a predicted relationship between variables after an action or event has already occurred. The causal-comparative design is similar to the correlational design in that both are used to determine if a relationship between variables exists, but in the causal-comparative design, the direction and magnitude between the variables is assessed. This design was appropriate because the achievement data had already been generated for K-1 students to compare the differences in reading outcomes between same-grade level students from the 2016–2017 school year and the 2017–2018 school year, and it was not possible to manipulate the variables by assigning students to the intervention or selecting measures of student learning.

Other methodological designs were considered, but not used, for several reasons. Experimental designs are conducted to establish possible cause and effect between independent and dependent variables, and all variables that influence the outcome except for the independent variable are controlled for (Creswell & Creswell, 2018). I did not use an experimental design because student groups for each grade level and reading achievement measures were not selected by me as the researcher. Qualitative designs are

used for inquiry to understand a social or human problem by building a complex, holistic picture with words and detailed views of the participants (Creswell & Creswell, 2018). I did not use the qualitative approach because only numerical and ordinal test score data were used as data sources.

Setting and Sample

The setting was a local elementary school in the northeastern region of the United States. According to the school quality profile published on the district website, the elementary school is one of 12 elementary schools in a public school district comprised of 13,525 students in kindergarten through Grade 12. During the time frame of the archival data used in the current study, the target elementary school had a student population of approximately 500 students comprised of the following demographics: 59% European American, 28% Hispanic American, 5% two or more races, 5% African American, and 3% Asian American. Of these students, almost 50% receive free/reduced lunch.

The sample consisted of the reading scores from 66 kindergarten students from five classrooms and 66 first-grade students from five classrooms during the 2016–2017 school year who received systematic and explicit phonics instruction without a multisensory component, and the reading scores from 66 kindergarten students from five classrooms and 66 first-grade students from five classrooms during the 2017–2018 school year who received systematic and explicit phonics instruction with a multisensory component.

I conducted a power analysis with G*Power 3.1.9.7 to determine the smallest sample size suitable to detect the effect a given test. The test statistic was a means difference between two independent groups, with a parameter of a two-tailed test. A G*power analysis with the standard settings for educational research (alpha = .05, power = .80, and a medium effect size) for a two-tailed *t* test and Kruskal-Wallis *H* test would require 64 data sets per group, for a minimum sample of 128 overall (see Cohen, 1992). Each of the groups in the current study had 66 participants. According to the results of the power analysis, the sample size of this study met the minimum expectation of at least 64 participants in each group.

The K-1 students who only received systematic and explicit phonics instruction during the 2016–2017 school year were taught through auditory and visual instructional techniques. The students received phonics instruction 5 days a week for 20 minutes a day. The K-1 students who received systematic and explicit phonics instruction with a multisensory component during the 2017–2018 school year were taught through tactile and kinesthetic modalities in addition to auditory and visual modalities. The students received phonics instruction 5 days a week for 20 minutes a day. I excluded the scores of students who transferred to the local elementary school after the school year began for first grade from data analysis because it was not possible to know the type of phonics instruction they received as kindergarteners at a different school. The number of participants per grade level was small due to small class sizes in the 5 classrooms per grade level. All data used in this study were preexisting from the school years of 2016–2017 and 2017–2018. I chose this sample and setting due to having access to the

elementary school. The data were retrieved from the local school data database, and there was no need for any recruitment procedures because the data were preexisting, archival data.

Instrumentation and Materials

To measure the dependent variables, I used the Phonological Awareness Literacy Screening test and the Istation test data that were obtained from the district in May of 2018. Teachers at the local elementary school were given access to this assessment data through a Google Spreadsheet that is username and password protected. The school administrator provided the assessment data to teachers, instructional coaches, and intervention resource teachers. The data were de-identified by the local elementary school intervention resource teacher before I received the data for data analysis. The intervention resource teacher replaced student names and teacher names with numbers for student names and letters for the student's teacher.

Istation

I used the Istation test to measure the dependent variable in RQ1. The test used an ordinal scale of 1-3 based on a range of scores grouped in tiers. Tier 1 scores of 230-270 indicated that the student is performing greater than 40% of same-aged peers and is on track to meet grade level proficiency, Tier 2 scores of 195-229 indicated that the student is performing as well or better than 20%-40% of same-aged peers and is at some risk of not meeting grade level proficiency, and Tier 3 scores of 120-228 indicated that the student is performing as well or worse than 20% or below of same-aged peers and is at significant risk of not meeting grade level proficiency (Istation, 2020).

The Istation (2020) test is an adaptive, computer-based reading program that provides student growth information in five domains of early reading: phonemic awareness, alphabetic knowledge and skills, fluency, vocabulary, and comprehension. Test reliability is reported to be higher than .90 (Istation, 2020). The test is reported to have adequate content validity in that test items were found to be accurate representations of the domain they are intended to measure (Istation, 2020).

Phonological Awareness Literacy Screening

I used the Phonological Awareness Literacy Screening test to measure the dependent variable in RQ2. For kindergarten students, the test used an interval scale of 0 to 102; a score of 83 indicates expected grade level performance, higher than 83 indicates above grade level performance, and below 83 indicates below expected kindergarten level performance (Invernizzi et al., 2004). For first-grade students, the test used an interval scale of 0 to 68; a score of 35 indicates expected grade level performance, higher than 35 indicates above first-grade level performance, and below 35 indicates below expected first-grade level performance (Invernizzi et al., 2004).

The Phonological Awareness Literacy Screening test is given throughout the district to assess oral reading, spelling, and phonics. It is administered to individual students by the trained classroom teacher through a computer-scripted program to ensure the accuracy and reliability to measure student performance. Test reliability is reported to be .80, and the test can be administered and scored consistently and accurately by different users (Phonological Awareness Literacy Screening, 2017.). The Phonological Awareness Literacy Screening test is also reported to have content validity, predictive

and concurrent criterion-related validity, and construct validity and can be dependably used to screen students to measure children's developing literacy skills, such as alphabet knowledge, phonological awareness, print concepts and writing (Invernizzi et al., 2004).

Phonics Instruction in the Local Setting

Prior to the current study, the teachers in Grades K-5 received 1-hour demonstration sessions for 5 weeks that were presented by the school instructional coach in the steps of using a multisensory component within the systematic and explicit phonics they were already using. Classroom observations were then conducted monthly by one of two school administrators for the K-1 teachers. All K-5 teachers were included to ensure that the elementary teachers would be able to implement intervention lessons with struggling readers. However, only K-1 students during 2017–2018 received the multisensory component as part of systematic and explicit phonics instruction.

Phonics instruction took place in the regular education classroom setting. The students received phonics instruction in a whole group setting for 20 minutes every day during each school day. This instructional pattern was followed when phonics instruction did and did not include the multisensory component.

Phonics Instruction Without the Multisensory Component

The K-1 students who received systematic and explicit phonics instruction during the 2016–2017 school year were taught through auditory and visual instructional techniques. Instruction began with a 2-minute visual and auditory review drill of seeing a word, the students verbalized each sound they saw in the word, and then the students

blended the sounds to verbally read the word out loud altogether. Then, the teacher presented a new sound. The following are the steps for each lesson:

1. The teacher showed a new letter.
2. The teacher visually wrote and modeled the letter while verbalizing the sound that the new letter made.
3. The students verbally repeated out loud together what sound the new letter made upon prompting from the teacher. This was repeated three times.
4. The teacher then reviewed words that incorporated sounds that had already been taught to review previously learned sounds.
5. The teacher pronounced a word, segmented the word into separate sounds, and then blended the word altogether to verbally repeat the whole word.
6. The students then mimicked the teacher. The students said the given word, verbally broke the word up into segmented sounds, and then blended the word altogether to verbally repeat the word the teacher gave.
7. The teacher then reviewed what sounds were focused on for that day.
8. The teacher concluded the lesson by asking what sounds the new letters made, and students verbally responded out loud together as the teacher wrote the letter or letters on the whiteboard.

Phonics Instruction With the Multisensory Component

The K-1 students who received systematic and explicit phonics instruction with a multisensory component during the 2017–2018 school year were taught through tactile and kinesthetic in addition to auditory and visual modalities. The students started with a

2-minute visual and auditory review drill of seeing a word, the students verbalized each sound they saw in the word, and then the students blended the sounds to verbally read the word out loud altogether. A new sound was then taught by the teacher following the same procedure as before; however, tactile and kinesthetic modalities were included. The following are the steps for each lesson:

1. The teacher showed a new letter.
2. The teacher visually wrote and modeled the letter while verbalizing the sound that the new letter made.
3. Upon prompting from the teacher, the students used a tactile learning technique. The students verbally repeated out loud together three times what sound the new letter made while writing the letter over a bumpy writing surface.
4. The teacher then reviewed words that incorporated sounds that had already been taught to review previously learned sounds that incorporated a kinesthetic technique that involved hand muscle movements.
5. The teacher said a word, verbally broke the word up into segmented sounds, and then blended the word altogether to verbally repeat the word while tapping their fingers into their palm modeling the sounds in the word. This was repeated three times.
6. The students then mimicked the teacher. The students said the given word, verbally broke the word up into segmented sounds, and then blended the word

altogether to verbally repeat the word while tapping their fingers into their palm modeling the sounds in the word. This was repeated three times.

7. The teacher then reviewed what sounds were focused on for that day.
8. The teacher concluded the lesson by asking what sounds the new letters made, and students responded by writing the letter or letters on their whiteboards.

Data Collection and Analysis

I used measures of reading achievement outcomes to compare the differences in reading outcomes between same-grade level students from the 2016–2017 school year and the 2017–2018 school year. The two components of literacy composite data were analyzed using the 2016–2017 and 2017–2018 school year data for Grades K-1. That is, the scores of kindergarteners who received systematic and explicit phonics instruction without the multisensory component during the 2016–2017 school year were compared to kindergarteners who received, systematic, and explicit phonics instruction with the multisensory component during the 2017–2018 school year. Similarly, I compared the scores of first graders who received systematic and explicit phonics instruction without the multisensory component during the 2016–2017 school year to first graders who received systematic and explicit phonics instruction with the multisensory component during the 2017–2018 school year. I excluded the scores of students who had transferred to the local elementary school after the school year began for first grade from the data analysis because it was not possible to know the type of phonics instruction they received as kindergarteners at a different school. These students were distinguishable because those who come from another district are given a student number beginning with the four

digits 1400, and students who begin in the local district are given a student number beginning with the four digits 7000.

The data were archival and had already been collected in June of each year, so there was no manipulation of variables or measurement before the study commenced. In the causal-comparative design, the independent variable is identified and used to determine if it influences a dependent variable (Laerd Statistics, 2019). The independent variable for this research study was the addition of the multisensory component to the systematic and explicit phonics program. The ordinal dependent variable was reading achievement as measured by the Istation test and automatic word reading accuracy as measured by the Phonological Awareness Literacy Screening test. I used the Statistical Package for the Social Sciences, Version 27 (SPSS 27) statistical software to test the statistical assumptions and to run the data analyses.

For RQ1, I analyzed the ordinal scale Istation test data using the Kruskal-Wallis *H* test to compare the means of reading achievement scores of students who received systematic and explicit phonics instruction in the 2016-2017 school year to students who received the multisensory component added to systematic and explicit multisensory phonics instruction in the 2017-2018 school year. To run the Kruskal-Wallis *H* test, I considered the following assumptions. Assumption 1 was there is one dependent variable that is measured at the continuous or ordinal level; Assumption 2 was there is one independent variable that consists of two or more categorical, independent groups; Assumption 3 was there is independence of observations and no relationship between the observations in each group of the independent variable or between the groups themselves;

and Assumption 4 was the distribution of scores for each group of the independent variable has the same shape or a different shape (see Green & Salkind, 2011). Prior to the data analysis, I determined that the data met the first three assumptions. I provide the testing results for Assumptions 4 in the Data Analysis Results section.

For RQ2, I analyzed the interval scale data from the Phonological Awareness Literacy Screening test using an independent sample *t* test to compare the means of automatic word reading accuracy of students who received systematic and explicit phonics instruction in the 2016-2017 school year to students who received the multisensory component added to systematic and explicit multisensory phonics instruction in the 2017-2018 school year. To run the *t* test, the following assumptions were considered. The first assumption that I considered was the dependent variable will be measured on a continuous scale. The second assumption was the independent variable will consist of two categorical independent groups. Assumption 3 was there is no relationship between the observations in each group of the independent variable or between the groups themselves. Assumption 4 was there were no significant outliers in the two groups of the independent variable. Assumption 5 was that the dependent variable should be approximately normally distributed for each group of the independent variable. And Assumption 6 was homogeneity of variance. Violations of these assumptions include implicit factors such as lack of independence within a sample, lack of independence between samples, outliers of data points, nonnormality of samples, unequal population variances, detecting violation assumptions in the patterns in plot of data, special problems with small sample sizes and special problems with unbalanced

sample sizes. Appropriate actions, such as rechecking the data and performing modified tests to determine if the appropriate statistical test, should be used if Assumption 5 is violated (Green & Salkind, 2011). I determined that Assumptions 1–3 were met prior to the data analysis. I provide the Assumption 4-6 testing results in the Data Analysis Results section.

Statistical significance for the effect of the addition of a multisensory component was determined using a 95% confidence interval with $p < .05$. Chi squared was used to determine if results showed practical significance. The expert source for the selection of the statistical tests was Vogt et al. (2014).

Assumptions, Limitations, Scope and Delimitations

I made several assumptions that could not be verified. The first assumption was that all teachers administered the Phonological Awareness Literacy Screening test and Istation with fidelity, making sure all test procedures were followed. A second assumption was that all teachers taught the phonics program with fidelity, adhering to the scope and sequence of phonic elements and teaching the elements according to the prescribed procedures.

The scope of the study involved the investigation of two variables. The independent variable was the addition of a multisensory component to systematic and explicit phonics instruction in a regular classroom setting of K-1 students. The dependent variable was student reading achievement scores in a nominal ratio scale as measured by the Istation test and student reading achievement scores in an interval scale ratio as measured by the Phonological Awareness Literacy Screening test. The study was limited

to a single geographical area in the northeast region of the United States. A potential weakness was irregular student attendance, as students who did not attend school on a regular basis would not have received the same amount of phonics instruction as students who attend school regularly. Another potential weakness was the threat to internal validity or the threat to the confidence that the statistical relationship was not influenced by other variables due to the lack of random selection of participants and inability to manipulate the independent variable (Vogt et al., 2014). Also, a potential weakness was the threat to external validity, or the extent the results can be generalized to other groups or context as the participants were selected based on convenience sampling and may not be representative of the population of K-1 students in the district (Vogt et al., 2014).

Protection of Participants' Rights

To address any ethical issues, the study was reviewed by the Walden University Institutional Review Board (IRB) to ensure that I have conducted it ethically. To protect the confidentiality of the students, the data was de-identified in this study. I requested the data from the district after receiving permission from the Walden University IRB (IRB Approval No. 04-06-21-0658110). All the data will be stored on a password-protected laptop and password-protected Google login for 5 years.

Data Analysis Results

I used SPSS 27 to run the Kruskal-Wallis *H* test for the Istation test scores ranging from a tiered rank of 1-3 from the 2016-2017 school year to the 2017-2018 school year. This test compares the means between two unrelated groups on the ordinal dependent variable. Eta squared was used to determine if results showed practical

significance. The expert source for the selection of the statistical tests is Vogt et al. (2014). I then used SPSS 27 to run an independent sample *t* test to analyze the Phonological Awareness Literacy Screening test scores from the 2016-2017 school year to the 2017-2018 school year. This test compares the means between two unrelated groups on the continuous dependent variable. I set the *p* value as less than .05 for determining if there were statistically significant differences between scores of the two groups. Cohen's *d* was used to determine if results showed practical significance. A small effect size is considered .2, a medium effect size is considered .5, and a large effect size is considered .8 (Cohen, 1992).

RQ1

The first RQ addressed differences in reading achievement outcomes as measured by the Istation test for students in K-1 who received systematic and explicit phonics instruction without a multisensory component during the 2016-2017 school year compared to K-1 students who received multisensory, systematic, and explicit phonics instruction during the 2017-2018 school year. The test variable was the Istation test reading achievement outcome score of a 1, 2, or 3, with a score of 1 being the goal score. There are four assumptions that must be met for the Kruskal-Wallis *H* test to be a valid statistical test. There is one dependent variable that is measured at the continuous or ordinal level (Assumption 1); there is one independent variable that consists of two or more categorical, independent groups (Assumption 2); there is independence of observations, which means that there was no relationship between the observations in each group of the independent variable or between the groups themselves (Assumption

3); and the distribution of scores for each group of the independent variable has the same shape or a different shape (Assumption 4; Green & Salkind, 2011). The study met the first three assumptions for the Kruskal-Wallis *H* test to be a valid statistical test to analyze these data. I used the SPSS 27 statistical software to test the fourth assumption. As shown in Figures 1 and 2, Assumption 4 was met as the distributions of the Istation scores were similar for all groups and there were no significant outliers, as assessed by visual inspection of a boxplot. The assumptions were not violated; therefore, the results of the analysis are not incorrect or misleading.

Figure 1

Box Plot of Kindergarten Istation Scores

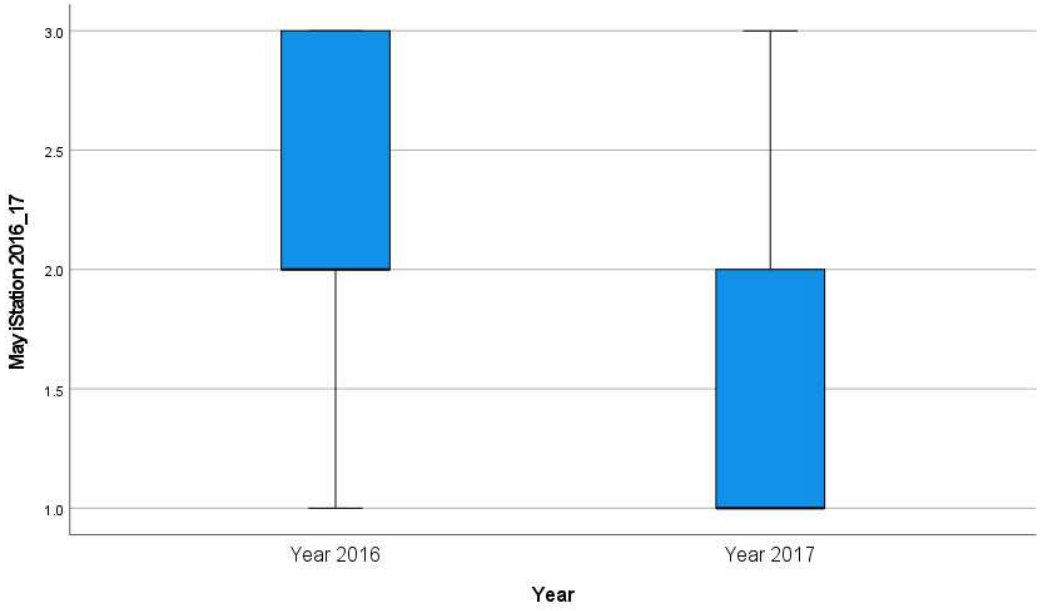
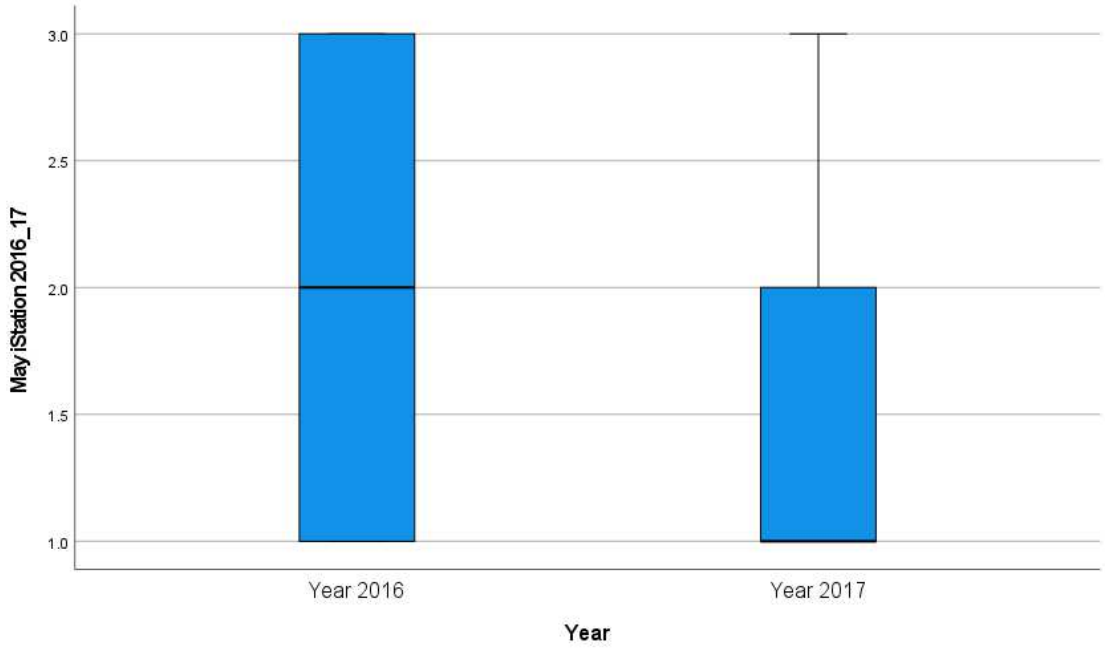


Figure 2

Box Plot of First Grade Istation Scores



The Kruskal-Wallis *H* test result for the kindergarten groups was $H(1) = 42.783$, $p = .000$. The mean rank Istation score for the 2016-2017 scores reflecting instruction without the multisensory component was 86.87. The mean rank Istation score for the 2017-2018 scores reflecting instruction with the multisensory component was 46.33. As shown in Table 1, the distributions of the 2016-2017 kindergarten Istation scores were statistically different from the 2017-2018 kindergarten Istation scores, where $p < .05$. An Istation test score of 1 and a decline in mean score is the goal for each student. As a result of the finding of statistical significance, I rejected the null hypothesis for the kindergarten students.

Table 1

Results of Kruskal-Wallis H *Test for Istation Scores*

		Kindergarten groups	First-grade groups
Without multisensory	*n*	66	66
	M	86.87	79.02
With multisensory	*n*	66	66
	M	46.33	59.98
Kruskal-Wallis *H*		42.783	17.011
	df	1	1
	p	.000	.000

The Kruskal-Wallis *H* test result for the first-grade groups was $H(1) = 17.011$, $p = .000$. The mean rank Istation score for the 2016-2017 scores reflecting instruction without the multisensory component was 79.02. The mean rank Istation score for the 2017-2018 scores reflecting instruction with the multisensory component was 59.98. As shown in Table 1, the distributions of the 2016-2017 first-grade Istation scores were statistically different from the 2017-2018 first-grade Istation scores, where $p < .05$. An Istation test score of 1 and a decline in mean score is the goal for each student. As a result of the finding of statistical significance, I rejected the null hypothesis for the first-grade students.

Eta squared was used to test the effect size of the Kruskal-Wallis *H* test. As shown in Table 2, there was an effect size of 0.653 for the kindergarten groups and an effect size of 0.25 for the first-grade groups. According to Vogt et al. (2014), both are large effect sizes for Eta squared.

Table 2

Results of Eta Squared for Istation Scores

		Kindergarten groups	First-grade groups
Without multisensory	*n*	66	66
	k	2	2
With multisensory	*n*	66	66
	k	2	2
Eta squared	η^2	0.653	0.25

Note. k = Number of groups

RQ2

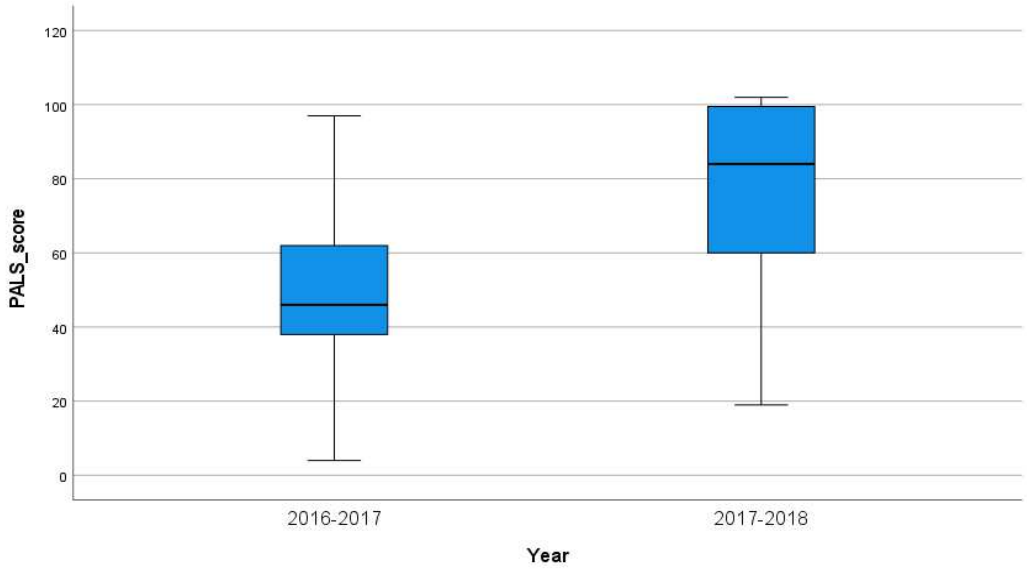
The second RQ addressed differences in automatic word reading accuracy as measured by the Phonological Awareness Literacy Screening test for students in K-1 who received systematic and explicit phonics instruction without a multisensory component during the 2016-2017 school year compared to K-1 students who received multisensory, systematic, and explicit phonics instruction during the 2017-2018 school year. The test variable was the Phonological Awareness Literacy Screening test word reading accuracy scores of 0-102 for kindergarten students and 0-68 for first-grade students, with the highest score being the goal score.

To run the *t* test, I considered six assumptions. The first assumption that I considered was that the dependent variable is measured on a continuous scale. The second assumption was the independent variable consists of two categorical independent groups. And Assumption 3 was there is no relationship between the observations in each

group of the independent variable or between the groups themselves. The study met the first three assumptions for the independent *t* test to be a valid statistical test to analyze these data. Along with these first three assumptions, there were no significant outliers in the two groups of the independent variable (Assumption 4). Outlier testing was completed in SPSS 27, as shown in Figure 3, the box plot did not show circular dots or asterisks, which indicated that none of the data points for kindergarten students and first-grade students were more than 1.5 box-lengths or 3 box-lengths away and were in acceptable range to conclude no outliers.

Figure 3

Box Plot of Phonological Awareness Literacy Screening Test Scores



To check the fulfillment of requirement for a *t*-test analysis, I also examined the normal distribution of variables (Assumption 5) and equality of variance (Assumption 6). The dependent variable should be normally distributed between both comparison groups for a *t* test analysis (Green & Salkind, 2011). As shown in Table 3, the dependent

variable for each group of the independent variable in 2016-2017 and in 2017-2018 were not normally distributed (Assumption 5), as assessed by Shapiro-Wilk's test ($p > .05$).

Table 3

Shapiro-Wilk Test of Normality

Phonological Awareness Literacy Screening Test Scores		
2016-2017	Statistic	.973
	df	132
	Sig	.000
2017-2018	Statistic	.885
	df	132
	Sig	.000

Normality can be assumed given the large sample size. However, as the data were not being normally distributed (Assumption 5), I used the Mann-Whitney *U* test. This popular alternative nonparametric test was used since the data assumptions required of the independent sample *t* test were not met. The purpose of the Mann-Whitney *U* test is to search for statistical evidence that the sampled populations are significantly different, which is the same purpose of the independent sample *t* test (Laerd Statistics, 2019).

The Mann-Whitney *U* test results were $U = 4{,}004.000$, $p = .000$, and a mean rank of 147.50 (Table 4). The output did not include the exact significance level because of the large size of the two groups (see Laerd Statistics, 2019). Because $p = .000$ is less than $p = .05$, the null hypothesis of no difference between the means was rejected. A statistically significant difference was shown between the 2016-2017 Phonological Awareness Literacy Screening test word reading accuracy scores in Year 1 as compared to the 2017-

2018 Phonological Awareness Literacy Screening test word reading accuracy scores in Year 2. These results confirm that the independent sample *t* test was a valid statistical test to analyze these data, and the results of the analysis were correct and not misleading.

Table 4

Mann-Whitney U Test Statistics

Phonological Awareness Literacy Screening Test Scores	
Mann-Whitney *U*	4,004.00
Wilcoxon *W*	14,882.000
Z	-9.334
Asymp. Sig. (2-tailed)	.000

I used the Levene's test for equality of variances in the SPSS 27 output that provided an equal variance assumed, and an equal variance not assumed. The output from the Levene's test for equality of variances for the kindergarten data showed a *F* value of 1.885 and $p = .000$. The first-grade data showed a *F* value of 8.012 and $p = .005$. As shown in Table 5, the *p* value of .000 for the kindergarten data is below the conventional threshold of 0.05, and the *p* value of .005 for the first-grade data is below the conventional threshold of 0.05, therefore equal variances are not assumed.

Table 5

Levene's Test for Equality of Variances

		Kindergarten groups	First-grade groups
Treatment of equal variances assumed	*t*	-5.456	-7.294
	df	120.865	110.229
	Sig. (2 tailed)	.000	.000
	Mean difference	-22.348	-16.864
	Standard error difference	4.096	2.312

Results of the independent sample *t* test for the kindergarten groups showed that the 2016-2017 scores reflecting instruction without the multisensory component were *SD* = 20.037, *n* = 66, and a mean rank Phonological Awareness Literacy Screening test score of 62.12; the 2017-2018 scores reflecting instruction with the multisensory component were *SD* = 26.568, *n* = 66, and a mean rank Phonological Awareness Literacy Screening test score of 84.47 (see Table 6). The distributions of the 2016-2017 kindergarten Phonological Awareness Literacy Screening test scores were statistically different from the 2017-2018 kindergarten Phonological Awareness Literacy Screening test scores, $t(120.865) = -5.456$, $p < .05$. As a result of the finding of statistical significance, I rejected the null hypothesis for the kindergarten students.

Table 6

Phonological Awareness Literacy Screening Test Scores

		Kindergarten groups	First-grade groups
Without multisensory	*n*	66	66
	M	62.12	38.65
	SD	20.037	15.847
	SEM	2.466	1.951
With multisensory	*n*	66	66
	M	84.47	55.52
	SD	26.568	10.085
	SEM	3.270	1.241

Note. *SD* = standard deviation, *SEM* = standard error mean.

Results of the independent sample *t* test for the first-grade groups showed that the 2016-2017 scores reflecting instruction without the multisensory component were $SD = 15.847$, $n = 66$, and a mean rank Phonological Awareness Literacy Screening test score of 38.65; the 2017-2018 scores reflecting instruction with the multisensory component were $SD = 10.085$, $n = 66$, and a mean rank Phonological Awareness Literacy Screening test score of 55.52. Distributions of the 2016-2017 first-grade Phonological Awareness Literacy Screening test scores were statistically different from the 2017-2018 first-grade Phonological Awareness Literacy Screening test scores, $t(110.229) = -7.294$, $p < .05$. As a result of the finding of statistical significance, I rejected the null hypothesis for the first-grade students.

I used Cohen's *d* to test the effect size of the independent sample *t* test. As shown in Table 7, there was an effect size of 0.949 for the kindergarten groups and 1.270 for the first-grade groups. According to Cohen (1992), both are large effect sizes for Cohen's *d*.

Table 7

Results of Cohen's d *for the Phonological Awareness Literacy Screening Test*

		Kindergarten groups	First-grade groups
Without multisensory	*n*	66	66
	M	62.12	38.65
	SD	20.037	15.847
With multisensory	*n*	66	66
	M	84.47	55.52
	SD	26.568	10.085
Cohen's *d*		0.949	1.270

Interpretation of Findings

In this study, I sought to investigate the difference in reading achievement and automatic word reading accuracy when a multisensory component was added to systematic and explicit phonics instruction in a regular classroom setting of K-1 students. According to the theory of information processing, as word identification becomes increasingly automatic, readers can then focus their attention on comprehension (LaBerge & Samuels, 1974).

My analysis of reading achievement scores for K-1 students showed significantly higher scores in the 2017-2018 school year when compared to the 2016-2017 scores and large practical significance when a multisensory component was added to systematic and explicit phonics instruction compared to scores in the 2016-2017 school year for K-1 students with only systematic and explicit phonics instruction. The findings suggest a benefit for incorporating multisensory phonics instruction for K-1 readers in regular classroom settings. However, the groups were comprised of different students on different years so a causal relationship could not be claimed.

As I discussed in the literature review, populations that include struggling readers, readers with disabilities, and readers who are English language learners have been investigated in studies of multisensory phonics instruction (e.g., Duke & Mesmer, 2019). However, few researchers have investigated the effectiveness of early reading instruction with developing readers that involves the addition of a multisensory component to the traditional visual and auditory modalities in systematic and explicit phonics instruction and none of these studies have been conducted in regular classroom settings (Henry, 2020; Schlesinger & Gray, 2017; Snyder & Golightly, 2017; Warnick & Caldarella, 2016).

Similar to my study, Schlesinger and Gray (2017) used a multisensory component that included kinesthetic and tactile modalities added to the visual and auditory components of typical phonics instruction as an experimental intervention with second-grade children with typical development and with dyslexia. Unlike my study in which instruction was delivered as part of regular classroom instruction by the children's

teachers, the sessions in the Schlesinger and Gray study were conducted with individual students by one of the authors and speech-language pathology assistants. Similar to my findings, the multisensory intervention was found to promote better letter name and sound production, word reading, and word spelling when compared to systematic and explicit phonics instruction only.

After reviewing seven phonics faux pas in early reading instruction, Duke and Mesmer (2019) suggested practices that are hindering phonics instruction and offer solutions to guide phonics instruction in education. Hindering practices such as how much time to spend on phonics instruction, neglecting the alphabetic principle, concept of word in print, teaching letter names without letter sounds, using inappropriate alphabet key words, lacking a scope and sequence, using a problematic approach to teaching sight words, and missing essential elements of phonics instruction were investigated and solutions were recommended. The authors suggested 30 to 60 minutes per day in grades K-2, with that time including several different activities. My study contrasts to Duke and Mesmer's study as I only used K-1 students. However, aspects of my study were comparable to Duke and Mesmer's study as systematic and explicit multisensory phonics instruction was used daily for 30-60 minutes in my study and included a variety of multisensory activities.

Duke and Mesmer (2019) suggested showing students the purpose and function of letters and letter sounds, and how words are represented in print. My study shows students through daily phonics instruction how to use letters and letter sounds through all sensory modalities. Duke and Mesmer further suggested that letter names and letter

sounds should be taught together and not separately as letter naming support print literacy and letter sound knowledge advances reading and spelling. These authors further stated that letters should also be associated with pictures that accurately represent the sound that letter makes. My study used visual and verbal letter name and letter sound activities that emphasized the letter and the sound the letter makes. My study also includes students orally responding while participating in the multisensory activities. Duke and Mesmer provided the support for the importance of the systematic approach that was included in my study as they concluded that systematic phonics instruction with a scope and sequence produces the best outcomes and is most effective. The authors suggested using a problematic approach to teaching sight words, which contrasted to my study in which sight words were not taught. In conclusion, Duke and Mesmer suggested using essential elements in phonics instruction such as specific instruction, active construction and deconstruction of words, opportunities to apply letter knowledge, and responsiveness. My study used these essential elements such as specific daily instruction, active multisensory opportunities to learn and apply letter knowledge, and opportunities for students to respond and be active learners.

Significant outcomes in reading achievement scores and word identification were also found by Snyder and Golightly (2017) when a multisensory phonics instructional approach was used with a whole-language reading intervention to improve the basic reading and reading comprehension skills of a second-grade student showing deficits in reading. The multisensory phonics lessons were implemented in 14 sessions for 45 minutes each and whole-language lessons were implemented in 35 sessions for 30

minutes each throughout a normal school day. Warnick and Caldarella (2016) also saw significant improvements in reading, comprehension, and word identification when a multisensory phonics-based reading remediation program was used with adolescents classified as poor readers. The 30-hour highly structured multisensory phonics reading lessons were implemented over an 8-week period. Henry (2020) also had similar results to my study as significant improvements in decoding, word identification, sight word recognition, and reading comprehension when an action research study was used to determine the effectiveness of multisensory phonics instruction as an intervention for fifth- and sixth-grade struggling readers. The students were divided into two groups, the first group consisted of 12 fifth-grade students who met 5 times a week for 60 minutes and the second group consisted of seven sixth-grade students who meet four times a week for 60 minutes.

However, there were contrasts to my study in comparison to Snyder and Golightly (2017), Warnick and Caldarella (2016), and Henry (2020). These studies used multisensory phonics instruction as an intervention tool for struggling readers and not as a part of regular classroom instruction for developing readers. My population included students in Grades K-1 only and my study used systematic and explicit phonics instruction daily throughout the entire school year versus sessions or a specific number of days.

The findings from my study expand on the existing knowledge of the benefit of systematic and explicit phonics instruction. My research is consonant with other studies of multisensory phonics instruction but provides new implications to the existing

database, by suggesting that developing readers benefit of incorporating a multisensory component into systematic and explicit phonics instruction in the regular classroom instruction.

Summary and Conclusion

This study addressed the problem of children experiencing delays in reading achievement outcomes during the early stages of reading development. The purpose of this quantitative causal-comparative study was to investigate the difference in reading achievement and automatic word reading accuracy when a multisensory component such as the addition of kinesthetic (e.g., tapping out letter sounds through finger taps or fist taps, and letter writing in the air) and tactile (e.g., finger writing in sand and writing over a bumpy or friction-based surface) modalities of multisensory phonics instruction to the traditional visual and auditory modalities of systematic and explicit phonics instruction can improve the reading achievement of all children, regardless of reading abilities, during the early stages of reading development when implemented as part of regular K-1 classroom reading instruction. Few researchers have investigated the effectiveness of early reading instruction in regular classroom settings involving the addition of a multisensory component to the traditional visual and auditory modalities in systematic and explicit phonics instruction. Given that the findings suggest a statistically significant benefit for the district to continue incorporating multisensory phonics instruction for K-1 readers, I determined that the project study deliverable should be a professional development plan. This professional development plan will ensure that all K-1 teachers can add the multisensory component to systematic and explicit phonics instruction to

improve reading instruction. Using the addition of multisensory phonics components to systematic and explicit phonics instruction will support meeting the reading achievement outcome standards and attaining the foundational skills needed to read increasingly complex reading texts throughout all grade levels. I will address the design and elements of the professional development project in Section 3. I will discuss the rationale, review of the literature, project description, project evaluation plan, and project implications and conclude Section 3 with a summary.

Section 3: The Project

The purpose of this study was to investigate the difference in reading achievement and automatic word reading accuracy when a multisensory component is added to systematic and explicit phonics instruction in a regular classroom setting of K-1 students. The findings showed significantly higher scores in the 2017–2018 school year for K-1 students when a multisensory component was added to systematic and explicit phonics instruction compared to scores in the 2016–2017 school year for K-1 students with only systematic and explicit phonics instruction. Given that the findings suggest a benefit for the district to continue incorporating multisensory phonics instruction for K-1 readers, I determined that the project study deliverable should be a professional development plan to ensure that all K-1 teachers can add the multisensory component to systematic and explicit phonics instruction. The professional development plan includes a 3-day program to take place before the new school year begins to focus on implementing the multisensory components with fidelity and subsequent bimonthly sessions with K-1 teachers to review and discuss classroom observation feedback from the instructional coach.

Rationale

I chose the project category of professional development to address the benefits found for the multisensory component added to systematic and explicit phonics instruction for developing readers withing regular classroom literacy instruction. The professional development will provide teachers with a repertoire of techniques for teaching phonics through multisensory modalities with fidelity in addition to the visual

and auditory modalities of systematic and explicit phonics instruction that they have been implementing. The techniques will be taught during a 3-day workshop taking place before the school year begins. Follow up will involve bimonthly sessions with the instructional coach to review feedback from classroom observations.

Review of the Literature

The results of this study indicated the benefit of adding a multisensory component to systematic and explicit phonics instruction. The professional development model will provide support for the teachers in implementing the multisensory component and potentially improve overall student reading achievement.

The professional development session was grounded in the adult learning theory. In the adult learning theory, often referred to as andragogy, Knowles (1973) stated that adult learners differ from younger learners in their need to be independent learners. The andragogical model is based upon five principles. Principle 1, self-concept, involves transition from being dependent to being a self-directed learner who is responsible for making decisions and accepting consequences about one's own learning. Principle 2 involves the accumulation of experiences with maturation, enabling the adult learner to relate new learning to past experiences. Principle 3 is identified as readiness to learn; adults become ready to learn things they need to know and do to cope effectively with real-life situations. According to Principle 4, orientation to learning, as people mature, they seek immediacy of application to a current problem. The fifth principle is the shift from extrinsic to intrinsic motivation; as people mature, they become internally motivated to learn rather than externally.

Adult learning theory informed my professional development project by reflecting how adult learners understand and retain new material. The professional development project reflects Principle 1 through self-directed experiences; Principle 2 through the incorporation of evaluative feedback and follow-up sessions; Principle 3 through the inclusion of modeling, hands-on experiences, and time for reflection; and Principle 4 through the directly applicable instructional methods. Finally, I designed the professional development project to provide information to the teachers in the local setting on incorporating techniques involving multisensory modalities with fidelity to their systematic and explicit phonics instruction program in the regular K-1 classroom setting. The professional development project reflects Principle 5 because the teachers are intrinsically motivated to improve instruction to increase the proportion of their students who meet reading achievement outcome standards and attain the foundational skills needed to read increasingly complex reading texts required throughout all grade levels.

I searched the following databases to locate literature for this review: Educational Resource Information Center, Sage Premier, Academic Search Complete, and ProQuest Central. I also used Google Scholar to locate published articles that I did not find through the databases. The following search terms were used: *professional development*, *adult learning*, *adult learners*, *collaboration*, *phonics*, *mentoring*, *reading instruction*, and *phonics instruction*. The studies discussed in this literature review met the criteria of being peer reviewed and published within the past 5 years. The patterns I found in this body of literature were models of professional development, coaching and mentoring, and collaboration.

Models of Professional Development

The research on professional development for teachers encompasses investigations of professional development models that incorporate adult learning theory. Many of these studies have involved exploration of characteristics that influence the effectiveness of professional development.

Professional development models typically include initial presentation of new information in day-long or multiday sessions and are often followed by small group sessions over a period during which participants share their experiences, challenges, concerns, and insights (Goodnough, 2018). One example of a professional development model is the Gupta and Lee (2020) mixed-methods, qualitative, single group, experimental study. In their study, 12 teachers participated in two reading workshops taught by local university faculty and participated in over 20 follow-up sessions. Based on analysis of teacher questionnaires, classroom observations, and student reading achievement data, Gupta and Lee stated that the teachers perceived they had mastered the content and skills learned in the professional development and applied their models, knowledge, and skills into classroom instruction. However, small gains in student reading achievement were also reported. Another example of a professional development model was investigated by Granger et al. (2019) in random control trial study. The 66 teachers in the educative space science curriculum group in their study received training in the new curriculum, and the 59 teachers in the traditional learning curriculum group reviewed the traditional textbook and teaching guide approach prior to the beginning of the school year, with a follow-up session for the treatment group midway through

teaching the science unit. Results showed that the teachers in the educative space science curriculum group had significantly higher scores in content knowledge and beliefs about science teaching and learning than teachers in the traditional curriculum group (Granger et al., 2019). However, no statistically significant differences were found between the groups for science teaching self-efficacy and views of science inquiry.

Other examples of professional development models have involved summer or year-long sessions and activities. Baird and Clark (2018) examined the effectiveness of the model they termed "look-ahead" over a period of 3 years. At each session, the 68 teachers reviewed previous content, were instructed in new content and strategies, and looked ahead to upcoming units of study and assessments. Results showed that Baird and Clark's look-ahead model was effective in increasing the teacher's understanding and instructional strategies, and students were reported to be more independent, willing to take academic risks, and participate in reasoning. The model investigated by Osborne et al. (2019) included three configurations. The 57 teachers in the study were randomly assigned to (a) a 1-week summer institute with a 2-week summer practicum experience and 8 follow-up days; (b) a 1-week summer institute with 8 follow-up days without the summer practicum experience; and (c) a 1-week summer institute, a 2-week practicum, and 4 follow-up days over the subsequent academic year. Their findings showed significant changes in teacher practices but no evidence that the practicum component had a significant effect on outcomes. Klatt et al. (2020) used a full-year immersion model in which 25 teachers participated in an orientation, lectures, workshops, observations of teaching, assisted teaching, and development of an action research plan. Klatt et al.'s

results indicated some shifts in teachers' beliefs about the importance of teacher collaboration and changes to their thinking about teaching and learning, although some of their beliefs did not change. Ufnar and Shepherd (2019) investigated a model titled "scientist in the classroom," in which members of the university's science, technology, engineering, and math faculty were paired with teachers for a 2-week summer workshop and for coteaching 1 day per week in a middle school classroom during the school year. Ufnar and Shepherd's findings showed gains in the teachers' discipline content and pedagogical knowledge and inquiry strategies.

Several studies involved identification of quality professional development. Results have shown that the professional development must be necessary and relevant to stakeholders, goal oriented, scheduled carefully to allow sufficient time for topics, incorporate input from experts and stakeholders, integrate collaborative and collective learning to enable support from peers, and include all needed resources (Ekinci & Acar, 2019; Goodnough, 2018; Hauge & Wan, 2019; Labone & Long, 2016; McCray, 2018).

Coaching and Mentoring

The research on coaching and mentoring for teachers encompasses investigations of professional development frameworks and coaching programs that use instructional coaching to improve teacher knowledge, skills, and instructional practices. Successful coaching models have involved workshop-style sessions that are tailored to professional development needs.

Coaching models that involved expert coaching were investigated by Scarparolo and Hammond (2018) and Clark et al. (2018). Scarparolo and Hammond's model used

expert coaches to model teaching scripts, perform multiple observations of teachers implementing the scripts, and give immediate feedback. Similar to Scarparolo and Hammond, Clark et al. used expert coaches to provide evidence-based reading instruction, classroom observations, individual feedback, support in interpreting student assessment data, and assessment of teacher content and pedagogical knowledge. Both studies found that their expert coaching model improved instructional practices and attitudes towards reading instruction. However, data analysis for Clark's et al. study was not available for the results of the teacher knowledge assessment, and the authors reported no significant changes in content and pedagogical knowledge.

Coaching models that involved self-coaching and peer coaching were investigated in two recent studies. Ma et al. (2018) examined the effectiveness of a 5-week peer coaching model for in-service teachers. At each session, the 20 teachers learned with either the peer coach or the expert coach. Snyder et al. (2018) compared self-coaching with expert coaching in a 16-week intervention. Self-coaching was conducted online, expert coaching was conducted in person, and both incorporated embedded instruction on using the instructional guides and materials. Ma et al.'s results showed that the peer-coaching model had a significantly greater effect on teacher learning, instructional design skills, and teaching abilities than the expert coaching model, whereas the expert coaching model was significantly more effective than the self-coaching model in the Snyder study.

Suchánková and Hrbácková (2017) used a mentoring approach in which 30 primary and secondary teachers participated in four 2-day modules that included individual supervision, classroom observations with feedback, and self-reflection. The

teachers used case studies to practice real-life scenarios with their mentors. Though the findings indicated that teachers' evaluated mentoring as effective, the authors cautioned that because participation was required and the teachers' inner motivation was low, the teachers did not attain the full benefits of the program.

A few researchers have examined a body of research literature to identify characteristics of effective coaching programs across studies. Kraft et al. (2018) reviewed 60 experimental studies to investigate the causal effect of teacher coaching programs on classroom instruction and student achievement. They discovered overall, large, positive effects on instruction and smaller, positive effects on achievement for coaching efficacy. Desimone and Pak (2017) identified five features of effective instructional coaching: (a) content focus involves activities focused on specific content and how students learn that content; (b) active learning involves opportunities for teachers to be observed, receive feedback, and reflect on student work; (c) sustained duration involves professional development that is ongoing throughout the school year and includes more than 20 hours of face-to-face interaction; (d) coherence involves alignment with standards, curriculum, and daily instruction; and (e) collective participation involves building an interactive learning community.

Collaboration

The research on teacher collaboration encompasses investigations of collaboration and peer coaching. Researchers have examined the role of coplanning, coteaching, and reflection in models of collaboration.

Several studies focused on the benefits and drawbacks involved in coplanning. The Grade 9 applied mathematics teachers from 11 schools in Jao and McDougall's (2016) project shared resources and coplanned materials. Several barriers to collaboration were identified that included disinterest in collaboration and lack of shared goals by some teachers, personality conflicts, and the need for common planning time. Their results pointed to several strategies for overcoming collaboration barriers, including creating team goals, planning purposefully, seeking venues and stakeholders to expand collaboration opportunities and knowledge, and using district-level resources. The five middle school teachers in Tallman's (2019) study used coplanning as a collaboration tool to create a social studies curriculum on a particular topic but experienced interpersonal barriers, including conflicting goals; personality conflicts; and temporal and logistical barriers, such as allocated time, time away from students, and monetary resources. Coplanning in the Callahan et al. (2016) study occurred after each professional development presentation when the seven teachers reviewed the new materials, collaborated with peers to create and implement instructional lessons, and reflected on each instructional lesson. Their results showed that the coplanning activities enhanced the teacher's instructional goals; yet, barriers, such as fidelity of implementation throughout the entire academic year, program weaknesses in content and scaffolding student thinking, and adequate teacher support to reach all teaching goals, were identified.

Several collaboration models have used online platforms or forums to support peer collaboration. Acar and Yildiz (2017) examined the effectiveness of an online platform in which the participating eight elementary teachers uploaded classroom videos

and requested peer feedback on instruction and behavior management. The teachers found the process of online peer collaboration to be a positive experience and the collaboration process to be supportive and influenced their professional development. McNeill et al. (2016) used an online community discussion site in which planning teams involving 50 teachers shared outcomes and ideas about effective teaching practices. The teachers reported a preference for a collaborative versus a top-down professional development model.

Two studies were designed to explore the views of teachers about collaboration. In Johnston and Tsai's (2018) study, 1,825 K-12 teachers responded to a survey questionnaire about their frequency of collaboration opportunities and how peer feedback through collaboration activities affected those in schools with different levels of student poverty. Tichenor and Tichenor (2019) asked 36 K-5 teachers to respond to a survey questionnaire that asked them about the frequency of their participation in collaborative activities, which activities they perceived to be the most and least beneficial, benefits and barriers to collaboration, and how collaboration could be improved. Findings for both studies showed that teacher collaboration was low and most considered time constraints to be the greatest barrier to collaboration.

Project Description

The purpose of this professional development project is to provide information to the teachers in the local setting on incorporating techniques involving multisensory modalities with fidelity to their systematic and explicit phonics instruction program in the regular K-1 classroom setting. The professional development project will follow models

and strategies that have been shown to be effective based upon my review of the literature and will involve a 3-day program before the school year begins and subsequent bi-monthly sessions. These qualities of effective professional development include the initial presentation of new information in multi-day sessions, followed by small group sessions over a full school year during which the participants share their experiences, challenges, concerns, and insights. I designed the professional development project to be necessary and relevant to the stakeholders, goal oriented, and scheduled carefully to allow sufficient time for topics. I also incorporated input from experts and stakeholders, integrated collaborative and collective learning to enable support from peers and included all needed resources. This professional development will also be a workshop style that is tailored to participants' needs and supports them with coaching and collaboration. See the Appendix for the professional development project.

The professional development project is grounded in adult learning theory as it reflects the differing needs of how adult learners understand and retain new material, will enable the participants to be self-directed, will offer them opportunities to provide evaluative feedback, will incorporate follow-up sessions to ensure their participation is valued, and will provide applicable instructional methods that they can take directly to their classrooms for immediate implementation with their students. Finally, the professional development project is designed to recognize the teachers' intrinsic motivation to improve instruction to increase the proportion of their students who meet reading achievement outcome standards and attain the foundational skills needed to read increasingly complex reading texts required throughout all grade levels.

The project will begin with 3-day professional development sessions before the school year begins. The first day will involve a presentation of five multisensory phonics instructional strategies. The second day will involve a presentation of an additional five multisensory phonics strategies, and the third day will involve review, practice, and how to assess student progress of the 10 multisensory phonics strategies. Follow-up sessions during the school year will take place bimonthly. Each teacher will have a designated school instructional coach as a mentor to observe and model the multisensory strategies. Teachers will be observed during their multisensory phonics instructional block by the instructional coach during the first week of the month in September, November, January, March, and May. Follow-up sessions to review classroom observations and reflect on teacher's implementation of the new multisensory strategies with their grade level team will be led by the instructional coach, and potentially have the principal, or assistant principal in attendance. These follow-up meetings will occur on the second week of September, November, January, March, and May.

Potential Resources and Existing Support

Resources for this professional development project include the school instructional coach, reading specialist, and intervention resource teacher to serve as the facilitators of the 3-day professional development. These staff members have been trained in the multisensory components and can effectively model the multisensory phonics instructional strategies. This elementary school is assigned an instructional coach and reading specialist to mentor and support teachers in highly effective instructional practices. An intervention resource teacher is also assigned to support teachers and

monitor student data to navigate best instructional and behavioral strategies to implement in the regular education classroom. All three staff members understand the need to support developing student readers to improve student reading achievement.

Several types of materials will be needed for the professional development including multisensory sand, plastic pencil boxes, plastic cross stitch sheets, cardstock for word and letter cards, red marker to write on the word/letter cards, dry erase boards or laminated white paper sheets, dry erase markers, dry erase erasers, internet access to view the word/letter card files, printer, folders to keep the teacher instructional pages, crayons, pencils, pens and highlighters for notetaking during the sessions, primary lined writing paper, small plastic baskets for teaching material storage, and the systematic and explicit phonics instructional manual with sequence sentences.

For the 3-day sessions, an open room in the school with tables and chairs will be needed to host the training. Each teacher will need a clear view of the facilitator, space at each table to practice the instructional strategies, access to the internet. and use of their school issued laptops to follow along with and print handouts and word/letter cards. The facilitator will need all these materials to model each multisensory component.

Potential Barriers and Solutions

One potential barrier to effective implementation of the professional development project is teacher fidelity of implementing the additional multisensory components into their systematic and explicit phonics instruction they have already been implementing. The additional multisensory components are new and will require practice to develop a comfort level with carrying out the additional multisensory tasks and building these new

routines into their regular reading instruction. A related barrier is to obtain teachers' support for including multisensory strategies in phonics instruction. To address both barriers, the professional development will need to show the benefits of reading achievement for developing readers. Another potential barrier is dedicating the teacher's bimonthly extended planning period to one specific topic of multisensory phonics instruction.

Project Timetable for Proposed Implementation

The first step for the proposed professional development project is to share the findings from the study with the principal, assistant principal, instructional coach, intervention specialist, and reading specialist at the local elementary school. I will then present the findings to the school district's instructional supervisors, director of elementary instruction and assistant superintendent of instruction. During this presentation, I will discuss the importance of the proposed professional development project.

The following timetable displays the sequence of implementation activities:

- End of spring: I will present the findings to the principal, assistant principal, instructional coach, intervention specialist, and reading specialist at the local elementary school. Soon after, I will present the findings to the school district's instructional supervisors, director of elementary instruction, and assistant superintendent of instruction.
- Early summer: I will present the design of professional development to the principal, assistant principal, instructional coach, and reading specialist at the

local elementary school and the school district's instructional supervisors, director of elementary instruction, and assistant superintendent of instruction.

- Early summer: After approval, the principal at the local elementary school will inform teachers of the professional development.
- Midsummer: Materials will be collected by the instructional coach and organized for the upcoming professional development sessions and reservations for the room will be made by the instructional coach.
- One week before the start of the school year: Three teacher workdays will be used for the 3-day professional development. The sessions will be scheduled from 9:00 am to 2:00 pm with three small movement breaks and 1 hour for lunch.
- Day 1: Presentation of five multisensory phonics instructional strategies.
- Day 2: Presentation of an additional five multisensory phonics strategies.
- Day 3: Review and practice of the 10 multisensory phonics strategies.
- Week 1 of September, November, January, March, and May: Teacher observations during multisensory phonics instruction block by the instructional coach.
- Week 2 of September, November, January, March, and May: Follow-up sessions to reflect on their implementation of the new multisensory strategies with K-1 grade level teams, the instructional coach, and potentially the principal, or assistant principal.

Roles and Responsibilities

As the researcher, my responsibility will be to present the results of the data collection and analysis to justify the professional development plan to school and district decision makers. My role will be to facilitate the 3-day professional development and organize and monitor bimonthly observations and follow-up sessions. The school instructional coach, school reading specialist, and school intervention resource teacher have the role of facilitating the professional development trainings and the instructional coach will provide follow-up sessions and bimonthly classroom observations. The teachers have a role in attending and actively participating in the 3-day professional development and follow-up sessions throughout the school year. The teachers will be expected to follow the district's professional development expectations to be on time, engaged, open to learning new skills, and respectful to others. During the school year, the teachers will be expected to execute the multisensory components in their daily systematic and explicit phonics instruction that were presented in the professional development.

The role and responsibility of the administrators will be to approve the professional development and the resources needed. Though not required, I believe that attendance by administrators at the 3-day professional development sessions and at some follow-up sessions will demonstrate the importance of the professional development to the teachers. The role and responsibility of the reading specialist, instructional coach, and intervention resource teacher will be to provide modeling of the multisensory

components during the 3-day professional development, observe teachers, and participate in the follow-up sessions during the school year.

Project Evaluation Plan

The evaluation plan for this project will be both formative and summative to determine the effectiveness of the professional development project for improving the participants' ability to incorporate the additional multisensory components into their daily systematic and explicit phonics instruction (see Appendix). Evaluation will also provide feedback for modifications of future professional development. At the end of Day 1 and Day 2, teachers will be asked to respond to a questionnaire that includes Likert scale and open-ended questions on the new multisensory concepts and instructional skills and ability of the facilitators to explain and coach their learning of the skills. A summative evaluation will be completed at the conclusion of the third day to rate the effectiveness of the 3-day professional development.

During the school year, the teachers will be asked to answer the following three questions after each bimonthly follow-up session:

- What was helpful in the professional development today?
- What was least helpful in the professional development today?
- I would like to know more about… and Questions, Comments, Concerns.

Evaluation results will be used to determine if more training is needed, the content of follow-up sessions, and satisfaction with the sessions to meet the teachers' learning needs. A final survey will be administered to the teachers at the end of the school year to determine if the year-long professional development improved teachers' perceptions of

their ability to implement multisensory strategies with the systematic and explicit phonics instruction.

Key stakeholders that will benefit from this professional development project include the teachers, local elementary school administrative team, and local elementary school students whose teachers will be trained in multisensory phonics instruction. School district administrators and the teachers and students in other schools may also be stakeholders if the training is extended to other schools in the district. Overall, this project has implications to enhance student reading achievement outcomes by attaining the foundational skills needed to read increasingly complex reading texts.

Project Implications

The professional development project has been designed based on the findings of this research study. In Section 2, analysis of the data showed that students who received a multisensory component with systematic and explicit phonics instruction showed statistically better automatic word reading and reading achievement compared to students who received systematic and explicit phonics instruction only. Using this professional development to enhance K-1 classroom teachers' knowledge of implementing multisensory components is important as automatic word reading accuracy and reading achievement has been a concern and a goal of the local school district.

The project has the potential to benefit all stakeholders and provide positive social change. The enhanced knowledge and skills of implementing multisensory components with systematic and explicit phonics instruction may increase the number of students who meet reading achievement benchmarks and attain the foundational skills needed to read

increasingly complex texts. The professional development plan may influence others within and beyond the local district who may replicate the professional development in their own schools to improve phonics instruction with developing readers.

Conclusion

In Section 3, I presented the goals of the project and the rationale for the professional development based on what I learned about the characteristics of professional development from the literature review. I provided a description of the project, the evaluation plan, and implications of the professional development project. I also offered the potential positive social change implications of the professional development.

In Section 4, I will discuss the strengths and limitations of the project and offer recommendations for alternative approaches. I will reflect on how my doctoral journey has allowed me to gain the knowledge to develop the proposed professional development project, grow as a scholar, and use new leadership skills to carry out academic initiatives I will also reflect on the importance of the work and identify implications, applications, and directions for future research.

Section 4: Reflections and Conclusions

Project Strengths and Limitations

The main strength of the project is the focus on advancing teachers' knowledge and skills in implementing multisensory components with systematic and explicit phonics instruction in the regular K-1 education classroom. A second strength of the project is that the professional development gives the participants explicit instruction and modeling on how to implement each multisensory component, along with time to practice and discuss the components in a hands-on model with the ability to take the exact materials from the training back into their classrooms. A third strength of this project is that after the 3-day professional development, teachers will be observed and engage in follow-up sessions for continued learning, practice, and discussion with colleagues.

A limitation of the project is whether the school district will recognize the importance of the professional development for the teachers, incorporate it as one of the scheduled professional developments at the beginning of the year, and provide resources for the bimonthly sessions during the school year. Another limitation is that this professional development only addresses K-1 teachers to provide them with the knowledge and skills to implement a multisensory component to daily systematic and explicit phonics instructional strategies they have already been implementing. A third limitation is that teachers may be reluctant to participate in a professional development that they have not received information about or understand the purpose of. A solution would be for the principal to conduct a meeting to inform teachers on the purpose, goals, outline, and benefits of the professional development. To help create buy in, the principal

could also have the instructional coach and literacy coach educate teachers on the benefits of the addition of a multisensory component to provide confidence on the importance of participating in this professional development to support phonics instructional practices.

Recommendations for Alternative Approaches

The purpose of this study was to investigate the difference in reading achievement and automatic word reading accuracy when a multisensory component is added to systematic and explicit phonics instruction in a regular classroom setting of K-1 students. I designed this professional development to support K-1 classroom teachers' knowledge of implementing multisensory components during systematic and explicit phonics instruction. An alternative solution would be a curriculum plan to map out detailed multisensory components that could be used at each elementary school.

Few researchers have investigated the effectiveness of early reading instruction in regular classroom settings involving the addition of a multisensory component to the traditional visual and auditory modalities in systematic and explicit phonics instruction (e.g., Lee, 2016; Warnick & Caldarella, 2016). An alternative method for addressing this problem may be to investigate the difference in reading achievement and automatic word reading accuracy when a multisensory component is added to systematic and explicit phonics instruction in a K-1 setting beyond the local school district. Another alternative method would be to investigate the effectiveness of adding multisensory components to systematic and explicit phonics instruction in a regular classroom setting of students in grades beyond K-1.

An alternative approach to the proposed 3-day professional development comes from the large change in how teachers and students can learn and maintain health safety precautions during the global COVID-19 pandemic. Schools are still facing the challenge of implementing the Centers for Disease Control and Prevention's safety precautions of wearing facial coverings, staying 6 feet apart, having no large groups in one setting, no sharing of materials, and sanitizing before and after contact with all materials. Schools are using technology more than ever to teach, conduct meetings, and communicate with others. Technology could also be used as an alternative approach for this professional development project. Along with the stated problem of implementing systematic and explicit multisensory phonics instruction in regular education classrooms, teachers are now faced with the problem of being able to come together and access professional development in a large group setting together. A Google Classroom or SeeSaw classroom could be created for teachers to be a part of the professional development class, and the 3-day professional development could use Google Meet or Zoom to conduct each day of training. Teachers would have access to each day of the professional development modules through their online classroom while modeling and practicing with their own materials in their own classrooms. Teachers would have 24/7 access to videos clips and slide shows modeling and explaining each of the multisensory components and how to implement the new systematic and explicit multisensory phonics instruction in their regular education classrooms. Facilitators could use attendance features, voice recordings, and turn-in assignments/surveys to ensure participants have met the learning goals for each day. Not only would the 24/7 access be helpful during the training, but the

teachers can refer to these video clips and slides when the training is over and they begin implementing the new multisensory components in their classrooms. Teachers would be able to ask questions directly to the facilitators through chat and comment features and save all files to their linked Google Drives for personal planning purposes. Conducting this professional development through available technology would not only provide convenience but safety precautions to the professional development participants if they are in a district that still has large restrictions with in-person learning.

Scholarship, Project Development and Evaluation, and Leadership and Change

My journey through this doctoral program allowed me to embark on a research process to investigate instructional practices. The archival student test data analyzed concerning the addition of multisensory components to systematic and explicit multisensory phonics instruction led to the development of this professional development project. Comparing the results between the student groups created an exhilarating opportunity for me to gain an in-depth understanding of the project I wanted to create to apply my findings and support teachers in gaining new knowledge, skills, and strategies for effective phonics instructional practices.

As an educator and a scholar, I have grown as a lifelong adult learner and curriculum and instruction project developer. The literature review for this project provided information and knowledge on how to effectively design and implement effective professional development. The review has changed my way of thinking about how I will support educators in my own building as a future administrator. Not only will I be able to use the research literature to help make key building-level decisions, but my

doctoral journey has given me the confidence to advocate for implementing research-based practices when making instructional decisions. It is invigorating to know that I have developed a project that can support teachers grow in their instructional knowledge and skills to enhance student reading achievement. I think that my project will be helpful to other schools and school districts that are facing reading deficits in foundational reading skills and overall reading achievement with their developing readers.

Reflection on the Importance of the Work

The professional development model in this project study is important for advancing teachers' knowledge and skills in implementing multisensory components with systematic and explicit phonics instruction in the regular K-1 education classroom versus the intervention or special education setting. Few researchers have investigated the effectiveness of early reading instruction in regular classroom settings involving the addition of a multisensory component to the traditional visual and auditory modalities in systematic and explicit phonics instruction (e.g., Lee, 2016; Warnick & Caldarella, 2016). The proposed professional development model is also important because it addresses a gap in practice in the literature on multisensory phonics instruction that is systematic and explicit with children in a whole classroom setting with some students who do and others who do not exhibit reading disabilities (see Warnick & Caldarella, 2016).

As my doctoral educational journey is coming to an end, I am hopeful that my work and proposed project could have a positive effect on reading instructional practices in the K-1 regular education classroom. I can truly see growth in myself as a scholar upon

completing this project. Throughout my journey I have planned a wedding, experienced a house fire, bought a new house with my husband, became a first-time parent with my husband to our daughter who was born 3 weeks earlier than expected, maintained a full-time job as a teacher, and completed a 2-year professional certificate program in administration, all while striving to be a supportive and loving wife and mother. This journey has challenged me mentally, physically, and emotionally. I have learned to exhibit patience and perseverance as well as to never give up on a dream that I am passionate about, especially when it comes to education. Not only will this degree conquer a lifelong goal of mine, but it will also equip me with the knowledge and ability to make instructional and professional choices in my upcoming career paths.

Implications, Applications, and Directions for Future Research

I chose a professional development project due to the findings showing significantly higher scores in the 2017–2018 school year for K-1 students when a multisensory component was added to systematic and explicit phonics instruction compared to scores in the 2016–2017 school year for K-1 students with only systematic and explicit phonics instruction. Given that the findings suggest a benefit for the district to continue incorporating multisensory phonics instruction for K-1 readers, I determined that the project study deliverable should be a professional development plan to ensure that all K-1 teachers can add the multisensory component to systematic and explicit phonics instruction. These findings informed the professional development to help teachers gain the knowledge and skills to implement a multisensory component to daily systematic and explicit phonics instructional strategies already being implemented. This

study can affect positive social change by providing research-based data to inform district leaders about the benefit of adding a multisensory component to systematic and explicit phonics instruction in a regular classroom setting of K-1 students. Training would then be available for all teachers to increase their knowledge and skills with multisensory components. Improved instruction through the addition of multisensory phonics components to systematic and explicit phonics instruction could increase the proportion of students who meet reading achievement outcome standards and attain the foundational skills needed to read increasingly complex reading texts required throughout all grade levels.

My recommendations for future research include conducting a longitudinal study to determine if the students who received the systematic and explicit multisensory phonics instruction in kindergarten or first grade are attaining reading achievement benchmarks in Grades 2-5. Another study should be carried out investigating systematic and explicit multisensory phonics instruction beyond Grades K-1. And yet another future study should be conducted to qualitatively focus on teachers' perceptions of the barriers to implementing systematic and explicit multisensory phonics instruction and the support they need to deliver this instruction effectively. Locally, the district should evaluate the effectiveness of the professional development approach and whether it improves the phonics instruction and reading achievement of developing readers.

Conclusion

In this causal-comparative study, I investigated the difference in reading achievement and automatic word reading accuracy when a multisensory component was

added to systematic and explicit phonics instruction in a regular classroom setting of K-1 students. In response to the findings, I designed a 3-day professional development project with follow-up sessions throughout the school year to provide continuous support to teachers. Few researchers have investigated the effectiveness of early reading instruction in a regular K-1 classroom settings involving the addition of a multisensory component to the traditional systematic and explicit phonics instruction.

Results of the research study provide promising evidence for the benefit of adding multisensory phonics components to systematic and explicit phonics instruction in general education K-1 classrooms. This approach to reading instruction with developing readers has the potential to increase the proportion of students who meet reading achievement outcome standards and attain the foundational skills needed to read increasingly complex reading texts required throughout all grade levels.

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Appendix: The Project

Purpose and Goals

The purpose of this professional development project is to provide teachers with the knowledge and skills to implement a multisensory component to daily systematic and explicit phonics instructional strategies they have already been implementing. The goal is to provide information to the teachers in the local setting on incorporating techniques involving multisensory modalities to implement them with fidelity during their systematic and explicit phonics instruction in the regular K-1 classroom setting. The objective will be addressed through modeling, practice, feedback from teaching observations, discussions with colleagues, and formative evaluations.

The professional development was based on models and strategies that have been shown to be effective based upon my review of the literature and will involve a 3-day program before the school year begins and subsequent bi-monthly sessions. These qualities of effective professional development include the initial presentation of new information in multi-day sessions, followed by small group sessions over a full school year during which the participants share their experiences, challenges, concerns, and insights. I designed the professional development project to be necessary and relevant to the stakeholders, goal oriented, and scheduled carefully to allow sufficient time for topics. The professional development project also incorporates input from experts and stakeholders, integrated collaborative, and collective learning to enable support from peers and included all needed resources. This professional development will also be a

workshop style that is tailored to participants' needs and supports them with coaching and collaboration.

The professional development project is grounded in adult learning theory as it (a) reflects the differing needs of how adult learners understand and retain new material, (b) will enable the participants to be self-directed, (c) will offer participants opportunities to provide evaluative feedback, (d) will incorporate follow-up sessions to ensure their participation is valued, and (e) will provide applicable instructional methods that participants can take directly to their classrooms for immediate implementation with their students. Finally, the professional development project is designed to recognize the teachers' intrinsic motivation to improve instruction to increase the proportion of their students who meet reading achievement outcome standards and attain the foundational skills needed to read increasingly complex reading texts required throughout all grade levels.

Target Audience

The target audience for this professional development will be the K-1 teachers who will be implementing systematic and explicit multisensory phonics instruction for the upcoming school year. The school district may decide to expand the target audience to include teachers in the other elementary schools to enable all the elementary schools to include multisensory components into systematic and explicit phonics instruction with K-1 students.

Timeline

The professional development project is designed to begin the week before the school year begins, during teacher workdays. The training will take place for three consecutive days and will last 5 hours each day, with the focus being on teachers' building the knowledge and skills to implement the multisensory components in their daily systematic and explicit phonics instruction. The goals of the professional development will be achieved throughout the 3 days. Each day will have an agenda, PowerPoint slides, and supporting materials for teachers to use and take back to their classrooms.

Day 1 will focus on modeling, learning, and implementing five of the multisensory components. The facilitators will model five of the multisensory components which will include: drill sounds with dry erase boards, drill sounds with tactile sand, new sound instruction with plastic tactile sheets, blending drills, and dictation of words. The teachers will then have time to practice the components on their own and provide evaluative feedback at the end of the day.

Day 2 will focus on modeling, learning, and implementing five additional multisensory components. The facilitators will model four of the multisensory components which will include: Warmup routines, new sound instruction using tactile sand, sight word review routines, and new sight word instruction routines. The last part of the day will consist of modeling how to close the lesson each day. The teachers will then have time to practice the components on their own and provide evaluative feedback at the end of the day.

Day 3 will focus on modeling, learning, and implementing more of the multisensory components, how to assess student learning at the end of the week, and an overall review of the 10 multisensory components that were taught from Day 1 and Day 2 of the professional development. The teachers will then have time to practice the components on their own and provide evaluative feedback at the end of the day, that will then be used to plan future follow-up sessions every two months during grade level team planning meetings.

Materials and Equipment

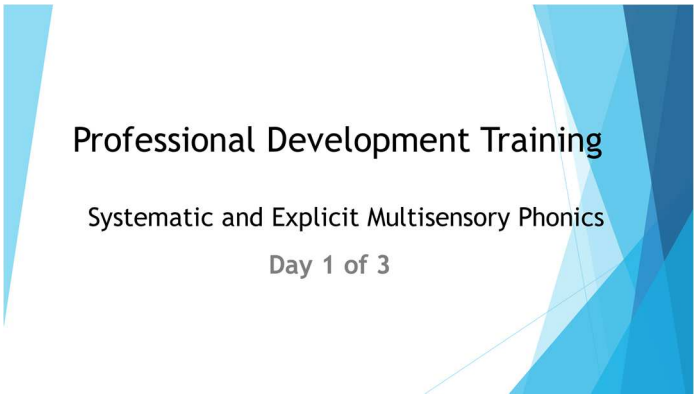
- Multisensory sand
- Plastic pencil boxes
- Plastic cross stitch sheets
- Cardstock for word and letter cards
- Red marker to write on the word/letter cards
- Dry erase boards or laminated white paper sheets
- Dry erase markers
- Dry erase erasers,
- Printed and assembled word/letter cards from the online folder
- Internet access to watch modeling videos after the sessions
- Printer
- Card stock
- Folders to keep the teacher instructional pages
- Crayons

- Pencils
- Pens and highlighters for notetaking during the sessions
- Primary lined writing paper
- Small plastic baskets for teaching material storage
- School adopted systematic and explicit phonics instructional manual with sequence sentences, sounds and words (already in use at the school)
- Open room in the school with tables and chairs to host the training.

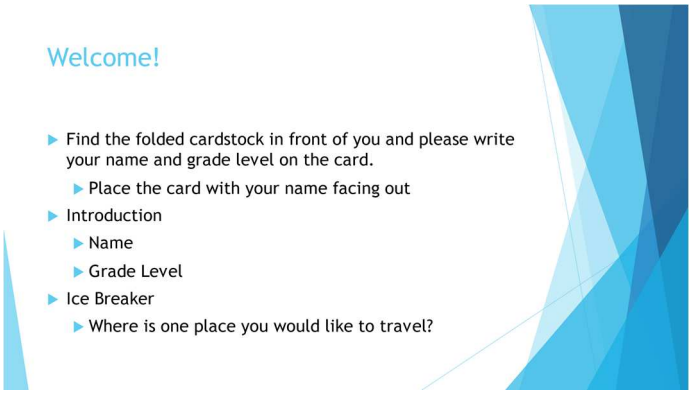
Professional Development- Day 1 Agenda

Time	Activity
8:45-9:00 *PPT Slide 1*	Registration Complimentary Breakfast
9:00-9:15 *PPT Slides 2-4*	Introduction and Purpose of the Professional Development **Give out Teacher Handout #1 and #2 to use for today*
9:15-9:30 *PPT Slide 5*	Explicit modeling from facilitator: -Drill sounds with dry erase boards
9:30-9:45 *PPT Slide 5*	Teacher applies knowledge: -Teacher practices drill sounds with dry erase boards
9:45-10:00 *PPT Slide 6*	Explicit modeling from facilitator: -Drill sounds with tactile sand
10:00-10:15 *PPT Slide 6*	Teacher applies knowledge: -Teacher practices drill sounds with tactile sand
10:15-10:30 *PPT Slide 7*	Break
10:30-10:45 *PPT Slides 8 & 9*	Explicit modeling from facilitator: -New sound instruction with plastic tactile sheets
10:45-11:00 *PPT Slides 8 & 9*	Teacher applies knowledge: -Teacher practices new sound instruction with plastic tactile sheets
11:00-12:15 *PPT Slide 10*	Lunch on your own
12:15-12:30 *PPT Slides 11 & 12*	Explicit modeling from facilitator: -Blending drill
12:30-12:45 *PPT Slides 11 & 12*	Teacher applies knowledge: -Teacher practices blending drill
12:45-1:00 *PPT Slide 13*	Break
1:00-1:15 *PPT Slide 14*	Explicit modeling from facilitator: -Dictation words
1:15-1:30 *PPT Slide 14*	Teacher applies knowledge: -Teacher practices dictation words
1:30-1:45 *PPT Slide 15*	Review of the day and questions
1:45-2:00 *PPT Slide 16*	Evaluations/Feedback forms- See you tomorrow!

Professional Development Day 1 PowerPoint Slides



Slide 1



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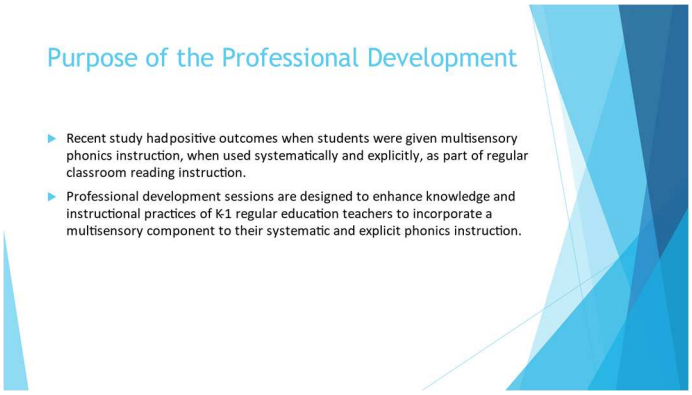


Slide 3

Goals of the Professional Development

- **Goal 1:** The facilitator will model the multisensory components for teachers to observe and understand.
- **Goal 2:** Teachers will gain the knowledge and skills on how to implement the multisensory components to their daily systematic and explicit phonics instruction through modeling and practice.
- **Goal 3:** The facilitator will use evaluations from the professional development sessions to understand teacher's level of comfort in order to plan the next steps for follow up meetings and feedback.

Slide 4

Drill Sounds- Dry Erase Boards

Steps to Implement:

1. Flash cards (sounds that have been taught or known) and students provide the letter and sound.
   Teacher says: "T, top, /t/" Students Repeat (3 times)

2. Auditory-(students write letters for sounds they hear on their Whiteboards
   Teacher says: What says /__/
   Students will: write on dry erase boards and show the letter

Materials:

- Letter/Sound Card Master Sets (90 Cards)
- Letters A-Z Picture Cards
- Dry erase boards
- Dry erase markers & erasers

Slide 5

Drill Sounds- Tactile Sand

Steps to Implement:

1. Flash cards (sounds that have been taught or known) and students provide the letter and sound.
   Teacher says : "T, top, /t/" Students Repeat (3 times)

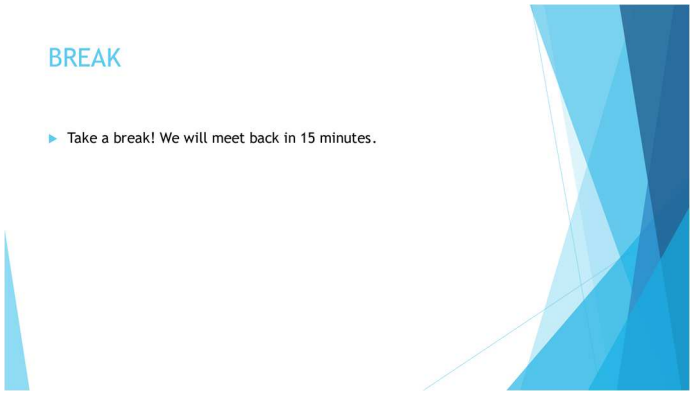
2. Auditory-(students write letters for sounds they hear in the Tactile Sand
   Teacher says: Whatsays /__/
   Students will: write in the Tactile Sand to show the letter

Materials:

- Letter/Sound Card Master Sets (90 Cards)
- Letters A-Z Picture Cards
- Tactile Sand in plastic pencil boxes

Slide 6

Slide 7



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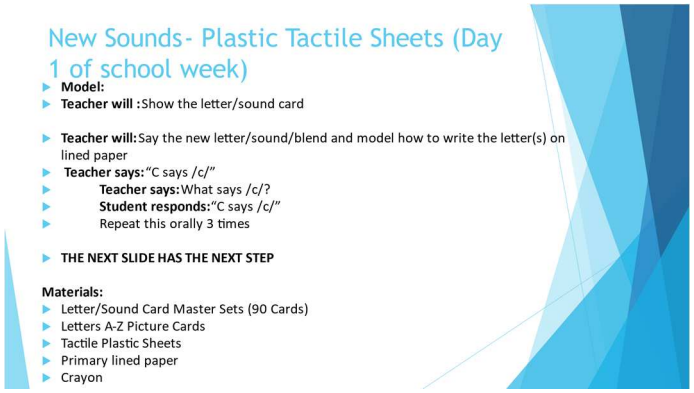

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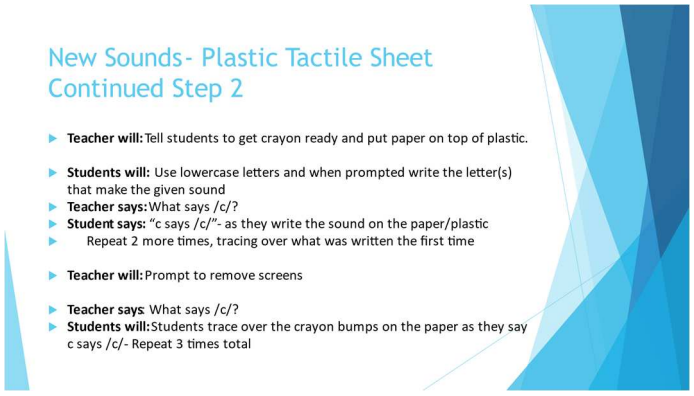

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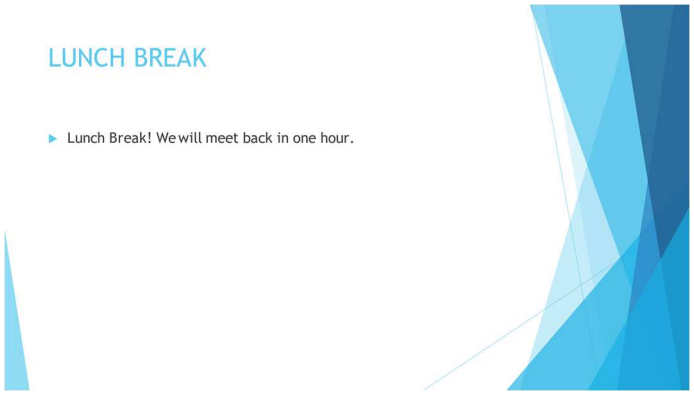

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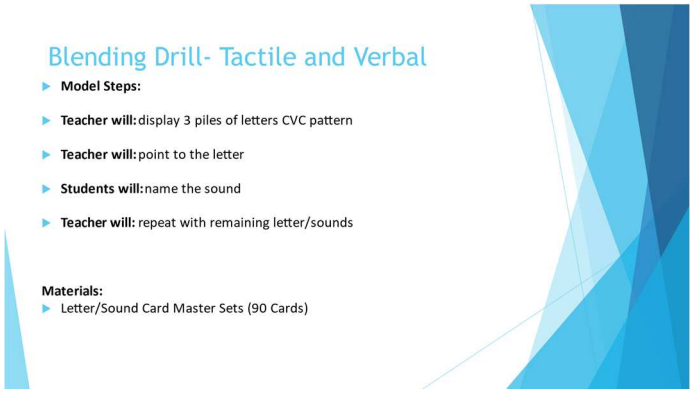

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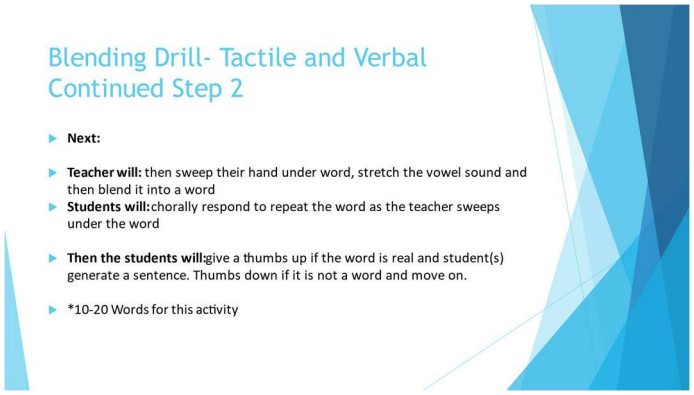

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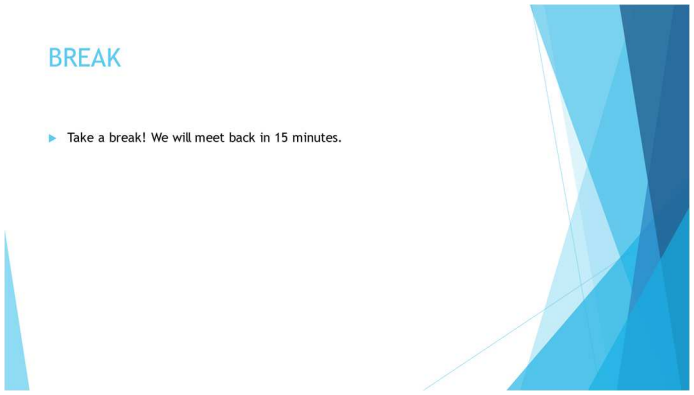

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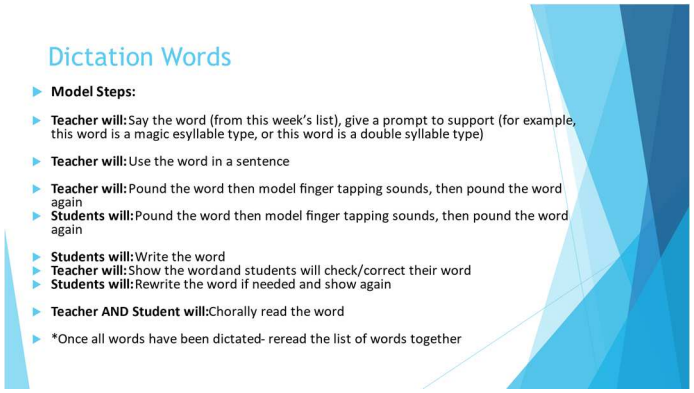

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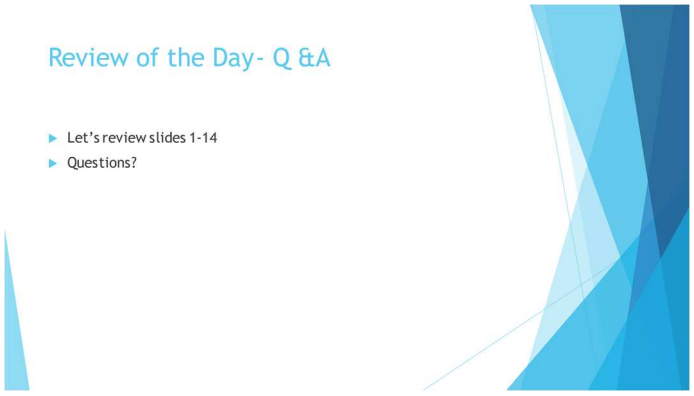
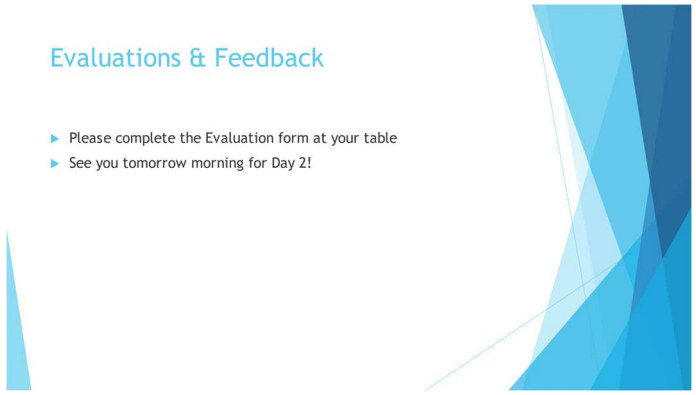



Evaluations & Feedback
Please complete the Evaluation form at your table
See you tomorrow morning for Day 2!

Slide 16

Professional Development Evaluation- Day 1

Please respond by placing an **X** by the number that best indicates your feelings after today's training.

1= Yes 2= Neutral 3= No

Question	**1**	**2**	**3**
1. Were the multisensory components for the day made clear to you?			
2. Did the facilitators show knowledge and present the skills for each multisensory component?			
3. Were your questions or concerns answered?			
4. Will you be able to implement the components from today's professional development when you return to your classroom?			
5. Did today's professional development improve your knowledge and skills of implementing multisensory components in your daily systematic and explicit phonics instruction?			

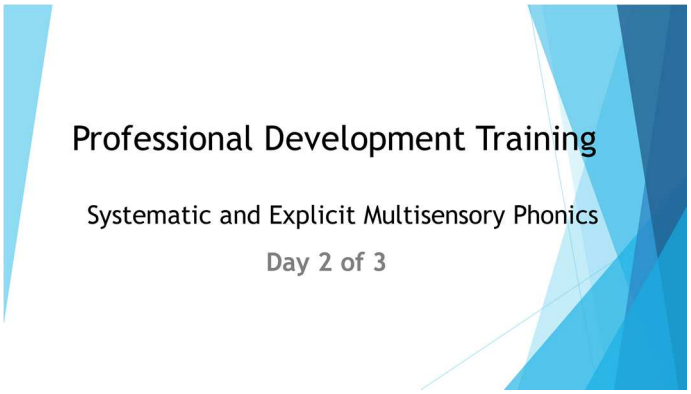
Please respond to the following questions.
Your answers will assist in determining how to improve the professional learning.

What components from today do you feel comfortable implementing in your classroom?
What components from today do you NOT feel comfortable implementing in your classroom?
What would you like to see in future sessions?

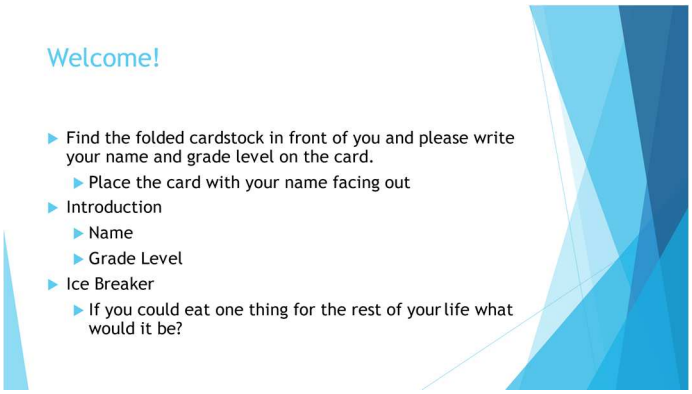
Professional Development- Day 2 Agenda

Time	Activity
8:45-9:00 *PPT Slide 17*	Registration Complimentary Breakfast
9:00-9:15 *PPT Slides 18-20*	Introduction and Purpose of the Professional Development **Give out Teacher Handout #1, #3, and #4 to use for today*
9:15-9:30 *PPT Slide 21*	Explicit modeling from facilitator: -Warm up routines for teachers to use during their school year instruction. -Vowel tents
9:30-9:45 *PPT Slide 21*	Teacher applies knowledge: -Warm up routines for teachers to use during their school year instruction. -Teacher practices vowel tents
9:45-10:00 *PPT Slide 22*	Explicit modeling from facilitator: -New sound instruction with tactile sand
10:00-10:15 *PPT Slide 22*	Teacher applies knowledge: -Teacher practices new sound instruction with tactile sand
10:15-10:30 *PPT Slide 23*	Break
10:30-10:45 *PPT Slide 24*	Explicit modeling from facilitator: -Sight word review
10:45-11:00 *PPT Slide 24*	Teacher applies knowledge: -Teacher practices sight word review
11:00-12:15 *PPT Slide 25*	Lunch on your own
12:15-12:30 *PPT Slide 26*	Explicit modeling from facilitator: -New sight word instruction
12:30-12:45 *PPT Slide 26*	Teacher applies knowledge: -Teacher practices new sight word instruction
12:45-1:00 *PPT Slide 27*	Break
1:00-1:15 *PPT Slide 28*	Explicit modeling from facilitator: -Closing of lesson routine
1:15-1:30 *PPT Slide 28*	Teacher applies knowledge: -Teacher practices closing of lesson routine
1:30-1:45 *PPT Slide 29*	Review of the day and questions
1:45-2:00 *PPT Slide 30*	Evaluations/Feedback forms- See you tomorrow!

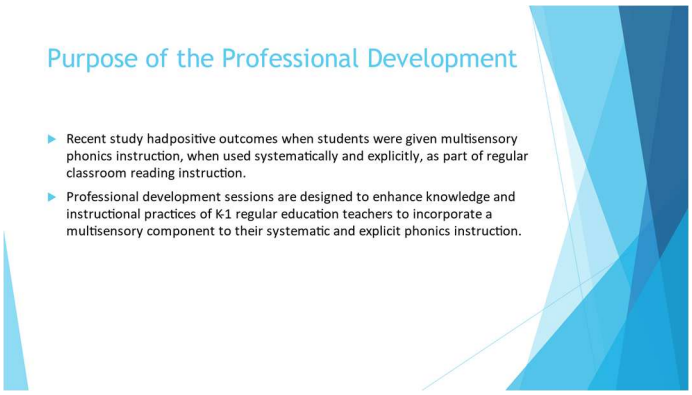
Professional Development Day 2 PowerPoint Slides



Slide 17



Slide 18



Slide 19

Goals of the Professional Development

- **Goal 1:** The facilitator will model the multisensory components for teachers to observe and understand.
- **Goal 2:** Teachers will gain the knowledge and skills on how to implement the multisensory components to their daily systematic and explicit phonics instruction through modeling and practice.
- **Goal 3:** The facilitator will use evaluations from the professional development sessions to understand teacher's level of comfort in order to plan the next steps for follow up meetings and feedback.

Slide 20

Warmup- Vowel Tents

- **Students will:**lay out vowel cards on desks in a, e,i, o, u order
- **Teacher will say:**short vowel sound
- **Students will:**repeat sound and hold the card up, repeating the vowel letter and sound
  - ***Teacher:*** *What says /a/?*
  - ***Student:*** */a/, a says /a/*
- Once step 3 is mastered, use VC syllables such as ap, op, ac, or**at**, etc. Teacher says the sound, students repeat the sound and hold up the vowel card
  - ***Teacher:*** *What says /op/?*
  - ***Student:*** */op/, o says /o/*
- Once step 4 is mastered, use CVC patterns (real or nonsense words can be used here) tat, fot, ras, mod, sop, etc.
  - ***Teacher:*** *What vowel is in hit?*
  - ***Student:*** */i/, i says /i/*

Materials:

- Vowel Tents (Vowel letters on the folded cardstock to stand up on student desks)

Slide 21

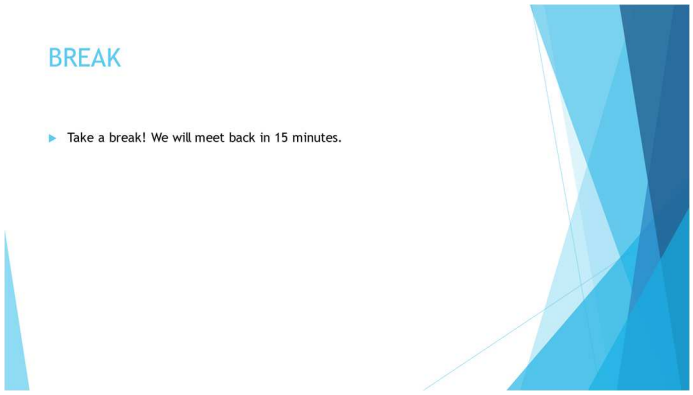
New Sounds- Tactile Sand

- **Teacher will:** Show the letter/sound card
- **Teacher will:** Say the new letter/sound/blend and model how to write the letter(s) in the sand
- **Teach Models** - how to write the letter and the students will follow by writing in their sand
  - **Teacher:** What says /c/?
  - **Student:** C says /c/, writing in sand as they speak
  - **Repeat orally 3 times**
- **Teacher will:** model correct formation, say the letter/sound, hold the student hand to trace 3x with teacher support.
  - Shake the sand and prompt for them to form the letter, again watching for correct formation.
- *Watch for correct letter formation - if students are not forming letters correctly.

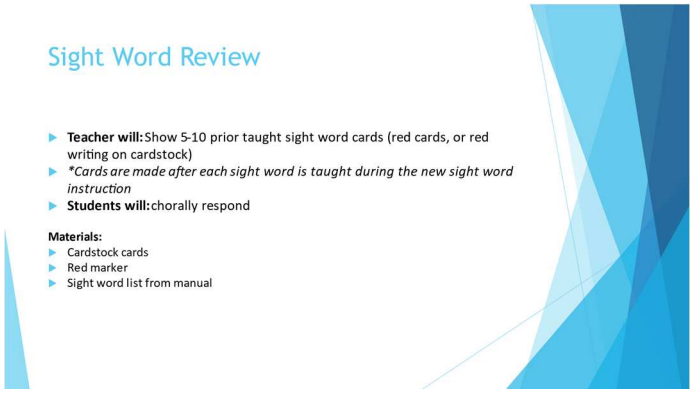
Materials:

- Letter/Sound Card Master Sets (90 Cards)
- Letters A-Z Picture Cards
- Tactile sand in plastic pencil box containers

Slide 22



Slide 23



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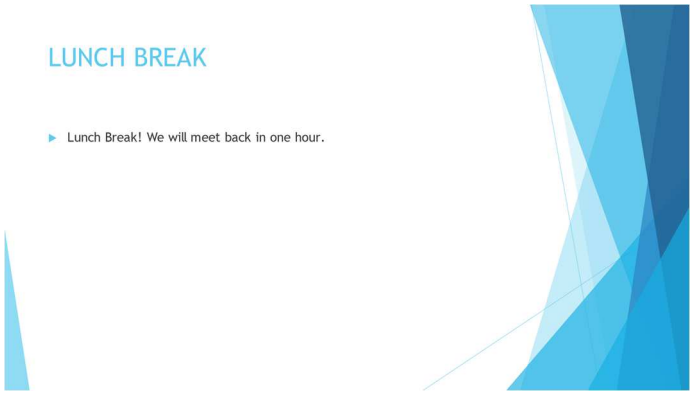

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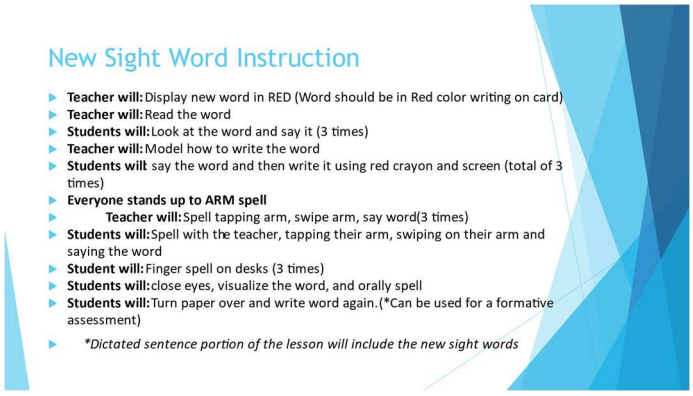

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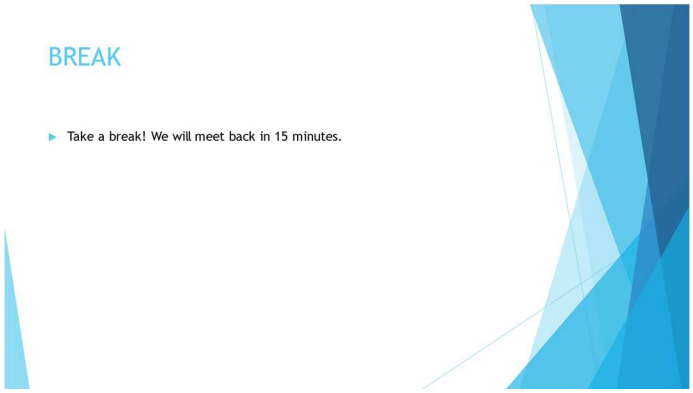

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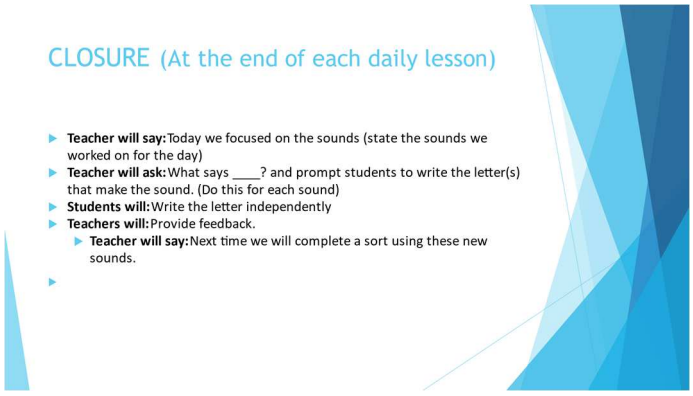

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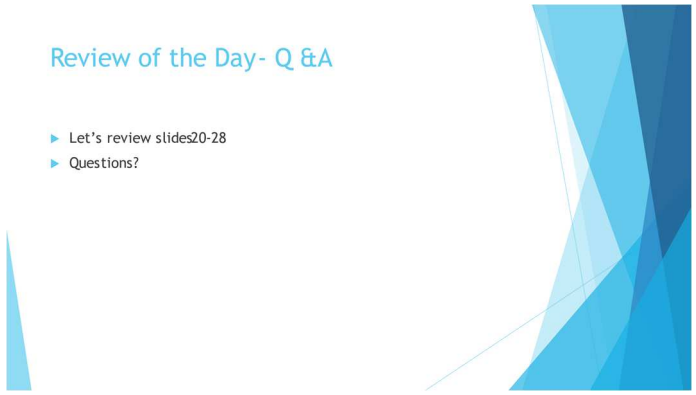
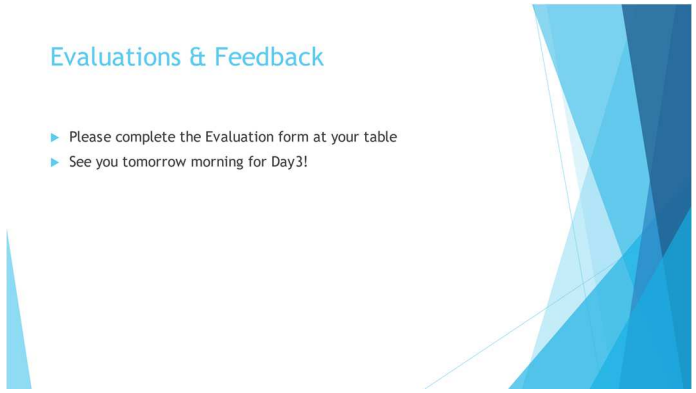


Slide 29



Slide 30

Professional Development Evaluation- Day 2

Please respond by placing an **X** by the number that best indicates your feelings after today's training.

1= Yes 2= Neutral 3= No

Question	**1**	**2**	**3**
1. Were the multisensory components for the day made clear to you?			
2. Did the facilitators show knowledge and present the skills for each multisensory component?			
3. Were your questions or concerns answered?			
4. Will you be able to implement the components from today's professional development when you return to your classroom?			
5. Did today's professional development improve your knowledge of implementing multisensory components in your daily systematic and explicit phonics instruction?			

Please respond to the following questions.
Your answers will assist in determining how to improve the professional learning.

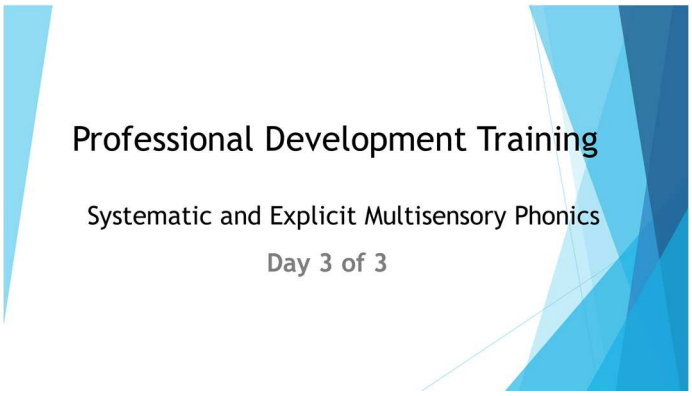
What components from today do you feel comfortable implementing in your classroom?
What components from today do you NOT feel comfortable implementing in your classroom?
What would you like to see in future sessions?

Professional Development- Day 3 Agenda

Time	Activity
8:45-9:00 *PPT Slide 31*	Registration Complimentary Breakfast
9:00-9:15 *PPT Slides 32-34*	Introduction and Purpose of the Professional Development **Give out Teacher Handout #1, #5, and #6 to use for today*
9:15-9:30 *PPT Slide 35*	Explicit modeling from facilitator: -Dictation phrases
9:30-9:45 *PPT Slide 35*	Teacher applies knowledge: -Dictation phrases
9:45-10:00 *PPT Slide 36*	Explicit modeling from facilitator: -Warm up routines for teachers to use during their school year instruction. -Phonemic awareness
10:00-10:15 *PPT Slide 36*	Teacher applies knowledge: -Warm up routines for teachers to use during their school year instruction. -Phonemic awareness
10:15-10:30 *PPT Slide 37*	Break
10:30-10:45 *PPT Slide 38*	Explicit modeling from facilitator: -Weekly assessment
10:45-11:00 *PPT Slide 38*	Teacher applies knowledge: -Weekly assessment
11:00-12:15 *PPT Slide 39*	Lunch on your own
12:15-12:30 *PPT Slide 40*	Facilitator and teacher review/practice Skill 1 from Day 1
12:30-12:45 *PPT Slide 41*	Facilitator and teacher review/practice Skill 2 from Day 1
12:45-1:00 *PPT Slide 42*	Break
1:00-1:15 *PPT Slides 43 & 44*	Facilitator and teacher review/practice Skill 3 from Day 1
1:15-1:30 *PPT Slides 45 & 46*	Facilitator and teacher review/practice Skill 4 from Day 1
1:30-1:45 *PPT Slide 47*	Facilitator and teacher review/practice Skill 5 from Day 1
1:45-2:00 *PPT Slide 48*	Facilitator and teacher review/practice Skill 1 from Day 2
2:00-2:15 *PPT Slide 49*	Facilitator and teacher review/practice Skill 2 from Day 2
2:15-2:30 *PPT Slide 50*	Facilitator and teacher review/practice Skill 3 from Day 2
2:30-2:45	Facilitator and teacher review/practice Skill 4 from Day 2

PPT Slide 51	
2:45-3:00 *PPT Slide 52*	Facilitator and teacher review/practice Skill 5 from Day 2
3:00 *PPT Slide 53*	Evaluations/Feedback forms Thank you for your time! We will see you during the school year!

Professional Development Day 3 PowerPoint Slides



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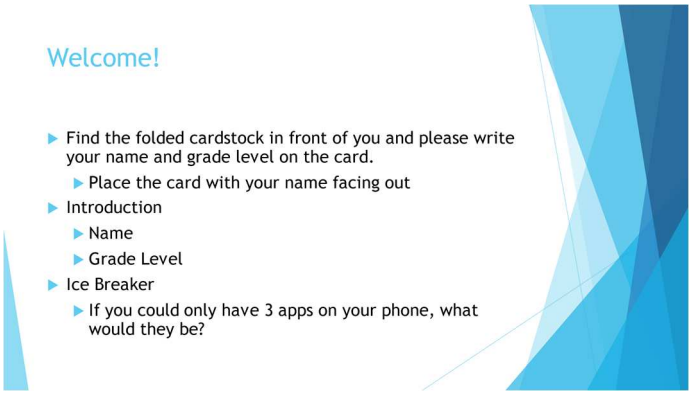

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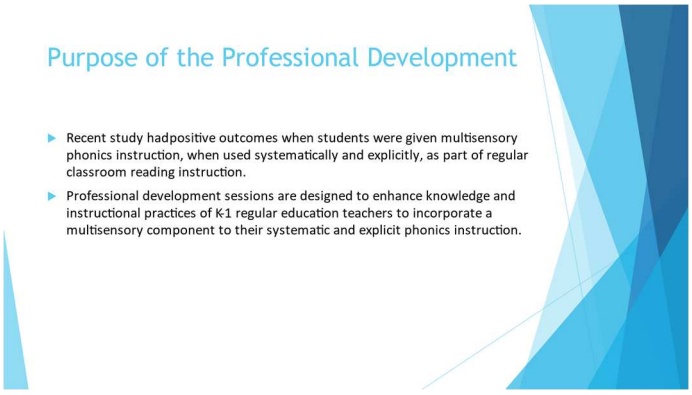

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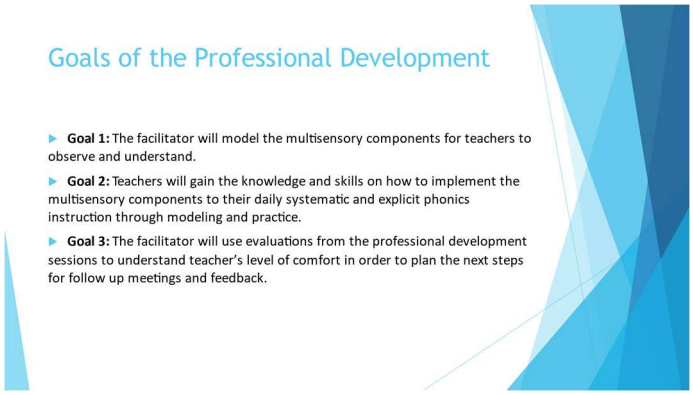

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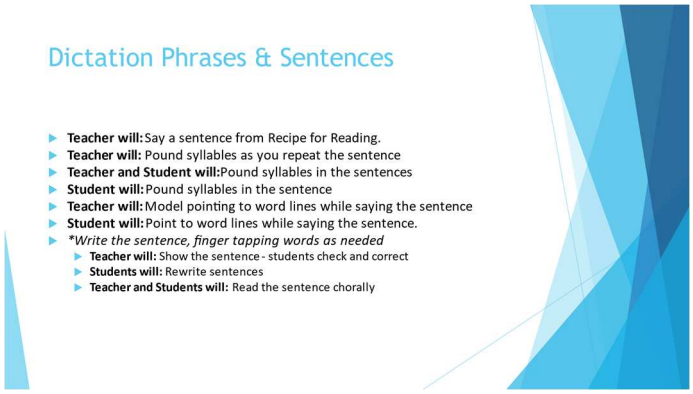

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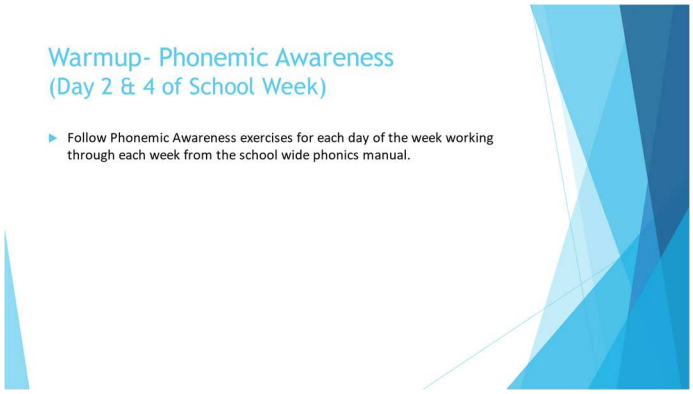

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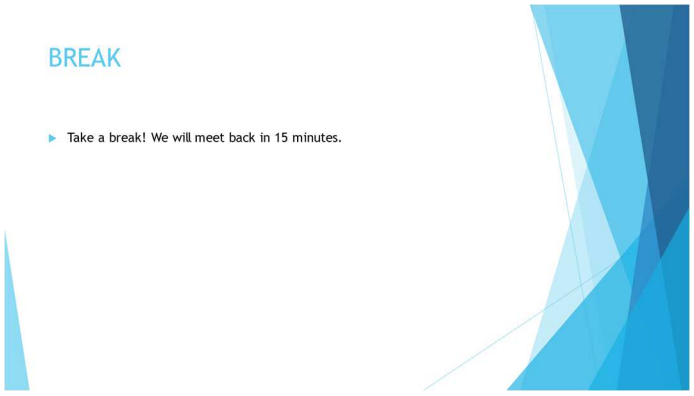

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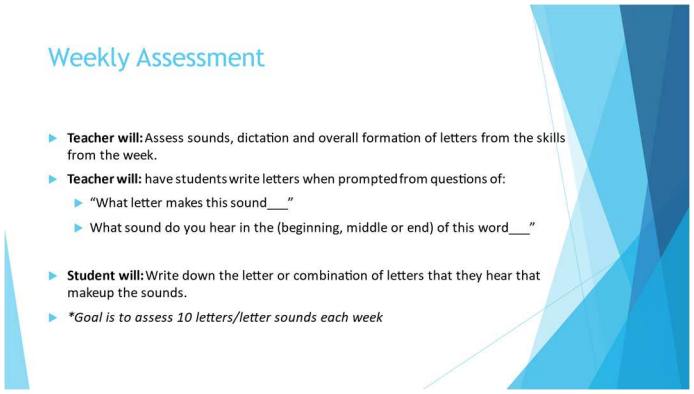

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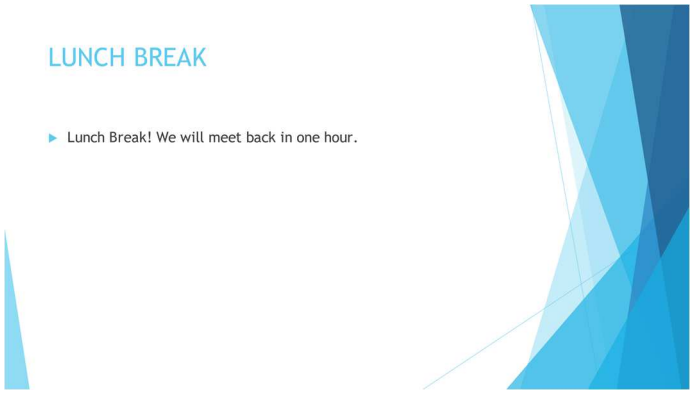

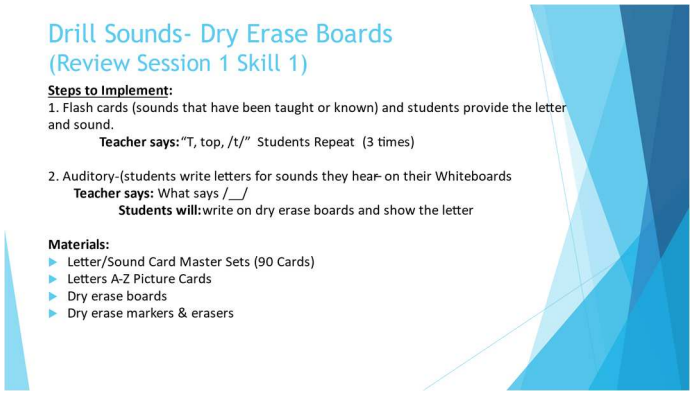

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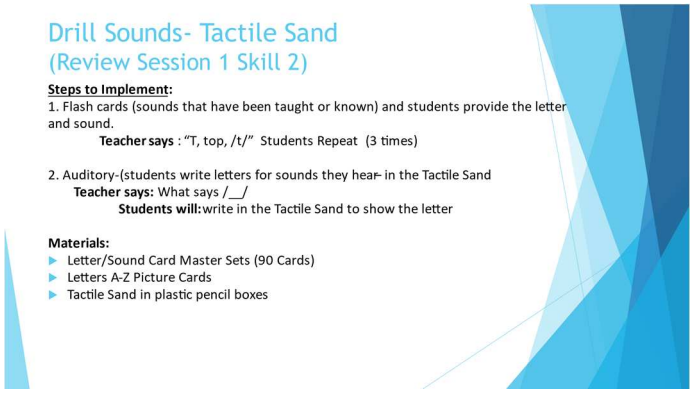

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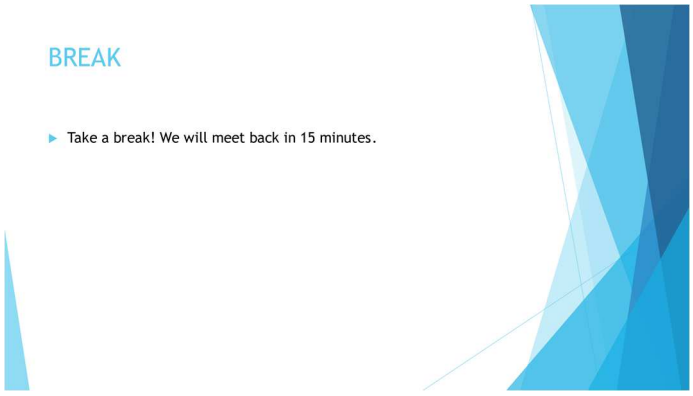

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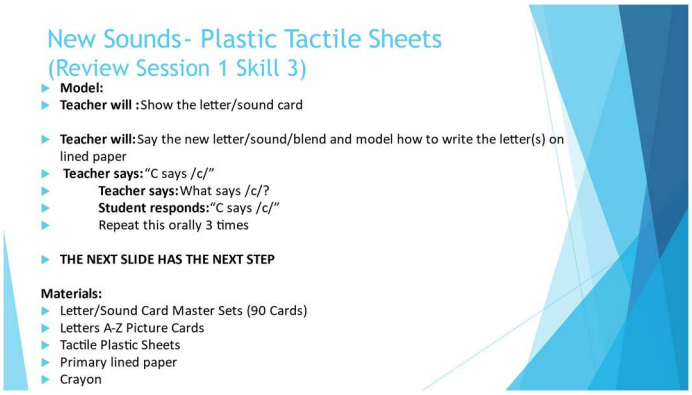

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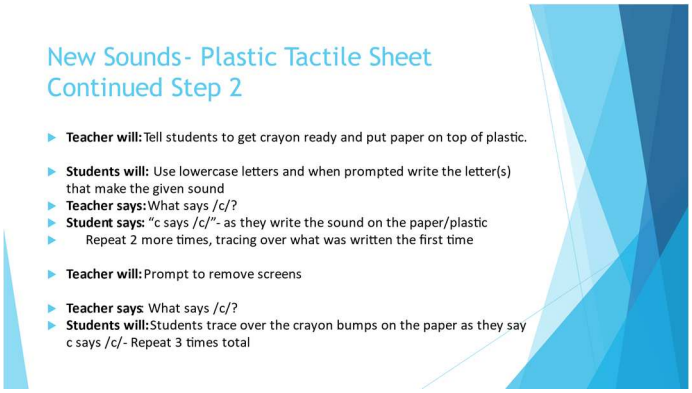

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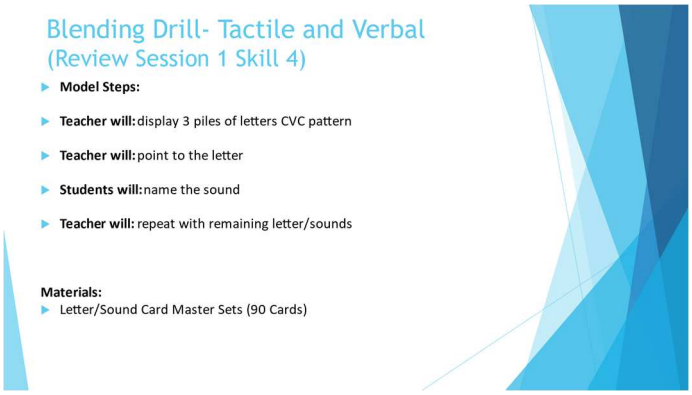

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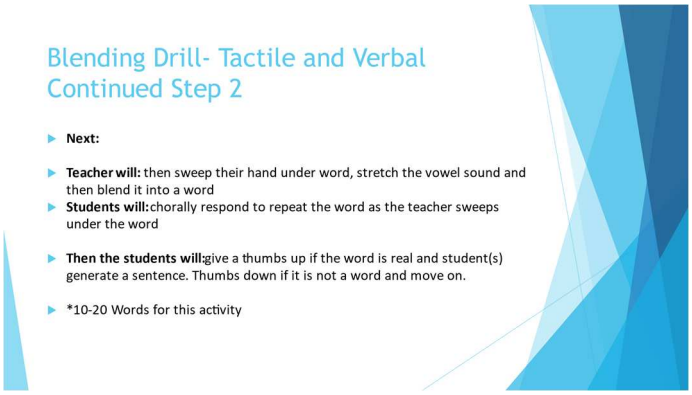

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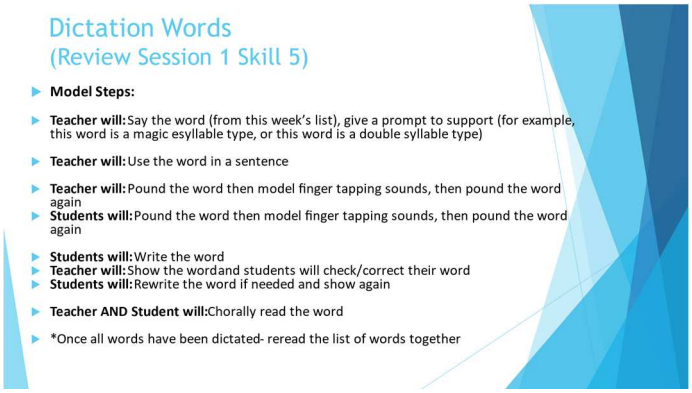

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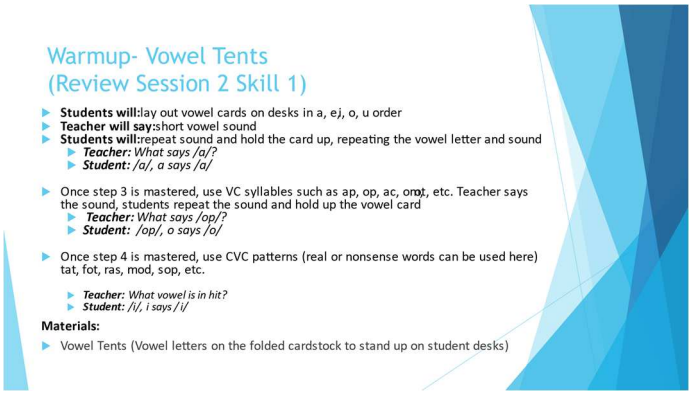

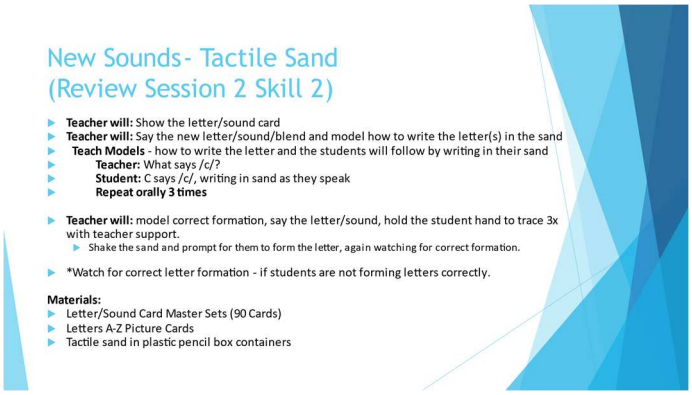

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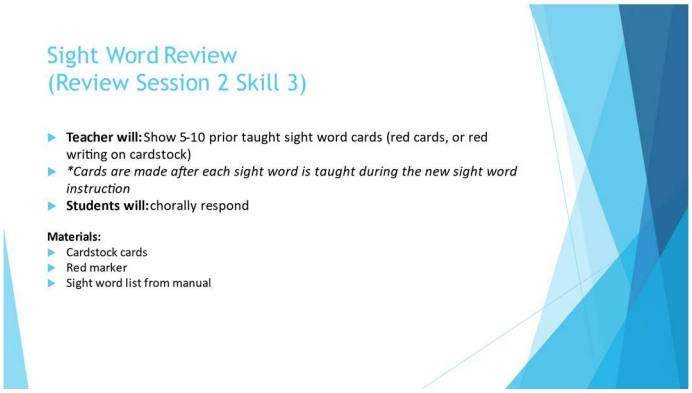

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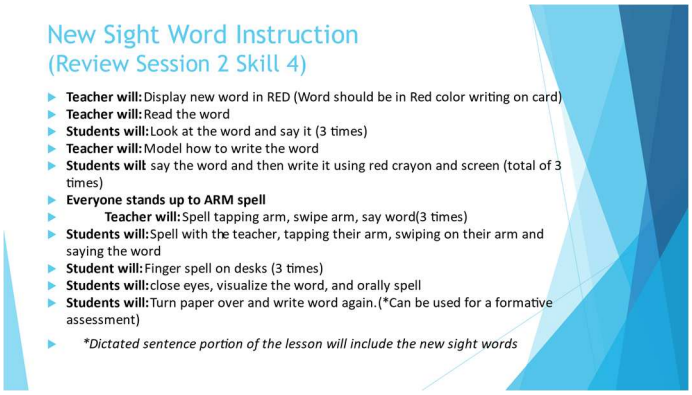

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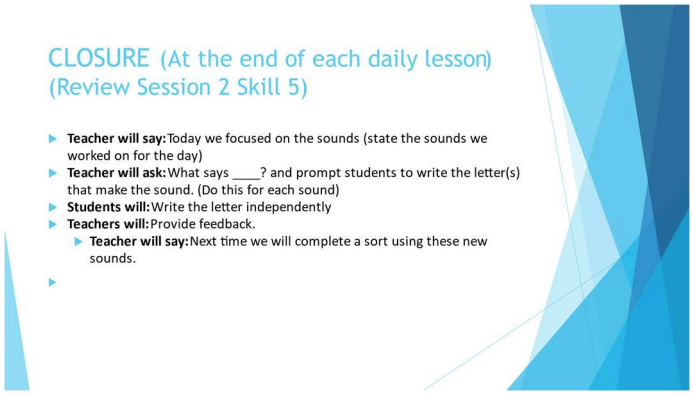

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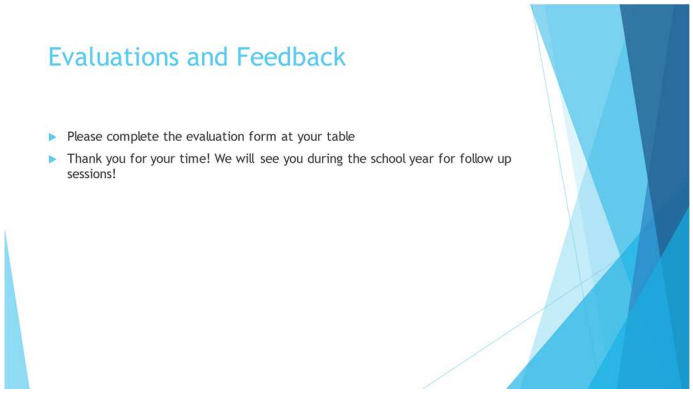

Slide 53

Summative Evaluation- Day 3 of Professional Development

Please respond to the following questions.
Your responses will assist in determining how to improve future professional development sessions.

What components from the training do you feel comfortable implementing in your classroom?
What components from the training do you NOT feel comfortable implementing in your classroom?
How has this 3-day professional development instigated you to reflect on your current phonics instructional practices?
What would you like to see in future sessions or know more about?
What suggestions do you have for the facilitators?
Other Comments:

Formative Evaluation- Monthly Team Planning Meetings and Check ins

Please respond to the following questions.
Your responses will assist in determining future sessions.

What was helpful in the professional development session today?
What was least helpful in the professional development session today?
I would like to know more about….
Questions, Comments, Concerns…

Professional Development End of Year Evaluation

Please respond by placing an **X** by the number that best indicates your feelings after today's training.

1= Yes 2= Neutral 3= No

Question	**1**	**2**	**3**
1. The yearly professional development improved my knowledge for incorporating multisensory components to systematic and explicit phonics instruction.			
2. The yearly professional development increased my skills in teaching systematic and explicit multisensory phonics instruction.			
3. Were your questions or concerns answered?			
4. Will you be able to implement the components from the professional development when you returned to your classroom?			

Please respond to the following questions.
Your answers will assist in determining how to improve the professional learning.

What components do you feel comfortable implementing in your classroom?
What components do you NOT feel comfortable implementing in your classroom?
What suggestions do you have to improve this professional development for future teachers?
What information was most helpful to you?
How did this professional development instigate you to reflect on your current phonics instructional practices?

Teacher Handout #1

School Week Daily Schedule

Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Warmup with Vowel Tents	Warmup with Phonemic Awareness	Warmup with Vowel Tents	Warmup with Phonemic Awareness	Assessment Day
1. Drill sound review 2. New sound/syllable instruction 3. Blending drill 4. Dictation words	1. Sight word review 2. New sight word instruction 3. Dictation phrases to include sight word	1. Drill sound review 2. New sound/syllable instruction 3. Blending drill 4. Dictation words	1. Sight Word Review 2. New sight word instruction 3. Dictation phrase to include sight word	1. Drill sound review 2. Sight word review 3. Assess, sounds, dictation and handwriting

Teacher Handout #2

Day 1- Step by Step of Activities

Warmup- Vowel tents **Materials:** • Vowel tents (Vowel letters on the folded cardstock to stand up on student desks)	• **Students will:** lay out vowel cards on desks in a, e, i, o, u order • **Teacher will say:** short vowel sound • **Students will:** repeat sound and hold the card up, repeating the vowel letter and sound • ***Teacher:*** *What says /a/?* • ***Student:*** */a/, a says /a/* • Once step 3 is mastered, use VC syllables such as ap, op, ac, om, ot, etc. Teacher says the sound, students repeat the sound and hold up the vowel card • ***Teacher:*** *What says /op/?* • ***Student:*** */op/, o says /o/* • Once step 4 is mastered, use CVC patterns (real or nonsense words can be used here) tat, fot, ras, mod, sop, etc. • ***Teacher:*** *What vowel is in hit?* • ***Student:*** */i/, i says /i/*
Drill sound review **Materials:** • Letter/Sound card master sets (90 Cards) • Letters A-Z picture cards • Dry erase boards • Dry erase markers & erasers • Tactile sand	• **Teacher will:** Flash cards (sounds that have been previously taught or known) and students provide the letter and sound. 1. **Teacher says:** "T, top, /t/" Students Repeat (3 times) 2. Auditory- (students write letters for sounds they hear – on their whiteboards) 3. **Teacher says:** What says /__/ 4. **Students will:** write on dry erase boards and show the letter 5. **Students will:** Write on dry erase or sand
New sound/syllable instruction	• **Teacher will:** Show the letter/sound card

(letter/sound, digraphs, blends, endings, etc.) **Materials:** • Letter/Sound card master Sets (90 Cards) • Letters A-Z picture cards • Tactile plastic sheets • Primary lined paper • Crayon	• **Teacher will:** Say the new letter/sound/blend and model how to write the letter(s) on lined paper • **Teacher says:** "C says /c/" • **Teacher says:** What says /c/? • **Student responds:** "C says /c/" • *Repeat this orally 3 times* • **Teacher will:** Tell students to get crayon ready and put paper on top of plastic. • **Student will:** Use lowercase letters and when prompted write the letter(s) that make the given sound • **Teacher says:** What says /c/? • **Student says:** "c says /c/" - as they write the sound on the paper/plastic • *Repeat 2 more times, tracing over what was written the first time • **Teacher will:** Prompt to remove screens • **Teacher says**: What says /c/? • **Students will:** Students trace over the crayon bumps on the paper as they say c says /c/ - Repeat 3 times total
Blending Drill **Materials:** • Letter/Sound card master sets (90 cards)	• **Teacher will:** display 3 piles of letters CVC pattern • **Teacher will:** point to the letter • **Students will:** name the sound • **Teacher will:** repeat with remaining letter/sounds • **Next:** • **Teacher will:** then sweep their hand under word, stretch the vowel sound, and then blend it into a word • **Students will:** Respond out loud together to repeat the word as the teacher sweeps under the word • **Then the students will:** give a thumbs up if the word is real and student(s) generate a sentence. Thumbs down if it is not a word and move on.

	• **10-20 Words for this activity*
Dictation words **Materials:** • Primary lined paper	• **Teacher will:** Say the word (from this week's list), give a prompt to support (for example, this word is a magic e-syllable type, or this word is a double syllable type) • **Teacher will:** Use the word in a sentence • **Teacher will:** Pound the word then model finger tapping sounds, then pound the word again • **Students will:** Pound the word then model finger tapping sounds, then pound the word again • **Students will:** Write the word • **Teacher will:** Show the word and students will check/correct their word • **Students will:** Rewrite the word if needed and show again • **Teacher and Student will:** Respond out loud together *Once all words have been dictated - reread the list of words together
Closure	• **Teacher will say:** Today we focused on the sounds (state the sounds we worked on for the day)

	• **Teacher will ask:** What says ____? and prompt students to write the letter(s) that make the sound. (Do this for each sound) • **Students will:** Write the letter independently • **Teachers will:** Provide feedback. ○ **Teacher will say:** Next time we will complete a sort using these new sounds.

Teacher Handout #3

Day 2- Step by Step of Activities

Warmup **Materials:** • Phonics manual	• Follow phonemic awareness exercises for each day of the week working through each week from the school wide phonics manual.
Sight word review **Materials:** • Cardstock cards • Red marker • Sight word list from manual	• **Teacher will:** Show 5-10 previously taught sight word cards (red cards, or red writing on cardstock) • **Cards are made after each sight word is taught during the new sight word instruction* • **Students will:** Respond out loud together
New sight word instruction **Materials:** • Letter/Sound Card Master Sets (90 Cards) • Letters A-Z picture cards • Tactile plastic Sheets • Primary lined paper • Crayon	• **Teacher will:** Display new word in RED (Word should be in red color writing on card) • **Teacher will:** Read the word • **Students will:** Look at the word and say it (3 times) • **Teacher will:** Model how to write the word • **Students will**: say the word and then write it using red crayon and plastic screen (total of 3 times) • **Everyone stands up to ARM spell** • **Teacher will:** Spell tapping arm, swipe arm, say word (3 times) • **Students will:** Spell with the teacher, tapping their arm, swiping on their arm, and saying the word • **Student will:** Finger spell on desks (3 times) • **Students will:** close eyes, visualize the word, and orally spell • **Students will:** Turn paper over and write word again. (*Can be used for a formative assessment) • **Dictated sentence portion of the lesson will include the new sight words*

Dictation phrases/sentences **Materials:** • Primary lined paper	• **Teacher will:** Say a sentence from the manual • **Teacher will:** Pound syllables as you repeat the sentence • **Teacher and Student will:** Pound syllables in the sentences • **Student will:** Pound syllables in the sentence • **Teacher will:** Model pointing to word lines while saying the sentence • **Student will:** Point to word lines while saying the sentence. • **Write the sentence, finger tapping words as needed* 1. **Teacher will:** Show the sentence - students check and correct 2. **Students will:** Rewrite sentences 3. **Teacher and Students will:** Read the sentence out loud together
Closure	• **Teacher will say:** Today we focused on the sounds (state the sounds we worked on for the day) • **Teacher will ask:** What says ____? and prompt students to write the letter(s) that make the sound. (Do this for each sound) • **Students will:** Write the letter independently • **Teachers will:** Provide feedback. o **Teacher will say:** Next time we will complete a sort using these new sounds.

Teacher Handout #4

Day 3- Step by Step of Activities

Warmup- Vowel tents **Materials:** • Vowel tents (Vowel letters on the folded cardstock to stand up on student desks)	• **Students will:** lay out vowel cards on desks in a, e, i, o, u order • **Teacher will say:** short vowel sound • **Students will:** repeat sound and hold the card up, repeating the vowel letter and sound • ***Teacher:*** *What says /a/?* • ***Student:*** */a/, a says /a/* • Once step 3 is mastered, use VC syllables such as ap, op, ac, om, ot, etc. Teacher says the sound, students repeat the sound and hold up the vowel card • ***Teacher:*** *What says /op/?* • ***Student:*** */op/, o says /o/* • Once step 4 is mastered, use CVC patterns (real or nonsense words can be used here) tat, fot, ras, mod, sop, etc. • ***Teacher:*** *What vowel is in hit?* • ***Student:*** */i/, i says /i/*
Drill sound review **Materials:** • Letter/Sound card master sets (90 Cards) • Letters A-Z picture cards • Dry erase boards • Dry erase markers & erasers • Tactile sand	• **Teacher will:** Flash cards (sounds that have been previously taught or known) and students provide the letter and sound. 1. **Teacher says:** "T, top, /t/" Students Repeat (3 times) 2. Auditory- (students write letters for sounds they hear – on their Whiteboards 3. **Teacher says:** What says /__/ 4. **Students will:** write on dry erase boards and show the letter 5. **Students will:** Write on dry erase or sand
New Sound/Syllable instruction	• **Teacher will:** Show the letter/sound card

(letter/sound, digraphs, blends, endings, etc.)
 	
Materials:
• Letter/Sound card master Sets (90 Cards)
• Letters A-Z picture cards
• Tactile sand in plastic pencil box containers
	• **Teacher will**: Say the new letter/sound/blend and model how to write the letter(s) in the sand
	• **Teach Models -** how to write the letter and the students will follow by writing in their sand
	  o **Teacher:** What says /c/?
	  o **Student:** C says /c/, writing in sand as they speak
	  o Repeat orally 3 times
	• **Teacher will:** model correct formation, say the letter/sound, hold the student hand to trace 3x with teacher support.
	  o Shake the sand and prompt for them to form the letter, again watching for correct formation.
	• **Watch for correct letter formation - if students are not forming letters correctly.*

Blending drill **Materials:** • Letter/Sound card master sets (90 Cards)	• **Teacher will:** display 3 piles of letters CVC pattern • **Teacher will:** point to the letter • **Students will:** name the sound • **Teacher will:** repeat with remaining letter/sounds • **Next:** • **Teacher will:** then sweep their hand under word, stretch the vowel sound, and then blend it into a word • **Students will:** Respond out loud together and repeat the word as the teacher sweeps under the word • **Then the students will:** give a thumbs up if the word is real and student(s) generate a sentence. Thumbs down if it is not a word and move on.

	• **10-20 Words for this activity*
Dictation words **Materials:** • Primary lined paper	• **Teacher will:** Say the word (from this week's list), give a prompt to support (for example, this word is a magic e-syllable type, or this word is a double syllable type) • **Teacher will:** Use the word in a sentence. • **Teacher will:** Pound the word then model finger tapping sounds, then pound the word again. • **Students will:** Pound the word then model finger tapping sounds, then pound the word again. • **Students will:** Write the word. • **Teacher will:** Show the word and students will check/correct their word. • **Students will:** Rewrite the word if needed and show again. • **Teacher and Student will:** Read the word out loud together. • *Once all words have been dictated - reread the list of words together
Closure	• **Teacher will say:** Today we focused on the sounds (state the sounds we worked on for the day)

	• **Teacher will ask:** What says ____? and prompt students to write the letter(s) that make the sound. (Do this for each sound) • **Students will:** Write the letter independently. • **Teachers will:** Provide feedback. ○ **Teacher will say:** Next time we will complete a sort using these new sounds.

Teacher Handout #5

Day 4- Step by Step of Activities

Warmup (phonemic awareness) **Materials:** Manual	• Follow Phonemic Awareness exercises for each day of the week working through each week from the school wide phonics manual.
Sight word review **Materials:** • Cardstock cards • Red marker • Sight word list from manual	• **Teacher will:** Show 5-10 previously taught sight word cards (red cards, or red writing on cardstock) • **Cards are made after each sight word is taught during the new sight word instruction.* • **Students will:** Respond out loud together
New sight word instruction **Materials:** • Letter/Sound card master sets (90 cards) • Letters A-Z picture cards • Tactile plastic sheets • Primary lined paper • Crayon	• **Teacher will:** Display new word in RED (Word should be in red writing on card) • **Teacher will:** Read the word. • **Students will:** Look at the word and say it (3 times) • **Teacher will:** Model how to write the word. • **Students will**: say the word and then write it using red crayon and plastic screen (total of 3 times) • **Everyone stands up to ARM spell** • **Teacher will:** Spell tapping arm, swipe arm, say word (3 times) • **Students will:** Spell with the teacher, tapping their arm, swiping on their arm, and saying the word. • **Student will:** Finger spell on desks (3 times) • **Students will:** close eyes, visualize the word, and orally spell. • **Students will:** Turn paper over and write word again. (*Can be used for a formative assessment) • **Dictated sentence portion of the lesson will include the new sight words.*

Dictation phrases/sentences
 	
Materials:
 	
• Manual
• Primary lined paper
	• **Teacher will:** Say a sentence from the manual.
	• **Teacher will:** Pound syllables as you repeat the sentence.
	• **Teacher and Student will:** Pound syllables in the sentences
	• **Student will:** Pound syllables in the sentence
	• **Teacher will:** Model pointing to word lines while saying the sentence.
	• **Student will:** Point to word lines while saying the sentence.
	• **Write the sentence, finger tapping words as needed.*
	  ○ **Teacher will:** Show the sentence - students check and correct.
	  ○ **Students will:** Rewrite sentences
	  ○ **Teacher and Students will:** Read the sentence out loud together.

Closure (At the end of each daily lesson)	• **Teacher will say:** Today we focused on the sounds (state the sounds we worked on for the day) • **Teacher will ask:** What says…? and prompt students to write the letter(s) that make the sound. (Do this for each sound) • **Students will:** Write the letter independently. • **Teachers will:** Provide feedback. ○ **Teacher will say:** Next time we will complete a sort using these new sounds.

Teacher Handout #6

Day 5- Step by Step of Activities

Drill sound review **Materials:** • Letter/Sound Card Master Sets (90 Cards) • Letters A-Z Picture Cards • Dry erase boards • Dry erase markers & erasers • Tactile Sand	**Steps to Implement:** 1. Flash cards (sounds that have been previously taught or known) and students provide the letter and sound. **Teacher says:** "T, top, /t/" Students Repeat (3 times) 2. Auditory- (students write letters for sounds they hear – on their Whiteboards **Teacher says:** What says /__/ **Students will:** write on dry erase boards and show the letter. S: Write on dry erase or sand *Student choice today
Sight word review **Materials:** • Cardstock cards • Red marker • Sight word list from manual	• **Teacher will:** Show 5-10 previously taught sight word cards (red cards, or red writing on cardstock) **Cards are made after each sight word is taught during the new sight word instruction.* • **Students will:** Respond out loud together
Assessment	• **Teacher will:** Assess sounds, dictation, and overall formation of letters from the skills from the week. • **Teacher will:** have students write letters when prompted from questions of: o "What letter makes this sound___"

Materials: • Primary lined paper	○ What sound do you hear in the (beginning, middle or end) of this word___"? ○ **Student will:** Write down the letter or combination of letters that they hear that makeup the sounds. • **Goal is to assess 10 letters/letter sounds each week.*