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## Effective Phonemic Awareness Instruction for Increased Reading Achievement

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Effective Phonemic Awareness Instruction for Increased Reading Achievement

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ED 590: Research & Complete Capstone, Cohort 987

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### **Abstract**

Reading fluently and for meaning is an essential skill that has allowed students to function effectively in society. Throughout the years, the reading achievement gap has continued to widen and linger across the United States. The low rates of literacy represent a national crisis, especially for low-income Americans. Research shows that strong phonemic awareness instruction and early intervention in the primary grades are key to closing the reading achievement gap. This paper explores the reasons behind the reading achievement gap and what differentiated instructional strategies early educators can employ to support students in the acquisition of skills such as phonemic awareness, alphabet recognition, and vocabulary development. A diverse selection of literature, as well as quantitative and qualitative research studies, were reviewed to determine how solid, proactive differentiated phonics instruction with reading will help educators effectively enhance the student's ability to learn and have access to content through their ability to read fluently. This paper seeks to answer the research question: In light of what is known about differentiated instruction, how do phonics instruction and intervention impact reading achievement and close the reading achievement gap with students who are performing below grade level in the primary grades?

*Keywords:* phonemic awareness, phonics instruction, primary grades, reading achievement gap

## Chapter 1: Introduction

Reading achievement in the primary grades is essential for success in subsequent grades and the students' futures beyond school. Educators are given the duty to provide solid phonetic instruction, so students can read fluently, find meaning in their reading, and function effectively in society. Phonemic awareness skills are the essential tools used today in education to enhance the reading abilities of children (Al-Bataineh & Sims-King, 2013). According to Fiester (2013), students without a basic level of reading competency by the third grade are more likely to struggle academically as well as to have behavioral and social issues in subsequent grades. In 2016, the United States Department of Education reported that only thirty-six percent of fourth-graders in the country were proficient in reading (U.S. Department of Education, 2016). These low rates of literacy represent a national crisis in the United States.

When students enter the classroom, they will get a series of experiences that will help them to read and understand what they are reading. Some students may have limited reading ability when entering the classroom, and due to the influence of the external environment, they may have difficulty becoming strong and fluent readers. Therefore, no matter what the background, every child has the right to learn to read. Educators must build on student experiences and use the tools they have available to tap into each child's unique abilities and differentiate for their transition into reading. Despite the emphasis on reading instruction in the United States, increased phonemic awareness instruction across the primary grade levels is key to curving the lack of reading ability among students.

Early educators play an essential role in supporting children's early literacy skills, as they will make instructional decisions in the classroom that assist children in acquiring the skills and motivation to read (Friesen & Butera, 2012). The main goal of early instruction and intervention

is to establish foundational knowledge that includes letter names and sounds, phonemic awareness, and their application in reading words and text fluently. Solid and proactive differentiated phonics instruction with reading will help educators effectively enhance student's ability to learn and have access to content through their ability to read fluently.

### **Scope of Research**

The ability and importance of a child to be able to read cannot be underestimated. Educators play a crucial role in a child being able to successfully read. Schools across the country continue to adopt a variety of approaches to teaching beginning reading skills to try to close the reading achievement gap. Districts and schools need to support educators by providing professional development opportunities in how to utilize the best phonetic strategies and tools to build a solid phonetic foundation in students. This paper will explore research about phonemic awareness and how it contributes to basic reading skills along with text reading. It will also look at the effectiveness of multi-tiered interventions on early reading outcomes for primary students with reading difficulties. Supportive partnerships between the classroom, community, and homes of students are vital for students to be successful in learning how to read. Beyond that, this paper will explore literacy intervention in after-school programs, specifically in low-income neighborhoods. The purpose of this paper is to highlight effective phonemic awareness instruction and intervention strategies that will successfully close the reading achievement gap.

### **Importance of the Study**

Early reading development is a vast and complex process that necessitates a variety of cognitive and perceptual components to work together (Friesen & Butera, 2012). Systematic phonics instruction is essential. Educators often feel strongly about what they think is the right way to teach this essential skill. The beliefs, ideas, and training experiences of educators from

this research will be important to understanding how to best close the reading achievement gap. This research is important so that educators understand the critical role of phonetic instruction in all grade levels and how it is the foundation for students to be successful in reading. Research has shown that teaching systematic phonics effectively to beginning readers requires specialized knowledge and training (Ehri & Flugman, 2018).

### **Research Question**

The reading achievement gap is a national crisis in the United States, and even though the U.S. Department of Education has considered children's literacy the most critical issue in American education, much progress remains to be made in this area. Students must learn phonemic awareness and be able to apply this knowledge to read words. Educators need to be equipped with appropriate curricula and professional development on phonemic awareness instruction to close the reading achievement gap. Therefore, in light of what is known about differentiated instruction, how do phonics instruction and intervention impact reading achievement and close the reading achievement gap with students who are performing below grade level in the primary grades?

### **Definition of Terms**

**Phonemic awareness** means one can hear, identify, and manipulate phonemes in spoken words (Casey, Cook-Cottone, & Baker, 2012).

**Phonics instruction** refers to teaching beginning learners about the alphabetic writing system that is essential for learning how to read and spell words (Ehri & Flugman, 2017). In the context of this study, it refers to the most effective phonetic instruction and interventions to close the reading achievement gap.



**Reading achievement gap** refers to the widening gap between disadvantaged low-performing readers and their advantaged peers (Noltemeyer, Joseph, & Kunesh, 2019).

**Primary grades** refer to early childhood to third grade (Friesen & Butera, 2012).

### **Summary**

The reading achievement gap continues to be of concern in the United States. There are a significant number of children who enter and exit the primary grades at the risk of not acquiring basic literacy skills (Noltemeyer et al., 2019). This study attempts to highlight effective phonemic awareness instructional strategies and how educators can successfully close the reading achievement gap.

Chapter Two will review studies that relate to the effectiveness of phonemic awareness instruction in closing the reading achievement gap in the primary grades. Chapter Three will focus on how the research can be used by educators to successfully close the reading achievement and recap the findings of the literature review.

### **Chapter 2: Literature Review**

Several studies have found that through phonetic teaching and intervention, the gap in reading achievement in primary school grades can be effectively reduced. This literature review attempts to highlight the importance of phonetic instruction, intervention, and key components to closing the reading achievement gap. This chapter examines the results of quantitative and qualitative research on the impact of effective phonetics teaching and how it improves reading performance. It also explores research on how phoneme awareness can contribute to text reading and fluency, as well as effective literacy interventions in after-school programs, especially in low-income communities.

The beginning section of the literature review focuses on how systematic multi-tiered phonics instruction achieves the goal of improving reading achievement for all students. It also examines the role of an educator in knowing how to teach phonics and what decisions are made about reading instruction. The research of Friesen and Butera (2012), Ehri and Flugman (2017), Fien et al. (2015), Simmons et al. (2015), Noltemeyer et al. (2019), Dussling (2020), and Tse and Nicholson (2014) have found how important effective phonics instruction and intervention are to improving a child's ability to read. Phonics instruction builds the foundation for a child to read a text fluently with purpose and meaning.

The second section of the literature review focuses on the effects of phonemic awareness instruction on basic reading skills and text fluency. Phonemic awareness is a known predictor of early decoding and word recognition, but it also relates to text reading fluency (Casey et al., 2012). The studies of Al-Bataineh and Sim-Kings (2013), Keeseey, Konrad, and Joseph (2015), Kaminski and Powell-Smith (2017), Casey et al., (2012), and Ashby, Dix, Bontrager, Dey, and Archer (2013) examined the effects of phonemic awareness instruction to early reading success and closing the reading achievement gap.

The final section of the literature review discusses the impact of after-school early literacy intervention programs, specifically in low-income neighborhoods, and the parenting practices focused on in the homes. Researchers found after school programs (ASPs) focus on enabling at-risk youth to access educational support services to increase reading achievement (Bayless et al., 2018). In the research of Jones (2018), Bayless et al. (2018), and Bojczyk, Haverback, Pae, Hairston, and Haring (2019), after-school early literacy intervention is key to closing the reading achievement gap, whether it was during an after-school program or in the home of students. Researchers suggest that target literacy among low-income students can play a

critical role in enhancing student achievement and narrow the gap as kindergarten through third-grade progress through school.

### **Positive Impact of Effective Phonics Instruction**

Early educators make instructional decisions in their classrooms that will set their students up for success in the future in reading. Reading development in the early years of a child's education is an intricate process that involves a range of skills such as alphabet recognition, phonemic awareness, and vocabulary recognition (Friesen & Butera, 2012). The following is a review of qualitative and quantitative studies conducted in the context of young children and elementary school. The reviews focus on purposeful phonics instruction, the significance of training teachers on how to teach phonics, and the importance of multi-tiered phonetic instruction to effectively close the reading achievement gap.

**Purposeful decisions about phonics instruction.** Friesen and Butera (2012) conducted a two-year mixed study part of a larger research project entitled Children's School Success (CSS) at the Coal Mountain Head Start program in a rural Midwestern state. Three teachers were selected based on past participation in CSS, commitment to seeing students successfully learn how to read, and agreement to participate without pressure. Teachers participated in observations, questionnaires, and interviews over the span of four months during both years. In their classrooms, teachers were expected to use their existing curriculum during the first year and then implement the CSS curriculum during the second year. After the two years of observations and interviews, teachers expressed their beliefs about what is correct reading instruction for early learners, and their desire to help students learn to read. Researchers discovered that the teachers emphasized the importance of reading development being best supported through play, spontaneous teaching opportunities, and child-guided activities. They also expressed the concern

of implementing intentional reading instruction as it is sometimes not developmentally appropriate and/or pushed too hard to the point where the students do not want to begin learning how to read. Researchers concluded the importance of understanding what early educators' beliefs and experiences are, and understanding those beliefs and experiences are important to know how to best support the young learners in their journey of how to read. Then, developmentally appropriate resources and instruction can be created based on teachers' expertise to use in the classroom to best support early readers and close the reading achievement gap.

**Mentor support for solid phonics instruction.** Providing support for educators to be successful in their teaching in systematic phonics instruction is crucial to closing the academic gap in reading. In a qualitative study, Ehri and Flugman (2017) focused on the effects of a “year-long mentoring program to improve teacher’s knowledge and effectiveness in teaching phonics and the extent that it improved students’ achievement in reading and spelling” (p. 425). Teachers were nominated by their principals to receive training and year-long mentoring. Participants were from 23 urban public elementary schools in the New York City region. Most of the participants taught general education classes. Mentors were highly trained in phonics instructional principles and most were retired teachers themselves. Mentors provided instruction in how to teach phonics systematically, prepare lessons, and met with teachers twice a week for 30 weeks during the school year. Forty-five minutes was dedicated to a preparation period with the mentor and then a 45-minute period with students in the classroom. Mentors demonstrated how to teach phonics with the students at the beginning of the school year but then gradually released instruction to the teacher. The authors gave each teacher a background questionnaire in the fall to inquire about their knowledge of phonics instruction, and then mentors submitted

monthly reports on their observations of each phonics teaching session. At the end of the study, the majority of teachers responded well to the program after gaining a better understanding of phonics and reading skills instruction, which resulted in higher student achievement in phonics and reading. Ehri and Flugman (2017) indicated the need for more professional development in phonics instruction for teachers before and after entering the profession so that they are successful in closing the reading achievement gap.

**Effective multi-tiered phonics instruction.** Researchers agree that effective, early-on phonetic instruction is key to closing the achievement gap. Fien et al. (2015) discovered in their quantitative study the key to closing the achievement gap is identifying students who need intervention early on and being proactive in providing the necessary instruction that includes the early reading skills these students need. Fien et al. (2015) evaluated the efficacy of a multi-tiered intervention called Enhanced Core Reading Instruction (ECRI). The study was part of a four-year project designed to examine the effectiveness of ECRI in improving the reading achievement of first-grade at-risk readers. The project was a cluster-randomized controlled trial that included students and teachers from sixteen schools in three school districts, which were randomly assigned. Within ECRI, the Tier 2 small group instruction should align with Tier 1 instruction and have strong potential to accelerate the achievement of at-risk learners (Fien et al., 2015). Students in Tier 2 are all receiving Tier 1 instruction in addition to Tier 2 supports. Fien et al. (2015) listed phonemic awareness, sound spelling, introduction blending, word reading, fluency reading, decodable text, and encoding practice being a part of the Tier 2 supports. The researchers found that multi-tiered intervention that has a strong alignment between Tier 1 and 2 appears to contribute to stronger results for at-risk readers compared to programs where Tier 1 and Tier 2 were not as strongly aligned. For phonics core instruction and interventions to be

successful, educators are encouraged to be proactive in aligning the Tier 2 interventions with the Tier 1 instruction so the reading achievement gap can be closed.

Along with aligning Tier 2 interventions with the Tier 1 instruction, it is crucial to use progress-monitoring data to adjust instruction for students receiving Tier 2 intervention so that they progress in their reading. Simmons et al. (2015) conducted a follow-up quantitative study on the effectiveness of the Tier 2 kindergarten supplemental beginning reading intervention called Early Reading Intervention (ERI, Pearson/ Scott Foresman, 2004). The project was a series of randomized trials that included 237 kindergartners (45% were girls and 55% were boys) from 26 public schools in the states of Connecticut, Florida, and Texas. Researchers consulted with school personnel to identify students who were considered in need of supplemental reading instruction, at least five years of age, and received reading instruction in English. Simmons et al. (2015) divided students into two groups: 136 students received ERI with ongoing adjustments (ERI-A) and 101 students received the conventional ERI. Interventionists at each school who administered ERI-A used the same instructional lessons and materials as the conventional ERI; however, curriculum-embedded mastery assessments were added about every four weeks along with the end-of-the unit assessments to evaluate students' mastery of skills taught during this time. Simmons et al. (2015) met with interventionists in ERI-A to make instructional adjustments based on student progression and data. They did provide interventionists in the conventional ERI with end-of-the-unit results but did not make instructional recommendations based on student performance. Based on assessment results, researchers determined whether to repeat or accelerate lessons along with which skills to review. Even though students receiving the conventional ERI achieved positive outcomes, Simmons et al. (2015) discovered that educators can enhance intervention effectiveness by using data to speed up lesson progression.

Despite the limitation of one supplemental intervention in one grade level, researchers suggest the continual use of responsive intervention to effectively close the reading achievement gap.

**Supplemental small group phonics instruction.** Research has shown that supplemental small group phonics instruction can address the specific needs of students who are at risk of failing to develop basic literacy skills during whole group instruction. Noltemeyer et al. (2019) discovered in their mixed study that supplemental small group phonics instruction was effective at improving immediate word recognition. Researchers conducted their study in kindergarten at a primary school in a metropolitan district near a large city in the U.S. Midwest. Participants were two African American boys and four African American girls all of whom were not formally identified as receiving special education supports. All students were identified and recommended by teachers due to their low emergent reading skills.

Noltemeyer et al. (2019) wanted to “extend past flashcard drill and practice research and examine the effectiveness of using this technique to teach decoding skills in kindergartners” (p.151). In the study, researchers used instructional words from a complete list of 466 words. The authors narrowed down the list to 270 words due to words being beyond the comprehension level of the typical kindergartner. All the words were randomized by using a random numbers table. Each participant was assessed on the 270 words to establish a list of words unknown by the participants in each group. Ten-minute small group phonics sessions took place once a week for five weeks for three students at a time. The phonics instructional method consisted of presenting a card to the participants, pronouncing the individual sounds of the words, and then blending the sounds together to read the whole word. At the end of each session participants were assessed, then assessed a week later to check for recall of the words previously taught. Despite the limitations of the small sample and short sessions, researchers felt their findings were strong in

suggesting that students young as kindergarten can learn to read words in brief, small group drills and frequent practice sessions that allow for modeling and opportunities to respond. The authors concluded that there is a strong connection between phonics instruction and word recognition which leads to reading fluently. Educators are recommended to consider how to implement a phonics-based approach that is explicit to meeting the needs of their students to actually close the reading achievement gap.

**Effective supplemental reading programs focused on phonics.** Phonics, along with phonemic awareness, play a fundamental role in the development of early reading in not only monolingual English speakers but also English Language Learners (ELL) (Dussling, 2020). Dussling (2020) discovered in their quantitative research how early phonics interventions effective for monolingual English students are also effective with ELL students. The author conducted their study at an elementary school in an upstate New York school district with 13 first graders (nine boys and four girls). There were seven ELL students and six native English-speakers recommended by the kindergarten teachers the year before as being at-risk for reading difficulties.

Dussling (2020) wanted to expand upon current research on how to close the reading achievement gap between ELLs and native English-speakers with early reading interventions. In the study, the researcher utilized the following pretest and posttest measures to glean a better understanding of the students reading abilities: Comprehensive Test of Phonological Processing (CTOPP), Phoneme Segmentation Test, Letter Name and Letter Sound Task, Woodcock Reading Mastery Tests- Revised/Normative Update (WRMTR/NU) and Developmental Spelling Test. In addition to the pretest and posttest, the researcher also administered the progress monitoring probe Dynamic Indicator of Basic Literacy Skills (DIBLES) approximately twice a week. All



students received supplemental small group reading instruction in addition to core reading instruction and English as a Second Language (ESL) instruction for the ELL students. Each group had a combination of ELL students and native English-speakers. Small reading groups led by the author met with students 30 minutes per session five times a week for approximately six weeks. Each session focused on sound-symbol correspondences, decoding skills, phonetically regular words and high-frequency words, oral reading in context, and dictation. Based on observations and progress monitoring, the pacing was modified for each of the three groups. Lessons were determined based on group needs and readiness to move on to advanced skills. At the end of the six-week study, Dussling (2020) found that both at-risk and native English-speakers made growth during the intervention on all measures even though there was a limitation in the study about the length of the intervention and number of lessons received by each group. Dussling (2020) also emphasized the servicing of ELL students and native English-speakers in small reading intervention groups together promoted an inclusive grouping arrangement. The author indicated through their research that a program that incorporates phonics skills and focuses on the alphabetic code can be beneficial to all students struggling to read in both language status groups and effectively close the reading achievement gap.

**Effects of book reading enhanced with phonics instruction.** Reading is an ability which many life skills depend on in society. It is a skill that must be explicitly taught. Reading is a complex task that involves word recognition processing in both the auditory and visual modalities (Tse & Nicholson, 2014). Researchers believe it is important for educators to demonstrate how to use semantic, syntactic, and grapho-phonetic cues to learn to read well. Tse and Nicholson (2014) discovered in their quantitative study that reading comprehension

instruction with explicit phonics and phonemic awareness is an additional way to help increase reading achievement.

Tse and Nicholson (2014) evaluated the effectiveness of the Big Book reading curriculum when it is enhanced by adding explicit phonics instruction. Big Book reading is a way for the educator to interact with the class and focus more on the text print along with the illustrations. During instruction, the text is enlarged so the whole class can see it clearly. The author's study was in South Auckland, New Zealand with 96 second graders (55 boys, 41 girls) who attended three low socio-economic schools. Tse and Nicholson (2014) utilized the scores from the Burt Reading Test to divide the students into three ability groups (Lower, Middle, Higher). Students were randomly assigned to one of the four subgroups: "Combined (Big Book/Explicit Phonics), Big Book only, Phonics only, and Control (this group received alternative instruction in math)" (Tse & Nicholson, 2014, p. 3). All participants completed the pre-assessments in May and post-assessments in November, which included word reading, reading accuracy, reading comprehension, basic word decoding skills, phonemic awareness, receptive vocabulary, word spelling, and math computation. Interventions were 30-minute lessons once each week for 12 weeks for each group. Students were taught in groups of four from each ability group. After completing the study, Tse and Nicholson (2014) discovered that combining Big Book reading and explicit phonics instruction showed more benefits across the board for a range of literacy skills compared to them being taught separately. The authors emphasize the importance of integrated, balanced instruction to effectively teach literacy to students who are performing below grade level. It is crucial for all students to not only find meaning in their reading, but to also be able to read with fluency.

### **Impact of Effective Multi-tiered Phonemic Awareness Instruction**

When students enter the classroom, they have a variety of experiences that can help them read fluently and fully understand what they have read. However, many other students will enter classrooms with limited academic activity outside of the classroom and strive to gain a solid readership. To close the gap, educators need to use effective multi-tiered instruction to close the reading achievement gap. The following are reviews of four studies focused on the effectiveness of multi-tiered phonemic instruction and intervention to improve reading abilities such as fluency.

**Pro-active phonemic interventions.** Phonemic awareness lessons are the foundation for students to effectively read. There is a strong link between phonemic awareness and reading (Al-Bataineh & Sims-King, 2013). Al- Bataineh and Sims-King (2013) discovered in their qualitative study what phonemic awareness is and its benefits to students in developing early reading skills. The authors conducted their study on 19 students from a kindergarten classroom in central Illinois. There were eleven girls and eight boys enrolled in the class.

Al-Bataineh and Sims-King (2013) wanted to “look for ways to improve the reading abilities of Kindergarten students by using phonemic awareness programs that are effective and beneficial in accomplishing this goal” (p. 66). In the study, researchers utilized the Measures of Academic Progress (MAP) in September and then again in December to measure the growth in early literacy skills such as phonemic awareness, phonics, concepts of print, vocabulary, comprehension, and writing. Researchers also used the Fountas & Pinell leveling system to determine students’ independent reading levels. All students were given phonemic awareness instruction daily for seventeen weeks. Based on observations during the whole group lessons, researchers identified three students who struggled and provided small group intervention

support three times a week for fifteen minutes. Since the students were identified early on, they successfully learned the skills their peers already knew and the gap was closed in reading abilities. Despite the limitation of the small sample size, researchers showed the importance of using pro-active phonics interventions to support students and close the reading achievement gap before the students significantly fall behind.

Along with proactive phonemic awareness interventions, it is vital to use instructional materials that are effective in improving student's phonemic awareness. Keesey et al. (2015) explored in their quantitative study the effects of word boxes and how they improve phonemic awareness, letter-sound correspondences, and spelling skills of kindergarteners who were at-risk of reading failure. After approval was given by the researcher's institutional review board, permission forms were sent to the parents of seven students enrolled in an alternative kindergarten classroom. Three of the seven students (two boys, one girl) who were permitted to participate in the study met the inclusion criteria. The inclusion criteria for the study were students who performed at or below the 25<sup>th</sup> percentile on the AIMSweb kindergarten measures of Phonemic Segmentation Fluency (PSF) and an inability to segment vowel-consonant (VC) or consonant-vowel-consonant (CVC) words (Keesey et al., 2015). The word box intervention and instruction took place in an empty classroom for 20-minute sessions two to three days a week. At each session, the materials included a word box (four adjoining 2.5" x 2.5" adjoining squares on laminated white poster board), counters, preprinted letter cards, dry eraser marker, eraser, and a timer. Keesey et al. (2015) measured the number of nonsense words correctly segmented orally using counters, the number of nonsense words segmented using the correct letter sound using the letter cards, and the number of nonsense words spelled correctly. Despite the limitation of the small sample size, the authors found that the word box intervention was effective for improving

phoneme segmentation, letter-sound correspondences, and spelling skill on all three at-risk kindergartners. Keesey et al. (2015) emphasize the early implementation of the systematic and explicit word box intervention to enable all students to better understand and use the alphabet system to have a chance to become fluent readers and writers. Educators are encouraged to use this successful, time-efficient way to teach phonemic awareness to close the reading achievement gap.

**Impact of phonemic awareness intervention for preschoolers.** Phonemic awareness continues to be identified as an essential skill along with being a crucial predictor of later reading abilities (Kaminski & Powell-Smith, 2017). Students who lack phonemic awareness at kindergarten entry are more likely to have short-term and long-term reading difficulties (Kaminski & Powell-Smith, 2017). Kaminski and Powell-Smith (2017) conducted a study to evaluate the effectiveness of focused “individualized intervention on the development of phonemic awareness skills, specifically awareness of initial sounds, in pre-school children eligible for Tier 3 support” (p. 207).

Kaminski and Powell-Smith (2017) conducted their quantitative study with six pre-school students (two boys, four girls) from local Head Start preschools in the state of Oregon. All participants were age-eligible for kindergarten in the following school year. All participants were nominated by their teacher to receive the intervention. Researchers selected the Reading Ready Early Literacy Intervention (RRELI) as the independent variable. RRELI is an intervention curriculum that included interventionist-led activities and games focused on phonemic awareness (identifying first sounds in spoken words) and alphabet knowledge (letter names and sounds) (Kaminski & Powell-Smith, 2015). Researchers felt the curriculum was suitable for the study because it had game formats, songs, and finger play to keep students engaged. The study

consisted of 3 lessons a week for eight weeks with a total of 24 sessions with students. Lessons were delivered by three research assistants who received training and ongoing feedback and support from the authors. Even though the duration of the study was short, researchers discovered that the Tier 3 early literacy intervention to be effective in helping students glean the foundational skills to eventually become fluent readers. Kaminski and Powell-Smith (2015) encourage educators to continue exploring Tier 3 early literacy, specifically in preschools to successfully close the reading achievement gap early on.

**Effects of literacy program on phonemic awareness.** Phonemic awareness is crucial to phonics instruction and students being able to successfully apply that knowledge. In the longitudinal quantitative study, Casey et al. (2012) were the first to investigate the effectiveness of The Magic Penny Early Literacy Program. This literacy program combines evidenced-based instructional techniques that primarily focus on phonemic awareness skills (Casey et al., 2012). The goal of the program is to teach students at the early literacy level how to process language through hearing and to make the connection that the sounds are represented by symbols.

Casey et al. (2012) conducted their study in two elementary classrooms at a public elementary school in the state of New York. This school was chosen because students had no prior exposure to the literacy program and the educators had been introduced and showed interest in Magic Penny over the summer (Casey et al., 2012). Both classrooms had 19 students (16 boys, 22 girls). One of the classroom teachers was trained by the director of Magic Penny to learn how to implement the program as a supplemental reading intervention. The other classroom teacher continued to implement the school's current reading curriculum, Houghton Mifflin Reading and did not receive any training or materials from the program. This class was referred to as the "comparison group" by Casey et al. (2012). At the beginning of the school year, all the

participants were given five phonemic awareness/reading tests from the standardized Woodcock-Johnson III Tests of Cognitive Ability and the Woodcock-Johnson III Tests of Achievement. These same tests were given as a posttest in December before winter break. The intervention teacher was given guidance and professional development when needed during the study period. There were also two workshops provided in the fall for the parents of students in the intervention classroom. In September, during the first workshop, the parents were provided with Magic Penny materials and they learned how to play the Magic Penny early literacy games at home with their students. The second workshop was in November, and it provided parents with additional resources and training on how to foster literacy in the home. Casey et al. (2012) found the Magic Penny Early Literacy Program to be effective in improving the intervention classroom sight-word recognition and phonics knowledge compared to the comparison classroom. Researchers indicated a major strength to the study was it being conducted in a real classroom setting; however, there was a difference between the two classrooms in access to instructional assistant support and there was not much evidence to show growth specifically in phonemic awareness due to the short period of time. Researchers believe if the study would have been longer there would have been a bigger difference between the two groups in terms of growth, specifically in phonemic awareness. Based on the results, Casey et al. encourage educators to incorporate a blend of early literacy measures to successfully close the reading achievement gap and ensure all students are successful.

**Positive impact of phonemic instruction on fluency.** Phonemic awareness has a long-lasting impact on the students' ability to read. It is the foundation for students to be able to read effectively and find meaning in their reading. According to a study conducted by Ashby et al. (2013), there is a strong relationship between phonemic awareness and text reading fluency.

Ashby et al. (2013) conducted their first-time longitudinal quantitative study with ten second graders (four boys, six girls) from several schools in different towns located in central Michigan. The researchers wanted to monitor eye movements from second grade to third grade to examine “how the efficacy of phonological processing affects the fluency of sentence reading” (Ashby et al., 2013, p.158). Ashby et al. (2013) utilized a novel method called Eyespy to monitor the children’s eye movements while they were performing language-conscious tasks and reading silently for understanding. The children would respond to phonemic awareness learning tasks and fluency reading passages in two 39-45 min. sessions that occurred in November and December of both their second and third-grade years. Despite the limitations of the small sample size, researchers felt their findings were strong, validating the connection between phonics and text reading fluency. The authors concluded that there is a strong relationship between phonemic awareness and fluency. Educators are encouraged to have solid instruction of phonics not only in the primary grade levels, but also in the subsequent grade levels so that students have a strong foundation for basic reading skills and it closes the reading achievement gap.

### **Impact of After-School Early Literacy Interventions**

As far as literacy intervention is concerned, educators can only do so much in the classroom. To effectively meet the needs of all students, a school-community-family partnership needs to have a sustainable impact on students’ literacy. The following are reviews of three studies focused on after-school literacy initiatives to improve student early literacy skills and close the reading achievement gap.

**Innovative approach to addressing literacy needs.** Researchers believe it is essential for a student to be able to read. Students need to master foundational reading skills including phonics and phonemic awareness. In a two-year randomized control trial evaluation, Jones



(2018) discovered that the SPARK literacy program developed by the Boys & Girls Club of Greater Milwaukee had a sustained impact on the literacy needs of low-income and minority schools. SPARK was created to build student literacy skills and develop natural supports in student's families, schools, and communities. The literacy program was awarded a grant from the Department of Education to provide support in six Milwaukee Public Schools (MPS) (Jones, 2018).

Jones (2018) collected informed consent from 496 parents for their students to be able to participate in the study. A random sample of 251 kindergarten, first, and second-grade students from the six MSP schools were assigned to SPARK and 245 to the "business as usual" control group (Jones, 2018). The author utilized the Measures of Academic Progress (MAP) to compare the two groups reading achievement throughout the two-year quantitative study. During the study, MPS administered the MAP as a benchmark in the fall, winter, and spring to all students. There were three main components to the SPARK program: in-school tutoring, family engagement, and after-school programs. Participants were offered 30-minute in-school tutoring sessions up to three times a week. Tutoring was organized and delivered by college students and community members focused on phonics, phonemic awareness, reading at the instruction level, and writing (Jones, 2018). Students' families were engaged at each SPARK site by receiving education about a variety of literacy activities to do in the home and attending family events. Finally, participants were attending after-school programming through the Boys & Girls Clubs. Students experienced academic enrichment activities to increase social and emotional learning and to connect literacy to everyday life experiences at each site. Books and activities were selected to provide a balance between reading skills and making connections with characters. When comparing the two groups' MAP results at the end of the study, Jones (2018) found that

SPARK had a small, but positive impact on student reading achievement even though the program was not quite fully developed when the study began. The author found that it is important to connect phonemic awareness to reading but also writing and spelling. Learning activities and interventions should be both constructivist learning and structured instruction in order to close the reading achievement gap (Jones, 2018). Educators are encouraged to use those partnerships between the school, community, and home in order for students to reach their fullest potential in reading.

Researchers agree that after-school programs have shown significant improvements in literacy and reading skills among students who participate in them. Bayless et al. (2018) found similar results to Jones (2018) when conducting a study to examine the effects of literacy training among students in kindergarten to third grade at the Bridge Project which is a community-based ASP serving four public housing neighborhoods in Denver, CO. Bayless et al. (2018) utilized a quasi-experimental design to “compare improvements in reading proficiency among program participants and a comparable groups of students residing in public housing neighborhoods with this ASP” (p. 542). Between the fall of 2012 and the fall of 2015, 534 participants (389 in the treatment group, 145 in the comparison group) were enrolled in the study (Bayless et al., 2018). Participants in the treatment group were enrolled in the Bridge project and students in the comparison group were not. Between the two groups, the racial and ethnic composition was similar. The following data was reported on each parent report to the researchers: Black or African American (37% treatment; 45% comparison), White (20% comparison; 20% treatment), Asian (13% treatment; 4% comparison), American Indian or Alaska Native (3% treatment, 9% comparison), and multiracial (5% treatment, 11% comparison) (Bayless et al., 2018). Researchers noticed only a significant difference in the proportion of

Asian participants. Students in the treatment group received one-to-one structured literacy tutoring through the Read Well program and reading intervention through the book distribution program GR8 (Great) Readers. Researchers utilized the local school district's Developmental Reading Assessments scores to compare the two groups. At the end of the study, Bayless et al. (2018) discovered in their results that the low-income students who did not participate in the Bridge Project either experienced a decrease or no growth in reading proficiency at all. Despite the limitations in the recruitment process at the beginning of the study, Bayless et al. (2018) make the case that ASP's focused on foundational reading skills are crucial to boosting student's achievement in reading and narrowing the achievement gap between advantaged and disadvantaged students.

**Literacy support in the home.** Bojczyk et al. (2016) chose to research children who grow up in households where the family income is below the national poverty level and/or in a minority culture because they typically have greater deficits in their school readiness than their peers from higher-income homes. Bojczyk et al. (2016) conducted their longitudinal, quantitative study with 98 kindergartners and 100 first graders. The students were recruited from two Title I elementary schools in an eastern seaboard state in the United States. Both of the elementary schools primarily serve families who qualify for free or reduced lunch.

Researchers wanted to investigate the home literacy environments of students and whether the parents' home literacy practices had an impact on the student's early vocabulary skills at the beginning of a three-year longitudinal vocabulary intervention study. The authors gave each parent a demographic questionnaire and activities to measure home learning. Parents had the choice to either complete these measures at home or during a family literacy night at the school. If a parent was illiterate, the measures were read to them. The skill measures for students

were the Peabody Picture Vocabulary Test, 4th Edition, Expressive Vocabulary Test, 2<sup>nd</sup> Edition, and the subtests of Letter Identification, Word Identification, Word Attack, and Passage Comprehension of the Woodcock Reading Mastery and they were all administered individually at the school by a research assistant. Only the Letter Identification subtest was given to the kindergarteners. Through the at-home measures and the progress monitoring through the subtests, the researchers and the teachers were able to provide specific at-home learning materials and activities to practice reading at home specific to that student's needs. Over time, students grew their reading abilities and vocabulary. Bojczyk et al. (2016) did not mention any limitations to their study. The authors suggest that home and school involvement, together, lead to students reaching their fullest potential. Educators are encouraged to use tools to inform themselves around home-literacy experiences with the hopes to improve home-to-school educational experiences for all students and to encourage parents to be a part of their student's learning. Educators are also encouraged to provide a continuous assessment for students who enter kindergarten and build a partnership with parents that highlights book reading to successfully close the reading achievement gap.

### **Conclusion**

All the articles reviewed feature the importance of multi-tiered phonics instruction and how to close the reading achievement gap. Throughout all of the studies, researchers emphasized the importance of educators taking the time to learn how to teach and implement phonological awareness into their reading instruction and build partnerships with student's families and community resources to support what is being done in the classroom. Educators should take into consideration the importance of differentiated phonemic awareness instruction in the primary and upper-grade levels and how it builds a strong foundation for students to be able to read. A

solid phonemic awareness intervention is the key to bridging the gap in reading performance. Chapter 3 will explore the insights gleaned from the research, limitations found in the research, and specific application examples of how future research will address the reading achievement gap.

### **Chapter 3: Discussion/Application/Future Studies**

Research has shown the importance of a strong foundation in early literacy. Phonemic awareness and phonics are critical for students to be successful readers. Educators need to be effective in phonetic instruction to guide students to be fluent readers and close the reading achievement gap. The purpose of Chapter Three is to provide a summary of insights gained from the research, discuss specific application examples of how the research will inform instructional or educational practices, and offer suggestions for possible future studies in continuing to discover how to close the reading achievement gap in primary students.

#### **Insights Gained from the Research**

As educators journey through their profession, they will face the challenge of closing the reading achievement gap between advantaged and disadvantaged students. Research has shown that phonics instruction should be developmentally appropriate along with being intentional. Solid phonics instruction helps students become fluent readers but also leads to them finding purpose and meaning in their reading.

The research shows that it is vital for phonics instruction to be developmentally appropriate to be effective. Teachers in the primary grades emphasize it is critical to support phonetic learning through play, spontaneous teaching opportunities tied to literature, and child-guided activities for teaching. They caution against the rigor of the standards in the primary grades and beginning the teaching of intentional reading too early. With skills being too difficult,

it may push students away from even attempting to learn to read and find the joy in it. It is critical to seek teacher input in when it is developmentally appropriate to introduce intentional reading and how to build that foundation early on for all students to glean the literacy skills they need to effectively read.

Research has indicated that teachers need more training on phonics and phonemic awareness instructional strategies. Throughout the findings of teacher training, teachers admitted to their lack of knowledge of phonics instruction and the need for more in-depth professional development, specifically on phonics instruction. The training should focus on how to systematically teach phonics, prepare lessons, and the scope and sequence of introducing early literacy skills. Teachers not only need more training during their pre-service programs but also throughout the course of their profession. Research has found that for teachers to successfully close the reading achievement gap, there needs to be purposeful observations and guidance from instructional coaches knowledgeable in phonics instructional principles. This training not only benefits the teacher in how to teach phonics but then also the students in gleaning the foundational skills in learning how to read.

### **Application**

Primary teachers are expected to build a strong foundation in phonics for students to become successful readers in subsequent grades. Teachers need to be using effective instructional strategies in a small group. Keesey et al. (2015) found the Elkonin word box intervention to be useful for teachers working with students on phoneme segmentation fluency and improving letter-sound correspondences. Elkonin word boxes build phonological awareness skills by segmenting words into individual sounds, or phonemes. To use Elkonin word boxes, a student listens to a word and moves a token into a box for each sound or phoneme. At-risk

kindergarten students were able to catch up to their on-level peers with the word-box intervention specifically with nonsense words. Jones (2018) provided another example of this intervention being effective in the SPARK program. In-school and after-school tutors used the Elkonin boxes to help students encode words while reading and writing. Routinely using Elkonin boxes will lead to students building a strong phonological awareness when segmenting the words into individual sounds and boxes. The goal of this early-on instructional strategy in small group instruction is to guide students in making the strong connection of sounds to the letter symbols while reading and spelling.

A mentorship is a key tool to supporting teachers in their professions. Ehri and Flugman's (2017) study shows that mentoring teachers in systematic phonics instruction is helpful in improving students' reading achievement. Districts across the country need to allocate funding toward supporting teachers in phonics and phonemic awareness instruction to close the reading achievement gap. This support would be instructional coaches observing and providing insight, professional development on phonics instruction, and the appropriate curricula. All of these supports coupled together would lead to collaboration and knowledge for educators to ensure every student reaches their fullest potential.

### **Recommendation for Future Research**

After a review of the current research, what is needed now is future research that seeks to implement more frequent Tier 2 phonics intervention sessions on word reading in small group instruction over longer periods of time. This further research would allow researchers to see if the trend of phonics is fully being more effective in the last few sessions before students exit the intervention program. So many of the current studies mention a limitation of a short-timespan. Future research should also consider building in more review sessions to see the impact on

students maintaining the words originally mastered. Researchers also need to explore the effects of alternating choral responding with individual responding when segmenting sounds to read a word during small group instruction focused on word reading. Understanding the impact of these simple strategies will lead to students improving their ability to read.

In supplemental phonics instruction, researchers need to also continue to explore the cultural appropriateness of different instructional approaches for different student populations. The research explored did discuss closing the achievement gaps between different student populations but did not go in-depth in what phonetic strategies are culturally appropriate. This research would help educators understand the best phonetic strategies to use with different student populations.

More quantitative research is needed on comparing the use of nonsense words versus real words when using the word box intervention in kindergarten. Along with this research, researchers may want to explore longer-range follow-up measures of the word box intervention to assess whether students maintain their growth over the summer from kindergarten and successfully move out of the “at-risk” category during the first-grade school year. This research would show educators the effectiveness of the word box intervention, and if students are retaining the skills they learn receiving the Tier 2 instruction. Researchers should also explore ways to efficiently add additional practice with short vowels using the word box interventions. This study would provide teachers with more effective ways to teach phonemic awareness while using the word box intervention.

In the future, research is needed to understand how to support non-native English-speaking teachers in teaching phonics and phonemic awareness. Current studies have discovered that teachers who do not speak English as a first language took longer to learn phonics programs



and curriculum because they lacked sufficient knowledge of English sounds, and they had to learn them before being able to learn how to teach the phonics curriculum. Future research needs to study this difficulty, its solution, and how it affects students' ability to learn to read. Teachers must be able to pronounce English phonemes so that they can teach letter-to-sound correspondences, dictate words accurately, and teach spelling rules. All of these components are crucial to teaching students how to read fluently.

### **Conclusion**

Reading is fundamental in helping one find and convey information. It is an essential skill that develops at a very young age and is a gateway to a wealth of knowledge. Reading achievement in the primary grades is vital for their academic success in the subsequent grades. The reading achievement gap continues to be an ongoing crisis in the educational world, and early phonetic intervention is key to curbing the lack of reading ability among student populations.

The findings in this research emphasize the importance of multi-tiered phonics instruction and how it effectively closes the reading achievement gap with students who are performing below grade level. Educators need to take the time to understand early literacy skills such as phonics and phonemic awareness and learn how to implement them into their instruction. Instruction must be intentional but developmentally appropriate to ensure each student is successful in being able to read. Educators need to advocate for more professional development on effective phonetic instructional strategies and a high-quality curriculum for students performing below grade level. Along with instruction in the classroom, it is critical for educators to partner with afterschool programs and families on how to best support students in early literacy. These partnerships will lead to reading achievement for all students. Educators need to

consider how phonemic awareness is the first stepping stone for a student to read fluently with meaning and purpose. Students must have a strong foundation in their early literacy skills.

Effective phonemic awareness instruction is the key to closing the reading achievement gap and for each student to reach their fullest potential in reading.

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