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Comparing the Effects of Phonics Instruction Provided to Students with Disabilities

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Capstone Project: An Action Research Project

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Abstract

Special education teachers work each day to implement effective curricula to help students with disabilities receiving special education services reach grade-level standards. Recent research supports the need for implementing a comprehensive reading program that includes phonics instruction. With numerous curricula available, this action research seeks to inform educators of two methods of instruction that have a heavy phonics component that leads to growth in student reading skills. Two methods were evaluated: one method used multiple curricula to target all areas of a comprehensive reading program while the other method used a single curriculum that targeted all of the same areas. The study showed that both methods were effective in leading to growth in reading fluency, reading accuracy, and comprehension. However, the single curriculum demonstrated greater growth in two of the three target skills making it slightly more effective for instruction than the mixed methods approach.

Keywords: special education, reading instruction, phonics, comprehensive approach to reading, reading curriculum, student growth

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Comparing the Effects of Phonics Instruction Provided to Students with Disabilities

The ways in which students learn to read and the best method of reading instruction have been debated for many years (Ehri, 2020). Recent researchers have debated what constitutes instruction that aligns with the science of reading, a field of study explaining that reading develops on a continuum of skills that progress from a pre-alphabetic phase to a consolidated alphabetic phase (Ehri, 2020; Schaars et al., 2017). This view on reading development aligns with the need for systematic instruction in phonics for students who are initially learning to read, students who are at-risk for reading disabilities, or students who are diagnosed with reading disabilities (Vadasy & Sanders, 2021). It is essential to provide students with effective methods of reading instruction, especially in elementary as reading literacy is essential not only for academic success (Pindiprolu & Mark, 2020), but also as an important skill that impacts individuals throughout their lives (Ahlgrim-Delzell et al., 2016).

Numerous studies and debates have occurred about the importance of learning to read by the end of third grade and the potential negative impacts not being proficient in reading can have on students' lives. These negative impacts include dropping out of school, living in poverty, getting incarcerated, and experiencing health problems including anxiety and depression (Beach et al., 2018; Folsom et al., 2019; McArthur et al., 2015). Additionally, Pindiprolu and Mark (2020) stated that "Some researchers suggest that 25 to 173 hours of preventive instruction is essential to successfully accelerate early reading development of at-risk students" (p. 117). This information points to the need for effective instructional practices for teaching reading to learners who struggle. The problem is that there are numerous resources available to educators for teaching reading. With the importance of early reading success, it's crucial that educators are using curricular resources that are efficacious in regard to student learning. The need for

effective curricula is especially pertinent for students receiving special education services in reading who have already fallen behind their peers in reading development.

There are 13 disability categories that can qualify individuals with disabilities for special education services under the Individuals with Disabilities Education Act (IDEA). One of these categories includes students with specific learning disabilities and as Englert et al. (2020) explained, “Nearly 85% of the students with LD [learning disabilities] in the primary grades have reading disabilities that delay their progress in learning to read” (p. 235). While not all students served through special education services are receiving services with the diagnosis of a learning disability, it continues to be essential that educators are providing students with targeted reading instruction that focuses on addressing key areas in reading including phonological awareness, word identification, decoding, phonics, fluency, and comprehension. By targeting these areas of need in each student, special educators have the ability to help their students catch up with their peers in reading. One goal of education is to help students learn to read, but the resources available to accomplish this goal are numerous. By analyzing instructional methods used with students, educators can better understand what materials or methods can lead to the most growth in student reading. The purpose of this action research is to help special education teachers make informed choices about which materials will best meet the needs of their students.

Sources included in this action research study were found through the ERIC (Education Resources Information Center) database from the DeWitt Library at Northwestern College. To be included in this research, articles had to be published within the last 10 years in a peer-reviewed journal. The 27 studies compiled include studies about reading instruction, at-risk readers, phonics instruction, reading assessment procedures, reading instructional procedures, students with disabilities, decoding, phonics instruction, phonological awareness, and the science

of reading. Whereas these studies highlight the importance and impact explicit instruction in reading and decoding has on student reading development, a gap in the literature exists in regard to comparing results from instruction in reading for students with disabilities that is provided through specific curricular materials that address the same components of reading instruction.

What is apparent through the literature is that systematic and explicit instruction in reading leads to improvements in student reading scores. The literature demonstrates this correlation in a variety of settings and student populations. Because the importance of systematic and explicit instruction is so well documented, it is crucial that teachers are implementing reading instruction that is targeted, explicit, and systematic to all students, but especially students receiving special education services in reading. By failing to provide students with instruction targeting these areas, students with disabilities may miss crucial reading skills that will impact their ability to reach grade-level expectations in reading (Englert et al., 2020). All of these components (phonological awareness, phonemic awareness, phonics, decoding, fluency, and comprehension) are necessary for students to bring the pieces of the puzzle known as reading together to accelerate growth and close the gap between them and their peers. Understanding the effectiveness of curricular materials and methods can help make these goals more attainable for special education teachers and their students.

To understand what the literature demonstrates, the review will be based on what the research says for different populations of students. But first, a general summation of what the science of reading supports in reading instruction will be provided. This section will be followed by an analysis of studies conducted with different groups of children. This portion will summarize studies conducted with students at-risk for reading disabilities from kindergarten through 8th grade followed by studies done with students in other countries. Finally, the review

will analyze results of studies done among students with specific disabilities including students with dyslexia, learning disabilities, and nonverbal students who communicate through the use of augmentative and alternative communication devices (AAC). The combination of these sources will support the importance of systematic and explicit instruction. This will demonstrate where the gap exists in the literature in regard to of the efficacy of various explicit instructional procedures used with students with disabilities and their impact on student reading growth.

Review of the Literature

The Science of Reading

The best method for reading instruction has been debated for many years (Petscher et al., 2020). However, due to numerous studies and advancements in science, the science of reading has become a widely accepted view of how students develop as readers (Brown et al., 2021; Ehri, 2020; Petscher et al., 2020). An intrinsic component aligned with this view of reading development is the need for students to develop strong associations between written letters and the sounds that they make (Earle & Sayeksi, 2017; Ehri, 2020; Petscher et al., 2020; Shanahan, 2020). A solid connection in this area has been noted to be a strong predictor of student reading in the future (Earle & Sayeski, 2017). It is through the development and familiarity with the relationship between letters and sounds that students begin to develop the alphabetic principle (Keesey et al., 2015). As stated by Earle and Sayeksi (2017), the alphabetic principle is, “The understanding that words are composed of letters that represent speech sounds” (p. 265). As students become more proficient and develop their understanding of this connection, they begin to develop as readers and learn to better manipulate sounds to read known and unknown words.

Over the years, Linnea C. Ehri and numerous colleagues have conducted countless research studies to develop a comprehensive theory about reading development that is aligned to

the science of reading research. Ultimately through their research, they reached a consensus about what is referred to as the phase theory of reading development. This theory of reading development states that as their reading knowledge grows, readers progress through four distinct phases of reading development: the pre-alphabetic phase, the partial alphabetic phase, the full alphabetic phase, and the consolidated alphabetic phase (Ehri, 2020). The four phases in this theory align to the particular reading skills students have; there are distinct skills required of students in order for them to transition from one phase to the next. The earliest phase is the pre-alphabetic phase in which students are relying on visual cues to read and write words rather than relying on the relationships between letters and sounds (Ehri, 2020). Students transition from the pre-alphabetic phase to the partial alphabetic phase once they have developed the ability to use actual letter names and sounds to read and spell known words (Ehri, 2020). When students have developed the ability to decode unknown words, they begin transitioning into the full alphabetic phase of reading development (Ehri, 2020). Finally, as students continue to build their understanding of various sound-spelling mappings, they develop the ability to apply these mappings to decode and spell multisyllabic words (Ehri, 2020). It is this culmination of skills that marks a child's entry into the consolidated alphabetic phase of the theory.

Understanding the science of reading and how readers progress through Ehri's (2020) four phases is important for understanding not only how students become fluent readers, but also the type of instruction that will best help them learn to read. The culmination of research done by Ehri (2020) and others help other researchers know what methods and theories to investigate in order to determine best practices for reading instruction. Researchers must be critical of instructional approaches in order to determine those that will best lead to growth in student reading because reading instruction can have a big impact on students' lives (Shanahan, 2020).

What the science of reading currently tells us is that systematic instruction in phonics is vital to the reading development of students (Ehri, 2020; Petscher et al., 2020). The need for this systematic instruction in phonics is particularly true for students with disabilities (Earle & Sayeski, 2017). The earlier students who are considered at-risk for reading disabilities are identified and provided with this systematic instruction, the better the chances are for remediating those difficulties (Petscher et al., 2020). Ultimately, as Shanahan (2020) also pointed out, if we want to provide students with an instruction that is aligned in the science of reading, we need to not only provide them with instruction in phonics and decoding, but also instruction that includes fluency, comprehension, and writing. It is through comprehensive reading instruction that aligns with the science of reading that we can help students develop as successful readers.

Reading Instruction in Other Countries

One barrier in learning to read in the English language relates to the nature of the language itself. The English language is considered a very opaque orthography (Schaars et al., 2017; Spencer & Hanley, 2004; Wolff, 2011). The opaque nature of the English langue is due to the fact that the 26 letters in the English alphabet do not have a one-to-one correspondence to the sounds used in the English language. This challenge in learning the English language is in contrast to transparent orthographies like German, Italian, Dutch, Welsh, Swedish, and Turkish (Scaars et al., 2017; Spencer & Hanley, 2004; Wolf, 2011) and even semi-transparent languages like Russian (Logvinenko et al., 2021) where there are one-to-one or nearly one-to-one correspondences between letters and sounds. Since these languages are more transparent, children are often able to gain reading skills at an earlier age and at a faster rate than students learning to read in English (Schaars et al., 2017; Spencer & Hanley, 2004). While research

demonstrates this difference in reading acquisition between orthographies (Wolff, 2011), there is evidence suggesting that the requisite skills needed for reading development in any alphabetic language are similar. As a result, understanding the impact of phonics instruction on students in other countries can help explain how reading develops in students.

Spencer and Hanley (2004) conducted a study with 46 four- and five-year-old students in North Wales who were receiving their first year of formal reading instruction. In Wales, parents can opt for their students to be taught in either English or in Welsh. As a result, 27 children in the study were receiving reading instruction in English and 19 children were receiving reading instruction in Welsh. This diversity in reading instruction between English and Welsh enabled the researchers to analyze the effects of initial reading instruction on the reading acquisition of young children in an opaque language (English) and in a transparent language (Welsh). The results of the study demonstrated that the children learning in Welsh developed word recognition skills much earlier in the year than their English counterparts (Spencer & Hanley, 2004). Whereas the students learning in English began to make significant gains in reading toward the end of the study, their improvements remained well below that of the children learning to read in Welsh (Spencer & Hanley, 2004). Additionally, the children learning in English demonstrated more errors in word reading, indicating that their decoding skills were lower than the children in the Welsh group (Spencer & Hanley, 2004). The results of this study demonstrated that phonics instruction in the transparent orthography led to quicker reading acquisition in beginning readers. The students learning to read in English did make progress, just at a rate slower than the children in the Welsh group. Both groups of students entered into school at the same point in reading development. The difference between groups was in the language in which they were learning to read. This discrepancy in student reading development between the two languages demonstrates

the importance of early reading instruction for children learning to read in opaque languages like English. As students learning to read in English are learning at a rate slower than that of their peers in more transparent languages, early instruction in learning to read in English is essential for helping students progress at similar rates when compared to their peers in grades where learning to read is a critical skill.

A study looking at the reading development of students in a transparent orthography was conducted by Wolff (2011) in Sweden with 112 nine-year-old third graders. Like Welsh, Swedish is considered to be a transparent orthography; however, reading difficulties can still develop in students. In this study, students were provided with 12 weeks of intensive phonics-based interventions. The instruction integrated intensive phonics-based instruction paired with repeated reading and reading comprehension strategies. Follow-up testing was conducted one year after instruction occurred. The students in the study demonstrated gains in spelling, reading speed, reading comprehension, and phoneme awareness that was still apparent at the one-year follow-up testing (Wolff, 2011). The findings from this study support the recommendation from Shanahan (2020) that a science of reading instruction should encompass not only phonics instruction, but also instruction in other areas of reading. These findings suggest that lasting effects on student reading occur when students are provided with a well-rounded reading instruction that targets multiple skill areas.

A more recent study on how word decoding develops in transparent orthographies was conducted by Schaars et al. (2017) in the Netherlands. In this study, 973 Dutch children in grade 1 were provided with incremental phonics instruction that introduced the children to the 34 graphemes in the Dutch language over the course of the school year and taught them to apply them in different early reading tasks. Results indicated that students showed a significant

increase in word decoding efficiency and that this increase was stable over time (Schaars et al., 2017). In fact, data from the study indicated that the students reached ceiling levels of accuracy within the first month of instruction and that over the course of the school year, their decoding efficiency continued to develop (Schaars et al., 2017). The findings in this study and the observed transfer of skills with the students supported previously research that children, in their language for reading, should be able to read any regular word once they have mastered the baseline word-decoding skills necessary (Schaars et al., 2017). This study demonstrates the significance in teaching students the phonetic code needed to help them develop the alphabetic principle. This phonics understanding is an essential component of reading development that leads to potential reading success in later years of schooling.

Another study looked at reading development in students learning to read in a semi-transparent orthography rather than in a transparent or opaque orthography. Logvinenko et al. (2021) looked at the impact of word decoding and paragraph comprehension skills in 461 Russian children in grades two through four in the European part of Russia. Russian is considered a semi-transparent orthography in that it has 33 letters that represent 39 to 43 phonemes (Logvinenko et al., 2021). The study looked at the impact of the traditional reading instruction provided to children in Russia and the link between word decoding and paragraph comprehension. Study findings showed that reading comprehension is largely connected with phonological skills and that these phonological skills are the best predictors of reading comprehension scores (Logvinenko et al., 2021). The results also demonstrated a connection between rapid letter naming and decoding speed (Logvinenko et al., 2021). The results of this study demonstrate the importance of developing early reading skills like phonological awareness for the later development of reading skills like comprehension. A primary goal of reading is

reading to understand, but studies demonstrate that prerequisite skills that build the alphabetic principle and phonological awareness in children are important.

Finally, a longitudinal study was done by Double et al. (2019) in England with 4,641 students in 162 English schools. This study looked at the impact of early phonics intervention and improvement on later reading comprehension in students. While this study was conducted in English (in contrast to the previously discussed studies), it provides significant evidence about the importance of early phonics reading interventions on student reading development. In England, students are required to take the Key Stage 1 reading assessment at the end of Year 1 (when they are 6-7 years old). Students who fail to pass this assessment are provided with guided interventions targeting phonics skills during Year 2 and are then required to take the Key Stage 1 assessment again at the end of Year 2 (Double et al., 2019). In this study, Double et al. (2019) looked at three categories of students: students who passed the first time, students who failed and then passed, and students who failed the assessment both times. The researchers then analyzed how these groups of students performed on the Progress in International Reading Literacy Study assessment that analyzes reading comprehension, an assessment taken at the end of Year 5 (Double et al., 2019). Results of the study indicated that early intervention was a critical component in helping students catch up with peers in phonetic decoding (Double et al., 2019). Additionally, the findings indicated that resolving early phonetic difficulties was a good predictor of future reading comprehension in school (Double et al., 2019). The results of this study demonstrate the importance of providing students who are learning to read in English with early intervention when they are demonstrating difficulties with the acquisition of phonetic decoding skills. In fact, Double et al. (2019) stated, “These findings support the idea that there is a critical period for the development of phonetic decoding skills around the period of reading

development that occurs at school entry" (pp. 1231-1232). The results of this study, when paired with results of phonics-based intervention studies conducted in other more transparent languages, demonstrate the importance of early phonics instruction on the reading acquisition skills of students as they show that a student's ability to apply phonetic rules to reading can have an impact on their future reading success and reading comprehension. Perhaps even more important, the earlier phonetic interventions and instruction are provided to students, the better chance they will have to catch up with typically performing peers (Double et al., 2019).

Reading Instruction with At-Risk Students

The analysis of reading acquisition in more transparent orthographies can help researchers analyzing reading development in English to better understand the impact of phonics-based instruction that is provided to students who are at-risk for reading difficulties. Keesey et al. (2015) conducted a study with three kindergarten students who were performing below the 25th percentile on AIMSweb kindergarten assessments, had limited phonemic awareness skills, and were considered at-risk for reading failure or disabilities in the future. In the study, students were provided with explicit instruction in phonemic awareness, including the skills of phoneme segmentation, letter-sound correspondences, and spelling through the use of word boxes where students manipulated letter sounds through the use of counters, letter cards, and writing letters for sounds. Findings in the study showed that explicit instruction in phonemic awareness led to growth in phoneme segmentation, letter-sound correspondences, and spelling skills of at-risk kindergarteners (Keesey et al., 2015). An additional finding in this study was that this explicit instruction with word boxes enabled the students to maintain or exceed their scores even after the intervention was finished (Keesey et al., 2015). The effects of the intervention in this study were so effective with these at-risk kindergarten students that they were meeting or

exceeding the performance of average kindergarteners at the end of the study, effectively moving them out of the at-risk category (Keesey et al., 2015). The results of this study indicate the importance of providing students with instruction and early intervention in phonemic awareness skills to help them improve their reading abilities.

McConnell and Kubina (2016) also conducted a study with kindergarten students, which included three students who were at risk for reading difficulties. In this study, the students' parents were taught to provide their children with explicit phonics instruction at home. Parents were trained in providing instruction with the program *Teach your Child to Read in 100 Easy Lessons* (Engelmann et al., 1983, as cited in McConnell & Kubina, 2016). Parents led their child through 30 lessons from the program. At the end of the study, all three students grew in their ability to recall letter names and letter sounds (McConnell & Kubina, 2016). Additionally, all three students went from being unable to read words correctly to being able to read between four and ten words correctly and maintain this skill while still missing some letter sound knowledge (McConnell & Kubina, 2016). The results of this study indicate that at-risk kindergarten students, when provided explicit phonics instruction by parents at home, can improve their reading skills. This study provides some evidence that supplemental phonics instruction provided to at-risk students at home can be beneficial for student reading development.

Vadasy and Sanders (2021) conducted a study with 68 kindergarten students who had limited early literacy learning to determine the effects of interventions focusing on grapheme-phoneme (letter-sound) correspondences and cognitive flexibility tasks. Students were assigned to a group that received instruction only in grapheme-phoneme correspondences and the other group received the same instruction plus activities for cognitive flexibility. Children in both groups demonstrated substantial growth in letter names, sounds, and letter sound writing (Vadasy

& Sanders, 2021). Additionally, children in the group that received only grapheme-phoneme correspondence instruction made larger gains in letter sound writing and spelling. The results from this study further support the use of explicit phonics instruction. In particular, it supports the need for introducing letter-sound correspondence and phonemic decoding with the introduction of high frequency correspondences first (Vadasy & Sanders, 2021).

An earlier study, one conducted by Vadasy and Sanders (2020), occurred in two phases to determine the rate and complexity of presenting grapheme-phoneme correspondences to kindergarten and first grade students with limited literacy skills. The first phase of the study was conducted with 65 children in kindergarten and first grade. The students involved were assigned to either a fast-paced set of lessons where students learned 10 single-letter and five two-letter spelling patterns or they were assigned to a slow-paced set of lessons where students learned seven single-letter and three two-letter correspondences (Vadasy & Sanders, 2020). Results from this portion of the study indicated that both conditions led to significant gains in student reading; however, students in the fast-paced instruction made bigger gains in learning letter sounds, letter sound writing, and word reading (Vadasy & Sanders, 2020). The second phase of this study was conducted with 61 kindergarten students. In this portion of the study, all students received instruction at the fast pace used in the first phase. The difference in groups occurred when students were placed in either a single lesson condition where students learned only one-letter correspondences or a mixed lesson condition where students learned a mix of single and two-letter correspondences (Vadasy & Sanders, 2020). In this part of the study, students in both groups made significant gains in reading; however, students who were higher at the beginning of the study benefitted more from mixed lessons and students who were lower benefitted more from single lessons. The findings suggested that mixed instruction led to better transferability of

instruction in grapheme-phoneme correspondences to decoding, word reading, and spelling tasks (Vadasy & Sanders, 2020). While supporting the need for explicit phonics instruction in students, this study also indicates that providing this instruction to students at a faster pace with mixed length of grapheme-phoneme correspondences can lead to greater student gains in sound and letter identification, but also in early reading skills.

Understanding the most effective methods for introducing grapheme-phoneme correspondences can help other researchers to better analyze the impacts of explicit phonics interventions on students. A study conducted by Beach et al. (2018) looked at the effects of a scripted and explicit phonics-based intervention on low-income minority students who were at-risk for reading difficulties. In the study, 14 first grade students and 18 second grade students reading significantly below grade level and at-risk for summer reading loss were provided with 15 hours of an intensive reading intervention during the summer. The students in both grade levels who participated in the intervention outscored comparison students from another school on composite measures of reading (Beach et al., 2018). The first-grade students in the study made limited growth; however, Beach et al. (2018) pointed out that this may indicate that interventions, “For very beginning readers, those who have not yet mastered basic decoding and fluency at early reading levels, need to be more intensive than 1 hr per day for 15 days to result in significant reading improvements” (pp. 277-278). The findings from this study not only point to the importance of providing struggling readers with intensive summer reading programs that focus on explicit phonics instruction, but also the need for instruction to be more intensive for students who struggle with the earliest skills in reading.

Folsom et al. (2019) conducted a similar study during the summer with 374 students who had just finished third grade and were preparing to enter fourth grade in the fall. The students

involved in the study did not meet the end of third grade reading benchmarks in their school and were now participating in an intensive summer reading program to target reading deficits. Folsom et al. (2019) explained that that effective reading instruction should be provided in a systematic and explicit way to address skills such as phonological awareness, phonics, fluency, vocabulary, and comprehension. Additionally, Folsom et al. (2019) wrote, “Research suggests that third graders not meeting grade-level reading benchmarks likely need intervention in phonics, spelling, and related foundational skills” (p. 149). The researchers focused on analyzing how much instructional time teachers in the district spent on various components of reading instruction as well as whether this instruction was provided in a whole or small group format. Results from the study indicated that a majority of the instructional time was in whole group rather than in small group and that almost 20% of instructional time was unproductive time (Folsom et al., 2019). Despite the fact that the intensive instruction provided to students did not align with what the authors found as effective instruction, students involved in the program did show slight gains on the FastBridge aReading assessment with the mean score increasing from 481.80 at the start of the study to 485.20 at the end of the study. The results indicate the need to help teachers better align their instruction in intensive tier three reading interventions with research recommendations in order to maximize instructional time and to lead to greater growth in at-risk readers (Folsom et al., 2019).

A similar study that analyzed the effects of summer reading intervention was conducted by Pindiprolu and Marks (2020). This study looked at the impact of two different parent-implemented computer-based reading programs on the reading skills of 20 at-risk students in kindergarten through second grade during the summer. Students were assigned to one of two reading programs that they completed with their parents at home. Students in both programs

made gains in their phonemic awareness, phonics, vocabulary, fluency, and comprehension over the course of the summer (Pindiprolu & Marks, 2020). These results demonstrate the importance of providing students with summer learning opportunities in order to prevent further slides in student reading abilities, but also to help remediate skills that students are already missing.

The aforementioned studies looked at the effects of reading interventions on children in elementary grades. A study conducted by Vaughn et al. (2012) looked at the impact of a yearlong intensive reading intervention that was provided to 28 eighth-grade students considered persistently inadequate responders when provided with interventions. This study was the third phase of a larger study; the students left in this portion had not responded to intensive interventions in sixth or seventh grade. The progress in student reading was compared to a group of 13 eighth grade students who did not receive the intensive intervention and received only standard school instruction. The interventions provided were tailored to the individual student's needs and focused on phonics, word reading, fluency, vocabulary, and comprehension (Vaughn et al., 2012). Whereas the students who were provided with the intervention were not able to close the gap in their reading skills, they were able to maintain their reading scores (Vaughn et al., 2012). This progress was in contrast to the students in the control group who demonstrated a decline in their reading scores over the course of the study (Vaughn et al., 2012). This improved performance of students in the intervention group over the control group held true for students with identified disabilities (Vaughn et al., 2012). The results from this study indicate that remediation of reading difficulties becomes increasingly difficult as students get older and that continued remediation may be necessary to help students make or maintain progress (Vaughn et al., 2012). This supports the need for intensive and explicit interventions early in students' school careers in order to help remediate reading difficulties early on. Additionally, the results

from this study also add evidence that interventions that are tailored to student need in later grades can be beneficial for student growth and maintenance of skills.

McGeown and Medford (2013) also conducted a longitudinal study that examined the impact of systematic synthetic phonics instruction on the reading skills of 85 children. Children were assessed prior to receiving instruction, six months after instruction, and one year after instruction. The children in the study received 40 minutes of phonics instruction daily during the study. All of the students who were in the study evolved from being non-readers before instruction began to reaching age-appropriate levels in reading by the end of the study (McGeown & Medford, 2013). Students made the greatest gains in letter sound knowledge, phoneme synthesis, and word reading (McGeown & Medford, 2013). As phoneme awareness and letter sound knowledge are essential skills for early reading development, the results of this study suggest that systematic and synthetic phonics instruction provided to young readers can lead to improvements in critical early reading skills. These skills have the ability to impact their future reading development and as such, it is important to provide strong foundational knowledge in these areas.

Finally, a study looking at systematic phonics instruction with at-risk students in kindergarten through third grade was conducted by Ehri and Flugman (2017). Teachers were provided with an intensive year-long program to teach them how to properly implement systematic phonics instruction. In total, 69 teachers received instruction, mentoring, and feedback about the instruction that they provided to roughly 1,336 students. Throughout the course of the study, the teachers' ability to provide systematic instruction grew, and the results in student scores indicated growth in students in kindergarten through third grade (Ehri & Flugman, 2017). However, students in kindergarten and first grade made greater gains than students in

second and third grade (Ehri & Flugman, 2017). Ehri and Flugman (2017) compared students in the study to students in norming groups and found that the kindergarten and first grade students met or surpassed the skills of the norming sample by the end of the year. Additionally, Ehri and Flugman (2017) also found that the phonics instruction had a bigger effect on second and third grade students decoding and comprehension than would be expected without this instruction. The results of this study point not only to the importance of systematic phonics instruction in early elementary school, but also to the impact of teacher training and mentoring on phonics instruction. This study along with the previously discussed studies demonstrate the importance that phonics instruction has on the reading abilities of at-risk students in kindergarten through eighth grade. These results also demonstrate the importance of early intervention and remediation of skills as skill remediation requires more intensive and lengthy instruction the older students get.

Reading Instruction and Students with Disabilities

Much research in reading instruction focuses on the effects of systematic phonics instruction on students who are at-risk for reading difficulties. The research that exists looking specifically at the effects of systematic phonics instruction on students with disabilities is smaller; however, it covers a range of disabilities.

One study that related more to special education was conducted by Englert et al. (2020). In this study, 48 preservice special education teachers worked with 48 at-risk children in first through third grade. Like with many other studies, the students involved in this particular study were considered at-risk and not labeled with a disability. To improve their knowledge of working with struggling readers, the preservice teachers provided the students with a phonics literacy protocol (Englert et al., 2020). The preservice teachers provided two one-hour lessons each week

to their students for 10 to 12 weeks. Over the course of the study, the preservice teachers grew in both their confidence implementing phonics instruction and in their knowledge of teaching phonics (Englert et al., 2020). Additionally, while not the primary focus of the study, the at-risk students involved in the study showed improvements on the phonics survey, their reading accuracy, and their fluency (Englert et al., 2020). The results show that even preservice teachers, when confident and knowledgeable about the phonics lessons that they are teaching to students, can help students improve as readers when the students are taught in a systematic way.

Ciullo et al. (2019) also analyzed the instructional practices of special education teachers. While this study did not analyze student growth scores, it looked at the instructional practices of special education teachers providing services to fourth and fifth grade students with learning disabilities. Observation results indicated that the special education teachers in this study approached reading instruction in a comprehensive way by covering a variety of reading skills including comprehension, phonics and word study, vocabulary, text reading, writing, fluency, alphabetic knowledge, spelling, phonological awareness, concepts of print, and oral language development (Ciullo et al., 2019). Many of these skills are not typically taught at this age level; however, they are skills targeted to address individual students' needs. Analysis of the instructional time demonstrated that the teachers in the study were maximizing their use of instructional time (Ciullo et al., 2019). This study further supports the need to provide special education services in reading that are comprehensive in nature. Additionally, it supports targeting skills that may be below what other students at that age are learning based on a student's individual needs.

Sight word training often aligns more closely with the whole word approach to literacy instruction, which is often perceived as contradictory to the phonics-based approach to literacy

instruction. However, phonics training can play an important role in sight word development. In fact, as stated by McArthur et al. (2015), “Many (if not most) reading researchers agree that phonics reading plays an important role in the development of sight word reading” (pp. 392-393). This idea that phonics plays a role in sight word reading aligns with the science of reading and how students learn to map sounds and letters to read words. McArthur et al. (2015) conducted a study that compared the effects of sight word training and phonics training in children with dyslexia. In this study, 104 children were split across three treatment groups. One group received initial instruction in phonics that was followed by instruction in sight words. A second group received initial instruction in sight words that was followed by instruction in phonics. Finally, a third group received mixed instruction where both types of instruction were provided to the students on alternating days as compared to alternating the segments of the study. The study analyzed students’ ability to read trained irregular words, untrained irregular words, nonword reading accuracy, nonword reading fluency, word reading fluency, and reading comprehension. Results indicated that the mixed group and the group that learned sight words first did better on the trained irregular word accuracy than the group that started with phonics, but the phonics group caught up to the other two groups by the end of the study (McArthur et al., 2015). In the skill areas of untrained irregular word accuracy, nonreading accuracy, and word reading fluency, study results indicated that phonics training that precedes sight word training is more beneficial for student learning (McArthur et al., 2015). Finally, in the areas of nonword reading fluency and reading comprehension, the study results indicated that the order of phonics and sight word training did not make any significant differences in student growth (McArthur et al., 2015). The findings indicate the importance of helping students with dyslexia learn grapheme-phoneme correspondences to help them learn to decode unfamiliar words. These

results align with the need for phonics-based instruction because it helps students understand the code to reading, equipping them with necessary skills as compared to learning words based primarily on sight word recognition.

A different study looked at the effects of systematic instruction in phonics on the skill acquisition of nonverbal students with moderate intellectual disabilities who utilize augmentative communication devices. In a study conducted by Ahlgrim-Delzell et al. (2014), three nonverbal elementary students who had either moderate intellectual disabilities or autism were provided with phonics instruction that was coordinated with the communication devices they used. Researchers analyzed student growth in phoneme identification, blending sounds to form words, and blending words with picture referents (Ahlgrim-Delzell et al., 2014). Results demonstrated that all three students involved in the study showed growth and maintained their scores in their ability to identify phonemes, blend phonemes to read words, and blend phonemes to identify pictures (Ahlgrim-Delzell et al., 2014). Additionally, the students in the study were able to apply these skills to identify common words but also text specific words (Ahlgrim-Delzell et al., 2014). The results demonstrated that even students with moderate intellectual disabilities who are nonverbal and communicate through alternative means were able to learn how to read words and to blend phonemes when they were provided with systematic and explicit phonics instruction.

A similar study was conducted by Ahlgrim-Delzell et al. (2016) a couple years later that again analyzed the impacts of systematic instruction in phonics with students with developmental disabilities who use alternative and augmentative communication devices (AAC). In total, 31 students in kindergarten through eighth grade participated in the study. The treatment group received daily systematic phonics instruction while a control group received sight word instruction. Data analysis at the conclusion of the study showed that the monthly increase in skill

development of students in the treatment group was 2.36 times more than that of the control group (Ahlgrim-Delzell et al., 2016). Additionally, in the skill areas of phoneme identification, word decoding, and picture matching, the students in the treatment group made significantly bigger gains than the students in the control group who received sight word training (Ahlgrim-Delzell et al., 2016). The results from this study again demonstrated that students who are nonverbal or have severe speech impairments who utilize AAC devices can learn early reading skills when they are provided with systematic phonics instruction that utilizes their AAC devices. This study provides further support for the need to provide students with disabilities with systematic phonics instruction that helps them learn the code to reading in the English language.

The research base surrounding the need for systematic and explicit instruction in phonics is growing. This is evident in studies done around the world and with students in the United States who are at risk. Research around the need for phonics instruction with students with disabilities is growing; however, a majority of the research available analyzes the impact of phonics instruction on remediating potential disabilities in at-risk students in order to alleviate gaps in learning prior to a disability diagnosis. Vaughn and Wanzek (2014) analyzed numerous studies to identify qualities of instruction that are impactful on students with identified disabilities. In their report, they noted that instruction in one-on-one interventions or groups with fewer than five students led to greater gains in students when compared to large group instruction (Vaughn & Wanzek, 2014). Additionally, Vaughn and Wanzek (2014) noted that students with learning disabilities benefit from both code-based instruction in phonics and meaning-based instruction in comprehension. There is a need to address the impacts of focused, phonics-based instruction that integrates comprehension instruction with students with disabilities. Additionally, as Shanahan (2020) discussed, we need to be analyzing the impacts of

instructional practices to determine if they are having an impact on student learning. Students with identified disabilities in reading are already significantly behind their peers in this skill area, making it extremely important that special education teachers are implementing curricular methods that are having significant impacts on the reading development of their students.

Methods

Research Questions

This action research project sought to answer the following questions:

1. Does the implementation of a comprehensive reading instruction with a heavy focus on phonics lead to improvements in the reading scores of students with disabilities?
2. How does the implementation of multiple curricular resources compare to the implementation of one curricular resource when analyzing student growth?
3. Do different instructional materials impact student reading growth in similar ways if component areas of a comprehensive reading instruction are covered?

Participants and Research Site

This action research was conducted in a rural elementary school in Iowa. The school district serves roughly 1,300 students in preschool through twelfth grade. The state of Iowa is a noncategorical state for special education services. As a result, students involved in this study are considered eligible individuals and are therefore entitled to special education services; these services are not provided to them under a specific disability category under the Individuals with Disabilities Education Act. The participants in this study include two groups of third grade students who all received special education services in reading. The first group of students included four boys who were in third grade during the 2019-2020 school year. The second group of students included nine boys who were in third grade during the 2021-2022 school year. All of

the students received specially designed instruction in reading in the special education classroom for thirty minutes daily. Instruction was provided to students in groups of two with one student in the 2021-2022 school year receiving one-on-one instruction.

Intervention and Timeline

This action research study analyzes the effects of two different approaches to reading instruction with students with disabilities. In both groups, students received targeted reading instruction that was considered comprehensive in nature. Their instruction included lessons in phonemic awareness, phonics and decoding, fluency, and comprehension; however, their instruction contained a heavy emphasis on phonics and decoding. Additionally, both groups of students received this targeted reading instruction over the course of their third-grade school year. The difference between groups came from the curricular materials used to target these areas in reading.

During the 2019-2020 school year, students received instruction in reading that used multiple curricular resources to address component areas of a comprehensive reading instruction. Instruction began daily with the Path to Reading Excellence in School Sites (PRESS) program. This program provided students with instruction and practice on individually determined phonemic awareness or phonics skills four days a week with progress monitoring occurring on Fridays. After the PRESS activity, students were provided with additional phonics instruction to reinforce skills taught in PRESS with the Making Reading Heavenly with Cathy Angel phonics program five days a week. To practice applying phonics skills to decoding in text, students were provided with a decodable passage from the West Virginia Reading First Explicit Phonics materials that connected to the skills being taught. Finally, students worked on comprehension skills by reading passages and completing comprehension questions in one of the levels of the

Making Connections reading program. These students received this approach to intervention daily for the entire school year. It is important to note that during the 2019-2020 school year, schools in Iowa were closed in March of 2020 due to the COVID-19 pandemic. Schools did not reopen in Iowa until the start of the 2020-2021 school year in August of 2020. As a result, the instruction that was provided to the students in the 2019-2020 group occurred from August of 2019 through the school closure in March of 2021. Additionally, posttest scores for these students were taken from their winter benchmark testing rather than their spring testing.

During the 2021-2022 school year, the district this study took place in adopted a new reading curriculum for special education students in elementary grades. This program was the Specialized Program Individualizing Reading Excellence (SPIRE). The SPIRE program covers all of the component skills of a comprehensive reading instruction (phonological awareness skills, phonics, spelling, fluency, vocabulary, and comprehension). The skills build off each other as students progress through the program. There are ten steps in each SPIRE lesson. Students completed one lesson every two days throughout the school year (August of 2021 through May of 2022).

Variables

The primary focus of this study is to determine if one approach to reading instruction within a special education classroom led to greater growth in student reading scores as evidenced by their performance on benchmark tests. As a result, the independent variable in this study is the curricular methods used by the special education teacher during each of the two school years. The independent variables in this study will relate to student growth on district benchmark testing. Specifically, the study will look at the impact of reading instruction on the fluency, accuracy, and comprehension of the students receiving the instruction.

Measurement Tools

The dependent variables analyzed in this study will be measured utilizing scores from district testing that is conducted using assessments from FastBridge Learning: aReading and CBMreading. The aReading assessment measures students' broad reading abilities including comprehension. In third grade, students answer 30 questions on the aReading assessment on their computer. The test is adaptive and adjusts based on student responses. Student scores are reported as a numerical value between 350 and 750 with a higher score indicating a higher level of broad reading abilities (Paige, 2022). Students complete the assessment three times per year in the fall, winter, and spring.

Students are also assessed with the CBMreading assessment. During this assessment, students read three grade-level reading passages for one minute each. As students read, the teacher listens to them and marks any errors that they make on a copy of the passage or on the computer system. After the student has read all three passages, the median score is used to indicate the student's reading fluency rate and reading accuracy. The reading fluency rate is reported as correct words per minute (CWPM) and the accuracy is reported as a percentage out of 100. As with the aReading tests, students complete this assessment three times per year during the fall, winter, and spring.

Anticipated Statistical Analysis

To analyze the data in this study, the mean and standard deviation will be calculated for each group to analyze the average score at pretest and posttest in addition to the average amount of growth. These calculations will be done to analyze both groups of students in all three assessment areas of reading fluency, reading accuracy, and broad reading comprehension. Mann-Whitney U tests will also be conducted to determine if there is a statistically significant

difference in scores between groups. The results of the Mann-Whitney U test will help determine if one group made a significantly greater growth in scores than the other group. This information will be used to help determine if one instructional method was potentially more effective than the other.

IRB Exemption

This action research project was granted an IRB exemption due to the nature of the study using instructional practices and assessments conducted in the special education classroom regardless of this study. These methods and materials were already in place in the district and will be used by the district and its teachers in the future. As this study met the qualifications for IRB exemption, parental consent was not required.

Data Collection

Data utilized in this research study was collected during benchmark testing windows within the district. Fall benchmark testing occurs during the month of September, winter testing occurs in January, and spring testing occurs in May. Data from assessments is stored in the FastBridge Learning system and in the Iowa Department of Education's student success portal, Panorama.

In August of 2019, the four students receiving special education services in reading were screened individually on both the CBMreading assessment and the aReading assessment. The four students were screened again in January of 2020 on both assessments. Scores for both screening windows are stored online on the FastBridge and Panorama systems. Spring scores were not able to be obtained during the 2019-2020 school year due to the COVID-19 school closures.

In August of 2021, the nine students receiving special education services in reading were also screened individually on both the CBMreading and aReading assessments. The students were screened again in January of 2022, but since they were able to complete their third-grade year, their spring benchmark scores will be utilized. These scores were obtained during benchmark testing that occurred in May of 2022 and are stored online in the FastBridge and Panorama systems.

For both groups of students, their fall benchmark scores on the aReading and CBMreading assessments will be utilized as their pretest scores. For students in the 2019-2020 group, their winter benchmark scores will be utilized as their posttest scores. Scores from spring benchmark testing will be used for students in the 2021-2022 group. All scores that are used in the analysis of student growth in this study will be analyzed in Excel and stored in an Excel document.

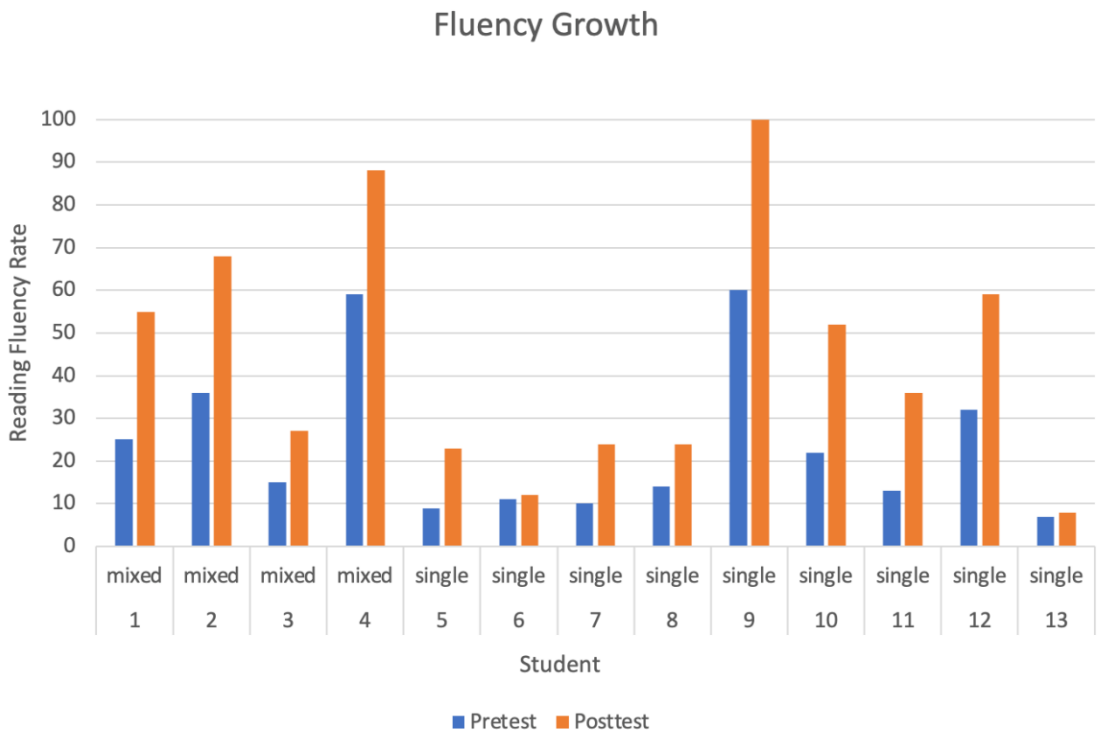
Data Analysis

Pretest scores were obtained for both groups of students using the fall scores from the FastBridge CBMreading assessment and aReading assessment. Posttest scores for the 2019-2020 students were taken from their winter test scores on the FastBridge screeners. Posttest scores for the 2021-2022 students were taken from their spring test scores on the FastBridge assessment. Data was analyzed using the Mann-Whitney U test to determine if one instructional method led to greater growth in student learning than the other method. The calculations were conducted in Microsoft Excel. This test was used due to the small sample sizes in each group of students. Additionally, averages for reading fluency, accuracy, and comprehension were found for each group in addition to averages for student growth in each group.

Figure 1 shows improvement in student reading fluency growth from pretest to posttest. Students are sorted by the instructional method that was used with them. Prior to instruction, students receiving mixed curricular materials were reading an average of 34 correct words per minute (CWPM) (M = 33.75, SD = 18.89). Following instruction, students receiving mixed methods were reading an average of 60 CWPM (M = 59.5, SD = 25.57). The mixed methods approach had an average growth of 26 CWPM (M = 25.75, SD = 9.25). Before instruction, students receiving a singular curriculum were reading an average of 20 CWPM (M = 19.78, SD = 16.97). Following instruction, students receiving the singular method were reading an average of 38 CWPM (M = 37.56, SD = 28.89). Students in the singular method had an average growth of 18 CWPM (M = 17.78, SD = 13.26).

Figure 1

Growth in reading fluency rate from pretest to posttest

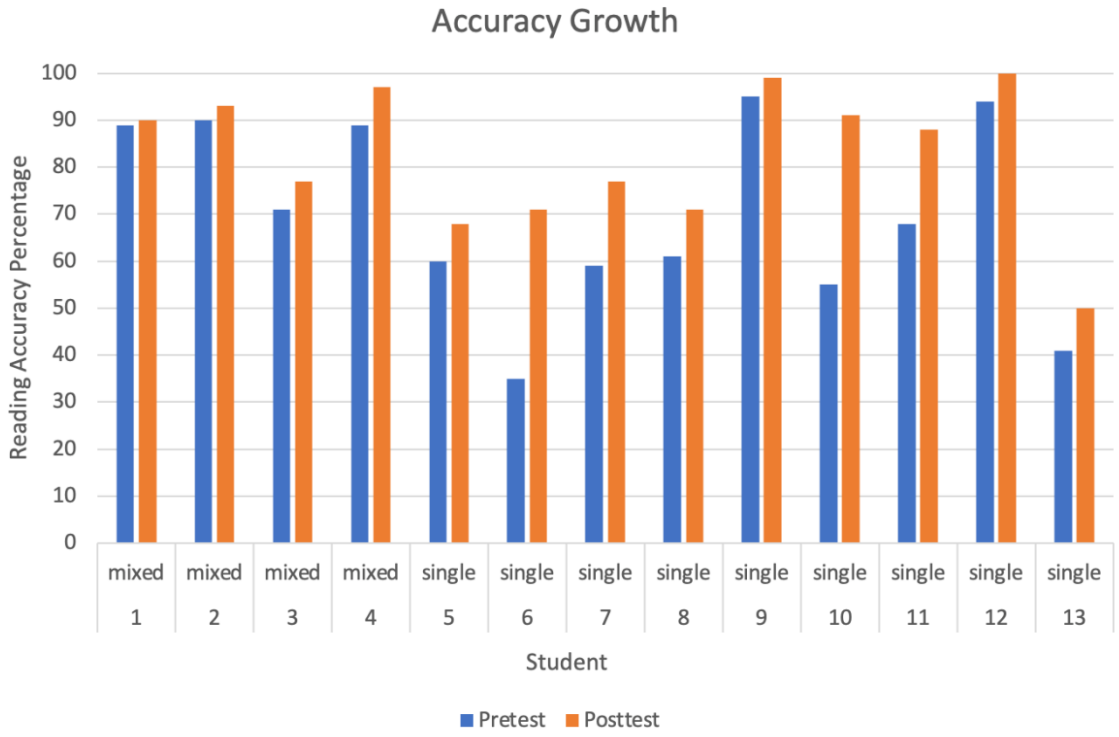


A Mann-Whitney U test was conducted to determine if there was a statistically significant difference in student growth from pretest to posttest in student fluency scores. From pretest to posttest, results from the fluency assessments for the mixed method group showed that students had an average growth of 26 CWPM ($M = 25.75$, $SD = 9.25$). From pretest to posttest, results from the fluency assessments for singular method group showed that students had an average growth of 18 CWPM ($M = 17.78$, $SD = 13.26$). The results of the Mann-Whitney U test showed that there was a statistically significant difference between the growth rates of each group, $z = -3.79$, $p < 0.05$.

Figure 2 shows improvement in student reading accuracy growth from pretest to posttest. Students are sorted by the instructional method that was used with them. Prior to instruction, students receiving mixed curricular materials had an average reading accuracy of 85% ($M = 84.75$, $SD = 9.18$). Following instruction, students receiving mixed methods had an average reading accuracy of 89% ($M = 89.25$, $SD = 8.66$). The mixed methods approach had an average growth in reading accuracy of 5% ($M = 4.5$, $SD = 3.11$). Before instruction, students receiving a singular curriculum had an average reading accuracy of 63% ($M = 63.11$, $SD = 20.53$). Following instruction, students receiving the singular method had an average reading accuracy of 79% ($M = 79.44$, $SD = 16.42$). Students in the singular method has an average growth in reading accuracy of 16% ($M = 16.33$, $SD = 12.31$).

Figure 2

Growth in reading accuracy from pretest to posttest



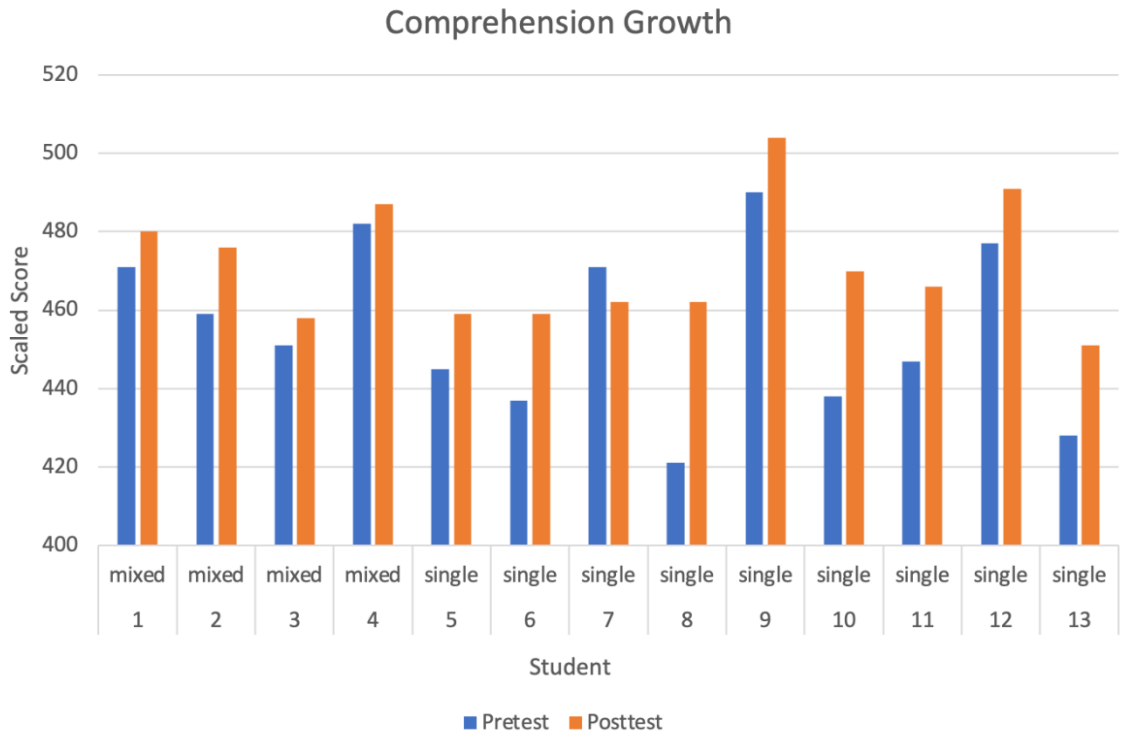
A Mann-Whitney U test was conducted to determine if there was a statistically significant difference in student growth from pretest to posttest in student reading accuracy scores. From pretest to posttest, students in the mixed methods group had an average growth in reading accuracy of 5% (M = 4.5, SD = 3.11). From pretest to posttest, students in the singular method group had an average growth in reading accuracy of 16% (M = 16.33, SD = 12.31). Results from the Mann-Whitney U test indicated a statistically significant difference in the growth in reading accuracy between each group, $z = -5.29$, $p < 0.05$.

Figure 3 shows improvement in broad reading comprehension from pretest to posttest. Students are sorted by the instructional method that was used with them. Prior to instruction, students receiving mixed curricular materials had an average broad reading comprehension score of 466 (M = 465.75, SD = 13.6). Following instruction, students receiving mixed methods had an

average broad reading comprehension score of 475 (M = 475.25, SD = 12.37). The mixed methods approach had an average growth in broad reading comprehension of 10 points (M = 9.5, SD = 5.26). Before instruction, students receiving a singular curriculum had an average broad reading comprehension score of 450 (M = 450.44, SD = 23.56). Following instruction, students receiving the singular method had an average broad reading comprehension score of 469 (M = 469.33, SD = 17.10). Students in the singular method has an average growth in broad reading comprehension of 19 points (M = 18.89, SD = 13.86).

Figure 3

Growth in reading comprehension from pretest to posttest



A Mann-Whitney U test was conducted to analyze the difference in growth rates in broad reading comprehension between instructional methods. From pretest to posttest, students in the mixed methods group had an average growth in broad reading comprehension of 10 points (M = 9.5, SD = 5.26). From pretest to posttest, students in the singular method group had an average

growth in broad reading comprehension of 19 points (M = 18.89, SD = 13.86). Results from the Mann-Whitney U test indicated a statistically significant difference in student growth between instructional methods, $z = -5.06$, $p < 0.05$.

Does the implementation of a comprehensive reading instruction with a heavy focus on phonics lead to improvements in the reading scores of students with disabilities?

Data collected indicated that students grew in reading fluency, reading accuracy, and broad reading comprehension with both instructional methods. In the mixed curricular materials group, students grew in fluency by an average of 26 CWPM, in reading accuracy by an average of 5%, and in broad reading comprehension by an average of 10 points. In the singular curriculum group, students grew in fluency by an average of 18 CWPM, in reading accuracy by an average of 16%, and in broad reading comprehension by an average of 19 points. These results support the idea that a comprehensive reading instruction with a heavy focus on phonics will lead to growth in the reading scores of students with disabilities regardless of if multiple curricula or a single curriculum is used to meet all areas of a comprehensive reading program.

How does the implementation of multiple curricular resources compare to the implementation of one curricular resource when analyzing student growth?

When analyzing the difference in growth in students between instructional approaches, data indicated that students in the mixed approach (average increase of 26 CWPM) made greater growth in reading fluency than students in the singular approach (average increase of 18 CWPM). However, data also indicated that students in the singular approach made greater growth in both reading accuracy (average increase of 16%) and broad reading comprehension (average increase of 19 points) than did the students in the mixed approach (average increase in accuracy of 5% and in broad reading comprehension of 10 points). These results indicate that

while both methods lead to growth in all three areas, the singular method leads to greater growth in more areas than the mixed approach does.

Do different instructional materials impact student reading growth in similar ways if component areas of a comprehensive reading instruction are covered?

Data indicated differences in the amount of growth students made in each of the three assessed areas. Despite differences in growth from pretest to posttest between groups, both methods demonstrated positive growth in student reading scores. These results indicate that the instructional materials used in this study, regardless of the number of materials, have a positive impact on student reading skills. It seems fair to conclude that as long as all component areas of a comprehensive reading instruction are covered, students with disabilities can grow in the reading skill areas of reading fluency, reading accuracy, and broad reading comprehension.

Discussion

Summary of Major Findings

An important goal of special education services is to help students with disabilities make progress toward grade-level expectations. To achieve this goal, special education teachers need to use curricular materials and methods that will lead to substantial growth in students in the various areas in which services are being provided. This study focused on student growth in reading and determining which curricular method led to the most growth in student reading fluency, reading accuracy, and broad reading comprehension. The goal of this study was to help inform other educators about effective instructional methods so that other students receiving services in special education can receive an effective instruction that will help them make efficient growth in their reading skills.

The findings from this research supports the literature about the effectiveness of comprehensive reading instruction that has a heavy focus on phonics. Additionally, this study adds to the literature about two instructional methods that lead to growth in student reading in students with disabilities. Vaughn and Wanzek's (2014) summation of research supported the need for both code-based instruction in phonics and meaning-based instruction in comprehension to help students with reading disabilities make meaningful progress. Additionally, the research that was conducted by McArthur et al. (2015) found that students with dyslexia benefit from learning grapheme-phoneme correspondences because it helps them decode unfamiliar words. The findings from both of these studies align with the need for phonics instruction in helping students with disabilities decode and read accurately. In studies of students who use AAC devices to communicate, both Ahlgrim-Delzell et al. (2014) and Ahlgrim-Delzell et al. (2016) found that explicit instruction in phonics led to growth in students' ability to read and understand texts. The data from the current study indicates that when students with an array of disabilities are provided with comprehensive reading instruction that is heavily focused on phonics, they can also make progress with reading skills. Both methods were effective in helping students improve their reading skills; however, the singular method that contained all component areas of a comprehensive reading instruction led to greater student growth in more areas than did the approach of using multiple curricula to target reading skill areas. The findings of the current study suggest that the curriculum S.P.I.R.E. is a reliable option for improving student reading skills when it is implemented as recommended.

Limitations of the Study

One limitation of this study was that the scores used to compare the two student groups were obtained at different times during the school year. Students who received instruction using

mixed curricular materials were unable to complete the entire academic school year due to the COVID-19 pandemic closing schools in Iowa. In Iowa, schools were not required to continue instruction while students were at home during the initial school closures that began in March of 2020 and remained in place through the end of the 2019-2020 school year. As a result, the mixed methods group used scores from fall testing to winter testing while the single method group used scores from fall testing to spring testing.

A second limitation of this study was the impact the COVID-19 school closures had on student learning that were not measured in this study. Students in the mixed methods group were in their third-grade year at the time of school closure. The students who were in the single method group were in their first-grade year when the school closure happened. The impacts of student age and loss of instruction due to the COVID-19 pandemic school closure were not analyzed in the current study but may have impacted how students progressed in their reading skills due to lost instructional time. A third limitation of the study is that the study focused only on students in third grade and included only male students. The lack of diversity in participants in this study could limit the results to being effective only with this particular population of students or a similar demographic of students.

Future Research

The current study provides evidence that comprehensive instruction in reading with a heavy focus on phonics can lead to improvements in reading growth in students with disabilities. An area for future research would be to look at the long-term impacts of the COVID-19 pandemic and lost instructional time on the reading growth of students with disabilities. This research should include analyzing the effect that the pandemic had on students at different age levels at the time that school closures were put into place.

Another area of future research would be to look at the long-term impacts of both instructional methods on student reading development. The current study focused on analyzing student growth over the course of their third-grade year. Future research should analyze if there is a more accelerated trend in student reading acquisition as students continue to progress through school with the mixed method or the single method approach. Providing students with the most effective method of reading instruction will help students make accelerated growth and help them reach grade-level standards faster.

Future research should also consider conducting this research in a setting that has greater diversity in participants. All students involved in the current study are Caucasian males. Future research should look at the effects of both instructional methods on a mixed population of male and female students as well as students with different cultural and ethnic backgrounds. A greater diversity in participant population will help to determine if the results of the current study can be generalized to the larger population of students receiving special education services throughout the country.

Conclusion

Students with disabilities receiving special education services are entitled to those services because they are discrepant from their peers in at least one area, whether that be reading, math, behavior, or any other area. As a result, it is of upmost importance that educators working with students with disabilities are providing them with the most effective instruction possible to help them make progress toward grade and age-appropriate standards. It is essential that research is available to help educators make informed decisions about the instruction that they provide to their students. Ample research is available about the effects of phonics instruction on students who are at-risk for reading disabilities and phonics instruction provided to students learning to

read in more transparent orthographies. However, there is less research conducted that analyzes the effects of comprehensive reading instruction heavily focused on phonics with students with disabilities. The aim of the current research was to provide additional insight into the impacts of two different instructional procedures on the growth of student reading in students with disabilities.

The findings from the current study suggest that both instructional procedures (mixed curricular materials and a single curriculum) are effective methods of improving student reading. Analysis of student scores and growth indicated that the mixed approach led to greater growth in reading fluency while the singular approach led to greater growth in both reading accuracy and broad reading comprehension. Because the singular method using the S.P.I.R.E. curriculum led to growth in all three areas and greater growth in two of the three areas, it can be determined that this is as an effective method for improving student reading in multiple areas. It is a comprehensive program that targets all skill areas involved in reading. The results of this action research can help educators consider two different instructional methods that are effective in fostering growth in student reading, with one method in particular, S.P.I.R.E., leading to big improvements in all areas.

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