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IMPROVING LITERACY RATES FOR STUDENTS WITH DYSLEXIA IN A RURAL
SCHOOL DISTRICT

A Dissertation
presented in partial fulfillment of requirements
for the degree of Doctor of Education
in the Department of Leadership and Counselor Education
The University of Mississippi

by

STEVEN WILLIAM HAVENS

May 2019

ABSTRACT

This applied research study aimed to improve literacy rates for students identified as having dyslexic tendencies in the Lynn County School District. The need to improve literacy rates of students with dyslexia in the Reaching Reading Success Program was identified through Mississippi K-3 Assessment Support System data. Using the two elements found in the program evaluation, accurate identification of dyslexic students and multisensory interventions the study sought to improve the literacy rates for students with dyslexia in kindergarten. Assessment, survey, and interview data were used in this applied research study to determine success. The findings indicated early identification, multi-sensory remediation, and organizational learning does improve literacy rates for students with dyslexic characteristics in kindergarten.

DEDICATION

This work is dedicated to my family and students such as Davis N. who face a lifetime struggle with reading the printed word. In the past, these students have been failed by the system because they did not fit the system design and were left with a lifetime of self-doubt about their intellectual ability. Hopefully, one study finding will change the system to one where the system fits the child. I also want to include my parents for teaching me my grandfather's motto. My grandfather, Carl Havens, finished the sixth grade but was intelligent enough to know the most important thing in any endeavor is, "You just gotta want to."

ACKNOWLEDGEMENTS

I would like to thank the Educational Leadership Department at the University of Mississippi for the guidance and help in this quest for a terminal degree. I would especially like to thank Dr. Jill Cabrera Davis for her insight, kindness and effort to help me be successful. I would also like to thank my dissertation committee for agreeing to ensure my work was completed in a scholarly and defensible manner. Finally, I would like to thank Heather, Jason, Jimmy, Krista, Leigh Anne, Lindsay, Mrs. Judy, Leslie, Shauna, April Kelly, and Jodie for seeing me through three of the most difficult years of my life.

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Chapter I:

INTRODUCTION

Statistically speaking, someone in your immediate family may have the reading disorder known as dyslexia and its associated tendencies, which can be passed down through generations (Morken, Helland, Hugdahl, & Specht, 2016). Dyslexia is a complex neurological language disorder which cannot be categorized (Snowling & Hume, 2011). The estimate of the population with dyslexia and the associated tendencies is between 10% and 17% (Morken, et al. 2016). Therefore, it is possible for a person to have the genetic trait for this disorder and not even be aware of it. Some of the characteristics for people with dyslexic tendencies include the following: (1) average to above average Intelligence Quotient; (2) reading difficulties; and (3) behavioral issues. Because some of the population with the reading disorder are academically successful due to a lower level of disorder severity, it leads some people to falsely believe others are not successful because of laziness or lack of desire (Miles, Wheeler, & Haslum, 2003). Students who face this particular disability will encounter multiple trials throughout the course of their school lives as well as their adult lives if the disability is not addressed through interventions at an early age. Students who have been diagnosed with dyslexia will benefit from immediate feedback. If dyslexia is identified and the problem is met with intervention at an early age, a child can and will likely lead a productive life. Interventions must be structured so that students can develop the ability to recognize words automatically without having to decode.

Statement of the Problem

The central issue of concern for this applied research is improving the literacy rates of students with dyslexia and accompanying tendencies in Lynn County School District (LCSD). Due to the statistical possibility of a large portion of lower achieving students being affected by the un-remediated reading disability dyslexia, the Reaching Reading Success Program (RRSP) served as a catalyst to improve student performance. Over 10 years ago, LCSD instituted RRSP to provide interventions focused on students identified as having dyslexic tendencies. As part of this institution's work, the RRSP seeks to identify students of average or above average intelligence who are having difficulty with reading, spelling, or writing due to differences in phonological processing skills. The program is available for identified students regardless of the student's eligibility for special education. The students in LCSD receive program interventions from first to fifth grade or until meeting release criteria. The goal for each student is mastery of the alphabetic principle as evidenced by improved reading fluency and the student no longer engages in "wild guess" or "skip the word" techniques. The ultimate goal is for the student to be empowered to decode multi-syllable words automatically, read fluently, and comprehend written text efficiently.

Lynn County is in north Mississippi and surrounds Oleput, Mississippi. The school district consists of mostly rural areas and small towns. The primary employers for the community are North Mississippi Medical Center, Lynn County School District, Oleput Public School District, manufacturing industries, and agriculture. Diverse career opportunities are available in the community. Itawamba Community College and the University of Mississippi provide access to higher education and technical training. The economic diversity in the community brings tremendous social and cultural differences. Recent research has shown family structure,

parenting practices, schools, neighborhoods, and communities were significantly correlated with economic status across the United States regardless of race (Putman, 2015).

The LCSD serves approximately 7,000 students dispersed over 14 schools. The Mississippi Department of Education currently rates the district B. The district has three high schools, four middle schools, three elementary schools, and three primary schools. The district consists of three different attendance zones which are the north, east and south. The schools in the north and east have high achievement ratings but the schools in the south zone struggle with academic success. The southern zone has the highest percentage of economically disadvantaged students. Sixty percent of the students served in LCSD are identified as economically disadvantaged. School performance levels within the school district vary measurably and are directly proportional to socioeconomic status. For example, Shan High on the south end had an accountability rating of F while the other two high schools typically have an accountability rating of A.

Since the majority of district students are economically disadvantaged, many students do not have the resources needed to obtain private educational support. Consequently, some of the students only receive educational services provided by the district, and more specifically, with regards to dyslexic tendencies. Dyslexia and accompanying tendencies are statistically common in all populations regardless of economic classification in the United States (Holifield, 2011). If the reported rate of 10-17% of the population with dyslexic tendencies is accurate, then approximately 1190 of district students need interventions. The district has three lead teachers and 16 interventionists, and the district serves 323 students in need of intervention. The district data reflects the mission statement of the International Dyslexia Research Institute's (2017) claim of only 5 out of every 100 people with dyslexia and accompanying tendencies receive

adequate instruction. Currently, LCSD uses the Response to Intervention (RTI) tier level system for students struggling academically. Level one of the RTI is core classroom instruction, level two is small group instruction, and level three is one-on-one individualized instruction. If a student goes through the RTI process and does not have academic success and he or she has a recognized disability, he or she receives an individualized educational plan. In Mississippi, dyslexia will not qualify a student for special education services. Without those services for students with dyslexia, the outlook is bleak for academic success. Public education has met the needs of the average to above average student and accountability ratings have reflected the success of these students. Unfortunately, new accountability models, which focus more on growth than on the performance average of top students, have changed the educational system. Students with learning disabilities or who have less than average intelligence are an impactful factor in new accountability models.

Justification of central issue of concern.

The need to improve the reading abilities of students was identified using state testing data and district assessments several years ago by LCSD. Of the total population of students needing direct reading instruction, 85% of those have dyslexic tendencies (Holifield, 2011). Multiple factors can contribute to dyslexia and make it difficult or impossible to find one instructional method which consistently works. The state of Mississippi does not have any laws or codes mandating help for public school students affected by this reading disability (Youman & Mather, 2012). Furthermore, even with a high proportion of the population affected by dyslexia, teacher candidates do not receive training to teach reading to students with the disability. Since teachers are not properly trained and special education services cannot be provided, students with dyslexic tendencies do not receive support from local or state agencies.

Thus, the above-stated issues provide ample reasons to perform this research and justify the need for the study.

Audience.

The audience for this applied research study is identified students, parents, and staff. Students will benefit by receiving an adequate education which will provide the literacy tools to be successful in college and future careers. Parents will benefit from the study by seeing their child experience academic success and observing recreational reading. Parents will also benefit from the training by allowing them to see the structured model in which the student can succeed and learn strategies to assist the child. Staff members will benefit from extensive specialized training and continued professional growth through on-going partnerships with administrators, students, parents, and other district instructional staff. The education community may use the results of this study to evaluate programs, implement change, and build a learning organization. The partnership will establish an educational environment which includes each member of the learning community.

Purpose Statement

The purpose of this applied research study is to improve literacy rates for students identified as having dyslexic tendencies in LCSD. The central phenomenon of improving literacy rates of students with dyslexia in the Reaching Reading Success Program (RRSP) was identified through Mississippi K-3 Assessment Support System (MKAS) data. The MKAS data showed students do not achieve grade-level reading performance before RRSP conclusion. The Mississippi Department of Education policy determines the MKAS cutoff score of 681 to indicate grade level reading proficiency for kindergarten students. Through a collaborative process with the LCSD leadership team, the central phenomenon was examined through a review

of pertinent school- and district-level data as well as research on the disorder. An action plan was then developed to address the issue of dyslexia identification and intervention for students. The present study involved a mixed methods approach using both qualitative data and quantitative data to evaluate the action plan to address the issue. The action plan includes inquiry for a set of qualitative and quantitative questions designed to formatively evaluate the action plan and aspects of organizational learning. Implementation began in the Fall of 2017 and process outcomes were evaluated between Spring 2018-Spring 2019.

Quantitative data consisted of fall and spring MKAS scores, identified population numbers, and staff survey responses. The quantitative data were gathered and analyzed for the evaluation to determine the impact on student outcomes. The assessment data compared the growth rates of the Fall 2018 and Spring 2019 MKAS assessments for students who are receiving RRSP interventions. In addition, qualitative data gathered from staff interviews were used to determine program cohesion, implementation, and deficiencies. The qualitative data were generated from open-ended interview questions which will be answered by RRSP interventionists. The questions will provide staff perceptions of process change implementation, weaknesses, and impact.

Initial implementation of the action plan will occur from August 2017 to August 2018. Action research is based on the Deming model of plan, do, study, act which is a continuous cycle. The evaluation will support learning through a cycle of continuous improvement based on the Deming cycle. In effect, the purpose of this action research study examines how the RRSP improves student literacy rates and creates a culture of continuous organizational growth within LCSD.

Research Questions

This applied research study was guided by two sets of questions used at different points in the process. An initial set of preliminary questions was used to develop the action plan. The purpose of these questions was to provide the information necessary for the collaborative development of a comprehensive action plan designed to address the problem of improving literacy rates for students with dyslexia and accompanying tendencies.

1. Did the collaborative process to select a screening tool which identifies kindergarten students with dyslexic tendencies increase the number of students identified to 52 or more?
2. Did scores for students receiving RRSP services show a score on spring MKAS reading assessments of 681 or more?

The guiding questions were as follows: the first question examined the reasons why students with dyslexic tendencies have been under-identified by the district screening process, and the second question sought to identify and summarize all existing and relevant research on student identification, program structures, and organizational processes successfully used to improve academic programs for students with dyslexic tendencies. Additionally, collaborative analyses of the data by the LCSD leadership team collected in response to these questions was used to develop the action plan presented in Chapter Three. The goals of the action plan seek to achieve accurate identification of students with dyslexic tendencies, earlier program entry, and implementation of program changes more aligned to organization values. In addition, the applied research seeks to improve the capacity of the school to identify, assess, and solve important issues related to improving student learning for those students with dyslexic tendencies. These questions and related sub-questions were used to guide the action plan. Such questions offer the

framework necessary to understand more clearly about the quality of services for students with dyslexia.

Overview of the Research Study

Chapter One was developed to present the framework and purpose of the applied research which is to answer the central question: How do we improve literacy rates for students identified as having dyslexic tendencies? The first set of questions in Chapter One were developed to guide the action plan and literature review. The second set of questions in this chapter focused on the effectiveness of implemented changes, development of an action plan, and provision of data. The two areas the questions identified are RRSP enrollment number discrepancies and remediation implementation delay. Chapter Two will present the review of the literature.

Chapter Two of this dissertation in practice provides a literature review of topics related to dyslexia. The topics are organized into four main categories: description and causes of dyslexia, effects of dyslexia, teacher reading instruction preparation, and interventions for students at-risk for dyslexia. Identification literature shows dyslexia to be a neurological disorder effecting the understanding of the written word and language. Early identification and intervention are essential to achieving literacy. The review also shows the most successful interventions to be multi-sensory strategies focusing on phonological deficits. The categories of the literature review provided the knowledge for understanding the collaborative development of the action plan and needed program changes. The review led to the variables and constructs to be used in the mixed methods study to improve literacy rates for students with dyslexic tendencies.

Chapter Three, which is organized into three sections, presents the mixed methods used and focuses on the research process necessary to implement the study. The first section details the development of the action plan and includes the collaboration of stakeholders, prior research

guiding the work, and LCSD data used to create the action plan. The second section presents the two elements of the action plan which are accurate student identification and providing interventions to these kindergarten students. The action plan details the goals, action steps, and exactly what is to be accomplished by each element. The last section of Chapter Three presents the evaluation of the RRSP program action plan. The evaluation details how the action steps for each element of the plan were evaluated. In order to determine the success of each action step goal, the study relied on qualitative data such as staff open-ended survey questions and interviews as well as quantitative data including student assessment scores and staff surveys. The assessment focused on determining the level of goal attainment and organizational growth occurring during the applied research process. The results are reported in the next chapter.

Chapter Four analyzes and compiles the data generated from the qualitative and quantitative questions. This data will be used to make program decisions. Chapter Five will present the outcomes and implications of the action research. Details are provided regarding the impact the study had on literacy improvement for students with dyslexic tendencies and possibly initiate an expansion of the literature review for future improvement.

Chapter II

Review of Literature

Depending on who is asked, dyslexia is not perceived as a disability. In some circles, dyslexia is viewed as an opportunity to discover the processes of the mind outside of the norms set forth by the general population. For others, dyslexia and accompanying tendencies present a barrier to one of most important skills we acquire: literacy.

The estimate of the population with this disorder is between 10% and 17% (Morken, Helland, & Specht, 2016). Statistically speaking, the Lynn County School District (LCSD) should have between 52 and 105 kindergarten students identified with dyslexia, yet currently do not have any identified and receiving interventions. The following research review will be used to provide necessary information to evaluate and improve the district intervention program to ensure all students receive theoretically grounded high quality instruction. The literature review also provides a theoretical grounding for organizational learning. As the literature review developed, four areas were identified as being crucial to improving the literacy rates of at-risk and all other students. Therefore, the literature review is organized into four sections: description of dyslexia, effects of dyslexia, teacher preparation for reading instruction, and dyslexia intervention strategies. The description of dyslexia is critical because of the numerous misconceptions associated with the disorder.

Description and Causes of Dyslexia

In the book, *Basic Facts About Dyslexia & Other Reading Problems*, Moats and Dakin(2008) state, Dyslexia literally means *difficulty* (dys) with *words* (lex)” (p.1).

The medical profession was the first to explore why children unexpectedly could not read (Moats and Dakin, 2008). The International Dyslexia Research Association (2017) defines dyslexia as: A neurobiological specific learning disability which includes difficulties with accurate word calling and is unexpected because people with dyslexia have otherwise normal cognitive abilities (Moats and Dakin, 2008). Moats and Dakin (2008) define a specific learning disability as a neurobiologic impairment which affects one or more academic areas arising from brain wiring and his or her life experiences. Fluency is the ability to read the printed word quickly and accurately and decoding is the ability to spell and use letter sound correspondence and syllable patterns (Moats and Dakin, 2008). The researchers also describe the phonological component of language as pronouncing, remembering, or thinking about sounds to make words.

In a review of literature to improve understanding of reading disorders and how it relates to current proposals for their classification in the Diagnostic Statistical Manual-5, Snowling and Hulme (2012), found dyslexia research has been conducted for over a century and has been identified as being associated with a neurological disorder. The review reports the ease with which children learn to read depends upon the language which they are learning. Snowling and Hulme (2012) state, “Reading is a complex skill requiring the development of a system of mappings between the visual symbols of the writing system and the pronunciation of words” (p. 595). Snowling and Hulme (2012) report dyslexia and accompanying tendencies has its origins in phonological deficits which are pronouncing, remembering, or thinking about letter sounds to make words.

Morken et al. (2016) performed the only longitudinal study using functional magnetic resonance imaging (fMRI) of the brain for dyslexic and non-dyslexic

readers. Both groups of readers were followed and repeatedly measured throughout the reading stages. The fMRI of the brain showed connectivity differences in the brain regions for dyslexic readers as compared to normal readers. Differences have been identified in pre-literacy stages (six years old), and emergent reading stage (eight years old). However, the connection differences were not significant in the literacy stage of those who are 12 years old. The study showed literacy skill differences were greater by the age of 12 between the types of readers although brain connectivity was the same. This study provides evidence of the differences in the brain functions of dyslexic individuals and of the biological cause of the disorder.

In a case study Miles, Wheeler, and Haslum (2003) used a cohort of British children born in April 1970. The hypothesis was normal achievers with dyslexic tendencies would perform lower than normal achievers on assessments. The study showed significant evidence the hypothesis was accurate. Findings also added to the complexity of the disorder, because some people with the tendencies were able to be academically successful. The research also confirmed the view of dyslexia occurring in varying degrees of severity. Miles et al. (2003) warned “The consequences for the concept of dyslexia are discussed, and it is suggested that the needs of dyslexics with only mild literacy problems should not be overlooked” (p.1). This information provides actionable areas which may improve literacy rates for our dyslexic students.

Effects of Dyslexia

Dyslexia is not a disease to be cured; the disability and the effects of dyslexia are with a person for a lifetime, as reported by the International Dyslexia Association (2017). Lima, Azoni, and Ciasca (2013) performed a quantitative study on Brazilian children with dyslexia and not at-risk children using several assessments to compare performance on attention span and executive functioning. Executive function controls the ability to plan, organize, and manage time. The aim

of the first experiment was to analyze oculomotor parameters and phonological awareness of healthy children. The second experiment compared visual-auditory capabilities between healthy and dyslexic children. The results suggested dyslexic students have more difficulty than healthy kids do in tasks involving attention skills, quantitative reasoning, short-term memory, and processing speed. Foster (2011) investigated the comorbidity of dyslexia and constructional apraxia. A sample of 23 children who met the criteria for a reading disorder completed two subtests the Wechsler Individual Achievement Test, and the Rey Complex Figure Test. The test was used to determine if dyslexia affected word recognition. Correlation coefficients and multiple regression analysis showed a statistically significant positive relationship between word reading and performance of dyslexic children. These results will be used to guide scheduling decisions and instructional strategies by the LCSD planning team and broaden the supports to include math interventions.

Lyytinen, Erskine, Tolvanen, Torppa, Poikkeus, and Lyytinen, P. (2006) performed a prospective follow-up study which lasted nine years on 200 Finnish children. The families agreed to participate in the study before the children were born. Half of the families had at least one parent who had literacy problems and half did not have any family history of reading problems. Theoretically, half of the students were considered at-risk. The data was gathered for the report beginning at 12 months of age and ended when the children entered second grade. The seven skill domains of receptive language, expressive language, morphology, memory, rapid serial naming, letter knowledge, and phonological awareness were assessed multiple times throughout the nine years. Preliminary findings indicated 40% to 50% of the children had reading difficulties during the first two years of school. The mixture-modeling feature of the Mplus program was used to analyze the study data. The study shows the significance of letter

knowledge, ability to pay attention, and ability to manipulate sound (phonological awareness) skills are developed before the acquisition of reading. Lyytinen et al. (2006) found four different reading trajectories in the study which are declining, typical, dysfluent, and unexpected. Declining trajectory was more common in the at-risk group and the students continued to decline through second grade. Typical trajectory was the normal scores expected at each assessment. Dysfluent trajectory was exhibited by slow reading students and had the highest percentage of at-risk students who showed the lowest comprehension scores. The unexpected trajectory was composed of students with higher early assessment scores with a continued decrease until second grade. The unexpected trajectory groups surprisingly had students with good speaking skills but poor readers. The first key finding was the trend of reading development is more predictive than reading level. The second key finding was the correlation of early literacy supports in the home for at-risk students and reading ability. The third key finding was the indication of the need for a comprehensive assessment of development required for early detection of reading problems. The final key finding was the predictive value for students of identifying parents with reading problems.

Using three groups, one group of dyslexic students and two control groups without dyslexia of 20 college students each between the ages of 17 and 28, Bruck (1990) examined patterns of dyslexia in children who continue to have the characteristics in adulthood. The dyslexic students were assessed during childhood using word recognition and oral reading and the Wechsler Intelligence Scale for Children. The average childhood IQ score was higher than 85. The word recognition assessments showed the dyslexic scores to be 1.3 grades below grade level and oral reading scores 2.3 grades below grade level. The three groups were given a battery of standardized tests to assess functioning as compared to the control groups. The results clearly

show how word recognition deficits and lack of age appropriate word recognition continue among adults with dyslexia. The study shows adult college students with dyslexia scored on the level of a sixth grader. One unintended finding was the dyslexic group had the same pattern reading errors as some readers in the control group. This finding could indicate a connection of the deficiencies of reading instruction across the educational system.

Teacher Reading Instruction Preparation

This section of the literature review provides ways to engage in systematic organizational learning community and improve literacy rates for all children by providing continued professional development for reading instruction. This section will provide current research describing classroom teacher readiness to teach reading and provide interventions for students with dyslexia.

Joshi, Cunningham, Binks, Hougen, Dahlgren, Ocker-Dean, Smith, and Boulware-Gooden (2009) tested the hypothesis that instructors responsible for training future elementary teachers are not familiar with the linguistic concepts of the English language. Joshi et al. (2009) administered a survey of language concepts to 78 instructors with 68 of the instructors having doctoral degrees from various colleges and universities around the southwest United States. The results showed the instructors performed poorly on morpheme and grapheme concepts. In a second study, of 40 instructors interviewed 32 defined phonological awareness incorrectly and failed to mention phonics as a key component. The study shows the need for professional development focused on reading instruction so teaching strategies can be integrated into pre-service training courses.

Previously cited research by Lyytinen et al. (2006) reported fluency correlations with reading comprehension especially for students at-risk for dyslexia. Van den Hurk, Houtveen, and

Van de Grift (2017) surveyed 109 primary teachers in the Netherlands. The pedagogical content knowledge of reading was assessed using a questionnaire. Standardized observation instruments measured the quality of instruction. One instrument measured quality of fluency modeling during instruction and the other measured teacher support during fluent reading practice. Van den Hurk et al. (2017) suggests domain expertise does not play a strong role in classroom practice. This finding is relevant to LCSD teacher evaluation practices and ensuring knowledge leads practice.

Wasburn, Binks-Cantrell, and Joshi (2014) surveyed pre-service teachers from the United Kingdom and the United States knowledge of dyslexia. “Results indicated that participants in the two groups demonstrated similar accurate knowledge about dyslexia as well as displaying some common misunderstandings about dyslexia” (Washburn et al., 2014, p.1). The findings by Washburn et al. (2014) was the majority of teachers in both groups falsely believe dyslexia is visual perception deficit but correctly understand dyslexia is a language-based disorder involving decoding and spelling. The research also found teachers, both pre-service and in service, lack a foundational understanding about basic language and linguistic concepts related to reading instruction for beginning and struggling readers. This section of the review reveals teacher-reading skill is negatively impacted by the failure of pre-service training programs and the lack of teacher professional development in literacy instruction.

Interventions for Students At-Risk for Dyslexia

Federal law and Mississippi law fails to require interventions for students with dyslexic tendencies. Even after being identified in the Elementary and Secondary School Act, many years ago requirements for remediation are still lacking (International Dyslexia Research Institute 2017).

Youman and Mather (2013) reviewed state laws and amendments in 1997 to the

Mississippi Code of 1972, which required pilot programs for testing certain students for dyslexia in order to check status, highlight differences between state laws, and to suggest law-initiating strategies. Youman and Mather (2013) found Mississippi HB 1494 provided funds for educator training and HB 1031 allowed students to transfer to a different school or district and required kindergarten through first grade screening. LCSD developed a dyslexia screener based on research many years ago, but it now requires districts to use one of two screeners approved by the Mississippi Department of Education (MDE). According to MDE July 1, 2017, Section 37-173-15 of House Bill 1046 mandates the use of one of the two approved screeners for dyslexia screening given the under-identification of students with the disability. Mississippi, however, does not fund or require dyslexia interventions. The lack of or absence of funding is a factor in the failure of children with a reading disorder and why LCSD uses Title I funds to provide help for identified students. Holifield (2011) performed a study of the MDE Dyslexia Grant Program for the fulfillment of dissertation requirements. Holifield (2011) determined the impact of the MDE Dyslexia Grant Program on the achievement of students on the MCT2. Third grade language arts scores for the year preceding the grant were compared to scores for the year after implementing interventions funded by grant. Dollar amounts were examined to see if they affected scores. Interviews were conducted with grant recipients to determine and progress tracked. The research study revealed no significant differences between scores pre-and post-grant award.

Piotrowski and Reason (2000) evaluated the usefulness of teaching materials in terms of eight questions based on learning theory relevant to reading acquisition. The researchers compared three types of commercially published teaching materials. The three types are phonics schemes/materials intended for all children, materials intended for learners making slower

progress in literacy, and materials targeted at and learners with difficulties of a dyslexic nature. Piotrowski and Reason (2000) found materials focusing only on phonological development were not successful and efforts to improve literacy with single intervention techniques have proven to be ineffective. The comparison showed students need remediation in all components of reading to improve skills, indicating the need for multi-skill interventions. Findings also show a need for more instructional time above one hour.

The National Reading Panel (2000) designated the five components of reading instruction as being: phonemic awareness, phonics, text comprehension, fluency, and vocabulary instruction. Phonemic awareness is the ability to hear and manipulate the smallest units of sound. Phonics combines the units of sound and their spelling. Text comprehension is the ability to understand the meaning of the words being read. Fluency is the speed and accuracy of reading words. Vocabulary instruction is teaching students to use context clues, exposure, and definitions to learn new words. The review has indicated the need for interventions to strengthen multiple skills for students at risk for dyslexia.

Schneider, Roth, and Ennemoser (2000) performed a comparison of three intervention programs for children at-risk for dyslexia. The three intervention programs were phonological awareness only, phonological awareness and letter sound, and letter sound only. Schneider and et al. (2000) provided overwhelming evidence the reading and spelling abilities of at-risk kindergarten children who received combined phonological awareness and letter sound intervention outperformed the students only receiving one-skill interventions and equaled literacy development in the control group of not-at-risk readers. Schneider et al. (2000) also found the combined intervention prevented at-risk children from developing reading difficulties.

In the comparison, kindergartners who received the combination training better performed in second grade.

Ritchey and Goeke (2006) describes the Orton-Gillingham approach as a systematic, sequential, multisensory synthetic and phonics based approach to teaching students the basic concepts of reading, spelling, and writing. Multisensory interventions include visual, auditory, and kinesthetic /tactile strategies (Hwee and Houghton, 2011). Hwee and Houghton (2011) performed an empirical evaluation of a yearlong Orton-Gillingham intervention program on Singaporean primary aged children. Hwee and Houghton (2011) used a pre-test/post-test experimental research design which was incorporated into a hybrid multiple baseline design. The reason Hwee and Houghton (2011) used this approach was because all dyslexic children in Singapore are given phonological interventions and a control group could not be established. Orton-Gillingham shows a highly significant effect on word recognition, word expression age, and sentence reading age (Hwee & Houghton, 2011). Also of importance, Hwee and Houghton (2011) found instructors are not a significant variable on gains. Faught (2012) examined the effects of the Orton-Gillingham training on the preparedness teachers working with dyslexic students. The study considered differences across four scales: teacher preparedness, quality intervention programs, assessment related factors, and the effects of specialized construction. The study was performed using questionnaires based on Likert type questions. A significant difference was found between the group with Orton-Gillingham and the group without Orton-Gillingham training. Dyslexic children have shown growth with Orton-Gillingham based approaches with most being personalized to fit the specific needs of the child to ensure future growth.

Andreou and Vlachos (2013) performed a study to examine the relationship between

preferred learning style and the reading disorder of dyslexia. The random sample of 129 students was chosen from schools in Volos, Greece. The sample consisted of a control group of students with dyslexia and a comparison group was matched by gender and age. The students self-administered the VAK learning style assessment. Andreou and Vlachos (2013) report visual learners have a natural inclination to visualize learning goals through drawing, imaging, and mapping. Auditory learners prefer drama, talking, and hearing text. Kinesthetic learners learn best using role play, body movement, and manipulatives. Multi-sensory learners use a combination of seeing, hearing, and doing (Andreou & Vlachos, 2013). The study did not find a relationship between learning style and a dyslexia diagnosis. However, Andreou and Vlachos (2013) noted the need of a student knowing his or her learning style and the importance of educators to consider all styles in lesson preparation.

Kempf (2015) performed a comparative case study to fulfill requirements for a dissertation on perceptions of all levels of school system personnel concerning educational practices for dyslexic students and found five themes in common. These themes are communication, professional development, dyslexia program essentials, transitions, and emotional aspects of dyslexia. Kempf (2015) also discovered the significance of additional support beyond reading. Studies by Washburn et al. (2014) and Kempf (2015) show how unprepared teachers are when it comes to teaching children and the effort districts must make to meet the needs of these children. Worthy et al. (2016) performed a study using interviews to get teacher perspectives of dyslexia reading instruction. A random sample of 32 teachers from central Texas were used as research participants. The purpose of the study was to lift up teacher voices to bring their understanding into the conversation about dyslexia. Worthy et al. (2016) found the most salient theme was the strong sense of responsibility participants had to provide

appropriate supportive instruction geared toward their student's strengths and needs. Also the responsibility to know the laws and to improve of practice were noteworthy.

Summary of the Literature Review

This literature review shows a notable population of students who struggle to read have dyslexia and the disorder cannot be cured. The research indicates the necessity of thorough early identification and intervention even before school entry and the appreciable factor of family history as a dyslexia indicator. Review of the literature shows with proper interventions children with dyslexic characteristics can be taught to read but the complexity and costs of identifying, training, and remediation for the disorder are barriers to success for many people.

However, the indications of the review show the educational system has not provided essential literacy instruction training for pre-service or in-service teachers. Proper literacy training for primary and elementary teachers could reduce the number of students needing reading interventions. LCSD has been providing the multi-sensory interventions suggested in the review to help students with dyslexic tendencies for over a decade but this literature review has shown areas where we can make changes and improve. The review indicates we need to develop an action plan to identify at-risk students early and accurate, provide interventions for identified students in kindergarten, provide professional development focused on literacy to primary, elementary teachers, and conduct continuous program evaluation based on current research findings.

Chapter III:

RESEARCH METHODS

The purpose of this applied research was to improve literacy program quality and literacy rates for kindergarten students with dyslexic tendencies in Lynn County School District (LCSD). In addition, the study sought to improve the district's capacity to identify and provide remediation to kindergarten students with dyslexic tendencies and to develop an organization based on collaborative learning. The study provided additional data for future researchers and identified other areas to be studied in the district. As stated in Chapter One, the research responded to the following questions:

1. Did the collaborative process to select a screening tool which identifies students with dyslexic tendencies identify 52 or more kindergarten students district wide?
2. Did scores for kindergarten students receiving RRSP services indicate a reading level 681 or higher on the spring MKAS?

The first goal in this action plan was to identify all kindergarten students with dyslexic tendencies in LCSD. The second goal was for each kindergarten student in the Reaching Reading Success Program (RRSP) to score 681 or higher on spring Mississippi K-3 Assessment Support System (MKAS), which is considered on grade level by the Mississippi Department of Education. Participants in this study included the researcher, RRSP Lead Teachers (RRSPLT), RRSP Interventionist (RRSPI), kindergarten administrators, teachers, and students at Salt Primary, Salt Elementary, Shan Primary, Shan Elementary, and Vern Elementary. All of these schools are located in the northeastern part of Mississippi.

Chapter Three is divided into three sections. The first section is a description of the development of the action plan and includes the collaboration of stakeholders, prior research guiding the work, and LCSD data used to create the action plan. The second section presents the action plan. The action plan elements represent the collaborative effort to tackle the problem. Each element includes one or more goals and three action steps. The discussion of each element provides details of exactly what participants were expected to do and accomplish, who was responsible for actions, timelines for implementation, resources required, and process evaluation data to be collected.

The last section of Chapter Three presents the evaluation of the RRSP action plan to be performed in February 2019. The evaluation addressed each element of the action plan. The assessment of each action step goal relied on multiple sources of qualitative and quantitative data such as staff surveys, interviews, and student assessment scores. The assessment focused on determining the level of goal attainment and organizational growth occurring during the applied research process. The research questions were answered with data collected and analyzed through the evaluation of the RRSP action plan. The logic models for the action plan and the evaluation plan are provided.

Development of the Action Plan

In August 2017, during an initial attempt to improve interventions to students with dyslexia, two problematic areas emerged. School staff members, RRSPLT, and parents echoed the lack of student success in meeting exit criteria from the program. The feedback showed in the last five years, only 10% of students met the exit criteria of at least a scale score of 681 on MKAS assessments. Using this feedback, the development of the action plan was based on two initial questions. First, why are students with dyslexic tendencies under-identified by the district

screening process? Second, what does research on student identification, program structures, and organizational processes suggest to successfully improve academic programs? These questions resulted in the identification of two elements in need of improvement. The two elements were accurate identification of kindergarten students with dyslexia and remediation based on data analysis.

The collaborative process discussed in Chapter Two was used to provide the theoretical framework to address the elements of the action plan. In current research, Morken, Helland, and Specht (2016) suggest more occurrences of dyslexia should exist in the current district student population. Schneider, Roth, and Ennemoser (2000) indicated multi-sensory interventions administered in the first three years of school significantly improves student literacy levels. To further support the need for early screening and remediation, Lyytinen, Erskine, Tolvanen, Torppa, Poikkeus, and Lyytinen (2006) found letter knowledge, attention span, and ability to manipulate sounds should develop before reading skill acquisition. The district was also found to be failing to screen and provide interventions during kindergarten because of a lack of state laws requiring early assessment, district policy, and staff resistance. The district team reviewed Response to Intervention (RTI) data from 2017 and found ten students were identified as having dyslexic tendencies after second grade. Inaccurate identification prevented these students from receiving the necessary help to be successful during the first three years of school. These detailed elements contributed to 90% of students failing to meet RRSP exit criteria. The action plan outlines the process to increase RRSP exit by improving literacy rates for students with dyslexia.

Action Plan.

The action plan addressed the need to accurately identify kindergarten students with dyslexic tendencies as early as possible in the educational process. Since students were identified

in kindergarten, the decision was also made by the district team to provide remediation at the kindergarten level. This section begins with a table outlining each element of the action plan, the three action steps, and the cost for each of these steps. The action plan narrative follows the table and explains the plan in detail. Table 1 provides the elements of the action plan.

Table 1

Action Plan

Element	Goals	Action Step	Timeline	Who	Budget
Accurate Identification of dyslexic students	Short term - Increase in number of kindergarten students identified as having dyslexia in LCSD to 52 or more district wide in a smaller time frame	Identify Screener to be used in LCSD Train RRSPI to administer Screener	August 2017 - Spring 2019	RRSPLT RRSPI Primary School Principals	\$93,364
	Long term – The reduction of students being identified as dyslexic by other means than screening	Screen kindergarten and first grade students	Spring 2019–ongoing		
Provide remediation to identified Kindergarten students	Short term – Kindergarten students receive interventions	Schedule Students for intervention time	September 2018-ongoing	RRSPI RRSPLT	\$211,714
	Long term – Dyslexic kindergarten students have a reading level of 681 or higher	Remediate student reading skills Progress monitor student reading abilities		Primary School Principals	

Accurate identification of students with dyslexia.

The first element in the action plan was to accurately identify district kindergarten students who have dyslexic tendencies using an approved and accurate screening tool. To

achieve this goal, the first action step was to identify an accurate screening instrument. The previous screener was developed by the district to satisfy the Mississippi state law of screening all students before the end of first grade. The screener was adequate for accountability requirements. However, the instrument failed to identify all students with dyslexia in LCSD. Therefore, as 2017 data confirmed, students were being identified through the Response to Intervention (RTI) process as having dyslexia well beyond first year of district enrollment. Inaccurate screening prevented students with dyslexia from receiving available help during the most critical time of reading development (Schneider et al., 2000).

The district team gave the responsibility of identifying an accurate screening tool to the RRSPLT. The Reaching Reading Success Program lead teachers are multi-sensory certified reading trainers for LCSD. Two screeners have been approved by Mississippi Department of Education (MDE) for use in districts. The two approved screeners are the Mississippi Dyslexia Therapy Association (MDTA) screener and the Lexercise screener. In September 2017, LCSD trial tested the two screeners using 200 students in multiple grades from across the district with 50 of them ranking in the top 25% on MKAS test data, and 50 kindergarten students. Of the two, the MDTA screener was chosen. The trial testing showed the MDTA screener to have better identification accuracy and to be more consistent with suggested research populations. When tested, the Lexercise screener identified every child assessed in the trial. Therefore, the Lexercise screener was excluded from use in the district because of over-identification. In October 2017, the LCSD adopted the MDTA screener. The MDTA screener was adopted to screen district students in accordance with MDE guidelines. However, the MDTA screener identified all of the kindergarten students tested. A second field trial was conducted, using 100 kindergarten students from across the district. The MDTA and the Dynamic Indicators of Basic Early Literacy Skills

Next (DIBELS) screeners were used to screen the second group of 100 kindergartners. The MDTA again identified all of the kindergarten students screened. The DIBELS screener identified 31 kindergartners. DIBELS is more in-line with the research but identified more than the upper ranges of research suggestions. The district leadership team discussed the results. The team determined the over identification was within a tolerable range of program capacity, and it was better to over-identify than under-identify. The district team decided progress monitoring would correct misidentification. The district team chose to purchase the DIBELS screener to be used for the initial screening of kindergartners.

The implementation of the new screeners offered the district the opportunity to decrease the number of intervention hours missed by students waiting on the screening process. The screening process previously took three weeks to assess all first grade students. However, with the addition of another screener and kindergarten students to the screening process, a three-week window would not be a sufficient amount of time using only three people to administer the assessment. Since certification is not required to administer the screener, anyone with the proper training could perform the task.

The second action step was to train the 16 RRSPI to screen students with the aim of reducing screening time. The Reaching Reading Success Program lead teachers facilitated the training sessions for RRSPI to administer the MDTA and DIBELS screeners from February 25, 2018, to February 28, 2018. The training was conducted at the LCSD central office. The purpose of the training exercises was to increase the accuracy and efficiency of the screening process.

The implementation of the new screener training required intensive, hands-on preparation using RRSP staff members as screening subjects. The training allowed the lead teachers to provide helpful and constructive feedback to those preparing to administer the screeners to

LCSD students and ensured each interventionist is prepared to accurately screen students. The lead teachers trained the RRSPI for three days and ensured screener administration mastery. These trainings were executed with fidelity. The accurate and efficient administration of the new instrument was evident throughout the LCSD in the initial steps of screening and identifying dyslexic students. A collaborative approach involved all RRSP stakeholders and expedited the initial screening phases by disseminating the workload among the team of well-prepared professionals, in lieu of one RRSP staff member per school.

The third action step was to screen kindergarten and first-grade students. The 2018-2019 first graders were not screened the previous because of policy and procedures. Therefore, to ensure proper identification and remediation this first grade group was included. The screening began the last week in August 2018. The screening had a target completion of the first week in September 2018. The short term goal for this element was to identify 52 or more kindergarten students with dyslexia in the LCSD. This element also had the long-term goal of reducing students being identified as dyslexic by means other than screening. This element combined with remediation aimed to improve literacy rates for dyslexic students.

Kindergarten remediation.

The second element in the action plan was to utilize data to revise and implement interventions for kindergarten students. The first action step in this goal was to schedule all identified students for remediation pullout time. The Lynn County School District previously focused RRSP resources on improving literacy rates for students from the first grade through fifth grade. However, research suggested literacy is influenced before systematic reading instruction occurs (Lyytinen et al., 2006). Also, Bruck (1990) purported the application of remediation interventions in kindergarten students had shown to have positive life-long effects.

With the addition of kindergarten students scheduled in the RRSP, all district students received interventions in accordance with current research.

After pullout time was scheduled for all dyslexic students, the second action step provided interventions. The Reaching Reading Success Program Interventionists (RSPI) provided reading intervention instruction to identified kindergarten students starting in September 2018. Hwee and Houghton (2011) contended approximately 45 minutes per day of intense multi-sensory remediation can improve reading abilities of dyslexic students. Multisensory interventions include visual, auditory, and kinesthetic/tactile strategies (Hwee & Houghton, 2011). Andreou and Vlachos (2013) noted the need of a student to know his or her learning style and the importance of educators to consider all styles in lesson preparation. Andreou and Vlachos (2013) reported visual learners have a natural inclination to visualize learning goals through drawing, imaging, and mapping. Auditory learners prefer drama, talking, and hearing text. Kinesthetic learners learn best using role play, body movement, and manipulatives. Multi-sensory learners use a combination of seeing, hearing, and doing (Andreou & Vlachos, 2013). Also, multi-sensory instruction has been shown to work best for dyslexic students because dyslexic students tend to be multi-sensory learners (Andreou & Vlachos, 2013).

The Reaching Reading Success Program Interventionists provided the multi-sensory instruction to the identified students. Some RRSPI were certified-teachers, and others were highly trained assistant teachers. The lack of formal teacher-certification has been shown not to be a factor in intervention effectiveness (Hwee & Houghton, 2011). Monthly RRSP professional learning communities (PLC) meetings provided targeted training to the RRSPI. The kindergarten remediation began in September 2018 and continued throughout the 2018-2019 school year.

The third action step for the goal of kindergarten remediation was to monitor student

progress using assessment data. Program interventionists monitored student progress and adjusted instruction to focus on strengths and improve areas of weaknesses. Each dyslexic student received individualized instruction. Worthy et al. (2016) found the teachers must feel a responsibility to provide instruction geared toward each student's strengths and weaknesses for students with dyslexia to progress. A reading skill baseline for kindergarten students was determined during October 2018 using the MKAS assessment. Monitoring each student's nine-week language arts grade provided additional data points for instruction modifications. Progress monitoring ensured each child's reading skill weaknesses were targeted for improvement. The three action steps were intended to achieve the short-term goal of kindergarten students receiving interventions for dyslexia and the long-term goal of dyslexic kindergarten students having a reading level of 681 or higher. The two elements needed the support of resources and staff member ownership to be a sustainable initiative.

Resources.

The resources needed for this plan included instrument use fees and opportunity costs. Assessing, instructing, and analyzing information required extensive amounts of district staff time. The user fees for the MDTA and DIBELS screeners were \$3,500 and \$1,500.00, respectively. The assessment software cost was \$40,000, and the data analysis software cost \$20,000 annually. However, the largest cost was the salaried time of district employees. The screener selection cost was \$2,432. The screening cost and staff training were estimated to be \$67,432. Staff survey cost was \$8,400, and interviews were another \$814. The addition of kindergarten-level intervention added to the cost of interventions was \$161,000. Total staff costs for the action plan were \$240,078. The plan had a combined total cost of \$305,078.

Stakeholder responsibility.

The district team was responsible for developing and implementing the action plan based on prior research findings. The team determined the appropriate district staff members for each role in the action plan. For example, RRSP lead teachers identified the screening tool best suited to accurately identify dyslexic students. District interventionists provided remediation throughout the year. The researcher and lead teachers were tasked with ensuring the validity, reliability, accuracy, and unbiased approach of interview, survey, and assessment instruments and data. The district team used the research data to make decisions concerning future program changes and improvements.

This action plan was Lynn County School District's chosen framework to improve literacy rates for dyslexic students. The district staff will continue to seek ways to improve dyslexic student performance and ensure future learning for all.

Action Plan Evaluation

The purpose of the program evaluation of the action plan was to determine the success of the action plan in response to the following questions.

1. Did the collaborative process to select a screening tool which identifies students with dyslexic tendencies identify 52 or more kindergarten students district wide?
2. Did scores for kindergarten students receiving RRSP services indicate a reading level 681 or higher on the spring MKAS?

The following sections of the program evaluation will cover the research design, participants, element evaluation designs, and a chapter summary. The methodology in this applied research used both quantitative and qualitative data to evaluate the action plan. Each element of the action plan had three or more types of data to determine if the element action steps achieved their goals

and identified ways to improve the effort in the future. The section included the element action steps and contained data collection methods, instruments, sources, protocols, and analysis methods for both quantitative and qualitative data. Reaching Reading Success Program Interventionist interviews provided qualitative data to gauge staff perceptions of process implementation, weaknesses, and impact. Kindergarten assessment scores, program enrollment numbers, and staff surveys provided quantitative data for program effectiveness determinations. The logic model listed the elements generated by current research in the action plan and the short-term and long-term goal for each element. The evaluation methods to determine the success of the action plan were also included. The table listed action plan elements, the goals, responsibilities, resources, and means of answering the research questions used in evaluating action plan success. Table 2 provides the elements and details of the evaluation plan.

Table 2

Logic Model/ Evaluation Plan

Element	Goals	Timeline	Who	N	Evaluation Data
Accurate Identification of dyslexic students	Short term – Identification of 52 or more kindergarten students identified with dyslexia in LCSD in a shorter time frame	August 2017 - Spring 2019	RRSPLT	519	Screening Field Test Results
			District KG Teachers	519	Screening Data
	Long term – The reduction of students being identified as having dyslexia by other means than screening	Spring 2019 – ongoing	Elementary School Principals	21	Training Observation Checklist (Appendices A & B)
				30	Kindergarten Teacher survey (Appendix C)
Provide remediation to identified Kindergarten students	Short term – Kindergarten students receive interventions	September 2018- ongoing	RRSPLT	10	RRSPI Interview (Appendix D) RRSPI Class Rosters
			RRSPI	27	Kindergarten Staff Survey (Appendix E)
	Long term – Dyslexic kindergarten students have a reading level of 681 or higher		Elementary School Principals	10	RRSPI Checklist (Appendix F)
				10	RRSPI Interview (Appendix G)
				148	MKAS Data Reading Report Card Grades

Early identification evaluation.

The first evaluation question sought to discover if 52 or more kindergarten students with dyslexic tendencies were identified district wide. When students are identified and receive early

intervention, research suggests their chances of reading on grade level increase. The evaluation used field tests, screening results, interviews, and a survey to determine the success of the action steps to achieve short- and long-term goal attainment and provided process improvement insights.

The short-term goal attainment was determined by the success of the first action step. The data to support accurate identification of kindergarten students with dyslexia was the initial screener field tests and the screening results of all kindergarten and first grade students, in August 2018. The results were analyzed to find if the number of kindergarten students identified was 52 or more. This data determined the first action-step goal attainment of identifying an accurate screening instrument and if the search should be extended for a better screening instrument.

The second action step was to reduce the time required to administer the dyslexia screening to district students by training all RRSPI to screen students. The successful implementation was determined by reducing the amount of time to complete the screening to less than three weeks. Success was also determined by examining each of the 16 RRSPI final evaluation observations. The evaluations were administered by the RRSPLT on May 28, 2018. The observation checklist included observation notes and provided information to determine if each of the RRSPI screeners met screening proficiency and identified any areas in need of strengthening (See Appendix A). The evaluation checklist for the MDTA screener determined the RRSPI screening accuracy when identifying evidence of alphabetic knowledge, sound symbol recognition, phonological awareness, reading, spelling, and rapid naming. The evaluation checklist included observation notes and determined if each of the RRSPI screeners met proficiency for the DIBELS screener when identifying evidence of first sound fluency and letter

naming fluency (See Appendix B). The observation checklist results and notes were analyzed and provided data to determine screener administration proficiency, the need for future training, and/or the need for different training methods. During the October 2018 PLC meetings, an online survey was given (See Appendix C). All kindergarten instructional staff and administrators were invited to participate. The survey determined primary staff perceptions of kindergarten screening implementation, weaknesses, and impact in association with the screening process time requirement.

Screening the students was the third action step for this element. All district students in kindergarten and first grade were screened in August 2018. The long-term goal for the element was the reduction of students being identified as having dyslexia by other means than district screening. Long-term goal achievement was gauged by the success of the third action step which was the comparison of the number of students identified as having dyslexia and what research findings suggest. Further evaluation data was provided by a random sample of RRSP staff interviews and provided staff opinions on screening implementation, weaknesses, and impact associated with identifying students with dyslexia (See Appendix D). The researcher chose every third staff member from an alphabetized list and administered the interview questionnaire. The research team developed the questions to gather kindergarten staff opinions of program implementation, weaknesses, and impact. The interview questions were standardized open-ended questions as described by Patton (2002). These questions ensured each interviewee was asked the same question, in the same way, and in the same order (Patton, 2002). Also, Patton (2002) states some doctoral committees and Internal Review Boards want to see interview questions especially if a sensitive subject is being studied. The interview was administered during the January 2018 RRSP PLC. The interviews provided evaluation information unattainable by numbers. The

interview questions were given to each interventionist which provided a chance to tell his or her story of the screening process. Interview notes provided the documents necessary for analysis. The research team reviewed the screening data and categorized themes based on process implementation, weaknesses, or impact. The data categorized as a weakness also illuminated areas in need of improvement. Any interview notes which appeared outside of the themes were categorized as unexpected findings.

The number of students identified by the screening process provided comparison data for the applied research study. The following section details the evaluation of the remediation action steps for the next element.

Kindergarten remediation evaluation.

The second evaluation question sought to determine if the spring MKAS scores indicated kindergarten students receiving RRSP services were reading on grade level. Three action steps are required for this element. The action steps were evaluated by the MKAS, DIBELS, language arts scores, surveys, and interviews evaluated the attainment of the action step goals.

The first action step was to schedule each student for intervention time. The schedules reflected 30 minutes of daily multi-sensory reading instruction in addition to core classroom instruction and determined the short term goal attainment of providing remediation. Intervention class rolls and kindergarten teacher surveys determined success of the action step and provided data for process improvements. Kindergarten teacher surveys were administered to provide teacher perceptions of student scheduling implementation, improvement, and impact in October 2018 (See Appendix E). Kindergarten teachers district wide were the participants. The survey responses and class roll data were analyzed and findings explained in November 2018 and January 2019 and determined the success of the action step and provided process guidance.

The second action step was to provide multi-sensory reading remediation to kindergarten students with dyslexia. Using assessment data from both classroom reading grades and district MKAS results, the RRSPI provided individualized remediation in needed areas for each child. The RRSLT monitored remediation by using an intervention fidelity checklist (See Appendix F). The random sample of kindergarten interventionists were interviewed. Responses to Patton's (2002) suggested standardized open-ended interview questioning method of qualitative data collection also determined the attainment of action step goals (See Appendix G). These focused interview questions gathered the needed information in a shorter period of time and eased the interview administration time. The interview provided RRSPI perspectives on kindergarten remediation. The research team administered the interview during the January 2019 monthly PLC meeting. Interview scripts and recordings provided the documents necessary for program guidance. The research team classified response themes and placed them in the proper category of remediation program implementation, weaknesses, and impact.

The third action step was monitoring the progress of each kindergarten student receiving remediation using data generated by MKAS assessments and classroom reading grades. Baseline MKAS scores were established with the first administration of MKAS in August 2018. The MKAS scores along with DIBELS screener results provided the initial data to develop interventions for each student's reading skill deficiencies. Each kindergarten student received a nine-week report card six times per year. The reading grades were also used as data points to drive reading skill development. In December 2018, winter MKAS and DIBELS assessments provided more data to compare to individual student baseline scores and initiate intervention modifications. Using this data, the RRSPI modified instruction to meet the needs of individuals as each progressed through the 2018-2019 school year to achieve the long-term goal of students

with dyslexia reading on grade-level at the end of kindergarten. Comparing the spring 2019 MKAS scores to fall 2018 MKAS scores provided yearly reading growth residuals and student grade-level reading ability and determined action step success. For the 2015-2016 and 2016-2017 school years, the average score for the 1,095 students on the spring MKAS testing cycle was 733. However, 23% of the 1,095 students failed to score 681 or above. Descriptive statistical analysis of 2015-2016, 2016-2017, and 2017-2018 spring assessment data compared to 2018-2019 MKAS spring score data showed positive growth association for kindergarten students receiving interventions. The Federal Programs Director and RRSP Lead Teachers gathered and interpreted findings reported in the following chapters.

The kindergarten remediation data showed successful achievement of the element goals, gauged organizational learning, and demonstrated literacy rate improvement for students with dyslexia. The students' academic progress monitoring will continue until the completion of high school or until no longer enrolled in LCSD.

Data Analysis.

This section will describe how the quantitative and qualitative data generated by the applied mixed methods research described in the preceding sections were reviewed or analyzed. The findings determined ways this research informed the field regarding early identification of students with dyslexia. The results also determined if the applied research served the purpose of improving the literacy rates for students with dyslexia and answered the two research questions.

The first question addressed the collaborative process to select a screening tool to increase the identification of kindergarten students ranging between 52 and 104 and was answered using both qualitative and quantitative data. The quantitative data used to answer the first question was the number of students identified during the initial screening results, RRSI

class rosters, and a kindergarten staff survey using a three-point Likert-like scale to quantify staff perceptions of screening implementation, improvements, and impact (See Appendix C). The survey also included two open-ended questions to gather staff recommendations for screening improvements. The qualitative data was gathered through the RRSI interviews (See Appendix D) as well as the two open-ended questions on the survey. The interview responses were reviewed by the researcher and RRSIT and categorized by the perceptions of the RRSPI on screening implementation, improvements, impact, and other prevalent information patterns. The themes from the interviews and open-ended survey questions were reviewed. Additionally, survey results were calculated to determine if the process of identification was improved. The survey was designed to provide a score ranging from zero to three.

The second research question to be answered determined if students receiving Reaching Reading Success remediation scored 681 or higher on spring Mississippi K-3 Assessment Support System reading assessment. The question was answered with descriptive statistics using the mean reading scores on MKAS assessments of the identified students. A kindergarten staff survey used a three-point Likert-like scale to quantify staff perceptions of remediation implementation, improvements, impact and reading instruction training (See Appendix E) and determined if dyslexia remediation was successful. Higher scores indicated a positive staff perception of remediation success.

The researcher and the three RRSIT reviewed qualitative data from RRSPI interviews and the open-ended survey questions and categorized the responses into themes of process implementation, weaknesses, and impact or other consequential thematic units which materialized. The findings of the descriptive statistics and the themes of the qualitative research

were compared and found to support each other's results. This triangulation supported data reliability.

The research team compiled the data from the study interviews and surveys to make organizational changes as indicated by the suggestions of the stakeholders. Using the specific input from stakeholders, the research team made the proposed changes recommended through the surveys and interviews. The changes made based on the interviews and surveys were evaluated yearly. By using the interview and survey process to make program changes, LCSD ensured the organization continued to learn and improve the services provided to students.

The field trial data, staff training checklists, observation checklist, language arts progress reports, and survey results were the instruments which provided formative assessment data to make program improvements as the school year progressed (See Appendices A, B, C, E, F). The areas formatively assessed by the instruments, listed respectively, are the screening tool results, RRSI screening proficiency, RRSI instructional performance, student reading growth, and K-5 teacher reading preparedness.

Summary.

This action plan was developed by a team from LCSD based on findings of discrepancies between current practice and current research suggestions. The LCSD practices were compared to current research findings and the discrepancies was used to identify changes and directed the action plan. The goals of the action plan were to identify kindergarten students with dyslexic tendencies and for dyslexic kindergarten students to read at a grade-level by the end of kindergarten. The evaluation determined the accuracy of the identification process and program effects on literacy skills for kindergartners.

Chapter Four reports the analyzed and compiled data generated from the two questions. The data was used to make program decisions and identify other areas in need of study.

Chapter Five presents the outcomes and implications of the action research. Details will be provided for the impact the study had on literacy improvement for students with dyslexic tendencies and initiate an expansion of the literature review for future improvement.

Chapter IV

RESULTS

In Chapter Three, the methodology was explained for this applied research which aimed to improve the literacy rates for students with dyslexia and accompanying tendencies in Lynn County School District (LCSD) specifically through accurate identification and remediation during kindergarten. The purpose of this applied research study with program evaluation was to improve literacy rates of students with dyslexia in the LCSD Reaching Reading Success Program (RRSP). The central phenomenon of improving literacy rates of students with dyslexia was identified through Mississippi K-3 Assessment Support System (MKAS) data. The MKAS data showed students did not achieve grade-level reading performance before RRSP conclusion. This chapter reports the results of the program evaluation of the action plan. Chapter Four is organized by the type of data, guiding questions, goal description, action plan implementation, goal evaluation, and summary.

The literature review provided necessary information to evaluate and improve the district intervention program to ensure all students receive theoretically grounded, high-quality instruction. As the literature review developed, areas were identified as being notable to improving the literacy rates of at-risk and all other students. The applied research plan was developed based on the literature review. The data was gathered and examined to focus on the following central question: Was the plan to improve literacy rates for LCSD kindergarten students by accurately identifying and providing multi-sensory remediation be effective?

The research team addressed the issue of identifying kindergarten students with dyslexia through the screening process. In addition to examining the screening process, the team also monitored the effects of early reading remediation using multi-sensory interventions. First, the data was examined to determine themes and other perspectives of process implementation, improvements and impact of the action plan.

Response to Research Question One

Did the collaborative process to select a screening tool which identifies students with dyslexic tendencies identify 52 or more kindergarten students district wide? The collaborative process identified more than 52 students who exhibited dyslexic tendencies during screening in the fall of 2018

Response to Question One Supporting Data.

The team reviewed data and determined students were not being identified accurately in the previous years. The average number of students with dyslexia being served in LCSD during the 2017- 2018 School Year (SY) was 323, which included 35 kindergarten students. The team determined it was best to identify students in kindergarten to avoid the loss of a critical year of instruction.

The first action step was to identify the most accurate screener available. Field trials held in the fall of 2017 identified the DIBELS screener as the most accurate tool available. The Mississippi mandated MKAS screener was also used. In July 2018, the Reaching Reading Success Program interventionists' (RRSPI) screener administration training action step was taken. The mastery of each screening tool for each RRSPI was verified by a checklist (See Appendices A & B). All RRSPI successfully completed screener administration training as shown by 100% of the trainees successfully completing the training, as evidenced by the

observations. All screening tool checklist items were marked satisfactorily achieved by the RRSPLT during observations (See Appendices A & B). The MDTA screening checklist indicated a couple of first-year interventionists required additional support to master the screening process. The notes stated that due to several questions asked by the interventionists, additional practice and a follow-up observation were performed satisfactorily before they were included on the screening team. After each RRSPI mastered the use of the screening tools, the RRSPI and the RRSP Lead Teachers (RRSPLT) worked together to take the last action step which was screening the students across the district.

The screening process identified 218 students in kindergarten with dyslexic tendencies. The number of students identified well exceeded the goal of 52. Table 3 shows the results by school.

Table 3

Identified Students by School

School	N Count
Shan Primary	31
Vern Elementary	55
Salt Primary	91
Moore Elem.	41
Total	218

The research team also conducted a survey using the Qualtrics program (See Appendix C), which included two open-ended questions and staff interviews (See Appendix D) after the administration of the screener. The interviews and open-ended questions were reviewed and

organized into themes based on screening implementation, weaknesses, screener impact, and other areas illuminated by staff viewpoints. Thirty respondents completed the screening implementation survey (See Appendix C), but only two chose to provide responses to the open-ended questions. The kindergarten staff survey (See Appendix C) consisted of nine questions designed to determine if the screening process accurately identified dyslexic students. The survey had 30 participants. The following staff screener survey responses are noteworthy. The first survey response was used to determine if the perception of the screening process was completed faster than in years past even though an additional screener was administered. The survey results showed 87% of the respondents agreed the process was completed in a timely manner. The second question showed 50% of those surveyed participated in the screening process as compared to zero from the previous year. The staff indicated 83% agreed the training prepared them for screener implementation. Responses to question four showed 56% felt the instruction was interrupted more than three times. However, the responses to question six indicated 70% of the staff agreed the screening was worth the instructional interruptions. The staff survey reported 90% of them had students in their class rooms identified by screening. On question nine the staff indicated only 13% thought there were students who were unidentified for dyslexia. The first recommendation from the open-ended survey questions was to use a different test, and the second recommendation was to have the screener mid-year. Table 4 provides a breakdown of the screener survey by response.

Table 4 *Screener Survey Responses*

Question	Agree	Not observed	Disagree
1. The dyslexia screening process was completed in less than 3 weeks.	26	3	1
2. I was involved in the screening process.	15	12	3
3. I was prepared for the screening process.	25	3	2
4. The screening process interrupted instruction more than three times.	10	3	17
5. The dyslexia screening process did not interrupt instruction.	14	3	13
6. The benefit of screening kindergarten students, offsets lost instructional time.	21	4	5
7. One or more of my students were identified during screening.	27	3	0
8. I had one or more students identified by screening who did not seem to need interventions.	16	9	5
9. I had one or more students who seem to need interventions yet were not identified.	4	12	14

Staff members were asked to give their perception of the screening process and make suggestions for improvement during the RRSPI staff interviews (See Appendix D). The staff perceptions emerged from the RRSP staff interview responses to questions about program screening implementation, weaknesses, and impact.

The following statements were recorded during the interview of the RRSPI staff members and provided the information for theme support. One interviewee stated the district worked as a team to screen the students in a shorter period of time, making the process quick and smooth. Other statements were made that lead teachers were very informative on how to administer the screener. Further supporting evidence for implementation success, was noted in multiple answers mirroring this statement “The interventionists were thoroughly prepared to screen students.”

The program had evidence of weakness because reports for the need of additional sample items for student practice was needed before administering the screeners. A teacher asserted this statement, “I feel some students are misidentified because they do not understand the directions not that they cannot do the task.” Also, many responses corroborated the perception of a lack of student exposure to pre-literacy skills before entering kindergarten. A concern of the lack of vision screening before screening was identified by such statements as “When a child is struggling with reading, it is not always because of dyslexia. Vision plays a huge part. So, I think vision should most certainly be ruled out first.” It was suggested by several responses that the maximum number of students in a group should be three. The following statement supported the previous response: “Based on this number, I would make sure that all groups stayed at a maximum of three and some groups need to be less.” Also, one interviewee suggested providing literacy training for preschool centers which echoed the sentiments of other interventionist. The evidence for the impact of the screening program is that each interventionist reported an average

kindergarten student load of 22. The process was reported to be faster multiple times with statements along the line of this one, “The team approach made the screening process faster.”

The only unexpected theme which emerged from the interviews was the need to teach preschool caregivers pre-literacy skill development strategies before the child begins school.

Findings for research question one.

The district screened each kindergarten student one-on-one for first sound fluency and letter naming. Numerous other findings related to the dyslexia screening process for kindergarten students were noted. The first finding indicated the process reduced time needed to identify students. The following finding expressed the training to screen kindergarten students was effective and thorough. Vision screening before being assessed was reported in many interviews. Another finding with multiple supporting reports indicated students show a lack of literacy exposure pre-kindergarten. The next to last finding of noteworthiness was the need to train preschool care givers effective strategies for pre-literacy skills. The final noteworthy finding was the first screening found 218 kindergarten students with reading deficiencies. Using the formative assessments of a three standard deviation score above 681 on the winter MKAS, teacher recommendation data, and academic classroom success, the research team removed students because of misidentification. This adjustment still identified a higher percentage of students than previous research suggests. The district identified 148 students in the study and research suggests the highest number identified should be 130, which indicates over-identification. This over-identification is within an acceptable range of program capacity and will only help accomplish the long-term goal of reducing students identified for dyslexia by other means than screening. The new screening tool and earlier identification increased the number of

students identified in kindergarten appreciably. Table 5 shows a visual representation of the findings.

Table 5

Comparison of Students Identified

School Year	n	Students	Percentage
2017-2018	502	35	7%
2018-2019	519	148	29%

Response to Research Question Two

Did scores for kindergarten students receiving RRSP services indicate a reading level 681 or higher on the spring MKAS? The reading scores for all kindergarten students were not 681 or above on the spring 2019 MKAS.

Response to question two supporting data.

The research team reviewed data of students who had received remediation in 2017-2018 SY and determined only 10 out of 323 students from across the district were reading on grade level and were able to exit the program. This meant the district was failing to provide the proper interventions to the students during the first three years of school, which is the most effective window for student success. The research team chose to provide remediation to identified students in kindergarten beginning in the fall of the 2018-2019 SY.

All kindergarten students in the LCSD were given the DIBELS screener to identify those in need of reading remediation. The staff at each primary and elementary school scheduled the identified students to receive multi-sensory reading interventions for 45 minutes a day beginning in September 2018. This intervention strategy used methods to reach all learning styles. The intervention time was scheduled so students would not miss core classroom instruction. This

allowed the students to receive multiple learning opportunities covering the same skill from different instructors using different instructional methods.

The data to determine goal achievement was generated by class rosters, a survey (See Appendix E) which had two open-ended questions, remediation instruction checklist (See Appendix F), RRSPI interviews (See Appendix G), MKAS data, and class report card grades.

The kindergarten staff interview survey was administered using the Qualtrics program. The kindergarten staff survey consisted of 14 questions designed to determine if the remediation process was successful. The district had 27 staff members complete the survey. The following staff remediation survey responses are of importance. The survey indicated all respondents were in the targeted group. Survey question three results showed 77% of the respondents agreed pre-service reading training prepared them to teach reading. The survey responses to question four showed 100% felt their in-service reading training prepared them to teach reading. District staff members surveyed indicated only 33% agreed their pre-service training prepared them to work with dyslexic students while 70% felt in service did prepare them. The staff reported a rate of 96% who had students pulled out for remediation. District-wide 93% of survey respondents thought students receiving remediation had higher class participation rates after the interventions started and 85% saw academic gains in remediated students. The survey showed 55% of the staff surveyed saw behavior issues before remediation started and 55% reported fewer behavior issues after remediation. The last finding of note was the need for math interventions with 81% perceiving the need to add math to the intervention process. See table 6 for remediation survey results.

Table 6*Kindergarten Remediation*

Question	Agree	N/O	Disagree
1. I teach in the grade span of KG through 2nd Grade.	27		
2. I teach in the grade span of 3rd through 5th Grade.		1	26
3. My pre-service training prepared me to teach reading.	21	1	5
4. In-service training prepared you to teach reading.	27		
5. My pre-service training prepared me to teach reading to students with dyslexia.	9	2	16
6. My in-service training prepared me to teach reading to students with dyslexia.	19	2	6
7. One or more students are pulled for reading remediation.	26	1	
8. Identified students participated in my reading class before interventions started.	25	2	
9. Identified students participation improved in my reading class after interventions started.	26		1
10. Identified students displayed behavior issues before interventions started.	15	8	4
11. Identified students displayed fewer behavior issues after interventions started.	15	8	4
12. Identified students made academic gains in reading.	23	3	1
13. Identified students showed progress in math after reading interventions.	14	9	4
14. Math should be included in the intervention process.	22	1	4

Twenty seven staff members completed the survey, with two open-ended questions. The first open-ended survey question asked for recommendations to improve the remediation process. The first response claimed the need to allow teachers suggest the pullout time. The second

response identified the need for a math intervention pullout time. The third response highlighted a need for a faster response to get students interventions. The final response indicated only certified teachers should provide interventions. The second open-ended survey question asked what the staff member would like to see changed. This question garnered two responses. The first response indicated students should not miss instructional time for pullout. The last response noted a need to reduce pullout frequency.

The Reaching Reading Success Program Interventionists were also observed using a checklist to gauge instructional proficiency. Ten of 26 interventionists were randomly chosen for the initial observation of remediation instruction. The observation checklist covered the parts of the lesson, lesson presentation, and other. If the action was marked observed, it was being implemented satisfactorily. If the action was marked not observed, it was not performed or was not performed satisfactorily. All 16 areas were included in the 10 observations with the exception of one interventionist, who failed to include handwriting as part of the required lesson. The positive observation comments were complimenting and encouraging. The comments also included a reprimand for starting a remediation lesson late and a need for additional reading time for students.

The 10 responses to the nine interview questions were categorized according to the perception of remediation implementation, improvements, impact, and other areas of consequential learning.

Interventionists stated the overall implementation of early phonological awareness, alphabet knowledge, and handwriting remediation was effective and students were receiving 45 minutes of remediation per day. Students are using multi-sensory strategies for decoding and encoding was the last implementation observation noted by several interview responses.

A weakness in the frequency of progress monitoring during the year was identified from interview responses and the need for progress monitoring every two weeks was reported. Also, the need for only 30 minutes a day for interventions was expressed consistently by the interviewees. The students need for to receive remediation immediately after being identified as having dyslexia was recorded multiple times. The last weakness identified by multiple statements was the need for program exit criteria for the kindergarteners.

The impact of the multi-sensory remediation on the student success was supported by interventionists reporting an average of 22 students on their rolls. Students were demonstrating the use of different reading strategies during intervention time. The remediation allowed the students to catch up with their peers in reading ability. The final, and possibly most crucial interview finding, was the reports of the lowest scoring students on the MKAS winter administration were not students receiving remediation.

The spring 2019 MKAS mean average score for identified students was 595 which is well below the grade level score of 681. The mean score for all students combined on the spring assessment was 714. The average growth rate for students receiving remediation was 162 scale score points after receiving interventions. The students' receiving remediation mean growth rate was lower 38 points lower than the mean for all students. However, this is an acceptable amount of growth considering these kids have disabilities with some being in self-contained special education classes. The average growth rate for all kindergarten students from the fall test administration to the 2019 spring assessment was 220 scale score points. The comparison of MKAS growth rates for all students from SY 16 through SY 18 indicates the SY19 students average growth was 220 compared to 215 for the previous years. Table 7 shows the mean growth for students on the MKAS.

Table 7

Mean Growth Comparisons

Year	Fall MKAS	Spring MKAS	Average Growth
SY 16-18 (All)	527	721	215
SY 19 (All)	494	714	220
SY 19 (Remediated)	433	595	162

Findings for research question two.

The Lynn County School District provided multi-sensory remediation for 148 kindergarten students during SY 2019. In order to provide the remediation, interventionists were trained throughout the school year and were documented as successfully providing the multisensory strategies to students. Furthermore, survey responses indicated the remediation training improved the teaching abilities of the interventionist. The data also supports the reduction of interventions to 30 minutes for kindergartners. The remediation was also reported to improve student word decoding skill and academic abilities. The goal of each student scoring 681 or above was not achieved. However, the growth documented for staff and students alike indicates a successful attempt at improving the literacy rates for students with dyslexia. A report by an elementary school administrator stating, “The lowest scoring students on the MKAS winter administration were not students identified for remediation was the most important study finding.”

Summary

The above sections presented the findings of the applied research plan evaluation. The findings in Chapter Four were used to identify study limitations, program recommendations, and

ideas for future study. Chapter Five details how the findings will be used to report study limitations, program recommendations, and ideas for future study.

Chapter V

DISCUSSION

The applied research process and improving the literacy for students in a rural school district have a common trait: change of the process as it evolves. The study implementation was a group process and was performed with permission from the Internal Review Board at the University of Mississippi.

Improving literacy rates for dyslexic students requires many hours of intense hard work from the students and the teachers. The students as well as teachers have to be willing to change as the students respond to the multi-sensory intervention, which, in some cases, means changing from one strategy to another approach.

Change, along with the choice to embrace it, is the key to the success of improving literacy rates and the applied research process. The staff from seven different schools came together and worked as a team to train, implement, and improve the program. The teamwork was evident because of the perceptions provided by the surveys of stakeholders in the district. The willingness of most of the staff members in the district to embrace change and work for the good of each child through this applied research study was a powerful testament of the metamorphous of the district into an organization based on learning.

The Reaching Reading Success Program (RRSP) has served as a catalyst to improve reading among students with dyslexia in the Lynn County School District (LCSD). As part of this institution's work, the RRSP has sought to identify students of average or above average

intelligence who are having difficulty with reading, spelling, or writing due to differences in phonological processing skills. The literature review was used to provide data about the causes of dyslexia and accurate ways to identify students with the disorder. Also data was gathered from the review of literature to support appropriate screening and remediation ages. This data was used to evaluate and improve the district's intervention program to ensure all students receive theoretically grounded, high-quality instruction. As the literature review developed, areas were identified as being important to improving the literacy rates of at-risk as well as other students.

The applied research plan was developed based on the literature review. The plan sought to improve the accurate identification of dyslexic kindergarten students, screening in kindergarten, and providing multi-sensory remediation immediately after identification. The previous chapter described the data analysis processes and results. The following sections will explain how program evaluation standards were met, action plan goals were attained, barriers to action plan goal attainment, evaluation plan conclusions, and recommendations based on conclusions.

Program Evaluation

The research team conducted the RRSP program evaluation in accordance with the program evaluation standards and the five attributes of the standards (Yarbrough, Shulha, Hopson, & Carothers, 2011). The five attributes of the standards are utility, feasibility, propriety, accuracy, and accountability. Each of the evaluation attributes is supported by 30 evaluation standards.

The program evaluation was planned to assess the impact the program was having and how it could be improved to enhance the reading ability of students with dyslexia. The district leadership team reviewed literature and found two areas where the evaluation would be useful.

The two areas were accurate identification of students with dyslexia and kindergarten remediation. The team reached out to the principals and staff members for input on implementing, evaluating, and improving the RRSP program through interviews, surveys, and meetings.

As the evaluation evolved, it was discovered the district did not have consistent phonics instruction. After researching and reaching a consensus, a phonics program was chosen for districtwide implementation and training began. Using a phonics program systematically will allow organizational growth based on consistent instructional variables and an increase in the reliability of assessment data for district-level decision making. This finding was outside the scope of this study. However, this outcome is a testament to the utility of the study in changing the district culture to one of organizational learning.

Before the action plan to improve the RRSP program was implemented district wide during School Year (SY) 19, the feasibility of accurately identifying kindergarten students and providing remediation was determined by the number of students being identified past the second grade. Multisensory intervention research has shown to be the most effective during a student's first three years of school which was being missed without providing kindergarten interventions. The cost of the program evaluation was calculated in Chapter Three and deemed minimal compared to the loss of the opportunity for hundreds or thousands of students to learn to read. Furthermore, the long range cost to sustain RRSP should decline as the effects of the early identification and remediation progress through the higher grades.

Evaluation propriety standards provided the parameters for getting Internal Review Board approval for the applied research study. All participants were notified of their right to withdraw at any time and the choice to not participate. Consent forms were signed by all who chose to be

involved in the study for screener implementation and multi-sensory remediation. The identities of all study participants were anonymous. This evaluation involved human subjects which increases the responsibility of the researchers to ensure safety in all manners regardless of costs.

The evaluation data collection was driven by questions used to develop the action plan for the applied research study. The action plan for screening and remediating kindergarten students provided accurate data. The triangulation of the screening implementation and multi-sensory remediation survey, interview, and quantitative data results indicated successful plan evaluation accuracy and reliability. The program evaluation addressed the program description and criteria. The description of the program was changed to include kindergarten students in the RRSP screening and remediation which brought the program into closer alignment with current research. The RRSP is managed on multiple school campuses with oversight from the district leadership team. Since multiple schools were involved in the evaluation, all stakeholders provided input; the process evolved and became an organizational endeavor.

The program evaluation supported accountability by identifying very few students who enter the RRSP program who met exit criteria in the previous years. The district team implemented changes to address current practices which had eroded the fidelity of the program based on the literature review findings. The RRSP employees 26 interventionists and four lead teachers. The annual payroll was over \$800,000 dollars for SY19. Current research indicates the program should serve almost 20% of the student population from kindergarten to fifth grade. The cost of not continuously evaluating the implementation and impact of the program more than justify the need for the evaluation. The program evaluation has found stakeholder perceptions are favorable in regard to the benefits of the RRSP. These perceptions generated data in regard to the program impact on student identification, student behavior, class participation, and academic

achievement. The accountability attribute created a culture of collaboration and organizational learning in the district because of the need to improve practice in order to help students meet program exit criteria.

Reflections

The screening time was successfully reduced from three weeks to two weeks as reported by staff members. The time was reduced even with the addition of the DIBELS screener for each student. The screener identified 218 students. Screening accuracy was skewed because other reading impairments closely resemble dyslexic traits and caused the number to be higher than the 17% suggested by research (Morken, Helland, & Specht, 2016). The schools and district leadership team used progress monitoring results and MKAS testing results to correct the misidentification. The research team erred on the side of caution and over identified rather than under identified. This would allow for students to be thoroughly examined by classroom teachers, interventionists, and assessment before removal from the program. The staff surveys showed staff perception was favorable for the screening implementation of kindergartners. The data showed a noticeable increase of identified kindergarten students, 90% of survey respondents had students identified for services, and 70% of the staff thought the loss of instructional time was offset by screening benefits. As a district, 74% of the kindergarten staff thought the screening process was improved. The Reaching Reading Success Interventionists' (RRSPI) interviews indicated the district worked as a team and reduced the time required to screen students. All interventionist had an average of 22 students on their rolls. Also noted was the need for district staff to train preschool caregivers in the appropriate pre-literacy teaching strategies. These findings provide the results which answer the driving questions of the action plan and supports the success of the program evaluation goal to accurately identify dyslexic

students in Lynn County School District (LCSD).

The descriptive statistics indicated an average growth rate of 61% for students with dyslexic tendencies in SY 2019 as compared to 70% for all students in SY 2016 through SY 2018. With the addition of kindergarten students scheduled in the RRSP, all district students are receiving interventions which is supported by Lyytinen, Erskine, Tolvanen, Torppa, Poikkeus, and Lyytinen, P. (2006) research on the necessity of early intervention.

The survey administered to LCSD teachers showed 77% believed their preservice training prepared them to teach reading to all students which includes students with disabilities. This finding is aligned to prior research which found teachers falsely believed they were prepared to teach reading (Wasburn, Binks-Cantrell, & Joshi, 2014). Prior research by Wasburn, Binks-Cantrell, and Joshi (2014) found teachers, both pre-service and in-service, lack a foundational understanding about basic language and linguistic concepts related to reading instruction for beginning and struggling readers. Other survey findings indicated 96% of the staff saw an improvement in class participation after remediation. The most important survey response was 85% of kindergarten teachers saw academic gains after multi-sensory remediation began which aligns with the prior research of Hwee and Houghton (2011). A significant difference was found between the group with multi-sensory Orton-Gillingham training and the group without Orton-Gillingham training with the multi-sensory group outperforming the other group (Hwee & Houghton, 2011). Similarly, in the current study, the lowest scoring students on the Mississippi K-3 Assessment Support System (MKAS) winter administration were not students receiving remediation.

The interviews of the RRSPI indicated early phonological awareness, alphabet knowledge, and handwriting remediation were effective. The interviews also reported

remediation to be effective and allowed the students to catch up with their peers which aligns with the research performed by Andreou and Vlachos (2013). The addition of multi-sensory remediation for kindergarten students with dyslexia did not achieve the goal of all students scoring 681 (grade level). The remediation addition did increase the growth percentage for SY 2019 by 5%. The evaluation study shows multi-sensory remediation was successful in LCSD based on the findings with the exception of all students scoring 681 or better on the spring 2019 MKAS assessment.

The creation of an organization based on collaborative learning was achieved. This applied research study produced an environment where stakeholders were able to identify systematic inconsistencies in teaching phonics skills across the district. Phonics is one of the key components of literacy, but the phonics program finding was not part of the applied research study. It was an unintended discovery of the organizational learning environment created through the district working as a team. Also, multiple stakeholders collaborated to overcome all obstacles in performing this study and suggesting areas of improvement.

Limitations

The first limitation to this study is the goal of all the students receiving remediation to score 681 or above on the spring MKAS. Some of the students are very high on the dyslexic scale and could take more than one year to reach grade level. Along with the goal being challenging, the spring assessment was given early which took away 25% of the available instructional days. Also, the lack of empirical comparison data from previous cohorts because of failure to provide systematic interventions in kindergarten could be of importance. The researcher's lack of experience in conducting applied research and reporting the findings is also a limitation to note. The qualitative data could be skewed due to respondents trying to give the

correct answer instead of their perspective which would compromise the results. Also, the small sample size could be a limitation in generalizing the quantitative results. The final limitation is the finding of remediation fidelity being compromised by site administrative changes.

Recommendations

The study found the lack of student vision testing before dyslexia screening could erroneously lead to some students to be identified as having dyslexia. The research team will report this to the curriculum department and recommend students receive vision screening before any assessments are given. The principals and Reaching Reading Success Lead Teachers will increase the number of observations performed to ensure interventionists are implementing the multi-sensory interventions with fidelity. The final program change will be the implementation of progress monitoring every two weeks for all students receiving remediation and adjusting interventions accordingly.

Future Research

The Reaching Reading Success Lead Teachers will continue to research screening tools which identify kindergartners more in alignment with previous research findings. The kindergarten students of SY 2019 performance data will be compared to cohorts who have received interventions and to those who have not received interventions in order to monitor their success and have empirical data for program decision making. Determining the long-term impact of the RRSP on retention, grade level literacy rates, graduation, and post-secondary education completion rates for SY 2019 kindergarten students will also be areas worth investigating.

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APPENDICES

APPENDIX A: MDTA OBSERVATION CHECKLIST

MDTA Screener Administration Observation Evidence

Specific Research Question: Did the collaborative screening process reduce the time required to screen students?

Statement of Consent:

This observation form is part of an applied research study to fulfill partial requirements for a Doctor of Education degree for Steven Havens from The University of Mississippi. The study is analyzing the relationship between earlier identification of students with dyslexia and effects of providing reading remediation in kindergarten has on literacy growth as measured by MKAS. Any questions regarding the project and its findings can be emailed to:

*swhavens@go.olemiss.com
steven.havens@leecountyschools.us*

Any questions can also be directed to the Dissertation Advisor, Dr. Jill Cabrera Davis, by email or at The University of Mississippi:

jdcahrer@olemiss.edu; (662)915-7069 (office)

This observation checklist is provided by the Lynn County School District and its use is required in the observation and evaluation of dyslexia screener administrators. Reaching Reading Success Lead Teachers will conduct the observations and complete the observation forms. The observation checklist documents screener administration proficiency. The researcher will use the completed observation form for data collection.

Alphabet Knowledge and Sound Symbol Recognition

Yes No

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | The teacher recognizes whether or not the student can give correct sounds for letters. |
| <input type="checkbox"/> | <input type="checkbox"/> | The teacher demonstrates excellent knowledge of the requirements for screening all areas of alphabet knowledge. |

Notes: _____

Phonological Awareness

Yes	No	
___	___	The teacher demonstrates excellent knowledge of phonological awareness.
___	___	The teacher recognizes whether or not the student can identify and produce rhyming words.
___	___	The teacher recognizes whether or not a child can isolate individual in sounds words.
___	___	The teacher recognizes whether or not a child can delete sounds in words.
___	___	The teacher recognizes whether or not the child can manipulate sounds in words.
___	___	The teacher demonstrates excellent knowledge of the requirements for screening all areas of phonological awareness.

Notes: _____

Reading

Yes	No	
___	___	The teacher recognizes whether or not the student is able to read nonsense words.
___	___	The teacher demonstrates excellent knowledge of the requirements for the reading section.

Notes: _____

Spelling

Yes **No**

___ ___ The teacher recognizes whether or not the student can accurately spell the stimulus words.

___ ___ The teacher demonstrates excellent knowledge of the requirements for the spelling section.

Notes: _____

Rapid Naming

Yes **No**

___ ___ The teacher recognizes whether or not the student can identify letters in 50 seconds or less.

___ ___ The teacher demonstrates excellent knowledge of the requirements for the rapid naming section.

Notes: _____

APPENDIX B: DIBELS OBSERVATION CHECKLIST

DIBELS Screener Administration Observation Evidence

Specific Research Question: Did the collaborative screening process reduce the time required for student screening?

Statement of Consent:

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This observation checklist is provided by the Lynn County School District and its use is required in the observation and evaluation of dyslexia screener administrators. Reaching Reading Success Lead Teachers will conduct the observations and complete the observation forms. The observation checklist documents screener administration proficiency. The researcher will use the completed observation form for data collection.

First Sound Fluency

Yes	No	
___	___	The teacher recognizes whether or not students give correct sounds for letters.
___	___	The teacher recognizes whether or not students give correct beginning sounds in words.
___	___	The teacher demonstrates excellent knowledge of testing and scoring first sound fluency.

Notes: _____

Letter Naming Fluency

Yes **No**

___ ___

The teacher recognizes common response patterns when students are naming letters.

___ ___

The teacher demonstrates excellent knowledge of testing and scoring letter naming fluency.

Notes:

Phoneme Segmentation Fluency

Yes **No**

___ ___

The teacher recognizes whether or not a student can accurately segment the phonemes in words.

___ ___

The teacher demonstrates excellent knowledge of testing and scoring phoneme segmentation fluency.

Notes:

Nonsense Word Fluency

Yes **No**

___ ___

The teacher recognizes whether or not a student can accurately read nonsense words.

___ ___

The teacher demonstrates excellent knowledge of testing and scoring nonsense word fluency.

Notes:

APPENDIX C: KINDERGARTEN STAFF SURVEY PROTOCOL

Kindergarten Staff Survey Questions

Research Topic: Improving literacy rates for students with dyslexic tendencies

General Research Question: Did the new screening instrument identify students with dyslexia more accurately?

Specific Research Question: Specific Research Question: Did the collaborative process to screen all students reduce the time required for screening to less than three weeks?

Conceptual frameworks: *intervention program implementation, weaknesses, and impact*

Statement of Consent:

This interview is part of an applied research study to fulfill partial requirements for a Doctor of Education degree for Steven Havens from The University of Mississippi. The study is analyzing the relationship between earlier identification of students with dyslexia and effects of providing reading remediation in kindergarten has on growth as measured by MKAS. Any questions regarding the project and its findings can be emailed to:

*swhavens@go.olemiss.com
steven.havens@leecountyschools.us*

Any questions can also be directed to the Dissertation Advisor, Dr. Jill Cabrera Davis, by email or at The University of Mississippi:

jdcabrer@olemiss.edu; (662)915-7069 (office)

Question	Please mark your response	Agree =1	Not observed =2	Disagree =3
The dyslexia screening process was completed in less than 3 weeks.		1	2	3
I was involved in the screening process.		1	2	3
I was prepared for the screening process.		1	2	3
The screening process interrupted instruction more than three times.		1	2	3
The dyslexia screening process did not interrupt instruction.		1	2	3
The benefit of screening kindergarten students, offsets lost instructional time.		1	2	3
One or more of my students were identified during screening.		1	2	3
I had one or more students identified by screening who did not seem to need interventions.		1	2	3
I had one or more students who seem to need interventions yet were not identified.		1	2	3
1. To improve the screening process, I would recommend _____ _____				
2. To improve the accuracy of the screening process, I would recommend _____ _____				

APPENDIX D: RRSP INTERVENTIONIST INTERVIEW PROTOCOL

RRSP Interventionist Interview Questions

Research Topic: Improving literacy rates for students with dyslexic tendencies

Specific Research Question: Did the collaborative process to select a screening tool to identify students with dyslexic tendencies increase the number of kindergarten students identified to 52 or more district-wide?

Conceptual frameworks: *screening implementation, weaknesses, and impact*

Statement of Consent:

This interview is part of an applied research study to fulfill partial requirements for a Doctor of Education degree for Steven Havens from The University of Mississippi. The study is analyzing the relationship between earlier identification of students with dyslexia and effects of providing reading remediation in kindergarten has on growth as measured by MKAS. Any questions regarding the project and its findings can be emailed to:

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Icebreaker

1. How long have you taught?
2. Tell me what content areas and grade levels you have taught.
3. How long have you worked in the RRSP?

Screening Implementation

4. Describe the screening process.
5. Did the training for screener implementation help? Explain.
6. What changes, if any, could improve screener training?

Screening Weaknesses

7. What contributes to misidentification of students in the dyslexia screening process?
8. Do you feel comfortable with your screening role?
9. How can the screening process be improved?

Screening Impact

10. How many students are on your class rosters?
11. What contributes to the misidentification of students in the dyslexia screening process?
12. Tell me what you would change to improve the impact of screening?

APPENDIX E: KINDERGARTEN STAFF SURVEY PROTOCOL

Kindergarten Staff Survey Questions

Research Topic: Improving literacy rates for students with dyslexic tendencies.

Specific Research Question: Did scores for kindergarten students receiving RRSP services have a reading level of 681 or higher?

Conceptual frameworks: *intervention program implementation, weaknesses, and impact*

Statement of Consent:

This interview is part of an applied research study to fulfill partial requirements for a Doctor of Education degree for Steven Havens from The University of Mississippi. The study is analyzing the relationship between earlier identification of students with dyslexia and effects of providing reading remediation in kindergarten has on growth as measured by MKAS. Any questions regarding the project and its findings can be emailed to:

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Any questions can also be directed to the Dissertation Advisor, Dr. Jill Cabrera Davis, by email or at The University of Mississippi:

jdcahrer@olemiss.edu; (662)915-7069 (office)

Question	Please mark your response	Agree =1	Not observed =2	Disagree =3
I teach in the grade span of KG through 2 nd Grade.		1	2	3
I teach in the grade span of 3 rd through 5 th Grade.		1	2	3
My pre-service training prepared me to teach reading.		1	2	3
My in-service training prepared me to teach reading.		1	2	3
My pre-service training prepared me to teach reading to students with dyslexia.		1	2	3
In-service training prepared me to teach reading to students with dyslexia.		1	2	3
One or more of my students are pulled out of my classroom for reading remediation.		1	2	3
Identified students participated in my reading class before interventions started.		1	2	3
Identified students' participation improved in my reading class after interventions started.		1	2	3
Identified students displayed behavior issues before interventions started.		1	2	3
Identified students displayed fewer behavior issues after interventions started.		1	2	3
Identified students made academic gains in reading.		1	2	3
Identified students showed progress in math after reading interventions.		1	2	3
Math should be included in the intervention process.		1	2	3

1. To improve the remediation process, I would recommend_____
2. What would you like to see changed about the remediation process?

APPENDIX F: INTERVENTIONIST OBSERVATION CHECKLIST PROTOCOL

RRSPI Observation Checklist

Teacher's Name: _____ Date: _____

Parts of the Lesson *activities not observed should be taught in the next lesson	observed	not observed
Class began on time		
Lesson plan was prepared in advance		
Phonological Awareness		
Alphabet Knowledge		
Handwriting		
Related Activities		
Lesson Presentation		
Lesson geared to needs of students		
Activities flowed smoothly		
Students were engaged		
Provided immediate corrective feedback		
Provided guided practice		
Provided review of previously taught skills		
Other		
Material was organized		
Evidence of recent training		
Evidence of effective classroom management		

Time class began: _____ Time class ended: _____

Comments:

Signature of observer: _____

Signature of teacher observed: _____

APPENDIX G: RRSP INTERVENTIONIST INTERVIEW PROTOCOL

RRSP Interventionist Interview Questions

Research Topic: Improving literacy rates for students with dyslexic tendencies

Specific Research Question: Did scores for kindergarten students receiving RRSP services have a reading level of 681 or higher?

Conceptual frameworks: *remediation implementation, weaknesses, and impact*

Statement of Consent:

This interview is part of an applied research study to fulfill partial requirements for a Doctor of Education degree for Steven Havens from The University of Mississippi. The study is analyzing the relationship between earlier identification of students with dyslexia and effects of providing reading remediation in kindergarten has on growth as measured by MKAS. Any questions regarding the project and its findings can be emailed to:

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Any questions can also be directed to the Dissertation Advisor, Dr. Jill Cabrera Davis, by email or at The University of Mississippi:

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Ice Breaker Questions:

How long have you worked in the district?

Tell me what you like about working with kindergarten age students.

Remediation Implementation

1. What are the goals of the intervention program?
2. When should students receive interventions?
3. Describe how students exit the intervention program.

Remediation Weaknesses

4. Do you think remediation is effective? Why or why not?
5. When should students start receiving remediation?
6. How often should students receive remediation?

Remediation Impact

7. Describe how students' reading skills improve after receiving interventions.
8. Describe how students' letter recognition improves after receiving interventions.
9. Tell me what you would like to see added to or removed from the program

VITA

Steven William Havens

Qualifications:

- Veteran United States Coast Guard
- Established formative assessment program to evaluate student academic achievement
- Established student progress monitoring tools for all subject areas
- Evaluated programs to determine effectiveness and to ensure compliance with federal, state, and local regulations
- Communicated with school board, district personnel, staff, students, parents and community
- Negotiated staff policies and disputes
- Evaluated employee performance (district level and MSTAR)
- Coordinated daily school activities including but not limited to scheduling, bus assignments, duty rosters, etc.
- Reviewed and interpreted government codes to ensure facility safety, security, and maintenance
- Grant writing, monitoring, and implementation
- Developed an organization based on learning using the Plan, Do, Study, Act model developed by Edward Demming

Areas of Licensure:

- Educational Administration
- Business Education
- Social Studies Education
- Physical Education

Experience:

2016-present Federal Programs Director

Lee County School District- **District Office**
1280 College View St. Tupelo, MS 38804

Responsibilities include writing, implementing, and evaluating federal grants. Training district personnel to comply with federal, state, and district policies governing grant management. Planning, funding, and monitoring the district's

plan to achieve the vision and mission of the district. I also, evaluate and support school leaders in achieving school wide plans.

2007-2016 Principal
Lee County School District- **Guntown Middle School**
1280 College View St. Tupelo, MS 38804

Responsibilities included developing and implementing school wide instructional changes related to MCT2 and Common Core State Standards. Also, I guided all facets of school communication and management as well as ensuring campus safety, supportive classroom learning environments, organization, and community involvement.
Professional learning communities were created under my direction.

2004-2007 Principal
Lee County School District- **Saltillo Elementary School**
1280 College View St. Tupelo, MS 38801

Responsibilities included developing and implementing positive school changes, creating a healthy school climate, personnel management decisions, safety, organization, and community relations as well as improving MCT scores.

2003-2004 Assistant Principal
Lee County School District- **Saltillo High School**
1280 College View St. Tupelo, MS 38801

Responsibilities included handling discipline issues for grades 9-12, evaluating teacher performance, and monitoring athletic activities.

2002-2003 Assistant Principal
Lee County School District- **Shannon Elementary School**
1280 College View St. Tupelo, MS 38801

Responsibilities included handling discipline issues for grades k-5, implementing technology changes, and evaluating teacher performance.

Accomplishments:

- 2010** Principal of the Year by the Mississippi Association of Middle Level Educators.
- 2011** Member of the Mississippi Association of Middle Level Educators Board of Directors
- 2012** Daily Journal People’s Choice Award received by Guntown Middle School
- 2016** Guntown Middle School received an accountability rating of A from MDE

Professional Enrichment and Education:

May 2002: Master of Educational Leadership

University of Mississippi
University, MS

May 1993: Bachelor of Accountancy

University of Mississippi
University, MS

December 1990: Associate of Accountancy

Northwest Mississippi Community College
Senatobia, MS

June 2018: Quest for Useful Employable Skills for Tomorrow Basic Leadership Training

Center for Quality People and Organizations and Toyota Motor Manufacturing of Kentucky
Georgetown, KY

December 2015: National Institute for School Leadership

North Mississippi Education Consortium
Oxford, MS

March 2013: MSTAR

North Mississippi Education Consortium
Oxford, MS

January 2010: Mississippi Writing Thinking Institute

Mississippi State University
Starkville, MS

August 2005: Technology Academy for School Leaders

Canton, MS

July 2005: Harvard Principals' Institute

Cambridge, MA