Fall 2023

PROGRAM EVALUATION OF IMPROVING READING OUTCOMES USING EVIDENCE-BASED INSTRUCTION THROUGH RESPONSE TO INTERVENTION

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PROGRAM EVALUATION OF IMPROVING READING OUTCOMES USING EVIDENCE-BASED INSTRUCTION THROUGH RESPONSE TO INTERVENTION

By

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A dissertation submitted in partial fulfillment of
the requirements for the degree of
Ed.D. in School Improvement
Department of Education
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College of Education and Psychology

The University of Texas at Tyler
December 2023

The University of Texas at Tyler

Tyler, Texas

This is to certify that the Doctoral Dissertation of

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Has been approved for the dissertation requirement on

November 10th, 2023

For the Doctorate in Education in School Improvement degree

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Acknowledgments

To my wife, Angela, my cornerstone, and beacon of unwavering support: I am indebted beyond measure for the love, patience, and understanding you have shown throughout this journey. Your sacrifices, large and small, have not gone unnoticed. From the countless nights you stayed up to offer solace during challenging periods to the strength you exuded in holding down the fort in my absence, you have been instrumental in every page I've penned and every idea I've nurtured. Every success I have achieved has reflected your belief in me.

To my amazing three sons, Brayden, Jonathan, and Joseph, who have observed their father engrossed in all the things research: Your natural aptitude to comprehend, even without a complete understanding of the significance of this pursuit, has been my inspiration every day. Every hug, every innocent question about my work, and every joyous moment we have shared in between has provided the balance I desperately needed. I hope this journey serves as a testament to the importance of perseverance, passion, and the pursuit of knowledge, and I hope it inspires you in your paths, whatever they may be.

I want to extend my deepest gratitude to my dissertation committee, Dr. Neel, Dr. Delello, and Dr. Hickey, for their unwavering support, guidance, and unparalleled expertise. Your collective wisdom and insights have been instrumental in shaping this work. Throughout the dissertation process, your valuable feedback enhanced the quality of my research and challenged and inspired me to push the boundaries of my understanding. I am truly honored to have had the privilege to learn from and work alongside such esteemed professionals. Thank you for being an integral part of this journey.

Abstract

This research leverages improvement science principles and rigorous scholarly design-based implementation research to delve into the efficacy of reading interventions for secondary students, a previously underexplored domain. The first iteration of this study critically assessed the present state of RtI practices within a rural East Texas school, while the subsequent iteration was an evaluative exploration of implementing a phonics-based reading intervention. The second iteration investigates the impact of the Reading Horizons Elevate (RHE) intervention program on reading outcomes of sixth-, seventh-, and eighth-grade students within a turnaround middle school in East Texas. This study focuses on the relevance of design-based implementation research in determining the potential of such interventions. This mixed-method approach, comprised of qualitative and quantitative data collection strategies, seeks to understand the alignment between teacher perceptions of using evidence-based strategies and programs in reading intervention for struggling readers. A key performance indicator for this exploration was STAAR (State of Texas Assessment of Academic Readiness). Preliminary findings suggest empirical gains through the intervention, yet its scalability remains a subject for future investigation. This study faced several limitations, including constraints related to participant sampling, with students selected based on prior year data and a small sample size from a convenience sample, as well as challenges associated with the intervention's design and delivery, like the rigid intervention schedule, exclusive use of Orton Gillingham-based dyslexia program symbols, and reported low student engagement during specific lesson phases. Additionally, the

absence of a control group and potential researcher bias might have influenced the study's reliability, validity, and generalizability of findings.

Table of Contents

List of Tables

List of Figures

Chapter One

Introduction

Reading is a complex and essential skill that is fundamental to academic success, socialization, and daily life. Reading involves various processes, such as decoding, fluency, comprehension, and vocabulary proficiency. It requires a combination of different skills to understand a text fully. However, not all individuals acquire these skills at the same rate, level, or by the same instructional delivery methods. According to Crosson and Silverman (2021), a robust correlative relationship exists between the lack of proficient literacy skills and the likelihood of poor reading ability later in life. Furthermore, a child's literacy skills in their early years can have a significant impact on their overall literacy success later in life. As a result, readers who experience difficulties in one or more of foundational components of early literacy inhibit their reading fluency, accuracy, and comprehension. These difficulties can significantly affect their academic achievement, social-emotional development, and future career opportunities. Moreover, struggling readers may face even more devastating challenges at the secondary level as texts become more diverse based on readability, cultural and social experiences, and increased abstraction.

Problem of Practice

Response to Intervention (RtI) is a tiered approach designed to help struggling students through a sequence of increasingly intense interventions. Research has demonstrated that when RtI is implemented effectively, it can significantly improve student outcomes. However, a campus-level problem of practice emerged as only 64% of middle school students scored at the approaches level and 36% failed the reading STAAR on one middle school campus in East Texas, which indicated persistent limitations in reading achievement. Despite providing

intervention teachers with training on evidence based RtI strategies and resources, these methods appeared to have had limited application in their intervention practices. Faggella-Luby and Wardwell (2011) added credence to the body of research on struggling middle school-aged readers by citing evidence that children with reading challenges require robust and systematic interventions from grades five through eight. Additionally, according to Burke et al. (2017), high-quality RtI intervention systems often need to be included at the secondary level to address ongoing reading difficulty.

The deficiency in effective RtI practices may contribute to the observed lack of progress in struggling students, as evidenced by stagnant or even declining scores on campus made assessments, district benchmark tests, and state tests. It is concerning that despite the presence of RtI resources and training, evidence-based instructional strategies were not being utilized to their full potential, potentially compromising the academic growth of the students who required these interventions.

To effectively address the academic gaps of struggling middle school readers, it is critical to understand the root causes behind the lack of practical RtI application. Possible contributing factors included a lack of ongoing support for teachers, limited understanding of the RtI process, insufficient time to plan and implement RtI strategies, or a perceived lack of effectiveness. The problem of practice required a thorough exploration to ensure that the intervention teachers were equipped with effective RtI strategies and resources to effectively apply them in their instructional practice to maximize student growth and success.

Furthermore, decreased reading proficiency hindered student learning in other content areas. For example, the seventh grade Texas reading fluency assessments highlighted that more than 50% of students were not on reading level. Students taking the eighth-grade social studies

STAAR achieved a mere 38% passing rate, resulting in 62% of students failing 8th grade social studies. Only 25% of middle school students were on grade level in math and 21% on grade level in science. Targeting struggling readers was a key factor in improving the overall performance because there was a significant link between reading proficiency and a student's success in other content areas such as science, math, and social studies.

Purpose and Significance of the Study

Iteration One

This study aims to evaluate the implementation of effective RtI practices and strategies in a rural school in East Texas. The evaluation included an examination of the fidelity with which intervention teachers were actualizing the RtI model, the strategies and interventions teachers used, the extent to which progress monitoring and data-based decision-making were used, and the identification of any obstacles teachers encountered in implementing RtI. This study also explored the potential factors affecting the adoption and application of RtI strategies, such as teacher knowledge, ongoing training and support, administrative backing, and availability of resources.

Effective RtI implementation has proven to be a powerful tool in identifying and addressing learning difficulties, helping students to meet academic standards, and closing achievement gaps. Despite the training and resources available, the district's limited use of RtI strategies represents a significant missed opportunity to optimize student outcomes. The findings served as a guide for teacher training, professional development, and resource allocation efforts, and provided valuable insights to administrators and policymakers regarding necessary changes in policy or practice to ensure that all teachers are equipped with, understand, and effectively apply the RtI model. Moreover, the results of this study contributed to the broader field of

education by adding to the body of knowledge on effective RtI implementation. This study provided a nuanced, in-depth understanding of teachers' obstacles and challenges in implementing RtI, which could be informative to other districts grappling with similar issues. Thus, this study has implications for this campus and far-reaching implications for enhancing the use of RtI strategies, thereby positively impacting student achievement on a broader scale.

Iteration Two

The purpose of the second iteration was to investigate the effectiveness of the Reading Horizons program in closing the gaps in literacy performance as measured by Reading STAAR state assessment. Reading Horizons Elevate (RHE) is a Science of Reading based program that provides explicit, systematic, and sequential phonics instruction for struggling readers. Additionally, the Reading Horizons intervention provided a multi-sensory approach to literacy instruction. Students receive a whole group skills lesson, transfer practice, small group instruction, and an online software component.

Results from the Texas middle school fluency assessment, administered in the fall of 2019, demonstrated that over 50% of seventh graders had foundational reading gaps due to a lack of reading comprehension. The goal was to increase the percentage of students passing the reading by 10% and gain one year's growth in reading level.

It is widely recognized that teachers can support middle school-aged struggling readers using a critical reading routine through various instructional methods and increased opportunities to read, discuss, and write about a complex text. Step one of implementing a critical reading routine is deciding the learning targets and the text to be used; chunking the selection with essential reading questions and creating a formative question; and then determining pre-teach content, ways to preview the text, and student grouping. Step two includes previewing the text,

vocabulary instruction, and partner reading procedure. Consistent with the body of evidence about what helps struggling readers, developing a critical reading routine is an effective intervention for middle school students.

Theory of Change

According to Heggi and Wade-Woolley (2017), if RHE is implemented with fidelity five days a week for at least 40 minutes daily, students can decode multisyllabic words and comprehend text with increased accuracy and deeper meaning. Students will also transfer their learning into their mainstream reading class with independence and address the problem that only 64% of middle school students scored at the approaches level, with 36% failing the reading STAAR. The goal was to increase the percentage of students who passed the reading by ten percent. The long-term goals were achieved by implementing the Reading Horizons reading intervention to provide explicit, sequential, and systematic phonics instruction.

The System

During the summer of 2021, there was a notable increase in stress and anxiety associated with transitioning back to in-person learning amidst a global pandemic, alongside concerns about potential learning loss and the global social-emotional effects of school closures. In addition, because of the yearly Texas middle school fluency assessment, the intervention team was deeply concerned that so many students were not reading on grade level and even more concerned as to why students failed even to attempt unknown words. As students lacked confidence in their ability to decode unfamiliar, multisyllabic words, mounting consternation persisted on a solution to support struggling adolescent readers better. In addition to campus literacy issues, this rural East Texas middle school received an " F " letter rating due to limited academic growth and student performance. The Texas Accountability A-F rating system is an educational evaluation

framework used by the Texas Education Agency (TEA) to assess student achievement and growth of public schools in the state (Texas Education Agency, 2022). The A-F letter grade system was introduced in 2018 to provide parents, educators, and communities with a clear understanding of how schools perform academically. Schools are assigned letter grades under the A to F system based on various performance indicators, including student achievement, student progress, closing performance gaps, and post-secondary readiness. For example, elementary and middle schools are evaluated using the State of Texas Assessment of Academic Readiness in student achievement, English language proficiency, and growth. In comparison, high schools consider college, career, and military readiness (CCMR) in addition to student achievement and growth, graduation rate, and English language proficiency in determining the letter grade (Texas Education Agency, 2022). The system evaluates academic and non-academic factors to measure overall school effectiveness and identify areas for improvement. Proponents argue that it promotes transparency and accountability. At the same time, critics express concerns about the potential over-simplification of complex educational realities and the impact of labeling schools with single-letter grades.

Due to limited student success and a looming negative school label, an effective reading intervention program was needed to accelerate learning within intervention classes. After multiple virtual meetings with vendors, a team that consisted of an administrator, teachers, and an instructional specialist determined that RHE would be the instructional resource used for reading intervention. The expectation for an effective intervention program was its efficacy in targeting foundational reading skills such as phonological awareness, phonics, fluency, and comprehension. The program's multi-modal implementation also allowed for direct, small-group instruction opportunities.

Reading Horizons is a partially web-based program that requires devices and software. In addition, Reading Horizons required teacher and student print materials. The selection of participants is based on diagnostics assessments such as Renaissance STAR and MAZE running records. The RtI team comprised RtI teachers, campus administration, and the school counselor, who met on an ongoing basis to analyze data and discuss the individual growth of the participants. The team discussed evaluating the program's implementation with fidelity as quality control for implementation.

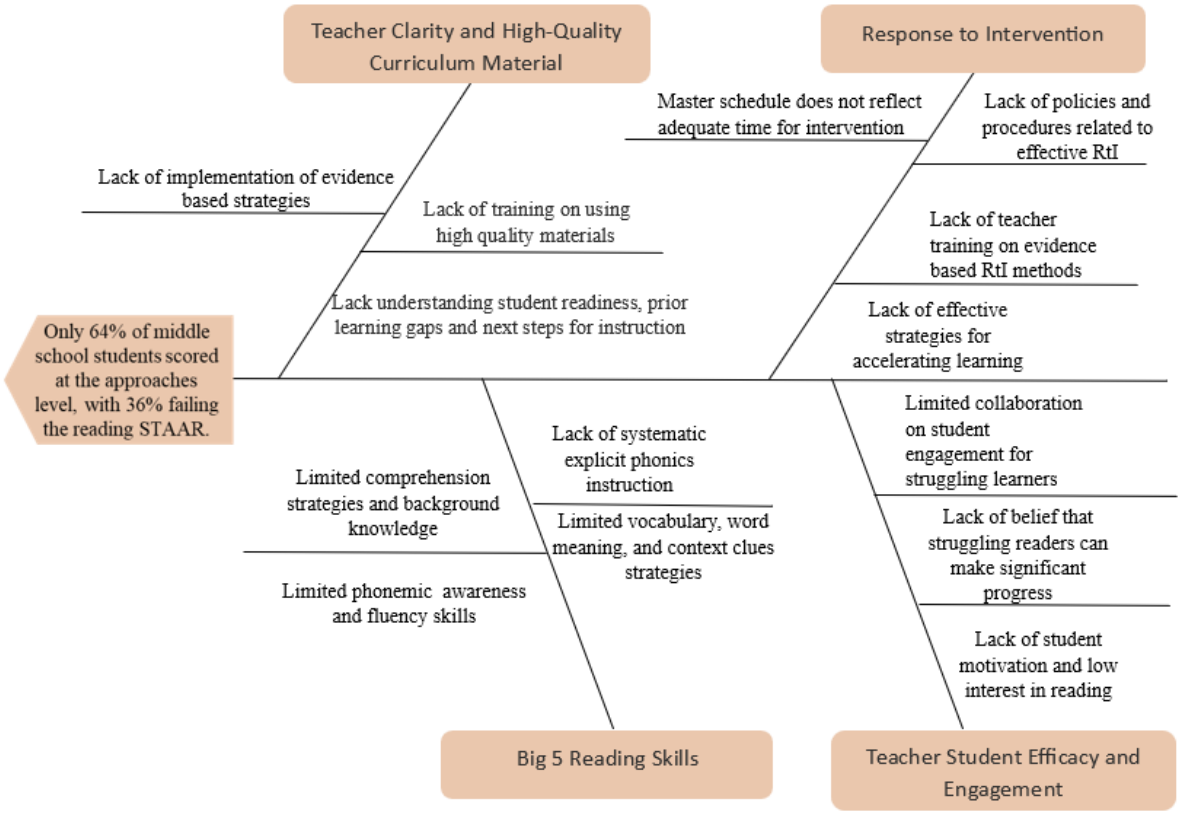
This study evaluated the effectiveness of RHE on struggling secondary reading students. Moreover, RHE follows the principles of Orton Gillingham's work for dyslexia. Therefore, the efficacy of this program is entrenched in the Science of Reading framework.

Root Cause Analysis

The root cause analysis of limited reading proficiency is presented with the help of a fishbone diagram that discusses the common causes of reading difficulty in students. According to Coccia (2017), a graphical method called the Ishikawa diagram or cause-and-effect diagram, commonly known as a Fishbone diagram, demonstrates the various reasons behind a particular occurrence or phenomenon.

Figure 1

Fishbone Diagram Discussing Root Causes for Low Reading Performance



This study investigated root causes at the system level that result in the lack of student reading proficiency. The root cause analysis revealed the need for a systematic approach to implementing RtI structures at the campus level. According to Fletcher and Vaughn (2009), the effective school-wide implementation of RtI is often a source of pervasive variation that contributes to the lack of scalability from one context to the text. In addition, teachers lack the intensive training needed to implement RtI in ways that apply either the standard response protocol or the problem-solving model. Using a systematic approach would strengthen the reliability of any RtI process.

A study by Atkinson (2009) found that only 15% of school children listed reading as a preferred activity. The root cause analysis found low teacher and student efficacy in accelerating interest and motivation for reading. Barber and Klauda (2020) described engagement as "active involvement in reading," which directly correlates with motivation, a student's "values, goals and beliefs" about reading (p.31). Engagement, motivation, self-efficacy, and teacher efficacy are all significant factors that influence the success or failure of reading intervention implementations. Atkinson (2009) proposed the expectancy-value theory which states that an individual's expectations of success and the incentives linked with a specific task or goal affect their actions and behavior. With insight into an individual's values and priorities, one can understand the reason behind their preference for one activity over another. This can be especially helpful when working with children and encouraging certain behaviors or activities. Teacher efficacy also plays a vital role in student achievement. Cantrell et al. (2013) suggested that Bandura's socio-cognitive theories are the foundation of teacher efficacy. According to his theories, teachers' beliefs about their ability to influence student learning significantly impact their effort and persistence in working with students. Therefore, teacher beliefs relate to their potential to impact student learning.

According to Vesay and Gischlar (2013), the National Reading Panel identified five essential reading domains crucial for developing strong reading skills. These domains include phonemic awareness, alphabetic principle, fluency, vocabulary, and comprehension. Individuals can improve their reading abilities and become better readers by focusing on these critical areas. The absence of skilled teaching focused on these five methods of instruction, namely phonics, became a critical root cause for ongoing poor reading performance. Commonly at the secondary level, "reading teachers" do not explicitly teach students who struggle with reading how to read.

Instead, teachers primarily provide students with strategies for comprehending a text. Research by Edwards (2008) noted the significant impact of phonics instruction on improving reading outcomes for struggling high school readers, thus challenging the belief that phonics instruction is only effective for young readers. The results show that even older students can benefit from phonics instruction to catch up on foundational skills they may have missed.

The final root cause presented in the fishbone is the intervention teacher's ability to clearly choose and implement evidence-based strategies that best support struggling readers with the use of high-quality instructional materials. Inspired by John Hattie's work in *Visible Learning*, Fischer and Frey (2018) highlighted the pivotal role of teacher clarity in student achievement. The term "teacher clarity" refers to a teacher's ability to communicate learning targets clearly, provide comprehensible input, align curriculum and assessments, and the effective integration of instructional strategies. Educators must use precise language, give relevant examples, and divide complex concepts into smaller, more digestible pieces to achieve teacher clarity. Teachers can help students understand the subject's content by being transparent in their explanations and feeling more confident in their learning abilities. As a result, improved teacher clarity can lead to greater student engagement and increased mastery of standards and is crucial for effective teaching and learning. According to Bolkan (2016), teacher clarity significantly impacts information processing, information storage, and learners' ability to retrieve information.

Another aspect of teacher clarity is effectively integrating high-quality instructional materials into the lesson cycle. High-quality instructional materials have a significant effect on student learning. According to Chingos and Whitehurst (2012), "instructional materials exercise their influence on learning directly as well as by influencing teachers' instructional choices and

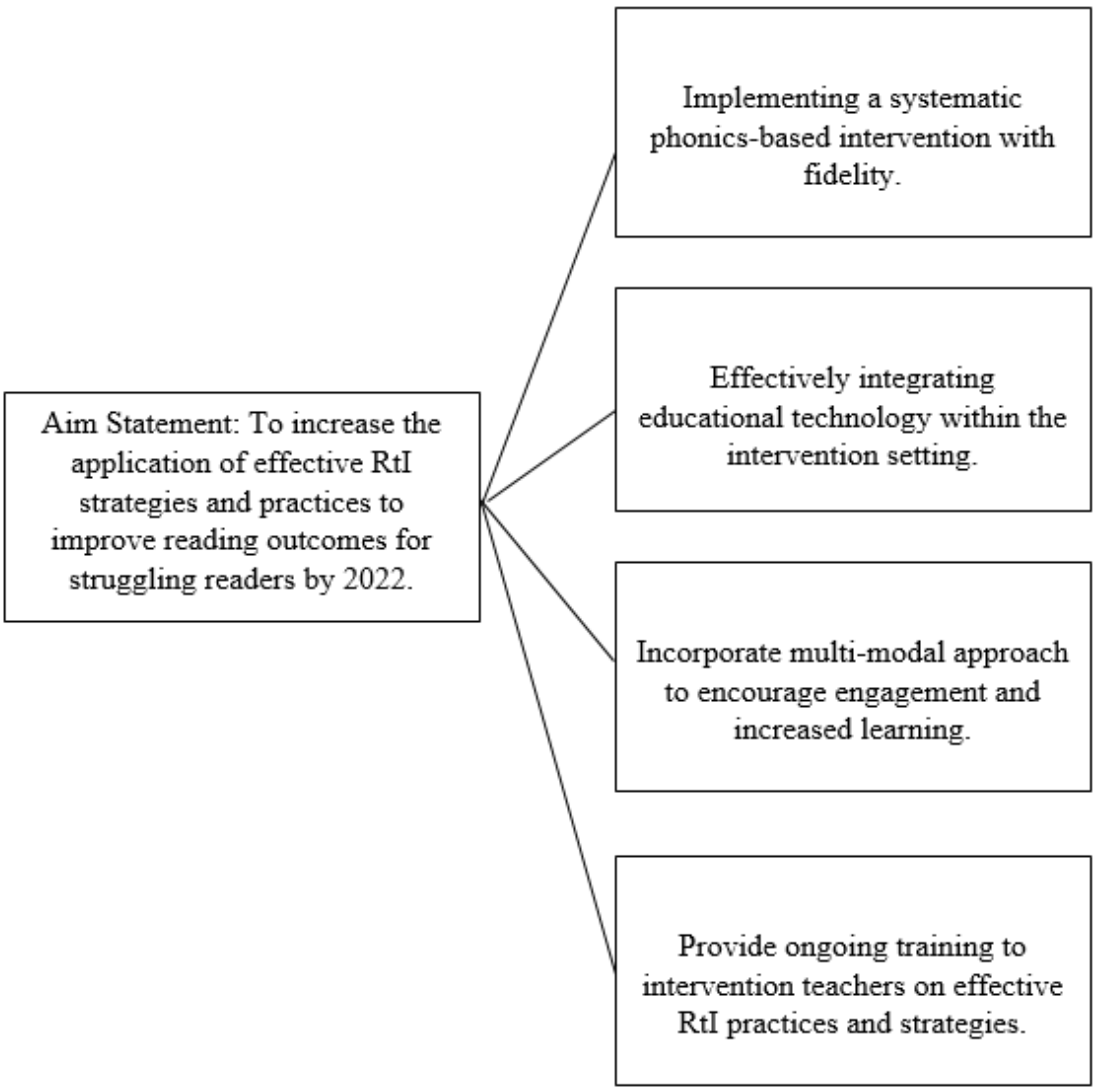
behaviors, makes instructional materials all the more important" (p. 4). When teachers engage students with high-quality materials and employ evidence-based instructional strategies, they create an environment where deep learning occurs.

The Driver Diagram

According to Perry et al. (2020), a driver diagram, a core tool in Improvement Science, is a valuable conceptual model that scholarly practitioners use for organizing, presenting, and communicating an improvement project's underlying theory of change. It is a visual representation of a team's shared understanding of what will drive or lead to the improvement they are trying to achieve. A driver diagram provides a structured way to visualize and assess hypotheses about what changes can lead to progress. Using a driver diagram, a team can create a shared strategy for achieving their aim, leading to more focused and effective improvement efforts (Perry et al., 2020). Figure 3 shows the primary drivers aiming to increase the application of effective RtI strategies and practices to improve reading outcomes from struggling readers.

Figure 2

Displaying Primary Drivers



Positionality

According to Holmes (2020), positionality refers to an individual's or researcher's perspective. The researcher's perspective is shaped by their beliefs about the nature of social reality and what can be understood about the world. Additionally, the individual's beliefs about the nature of knowledge and human nature and agency also shape their worldview and

interactions with their surroundings. Positionality can play a critical role in a design-based implementation research study, especially when the research is hands-on in the research design, data collection, analysis, and reporting of the findings. As an educator in academically struggling, low socioeconomic contexts, I understand the importance of literacy and how reading proficiency significantly determines students' quality of life after high school graduation. Therefore, researchers have a sense of urgency to design and provide interventions to improve reading outcomes for struggling readers.

As I started this research project to improve reading outcomes for struggling readers, it was crucial to identify and articulate my positionality. I am an African American male from a middle-class background, which inherently influences my perspective, worldview, and approach to the research process. My background, education, and culture have influenced my interests, approach to learning, and research pursuits. I grew up in an environment where not everyone had a good education, which sparked my interest in education and literacy. As an African American male, I have seen how race and socioeconomic status affect academic success, particularly regarding literacy rates among those who struggle with reading. I acknowledge that these experiences while providing insight, can also bring bias. Thus, I am committed to mitigating potential bias through reflexivity, regular peer reviews, and a persistent focus on objectivity. My middle-class background has afforded me the privilege of access to quality education and resources that significantly influenced my academic progression. Although I acknowledge that my perspective may unintentionally overlook the experiences of individuals from different socioeconomic backgrounds, I addressed this by engaging with various education stakeholders. This includes educators, students, parents, and district personnel from varying socioeconomic backgrounds. I actively sought their input to ensure that my research was grounded in a broad

range of lived experiences and not just limited to my own viewpoint. My identity as a male also influences my positionality as I am aware that gender can play a significant role in educational experiences and outcomes. As such, I ensured that my research did not overlook the unique challenges female students face or reinforce gender-based stereotypes in the reading outcomes of struggling learners.

As a researcher, I bring a deep passion for literacy and a commitment to promoting educational equity. I aim to contribute knowledge that can help enhance reading outcomes for struggling learners. However, I acknowledge that I am a part of the very system I aim to study, and this inside positionality presents advantages and challenges. While my experiences and insights can provide valuable depth to my research, I recognize the risk of being too close to the subject matter, possibly overlooking critical aspects or losing objectivity.

In conclusion, I am committed to using my positionality as a source of strength. It will guide me to ask relevant questions, engage with various stakeholders, and remain mindful of potential biases. I will adopt an iterative reflexive process throughout my research journey, regularly questioning my assumptions, acknowledging my biases, and adjusting my approach as necessary. I aspire to create a work that is reflective, honest, and ultimately contributes to improving reading outcomes for struggling readers.

Methodology

Research Design

The research framework for this dissertation in practice study is Improvement Science. The first iteration of this study focused on teacher perceptions of current RtI practices and instructional practices, and existing interventions used to support struggling middle readers. In addition, this iteration investigated the impact of instructional strategies used in RtI to improve

student reading outcomes. The second iteration studied teacher perceptions and the impact of a specific phonics-based program, RHE.

The evaluation study of the current RtI practices utilized a mixed-method design to explore and better understand the problem of practice. More specifically, the researcher used exploratory sequential mixed methods design. According to Creswell and Pablo-Clark (2011), the initial stage of an exploratory design focuses on gathering and analyzing qualitative data. In the second stage, the researcher used quantitative analysis to validate or expand on the findings from the exploratory phase. Finally, the researcher evaluated how the quantitative results complement the initial qualitative findings. This study's primary focus was to evaluate the instructional practices, procedures, and data-driven decision-making that influence literacy performance in middle school students. Qualitative data such as semi-structured interviews provided insight into teacher perception of the current RtI practices, and the impact of instructional strategies used to support struggling middle school readers.

Quantitative data were acquired from 2021 Reading (STAAR) data reports. The data was used to examine the STAAR scores for the students currently served in intervention classrooms and was a baseline for reading achievement to validate a student’s participation in intervention instruction.

The evaluation study materials and processes received approval from the University Institutional Review Board (IRB). Before data collection, all participants signed informed consent to participate in interviews. The students' names were removed from the quantitative data to ensure anonymity and replaced with numerical pseudonyms.

Context

Iteration One

This mixed-methods study was conducted at a middle school in East Texas. The initial focus was examining the selection process for placing students in RtI and the tiering process utilized for students.. The RtI tier system is a familiar approach educators use to provide targeted support to students struggling academically or behaviorally. The system is designed to identify students who may need additional assistance beyond what is typically provided in the classroom and provide them with the necessary interventions to help them succeed. There are three tiers in the RtI system, each with a different level of support. Tier 1 is the universal level, where all students receive high-quality instruction and support in the classroom. Tier 2 is the targeted level, where students struggling academically receive additional support through small group instruction or other interventions. Finally, Tier 3 is the intensive level, where students continue to struggle, although the targeted interventions in Tier 2 receive more intensive interventions and support. The RtI system aims to provide early intervention and support to students before they fall too far behind or require more intensive interventions. By identifying struggling students early and providing the appropriate support, educators can help ensure that all students can succeed. It was determined that only teacher recommendations were used to identify students for reading intervention. Data analysis played a minimal role in identifying students, targeting specific learning gaps, and student grouping.

Intervention teachers did not formally use an implementation design or evidence-based, high-quality instructional materials with fidelity. Teachers were using parts of the Leveled Literacy Intervention (LLI) as a part of their program (Fountas & Pinnell, 2018). Leveled Literacy Intervention (LLI) is a research-based program designed to support and improve the

reading skills of struggling readers in K-12 classrooms. Leveled Literacy Intervention is designed to target instruction to students who are not yet reading at grade level, using a combination of leveled books and lessons tailored to each student's needs. Although LLI is research-based, it is essential to note that the program is deeply grounded in the whole language approach to teaching reading. In addition, students were supposed to participate four to five days a week for forty-five minutes a day. However, the RtI teachers used a pull-out method for meeting with students. The pull-out method for intervention is an instructional approach where students were temporarily removed from their regular classroom setting and placed in a separate location or smaller group to receive targeted intervention or support. Ideally, this method aimed to provide more targeted instruction and personalized support for students needing extra assistance in certain areas. Yet, inconsistencies in the current RtI plan made it difficult for teachers to consistently engage with students. The first iteration or the evaluation study sought to determine teacher perceptions of implementing RtI instructional practices and impact of the RtI model on struggling middle school readers.

Iteration Two

The second iteration took place at the same middle school campus but specifically researched the effectiveness of RHE, which occurred at a middle school with 251 students. The student body was comprised of 48.61% Female, 51.39% Male, 34.66% Hispanic, 19.52% African American, 40.64% White, 4.38% Two or More, 87% Eco. Disadvantaged, 65.34% At Risk, and 19.52% Emergent Bilingual. Reading intervention was taught by two educators having intervention experience. One of the intervention teachers had already obtained her master’s degree with an emphasis in special education.

Participants

Iteration One

Convenience sampling was utilized to select participants to evaluate teacher perceptions of current RtI instructional practices and the impact of instructional strategies used in RtI. The researcher had face-to-face discussions with the intervention teachers about the study and their role in the study. Both teachers signed written consent forms to participate in the semi-structured interviews. The participating teachers' experience ranged from twenty-seven to thirty years in the field. Both teachers were female, one African American and the other Caucasian and held current teacher certification credentials, with one having already earned her master's degree.

Iteration Two

Due to unforeseen circumstances, the intervention study only consisted of one participant. The participating teacher had twenty-seven years of experience and taught intervention classes for grades six to eight. The participating teacher was a white female. This teacher was highly qualified by the state of Texas's teacher credentialing standards.

Instrumentation and Data Collection

Iteration One

Qualitative data was collected from semi-structured interviews. The data from the interviews sought to answer research questions one: *How do intervention teachers perceive the implementation of RtI instruction?* These data collection methods also sought to answer research question two: *What is the impact of instructional strategies used in RtI to improve reading outcomes for struggling middle school students?* The aim is to gather information on the effectiveness of current RtI practices in addition to how teachers perceive their implementation of RtI instruction (see Appendix A).

As part of this mixed-method evaluation study, quantitative data was collected from the campus' tier one spreadsheets, which housed student level data such as current and prior years' STAAR scores. The data collected was used to answer the second research question.

Iteration Two

The mixed-methods study utilized quantitative and qualitative data sources. The quantitative data set was derived from Spring of 2022 Reading STAAR results. There were 28 students in the intervention who had a 2021 STAAR score and a 2022 STAAR score. Some students were either home schooled and did not take STAAR or moved from out of state, and therefore, did not have a prior year's STAAR score. In addition to quantitative data, qualitative data was collected through semi-structured interviews. The open-ended questions allowed the participant to reflect and discuss the implementation of RHE and provide insight into future study of the intervention.

Data Analysis

Iteration One

Data analysis for the evaluation study came from 2021 Reading STAAR scores and semi-structured interviews. The qualitative analysis included an examination of ten open-ended questions using thematic analysis to generate themes for findings. According to Nowell et al. (2017), thematic analysis is a valuable method to explore diverse research participants' perspectives, highlighting both shared and unique viewpoints and uncovering unforeseen insights.

Quantitative data from the 2021 STAAR was analyzed using descriptive statistics. Descriptive statistics organize and present frequency distribution, providing insights into occurrence of values. The researcher also used the performance level indicator from Lead4ward

to better understand the performance levels on STAAR. Students were either classified as did not meet or approached grade level. The researcher used the quantitative data to better understand the level of achievement of students being served in RtI.

Iteration Two

An inductive thematic analysis was used to examine the open-ended, semi-structured questions to better understand the perception of the intervention, RHE. Responses were captured using a Google document, recorded, and later transcribed for increased accuracy during reporting. The interview, between the researcher and the teacher, lasted about 40 minutes. The participant was aware of the purpose and intent of the study and signed consent prior to the interview also permitting audio recording (see Appendix B).

A pairs samples t-test was utilized to determine if there was a statistically significant change in reading outcomes due to the intervention from one year to the next. Prior to conducting the statistical test, it was determined that the data assumptions were violated. The researcher switched to the Wilcoxon Signed Rank, a nonparametric test to determine the impact of RHE on improving reading outcomes.

Limitations of the Research

Iteration One

Various limitations were found in this evaluation study. One of the limitations was the small number of participants in the study. Only two teachers were a part of the study, therefore, inhibiting increased generalizability of the findings. In addition, the study did not have a control group to increase the validity of the results. Consequently, it is recommended that in future studies more participants are recruited to increase the occurrence of generalizability.

Iteration Two

The second iteration of the study also produced limitations. Fidelity in the implementation may have been threatened since this was the first year of implementation. Although there was professional development provided for the program, it is unknown if it was implemented completely. In addition, the study did not include a control group. According to Pithon (2013), a control group within a research study can help the researcher determine the impact of variables, primarily when the experimental group receives the same treatment or intervention. Therefore, future research should include a control and treatment group to increase the findings' validity and generalizability.

Design-Based Implementation Research Framework

The Design-Based Implementation Research (DBIR) was to investigate and explore improvements for improving outcomes for struggling readers. The DBIR approach was developed to solve the ongoing challenge of improving quality in education. By forging partnerships between researchers and practitioners that are equal and considerate, DBIR has shown that educational research can positively impact intended practices and outcomes in classrooms and schools (LeMahieu et al., 2017). Design-Based Implementation Research also seeks to achieve the following:

1. DBIR considers the viewpoints of various stakeholders, such as students, teachers, parents, leaders, and instructional aides, to address persistent problems in education systems.
2. DBIR stresses an iterative and collaborative design process for programs or interventions to achieve desired results.

3. The main goal of DBIR is to develop theoretical knowledge and practical expertise in program implementation processes and classroom learning outcomes through methodical inquiry.
4. DBIR places great importance on building organizational capacity to sustain improvements in education systems over time.

Despite the similarities between DBIR and Design-Based Research (DBR), they are marginally different. According to Lin et al. (2022), DBIR seeks to improve the implementation of interventions through a rigorous process of considering how context, stakeholders, and organizational factors influence an educational innovation. However, Anderson and Shattuck (2012) suggest that "the design is conceived not just to meet local needs, but to advance a theoretical agenda, to uncover, explore, and confirm theoretical relationships" (p.16). While both approaches use mixed-methods to focus on iteratively solving complex problems within educational settings, DBIR supports a more integrated relationship between theory and practice. According to Hoadley and Campos (2022), while DBIR is an offshoot of DBR, DBIR focuses on the scalability or the ability for improved outcomes to become more accessible and widely adopted, leading to better results for students and educational practitioners. In addition, methods for disseminating improvement efforts through Networked Improvement Communities are a differentiating tenant of DBIR (Hoadley & Campos, 2022). The purpose of networked improvement communities is to bring together groups of individuals who share a common goal of improving a particular system or process. These communities work collaboratively to identify problems, develop solutions, and implement changes to improve outcomes. By leveraging its members' collective knowledge and expertise, Networked Improvement Communities can drive meaningful and sustainable improvements in various settings, from healthcare to education to

social services. The aim is to create a widespread culture of continuous improvement that transcends multiple contexts and conditions.

The Dissertation in Practice

According to Tamim and Torress (2022), the Doctor of Education (EdD) was first established in 1920 at Harvard's Graduate School of Education as the initial professional doctorate program. Today, other industries such as health and human services, engineering, and business now offer an applied doctorate or dissertation in practice pathways. Stacy (2013) claims that the dissertation in practice finds its roots in the Carnegie Project on the Education Doctorate, which emphasizes understanding and investigating the problems of practice that challenge school leaders today. A dissertation in practice aims to equip confident and capable scholarly practitioners with Improvement Science based methodologies for investigating high-leverage problems of practice that impact student outcomes. As scholarly practitioners, "EdD graduates gain valuable skills that allow them to become transformed leaders" (Tamim & Torress, 2022, p.2).

Introduction to Improvement Science

Lewis (2015) describes Improvement Science as a comprehensive understanding of effective strategies for improving complex systems that require both basic disciplinary knowledge and a system of profound knowledge that can be applied within organizations. This approach draws on various fields of study and emphasizes measurable outcomes and increased efficiency, aiming to drive continuous innovation and create lasting change. Improvement Science is used in diverse settings, including healthcare, education, and business, and by applying rigorous scientific methods to the process of improvement, practitioners of Improvement Science aim to create lasting change and drive continuous innovation. The

Improvement Science framework, developed by the Carnegie Foundation for the Advancement of Teaching, is based on six core principles listed in Table 1. This framework aims to bring about significant improvements in educational practices and outcomes. The six principles provide a comprehensive and practical guide for educators to make meaningful and lasting changes in their work. Improvement Science is focused on iterative changes and making the right changes that result in better outcomes for students and educational practitioners.

Table 1

Carnegie Foundation of the Advancement of Teaching

Six Principles of Improvement Science
1. Make the work problem-specific and user centered.
2. Variation in performance is the core problem to address.
3. See the system that produces the current outcomes.
4. We cannot improve at scale what we cannot measure.
5. Anchor practice improvement in disciplined inquiry.
6. Accelerate improvements through networked communities.

Note. From Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to Improve*. Harvard Education Press.

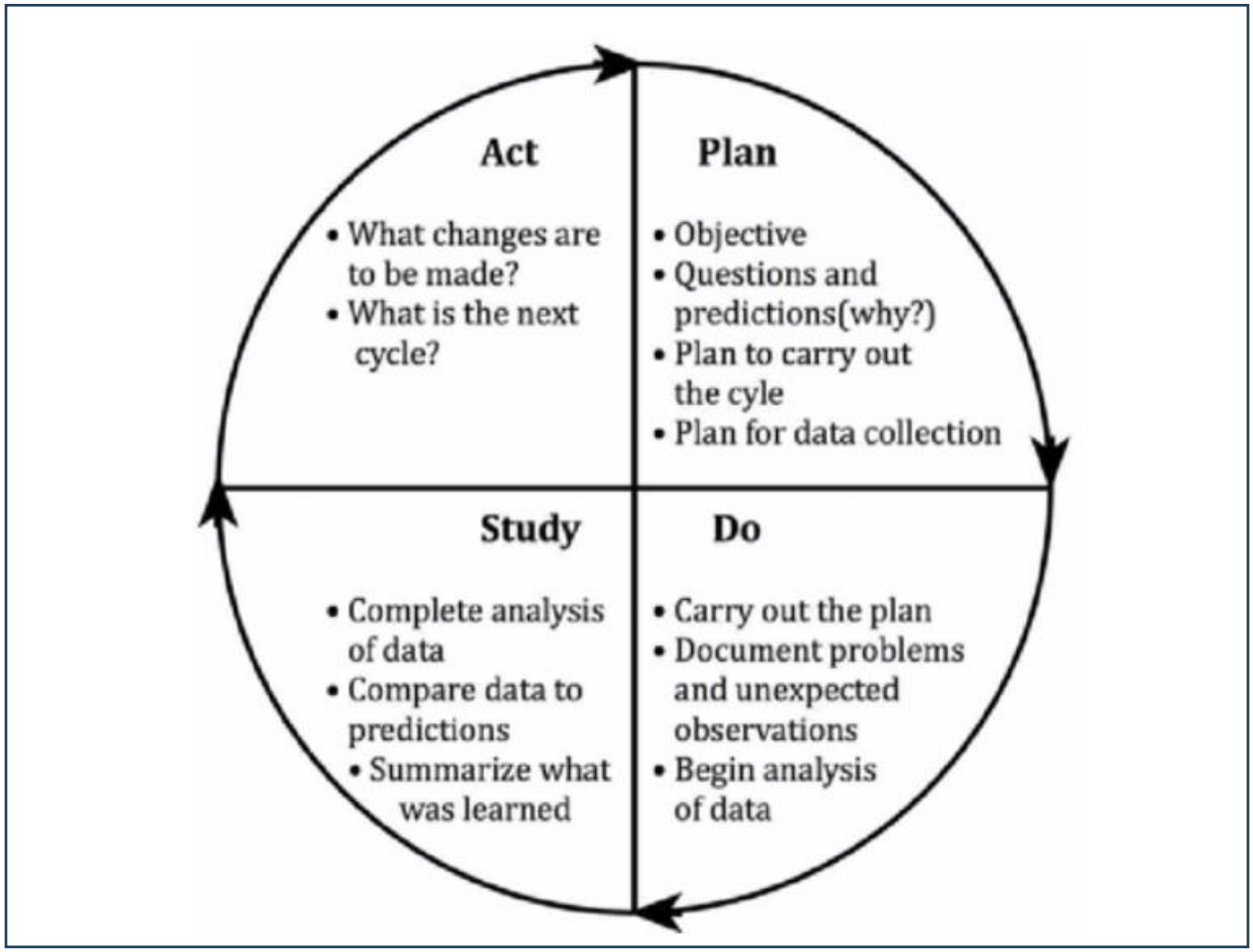
Plan-Do-Study-Act Improvement Cycle

The Plan-Do-Study-Act Cycle of improvement is the linchpin for continuous improvement by implementing an active iterative approach to adjusting actions. According to Wagner et al. (2017), the purpose of the Plan-Do-Study-Act Cycle is to continually improve processes and achieve better outcomes through a structured, iterative approach. To improve efficiency, effectiveness, and overall performance, organizations can implement a process of planning, implementing changes, studying the results, and refining accordingly. By making

incremental improvements over time, significant gains can be achieved. As depicted in Figure 1, every iteration encompasses four distinct phases. These are methodically repeated to address the evolving queries that emerge during an innovation or intervention's implementation.

Figure 3

The Plan-Do-Study-Act (PDSA) Cycle



Note. Plan-Do-Study-Act (PDSA) Cycle. Adapted from Langley et al. (2009)

Two Phase Nature of Dissertation in Practice

The dissertation in practice was designed in two iterations. The goal of the study's first iteration was to investigate and analyze the current campus level of implementation of RtI practices. In addition, the first iteration sought to gain a deeper understanding of the perceived

effectiveness of campus interventionists' role in implementing evidence based RtI strategies that result in increased student outcomes for struggling readers. Iteration one investigated Improvement Science principle three, which highlights the profound role of understanding the system that produces the current outcomes. Principle three underscores the imperative of perpetual enhancement, necessitating an unceasing commitment to data analysis and evaluation. This ongoing scrutiny is pivotal in validating our progression towards predetermined objectives, thereby creating a foundation for an evidence-based approach to continuous improvement. After analyzing the results from iteration one of the studies, it was determined that struggling readers needed explicit, systematic phonics instruction to accommodate multiple learning styles. Therefore, iteration two of the study or the evaluation study sought to determine the effectiveness of Reading Horizons for supporting struggling readers with foundational reading gaps. The evaluation study sought to acknowledge principles four and five. According to Bryk et al. (2015), “We cannot improve at scale what we cannot measure." This asserts the significance of measurable elements within a system poised for improvement. Principle four emphasizes the role of data and reliable metrics in assessing system performance, understanding the impact of changes, and scaling effective practices. With consistent, reliable measurement, it is possible to know if interventions achieve their intended effects or how to make necessary adjustments. Principle five, "Anchor practice improvement in disciplined inquiry," stresses the importance of engaging in systematic, rigorous investigation to improve practice. It involves establishing testable hypotheses about what changes will lead to improvements and then using iterative Plan-Do-Study-Act (PDSA) cycles to test these hypotheses in practice. This disciplined inquiry generates valuable feedback and contributes to the larger body of knowledge in each field.

Together these principles underscore the need for a thoughtful, evidence-based approach to improvement.

Together, these principles are embedded within the Design-Based Implementation Research (DBIR) framework, which offers a holistic, iterative approach to educational improvement. DBIR framework is uniquely positioned to further the understanding of the complex relationship between theory and practice in education. The DBIR approach considers not just the design and implementation of interventions, but also the broader contexts in which they exist. By emphasizing collaborative partnerships, context-specific design, and an iterative feedback loop, the DBIR offers a pathway to understand and navigate the complexities inherent in educational settings.

Summary

Chapter one introduced the problem of practice within a rural East Texas middle school. Limited use of effective RtI strategies by intervention teachers led to ineffective intervention instructional time and the lack of instructional materials that best support struggling readers. The importance of this issue is emphasized, stating the potential impact on student outcomes. The introduction of this study discussed the significance and the rationale for implementing the RHE intervention program. Legislative demands for accelerated learning because of academic regress and deficiencies due to COVID-19 have placed renewed focus on RtI and multi-tiered systems of support structures to mitigate learning loss and close the achievement gap for all students. Reading Horizons, an evidence-based reading intervention program, has been documented for its use with struggling readers in addition to English language learners and students with dyslexia. Chapter 2 will review literature regarding evidence-based practices for supporting struggling adolescent readers.

Chapter 2

Review of the Literature

The No Child Left Behind Act (NCLB) of 2001 pinpointed national attention on the importance of literacy and reading proficiency in American schools. Unfortunately, data from the National Assessment of Educational Progress revealed a staggering fact that 64% of eighth graders read below grade level (Wexler et al., 2020). In other words, according to Hurwitz and Macaruso (2021), by the eighth grade, two out of three American students are represented among the lowest percentages of reading proficiency. According to Fuchs et al. (2012), secondary schools in Texas are increasingly beginning to mobilize RtI or a multilevel system to address learning gaps through intervention and prevention due to consistently declining reading proficiency scores. Through intensive RtI programs, the goal is to close performance gaps for students who failed the State Assessment of Academic Readiness (STAAR) and English end-of-course exams (Bippert et al., 2017). More recently, the negative impacts of COVID-19 led to the passing of Texas House Bill 4545, which requires students who do not pass the STAAR test in grades 3–8 or STAAR (EOC) end-of-course assessments to receive accelerated instruction to close learning gaps. It is important to discuss the specific instructional strategies that are evidence-based for accelerating students learning in reading.

The National Assessment of Educational Progress reading assessment framework defines reading as a dynamic, cognitive process that involves understanding written text, developing, and interpreting meaning, and using meaning appropriately for text type and purpose" (NAEP Reading, n.d.). According to Powell and Gadke (2018), the fluent reader utilizes phonemic awareness, fluency, vocabulary, and comprehension skills to construct meaning in and beyond a text (Powell et al., 2018). Observational findings by Ciullo et al. (2016) revealed the necessity for professional development in literacy strategies as teachers reported inadequacy in their ability

to support struggling readers and those with learning exceptionalities. Research contends that robust intervention systems of support for struggling middle school readers, instructional time, technology, evidence-based instructional practices, student grouping, and teacher preparedness are all elements that impact student outcomes and performance (Ciullo et al., 2016). This thematically organized literature review aims to explore, evaluate, and explain current research on critical evidence-based practices for supporting middle school students with reading difficulties, while also arguing for further clarification and advocating for specific evidence-based practices for these same readers.

Comprehension Skill Deficiencies

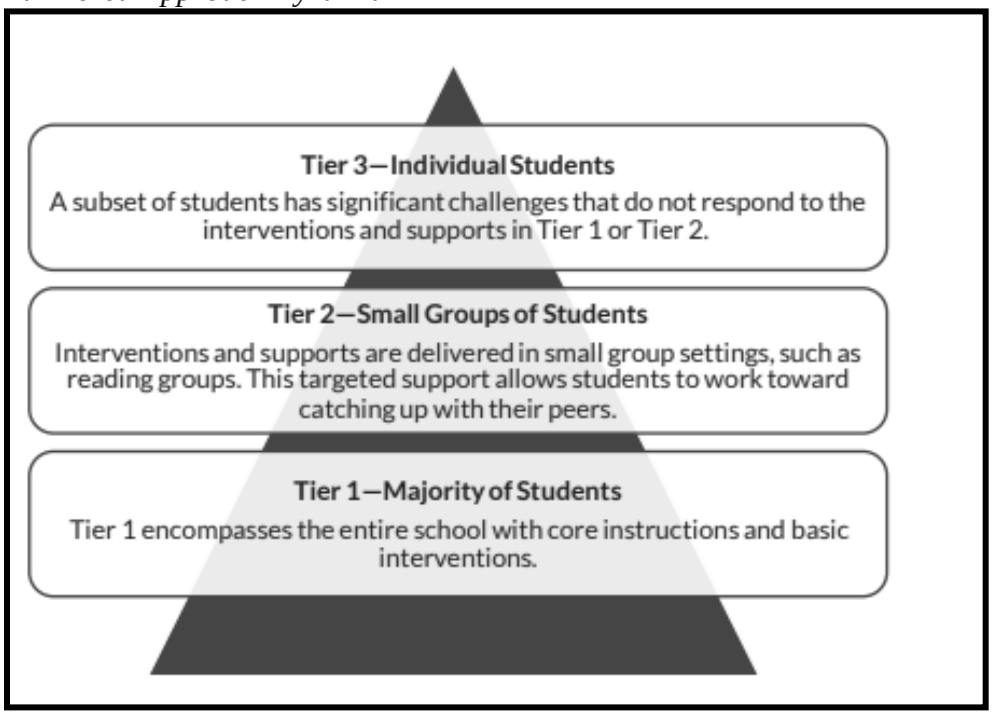
Consistent with the body of research and national assessments, Kim et al. (2016) suggested that the demands of technical and text-dependent reading challenge adolescent struggling readers in the areas of summarization of text, comprehension, fluency, decoding, and synthesizing information from multiple genres. The authors carefully highlighted the limited scope of reading interventions that target secondary students and contended that intervention strategies that only target word and sentence level skills often fall short of providing contextual transfer to result in profoundly analytical comprehension. Daniel et al. (2021) echoed the idea that word reading skills are a focal point for elementary-aged readers. However, upper elementary through secondary readers must transition to synthesis and high levels of analysis to develop new meaning from text. The authors do not fail to acknowledge the necessity of decoding, morphological, and syntactical awareness within adolescent readers, as these critical drivers aid in constructing meaning (Kim et al., 2016). Kim et al. (2016) claimed that the efficacy of reading interventions relies on exposing readers to high-quality complex texts, open-ended constructed response opportunities, and extensive analytical reading texts. The authors

also identified motivation as a core component of activating struggling adolescent readers in closing literacy gaps. Donalson and Halsey (2020) suggested that as struggling readers matriculate through subsequent graders, motivation declines partly due to insecurities in self-esteem and social, academic, and cultural pressures. Glenn et at. (2018) declared that struggling readers frequently perceive that the label of the struggling reader is often predetermined and becomes a self-fulling prophecy. According to Donalson and Halsey (2020), struggling readers often possess many negative perceptions about their identity as readers. These readers frequently need more self-efficacy, determination, and adequate targeted support to overcome learned helplessness due to years of poor academic performance.

Kim et al. (2016) sought to evaluate the impact of the Strategic Adolescent Reading Intervention (STARI) curriculum program on struggling adolescent readers. STARI is a multimodal approach for teaching decoding, peer talk, fluency, and the direct teaching of strategies for constructing meaning for deep comprehension. The context of the study consists of eight Title I middle schools in urban and rural Massachusetts using a randomly assigned treatment group (n=214) while implementing a pretest-posttest design. The study results revealed that students who participated in more STARI activities realized increased gains in reading skills. In addition, participants reported improvements in confidence, focus, and self-efficacy. The researchers identified multiple limitations of the study and the current research: can multimodal TIER 2 interventions be scaled to target comprehension gaps? Tier I instruction includes the core curriculum and instructional strategies that align with state standards for all students in a general education classroom. Tier II instruction consists of targeted and strategic instruction in the form of intervention. Students within Tier II who have yet to respond may require tier III instruction. Tier III included a more intensive intervention form of instruction.

Figure 4

RtI Tiered Approach Pyramid



(Hanover Research, 2020)

Determining the positive impact of multicomponent literacy interventions is vital for the sustainability and transferability of the intervention. Daniel et al. (2021) later emphasized the limitations of earlier researchers by suggesting there is limited evidence to support the long-term sustainability that struggling readers make while in intervention programs. The researchers argued that follow-up data from summative or formal assessments are needed to add quantitative value to the evaluation of reading interventions. Daniel et al. (2021) cited prior research on the sleeper effects of reading interventions. *Sleeper effect* in the context of interventions refers to the delayed effects of an intervention that might not be immediately apparent after the intervention is completed. The full impact of the intervention is not evident immediately after the implementation but instead emerges after some time. Therefore, students may require time to embrace newly learned reading behaviors that target literacy gaps.

According to O'Connor and Padeliadu (2000), the lack of phonemic awareness can be attributed to sound discrimination in their phonological processing. Based on their findings, poor readers not only experience a myriad of difficulties associated with reading, but how well they do could be attributed to their ability to recognize and remember letter and whole word patterns, commonly referred to as orthographic processing. The ability to determine the correct spelling of a word only sometimes translates into the correct pronunciation of the word or its meaning. Research by O'Connor and Padeliadu (2000) suggested that children who find reading difficult often do not receive the attention they need to answer the question as to why they are poor readers because there is a lack of targeted, evidence-based intervention tailored to the individual needs of struggling readers. In this study, twelve first-grade children of varying ethnic backgrounds were tested on sound repetition, blending, and segmenting, as well as their regular reading instructional time to prove their theory. While they were able to prove immediate improvement, lasting results were not indicated. They attributed this to the inability to control the instructional methodology of the teacher.

Multi-Strategy Approach

Research by Barth and Elleman (2017) specifically evaluated the impact of a multi-strategy inference intervention targeting struggling middle-school readers. The authors highlight the importance of a reader's ability to make inferences while engaging with a text. Barth and Elleman (2017) suggested inferencing is a current trend in reading comprehension studies and state standards. Research suggests that there are two forms of inference. First, text-based inference joins current data in the text to data that was previously read. Second, knowledge-based inferences incorporate information from the author within the text, infusing a reader's personal schema or background knowledge (2017). Donaldson and Halsey (2020) argued that

struggling readers need more strategies for making profound inferences and responding analytically to complex text.

Moreover, researchers assert that the ability to make inferences is the linchpin for comprehending text from every level from elementary to adulthood (Donaldson & Halsey, 2020). Barth and Elleman (2017) suggested strategies for teaching and modeling inferences including using text clues for clarification, activating and integrating prior knowledge, understanding character perspectives and the author's purpose, and learning how to answer inference questions. The findings revealed the positive effects of the intervention (Barth & Elleman, 2017). However, the researchers recognized the study's inability to isolate and quantify the highest leverage strategy employed during the treatment sessions.

An Argument for Explicit Phonics Instruction

The study conducted by Bowers centered on synthetic phonics and its effectiveness in improving reading skills by teaching the relationship between sounds and letters (Fletcher et al., 2021). Fletcher et al. (2021) acknowledged the study's importance in providing empirical evidence supporting the efficacy of phonics instruction, especially in early reading development. They emphasized that phonics enables children to recognize letter-sound correspondences, thereby decoding words. Furthermore, explicit, and systematic phonics instruction is particularly beneficial for struggling readers and those with dyslexia. Fletcher et al. (2021) discussed the implications of Bowers' findings for educators, suggesting that teachers prioritize phonics instruction and provide structured lessons to help students understand and apply phonetic principles. They also emphasize that professional development opportunities for teachers are crucial to ensure they possess the necessary knowledge and skills. According to Fletcher et al. (2021), a pure focus on phonics instruction does not allow literacy professionals to make solid

decisions in the practice of systematic phonics, thereby affecting legislative decisions that have the power to increase or decrease literacy funding. Bowers' findings suggested that the best way to address systematic phonics from the perspective of evidence-based instruction is to start by asking the right question. However, Fletcher et al. (2021) cautioned against an exclusive focus on phonics and advocate for a balanced approach to reading instruction. They stress the importance of a comprehensive literacy curriculum that includes other essential components such as vocabulary development, reading comprehension, and fluency. The research of Fletcher et al. (2021) highlighted the significance of Bowers' study in supporting the role of phonics instruction in reading. They underscored the importance of explicit and systematic phonics instruction for improving reading skills, particularly for struggling readers. Unlike Bower, the writers argued that in teaching children how to read, it is the teacher who facilitates the development of reading by providing reading experiences through factors such as print-rich environments and age and stage appropriate literature and materials. Because of this, the breaking apart of words should not take preference over teaching the reader the word and its meaning. Fletcher et al. (2021) agreed with Bowers in that learning to read is a combination of language development based on what is heard and then understood. While advocating for phonics in reading instruction, they stressed the need for a well-rounded literacy curriculum that encompasses various components of reading proficiency.

Is Phonics Alone Enough?

According to Stuebing et al. (2008), a reexamination of the National Reading Panel Report emphasized the significance of systematic phonics instruction in enhancing literacy rates. Factors such as group size, understanding the alphabetic code, cost identification, and phonics merging with language instruction were crucial for effective intervention. It was observed that

group size and norms played a significant role in the intervention process. Teachers selected materials based on specialized groups in the past, but this approach could have improved reading growth in individuals uninterested in the selected topics. To improve reading outcomes within the intervention setting, materials should be tailored to the interests of each individual rather than structured instruction for the entire group. However, this personalized approach increases the intervention cost due to tutoring expenses. The report also highlighted that phonics instruction alone cannot be considered a complete reading program and should be combined with other reading programs. Stuebing et al. (2008) suggested it is essential to ensure students have a working knowledge of the alphabetic code to learn to read effectively. There needs to be more than just reciting the code alone; a comprehensive understanding of the phonetic principles is necessary for students to move past intervention. According to Stuebing et al. (2008), systematic phonics instruction is critical for students who struggle with reading. Research shows that explicit and structured phonics instruction is beneficial for those with dyslexia or other reading difficulties. The authors stressed the need to identify struggling readers early and provide targeted interventions to improve their reading outcomes.

Motivational Theories

According to Van der Sande et al. (2023) the primary objective of meta-analysis on motivational theories was to critically evaluate the impact of interventions anchored in these theoretical frameworks on students' reading motivation and comprehension. Furthermore, this research seeks to discern which specific mechanisms yield the most pronounced effects in changing motivation and comprehension capacities. According to Van der Sande et al. (2023), meta-analysis consists of a process that allows the researcher to combine data gained from multiple studies that identifies and addresses trends and patterns from a statistical standpoint.

Using this approach, their study included research derived from online databases and was broken down into categories or discussion points. The research points were as follows: Positive effects on affirming motivation, extrinsic motivation, combined motivation, and reading comprehension. Understanding motivation is vital when engaging secondary aged students in reading intervention.

Theories of Affirming Motivation. Within the scholarly domain focused on motivation, researchers have expounded and debated numerous theories. Among those positing the affirmative dimensions of motivation, three predominant theories—namely the Achievement Goal Theory (AGT), Interest Theory, and the Expectancy Value Theory—emerge as valuable. Motivational theoretical perspectives help explain how individual-driven determinants underpin successful reading engagement and intrinsic motivation to read.

Achievement Goal Theory (AGT). Chazan et al. (2017) suggested that the overall approach of Achievement Goal Theory (AGT) is the achievement of reading mastery through individual motivation. According to Chazan et al. (2017), the practice of determining reading goals was based on that of other students, and individual student development was increased by employing instructional methods using thematic units and project-based learning. This method allowed a level of individual autonomy that increased student motivation and, subsequently, led to an increase in student performance. Adhering to the social comparison method to measure motivation as an overall group can be unreliable as motivation would not be achieved if an individual from within a group did not find interest in the subject. If a student lacks interest, they may not engage in or complete reading tasks, which can ultimately impact overall data.

Interest Goal Theory (IGT). In the Interest Goal Theory, the measuring of reading motivation was based on the level of individual interest in a topic, an activity, or a subject

(Schiefele,1991). In this theory, motivation came by way of how a subject's content was presented. If the subject were presented from a multifaceted approach, the individual would be allowed to select and or choose their area of interest. This freedom to explore an individual area of interest would serve as the catalyst for their overall motivation. According to Schiefele (1991), the basis of IGT was to allow a dissection of a subject to motivate the reader to gain knowledge unique to their interest. This dissection, or the ability to choose, would allow for reading autonomy. This autonomy would capture the reader's attention, and he or she would in turn be motivated to continue reading because of the knowledge being gained by pursuing their interest. However, in the IGT, the constant retaining of the readers' interest through carefully crafted lessons and units would not address practices based on repetitive skills-based learning such as math.

Expectancy Value Theory (EVT). In the Expectancy Value Theory researchers measured several factors involving motivation. The EVT theory is based on the psychological effect of motivation. Researchers measured intrinsic value, attainment value, utility value and cost value (Wigfield & Eccles, 2000). In each of these motivational values the psychological effect, by way of thought patterns, was used as the motivation measuring tool. If the subject was enjoyable, was found to be personally important, personally useful, and did not require a large amount of personal time, individuals were more likely to remain motivated. However, if there is a loss of interest in any of the before referenced, the individual would cease from being motivated.

Motivational Theories in Reading Intervention

The use of AGT, IGT and EVT theories not only affected reading motivation, but once incorporated into reading intervention, they affected how material was presented as well as

instructional content. The most profound effect on reading intervention was the shifting of the traditional learning model to that of instructional partner. When reading intervention strategies are formulated into motivation, the teacher serves as an instructional partner alongside the student. This change of dynamics may change student learning.

Van der Sande et al. (2023) propose that although the researchers initially aimed to examine and promote reading motivation through meta-analysis, upon collecting data, they found that the most effective approach for addressing the needs of academically struggling students was to concentrate on understanding how motivation was impacting these specific individuals. They determined that intrinsic motivation needed to be addressed and then fostered in students for them to be removed from intervention activities in the future.

Assessment of Identifying Struggling Readers

According to King and Coughlin (2016), RtI is a multi-tiered system of support that includes early and intensive monitoring of the progress that ultimately affects how information is presented through instructional practices. The goal of RtI is to identify struggling readers and provide interventions that will not only address their needs, but also fill in gaps leading to higher literacy levels based on problem solving. The article focused on programs and techniques as opposed to statistical data.

Intervention Models

Standard Treatment Protocol (STP) is a method of intervention that is used for small groups and is typical of most campuses with struggling readers. According to Harlacher et al. (2010), STP is a model that provides uniform instructional strategies, skills, and curriculum materials to target gaps in student learning. Because STP is evidence based, its focus is primarily on skills and not on motivation. The use of this method encourages the mastery of a

skill or technique that is not tailored towards the individual, but rather the group. This intervention model is used to move or increase academic targets for a particular group as opposed to a single student (King & Coughlin, 2016). Furthermore, this model does not allow for individualized approaches or encourages the use of creative instructional approaches, but only demands use of repetitive strategies and techniques that will increase the skill level.

In contrast, a Problem-Solving Approach (PSA) provides a more individualized methodology by taking several factors into account with the intention of meeting the needs of struggling learners. Factors such as skill deficits, learning environments, behavior patterns, and other instructional data are taken into consideration when developing an intervention plan or strategy (Ehren et al., 2010).

Reading Comprehension and Motivation in the Secondary Student

Researchers used data from 2,485 high school freshmen (Grade 9) to effectively measure reading comprehension (Van Ammell, 2021). Their goal was to measure not only reading comprehension, but the effects of motivation on this age group and sought to show a link between how motivational and behavioral structures combine to increase reading comprehension. The measurement of reading comprehension, comprehension being the ability to understand what is or was read by an individual, was harder to discover on the secondary level because of several factors. According to Van Ammel et al. (2021), factors such as cognitive ability, behavior concerns, group dynamics, and societal norms were all taken into consideration and found to affect reading comprehension of students. Students within this group were motivated strictly by their individual interest and not as a group. If students were interested in the overall topic and subject or if the subject was relevant to their current high school life or

experience, they were easily motivated. If not, instructional strategies had to be put into place to motivate them first and then attempt to measure comprehension.

Incorporating Supplementary Resources: Digital/Online Learning

Ostiz-Blanco et al. (2021) suggested that reading involves several aspects, such as recognizing letters and words and understanding the language. These can be divided into smaller parts such as spelling, phonetics, vocabulary, comprehension, fluency, and motivation and attention. The introduction of digital or online learning significantly changed the dynamics of the learning community as to how struggling readers are introduced to learning, how students maintain learning, and how student learning is assessed. While this introduction has proven crucial as to the pace of keeping up with and staying abreast of educational changes, neurologically, there remain both challenges and severe consequences. Digital literacy is the ability of students to possess the skills needed to access, interpret, and process information. Research from Turner et al. (2020) asked about the conditions involved when adolescents read digitally. Research interviews suggest that students feel detached between printed text and digital text platforms (Turner et al., 2020). For some, the introduction of systemic digital/online learning has challenged not only the cognitive abilities of students, but also the technological literacy of educators as well. When Gilster (1997) first made the world aware of the concept of 'digital literacy' in the late 1990s, he defined it in educational terms, recognizing the fundamental but revolutionary uniqueness of the internet and identifying the digitally literate student as having a specific set of information skills (e.g., evaluation, searching) applied to text and multimedia information found on the internet and situated in a formal, school-based learning context. He noted that with instant access to a seemingly limitless number of ideas and information came new responsibilities for the user. The proverbial question continues to arise as to what the proper

age is to incorporate digital/online learning in the classroom, and what age is regarded as developmentally unsafe for students. Armstrong and Casement (2000) presented an opposing view. They argued that introducing digital technology should be avoided in young readers and learners because it creates less social interaction with peers. This led to less social and emotional development, which could limit the ability to grasp basic learning concepts fully. According to Fogarty et al. (2017), struggling adolescent readers frequently present an overwhelming deficiency in several foundational reading skills. However, technology-based applications may provide adequate support in school and at home (Fogarty et al., 2017). Researchers agreed that while digital/online learning should be included in learning options, it should not be the main component in learning environments. Computer-based interventions offer numerous benefits compared to conventional approaches. For example, digital reading intervention programs may provide opportunities for individualized learning and increase freedom for teachers to work with small groups. Moreover, they create an engaging learning environment for children. Furthermore, they facilitate the systematic implementation of reading instruction across all students, minimizing the impact of individual variances among teachers (Ostiz-Blanco et al., 2021).

Literature Review Conclusion

The purpose of this literature was to review, evaluate, and explain critical evidence-based practices for supporting middle school students with reading difficulties. In addition, the review of literature also examined the centrality and importance of motivation in reading comprehension, especially for secondary aged students. The research provided concrete evidence that struggling adolescent readers can make gains but only with intensely targeted interventions. However, the motivation to read was strictly based on the interest level of the individual.

The research suggested that the foundational component needed in literacy-based programs targeting struggling adolescent readers relied on heavily targeted interventions that support phonics development. While the research did not point to one specific type of intervention for literacy instruction or design and delivery, the research showed that a system had to first be in place to address the problem. In addition, researchers concluded that the overall relevance of information, knowledge base, skill level, and the overall ability to navigate through text were all factors leading to reading comprehension.

As summarized in this literature review, the body of research provides substantial implications for implementing multimodal interventions for remediating adolescent struggling readers. However, current research may not provide data analysis on the most powerful strategy used during the intervention to calculate the most significant effect size. Unfortunately, research lacks the evaluation of the impact and efficacy of online-based or software-driven reading interventions on struggling readers. Therefore, further research is needed to determine the effectiveness and sustainability of technology in the remediation of middle school-aged children with reading difficulty.

Working Theory of Improvement

Guided Reading. Guided reading is a potential change effort to address the problem of practice. According to Lyons and Thompson (2012), guided reading is a strategy within a balanced literacy framework. The literacy strategy includes four methods: modeled reading, where the teacher reads aloud to the students; shared reading, where both the teacher and students read together; guided reading, where the student reads under the teacher's guidance or coaching; and independent reading, where students read on their own. Morgan et al. (2013) suggests that although guided reading is primarily employed in primary and upper elementary

grades, there may be implications for supporting struggling readers in the middle school years. Assessment is an integral pillar in guided reading, particularly when delving into the intricacies of text selection. The fundamental goal of assessment in guided reading is to discern a student's reading ability, comprehension level, and specific areas of strength and challenge. With these insights, educators can handpick texts that are neither too challenging nor too simple but are just right to stretch the student's capabilities, a concept commonly referred to as the 'Zone of Proximal Development' by Vygotsky (Morgan et al., 2013). Texts can be selected to cater to individual student needs, ensuring inclusivity and personalization in the guided reading process.

According to Ramsa and Rawian (2021), while proponents of guided reading emphasize its multifaceted approach, one can argue that its exclusive focus might fall short of capturing the entirety of literacy development. The assertion that students require more than just comprehension strategies, needing instructional support for these strategies, domain-specific knowledge, word recognition skills, fluency, and the intrinsic motivation to read brings to light potential limitations in the guided reading approach (Ramsa & Rawian, 2021).

Vocabulary. In addition to guided reading as a change effort, teaching vocabulary as an exclusive intervention for struggling readers is a viable option for improving reading comprehension and increasing fluency. Kelley et al. (2010) highlighted the difficulty that struggling readers experience due to limited vocabulary and word meaning knowledge. While empirical studies indicate a correlation between disparities in reading proficiency and gaps in reading comprehension, most educational institutions neglect explicit instruction for developing vocabulary strategies (Kelley et al., 2010). Research by Rupley and Slough (2010) suggested that impoverished children face more extreme vocabulary and word meaning deficits than middle-class students. When students have a limited vocabulary, their ability to comprehend complex

text at a deep level is significantly impaired. According to Elleman et al. (2019), a broad and varied vocabulary enhances children's comprehension of spoken and written communication and empowers them to articulate their experiences and ideas more effectively in discussions and written form. Research by Elleman et al. (2019) suggested that vocabulary acquisition includes embracing explicit vocabulary teaching methods, thoughtful choice of words during lesson planning, offering activities that require active thinking, instructing on self-reliant word-learning techniques, utilizing knowledge networks, and encouraging unplanned vocabulary acquisition. While vocabulary instruction is undeniably crucial, it is essential to note that solely focusing on vocabulary is not enough. The reason is that comprehension and effective communication are multifaceted skills. While a strong vocabulary foundation enables learners to identify and use words, proper understanding goes beyond mere word recognition.

Reading Fluency. Reading fluency refers to reading text accurately, quickly, and with proper expression and often noted as an essential skill for comprehension because if a reader struggles with word recognition or reads slowly and with significant challenges, they may have difficulty remembering what they have read and connecting the ideas in the text. Reading fluency is a bridge between the act of decoding words and comprehension. According to Rasinski et al. (2009), a reader's fluency level significantly impairs their reading ability and should be targeted in grades beyond primary ages. Rasinski et al. (2009) suggest that when students have limited fluency and automaticity of word recognition, they become cognitively exhausted, resulting in a breakdown in comprehension.

Despite the importance of fluency in the reading process, this paper does not investigate the role of fluency as a primary driver. Practitioners must help struggling readers delineate the difference between reading at a rapid rate, resulting in limited comprehension, and reading at an

appropriate rate, which results in a deep understanding of the text. Focusing solely on fluency when working with struggling readers may not achieve the desired progress or results. While fluency, which refers to the ability to read a text accurately, quickly, and with expression, is an essential component of proficient reading, it is only a piece of what may be a more significant issue.

Proposed Evaluation and Possible Intervention

According to Fawcett et al. (2000), traditional reading intervention support programs can be costly and lack the engagement needed to captivate the attention of struggling secondary readers. Traditional reading intervention programs are often limited in offering a multi-sensory learning experience with the goal of long-term success and transference. In addition, with advancing educational technology, most traditional modes of instruction can be simulated within digital learning platforms to provide more appealing participation (Fawcett et al. 2000). Reading Horizons Elevate (RHE) software will be evaluated to address the problems of successful implementation of RtI practices and if it can successfully support struggling readers. RHE places participants on a learning pathway based on an hour-long diagnostic. Students reported feelings of agency and empowerment because of the individualized blended learning model and the self-paced progression through the program. The diagnostic assessment plays a crucial role in ensuring that each student focuses on the specific skills that will maximize their progress in reading. The diagnostic assessment accomplished this by prescribing a tailored lesson track for every RHE program student. The assessment utilizes four types of questions to gauge the depth of instruction required for each lesson. The first question type asks students to spell a word, allowing them to progress to the following term if spelled correctly. If a word is misspelled, the assessment moves to a fill-in-the-blank question that targets the same skill. A correct response

here leads to the next word, where students must provide accurate spelling. The diagnostic introduces a new element in cases of an incorrect response to the fill-in-the-blank question. The narrator reads a nonsense word, and students must choose the correct word from three options provided. Selecting the correct answer grants them access to the next word, where spelling is again required. If an incorrect response is given to the nonsense word question, the assessment proceeds to the final option. Students listen to a word being read and must select the correct word from three options. This meticulous process determines the depth of instruction needed for each lesson. Based on students' performance on each question, they are assigned one of four levels of instruction: Mastered, Advancing, Basic, or Beginning. This personalized approach ensures that students receive instruction tailored to their specific needs and current skill level, optimizing their learning experience and progress in reading, and enabling teachers to focus on small group instruction that is then easy to identify, group, and tailor to the students' needs.

Chapter three investigated the existing system, focusing on the support provided to struggling readers through campus RtI implementation. The study employed qualitative methods to offer a comprehensive insight into these practices and their impact on improving reading outcomes for struggling readers. Chapter three provides an in-depth overview of the study, encompassing vital components such as the methodology employed, a description of the participants, the procedures for data collection and analysis, as well as the ensuing findings and their broader implications.

Chapter 3

The 2022 National Assessment of Educational Progress (NAEP) report in America emphasized students' academic performance across the country. While the report does display overall decreases in reading proficiency, there were no significant changes in the overall reading performance of students in the United States when compared to previous assessments. Fourth and eighth-grade students had stable average scores, with differences in certain subgroups. Fourth-grade students had an average score of 217 out of 500, with 24% of students performing at or above the proficient level. Eighth-grade students had an average score of 260 out of 500, with 27% of students performing at or above proficiency. The NAEP report also identified achievement gaps among various demographic groups. It highlighted differences in reading performance based on race/ethnicity, socioeconomic status, and English language proficiency. These gaps persisted, showing the need for targeted interventions to address these inequalities. Chapter three of this dissertation in practice used a mixed-methods study to investigate the level of Response to Intervention implementation by exploring how intervention teachers perceive the implementation of RtI instruction and the impact of instructional strategies used in RtI to improve reading literacy in struggling middle school students.

Response to Intervention Literature Review

According to Gagne (2016), by overhauling the widely criticized No Child Left Behind (NCLB) legislation of 2001 through the reauthorization of the Individuals with Disabilities Education Act of 2004 and the introduction of Every Student Succeeds Act (ESSA) in 2015, the national government granted states greater autonomy in determining their educational performance criteria. In addition, ESSA gave states the authority to replace the outdated and standardized solutions of NCLB with locally designated and customized evidence-based interventions to address the needs of struggling learners (Zinskie & Rea, 2016). According to

Preston et al. (2016), RtI has undergone significant development and progress in its application since its inception. Despite gaining approval and being incorporated into federal educational guidance since 2004, schools still faced significant challenges in implementing best practices through RtI, resulting in better outcomes for struggling learners. Sullivan and Castro-Villarreal (2013) argued that increasing variability in the policies and procedures that govern RtI implementation dramatically reduces the consistency of effective intervention practices from state to state and district to district. Berkeley et al. (2020) reported that a study conducted with 619 administrators in both general and special education across the country revealed a significant difference between their awareness of RtI and their ability to effectively apply the tiered approach. Moreover, teachers have expressed concerns about their readiness to meet the standards of RtI due to the introduction of new roles; they feel that their pre-service and in-service training, as well as their knowledge and skills, may not be up to par for meeting the challenges of accelerating learning for struggling students. The success of education initiatives hinges on the knowledge and preparedness of those responsible for implementing them on the ground (Berkeley et al, 2020; Sullivan & Castro-Villarreal, 2013). Berkeley et al. (2020) suggested that "despite the enduring lack of clarity surrounding RtI in the field, it has had a significant impact on service delivery models and instructional practices in schools, primarily at the elementary level" (p. 333). This chapter examined the current RtI practices and implementation within a rural East Texas school as a means of improving interventions outcomes for all students, especially struggling learners.

Purpose of Study

This chapter describes the research methodology for this mixed-methods study to evaluate the current level of RtI implementation by observing and examining current practices

for supporting students with reading difficulty. Further, this chapter will include the problem of practice evaluated, research questions, study setting, methods, results, discussion, conclusions, and recommendations for future research.

Problem of Practice Statement

Despite providing intervention teachers with training on evidence based RtI strategies and resources, the instructional efforts appeared to have had limited application in their intervention practices. Faggella-Luby and Wardwell (2011) added credence to the body of research on struggling middle school-aged readers by citing evidence that children with reading challenges require robust interventions from grades fifth through eight (2011). However, according to Burke et al. (2017), high-quality RtI intervention systems often need to be included at the secondary level, as well. Many teachers continue to employ strategies inconsistent with RtI principles, such as inconsistent progress monitoring and a lack of data-based decision-making. Furthermore, some teachers prefer traditional remedial teaching methods rather than adopting more effective, research backed RtI strategies that accelerate student learning. Therefore, the researcher investigated teacher perceptions of implementing RtI instruction and the impact of RtI instruction in the intervention classrooms. Possible challenges at the system level, such as a shortage of resources, insufficient motivation or understanding, and various individual or environmental factors, might have influenced the application of RtI strategies. Examining these factors to enhance the understanding of why the strategies are ineffective may offer insights into addressing these issues. In addition, the outcomes could be gauged in terms of literacy skills improvements, engagement, retention, and other measures of academic success. The aim was to provide compelling evidence to teachers about the potential benefits or drawbacks of their chosen methods.

Research Questions

RQ1: How do intervention teachers perceive the implementation of RtI instruction?

RQ2: What is the impact of instructional strategies used in RtI to improve reading literacy in struggling middle school students?

Target Population and Participants

This study was comprised of two intervention teachers who serviced students in grade six through eight. The reading interventionists were selected because of their prior experience working with struggling readers. In addition, the intervention teachers expressed the idea that they felt called to support struggling learners, especially at the middle school level. One participating interventionist taught for thirty years, while the other taught for 27 years. It is important to note that the interventionist with thirty years of experience also had a background in teaching special education.

Convenience sampling was used to recruit participants for the evaluation study. According to Andrade (2021), convenience sampling is a research method commonly used when time and resources are limited. It involves selecting participants based on their availability and willingness to participate rather than through random selection. However, it is essential to remember that convenience sampling may not always be the most accurate or reliable method, as it can introduce bias into the results and researchers should carefully consider the potential limitations of this method when deciding on a technique for recruiting participants.

Table 2

Demographic Data

Class	Gender	Race	Grade band	Years of Service	Intervention Experience
A	Female	White	6th- 8th	27	Yes
B	Female	Black	6th – 8th	30	Yes

Note. Teachers who participated in this study.

Context of the Study

Sixty-five students were served on the campus through a RtI program. The first thing examined was the selection process for placing students in RtI and the process used for tiering students. The RtI tier system is a familiar approach educators use to provide targeted support to students struggling academically or behaviorally. The campus' RtI system was designed to identify students who may need additional assistance beyond what is typically provided in the classroom and provide them with the necessary interventions to help them succeed. There are three tiers in the RtI system, each with a different level of support. Tier 1 is the universal level, where all students receive high-quality instruction and support in the classroom. Tier 2 is the targeted level, where students struggling academically receive additional support through small group instruction or other interventions. Finally, Tier 3 is the intensive level, where students continue to struggle, despite the targeted interventions in Tier 2 and receive more intensive interventions and support. The RtI system aims to provide early intervention and support to students before they fall too far behind or require more intensive interventions. By identifying struggling students early and providing the appropriate support, educators can help ensure that all students can succeed. It was determined that only teacher recommendation was utilized to

identify students for intervention and that data analysis played a minimal role in identifying students, targeting specific learning gaps, and student grouping.

Intervention teachers did not adhere to a systematic implementation design or consistently use evidence-based, high-quality instructional materials. Instead, they incorporated portions of the Leveled Literacy Intervention (LLI) into their programs. LLI, a research-based system for enhancing the reading skills of struggling readers in K-12 classrooms, employs leveled books and customized lessons. Despite its research foundation, it is crucial to recognize that LLI is deeply rooted in the whole language approach to reading instruction. Additionally, the prescribed participation for students was four to five days a week for forty-five minutes each day. However, the RtI teachers opted for a pull-out method, where students were temporarily removed from their regular classrooms and placed in a separate location or smaller group to receive targeted intervention Ideally, providing more instructional time aimed to deliver targeted instruction and personalized support for students needing extra assistance in certain areas. Yet, inconsistencies in the current RtI plan made it difficult for teachers to consistently engage with students.

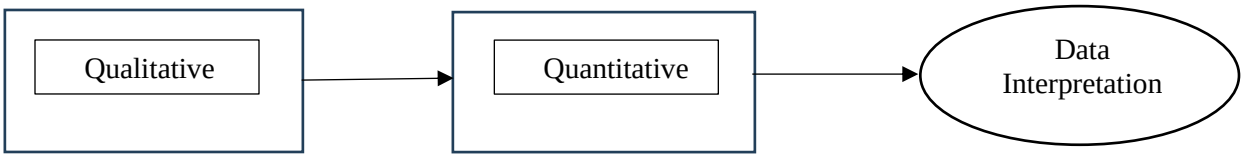
Research Methodology

To evaluate the implementation of RtI practices, a designed-based implementation research (DBIR) approach was taken using both quantitative and qualitative methods was applied to collect data. More specifically, the researcher used an exploratory sequential mixed methods design. According to Creswell and Pablo-Clark (2011), the initial stage of an exploratory design focuses on gathering and analyzing qualitative data. In the second stage, the researcher uses quantitative analysis to validate or expand on the findings from the exploratory phase. Finally, the researcher evaluated how the quantitative results complemented the initial qualitative

findings. This study's primary focus was to evaluate the instructional practices, procedures, and data-driven decision-making that influence literacy performance in middle school students.

Figure 5

Exploratory Sequential Design



This study employed quantitative data by examining the current Reading STAAR scores of the students served in RtI classrooms. The inclusion of these scores helped to provide baseline data for future research and insight into student performance before any intervention. Descriptive statistics were used to represent the 2021 STAAR data. With qualitative and quantitative methods, researchers can delve into complex phenomena that are influenced by multiple factors and are not easily quantifiable.

Qualitative methods offered researchers the flexibility to adapt their approach, allowing for a more natural and in-depth exploration of the research topic. As Morse (2015) mentioned, by employing techniques such as semi-structured interviews, textual or visual data analysis, qualitative methods offer rich and detailed insights into the thoughts, feelings, motivations, and behaviors of individuals or groups. In addition, qualitative research is valuable for studying under-researched or emerging areas, as it allows for generating new theories and hypotheses as fostered through a strong relationship between the observer and the observation (Morse, 2015). Qualitative methods are particularly relevant in research areas that involve complex social, cultural, or psychological phenomena (Houghton, 2015). Additionally, qualitative research is

often a precursor or complement to quantitative research, providing a foundation for developing hypotheses, measurement instruments, or theoretical frameworks.

Data Collection

Qualitative Data

Face to face semi-structured interviews were conducted to gather qualitative data and gain deeper insight into the current RtI practices, procedures, experiences, and teacher perception on the effectiveness of the system (see Appendix A). According to Kallio et al. (2016), during a semi-structured interview, participants may express their unique perspectives and focus on the issues that are most important to them. This approach allows for a diverse range of perceptions to be captured. Individually, the teachers were interviewed to assess their viewpoint regarding the present implementation of RtI practices, procedures, and overall effectiveness. In particular, the teachers were asked ten open-ended questions to evaluate their perception of the effectiveness of RtI implementation, the challenges that have impeded its efficacy, and the overall quality of its implementation. The interview aimed to investigate the teachers' perceptions in regard to how implementation quality influences student outcomes and possible iterative changes for future implementation design.

In every research project, it is crucial to ensure trustworthiness to maintain the findings' integrity and reliability. To foster independence, the researcher explicitly conveyed impartiality at the outset of the interview. Additionally, participants were reassured that the open-ended questions had no set correct or incorrect responses, which made it a secure environment to freely express ideas and personal experiences without the risk of damaging one's reputation within the organization. Moreover, participants had the freedom to withdraw from the study at any point, further reinforcing the overall trustworthiness of the research. This study aimed to build trust

using a thorough approach, careful gathering and examination of data, openness, and detailed documentation.

Quantitative Data

Quantitative data from the 2021 Reading STAAR was gathered using the district acquired data management system Data Management for Assessment and Curriculum (DMAC). The scores represent the percentage of questions items correct on the assessment. The data does present limitations as all sixty-five students' scores could not be collected because some students moved from out of state. In addition, some students were homeschooled, did not participate in the STAAR test, or had relocated from another state, consequently lacked the previous year's STAAR score.

Data Analysis

Inductive thematic analysis was used in the analysis of the semi-structured interview questions. According to Nowell et al. (2017), thematic analysis is an adaptable qualitative research technique used across various research methods. This method focuses on internalizing, examining, categorizing, detailing, and conveying themes present in a data set. Thematic analysis acts as a bridge between qualitative and quantitative research methods, facilitating communication among researchers from diverse methodological backgrounds. The researcher transcribed the audio recordings of the semi-structured to a Word document for readability, storage, and later coding of themes. Finally, the derived themes were examined to confirm alignment with the research questions and the required data to substantiate claims.

Quantitative data was analyzed using descriptive statistics. The researcher employed quantitative data to assess students' academic achievement in RtI. Additionally, the 2021

STAAR scores served as a baseline for future data collection, enabling the researcher to evaluate the effectiveness of iterative studies.

Findings

RQ1. How Do Intervention Teachers Perceive the Implementation of RtI Instruction?

To answer research question one, *how do intervention teachers perceive the implementation of RtI instruction*, data was analyzed from a ten question semi-structured interview. From the teacher interviews, four themes emerged, including consistency and fidelity and professional development and collaboration. For the theme of *consistency and fidelity*, the two intervention teachers reported integrating RtI strategies into their everyday lessons. Specifically, both teachers reported using guided reading. Both teachers reported using guided reading strategies. However, differing outcomes were observed, with Teacher B facing challenges in student motivation, while Teacher A reported success in differentiation, fostering greater student engagement. Neither teacher mentioned continuous progress monitoring nor a methodical student data tracking approach. Instead, Teacher B leaned heavily on personal judgment when discussing evaluation metrics, suggesting a possible over-reliance on intuition over evidence-based monitoring. Furthermore, in curricular choices, both teachers echoed the call for an intervention program with a strong emphasis on foundational phonics skills, viewing it as pivotal for enhancing literacy.

Teacher B reported low student interest and motivation with this instructional strategy of guided reading. Teacher A reported strength in differentiating instruction to the needs of students in class, which increased student engagement. Neither teacher mentioned ongoing progress monitoring or a system for documenting and tracking student data. Question one of the interviews focused on the current level of RtI implementation. Teacher A stated, “we've

integrated it into our daily routines and practices," and Teacher B stated, "We've got the framework, but consistent execution is a challenge." Question three focuses on the consistent use of RtI strategies. Teacher A stated, "from what I've observed, the majority of our teachers are using RtI strategies consistently. However, there might be slight variations across grade levels." Teacher B responded to this question by stating "I would like to believe that I consistently implement effective strategies; however, I know my students and the many gaps that they have. Sometimes there are students where it feels like no matter what I try, I can't get through."

For the themes *professional learning and collaboration,* both teachers reported a perception of working within an intervention silo. They felt that their work needed to be integrated into an action plan to collectively get struggling readers on grade level. Teacher B stated, "Sometimes it feels like teachers just want to dump the students they do not want to work with on me, and I am responsible for figuring it out alone." Teachers also reported on the struggles within the community related to literacy. Both teachers expressed the need for parental literacy education and the opportunity to meet with parents about students' struggles with at-home support. Interview question five pertained to the preparation for implementing effective RtI strategies. Teacher A stated, "I feel relatively well-equipped, but continuous professional development on the latest RtI strategies would always be beneficial." "I would like more training on ways to motivate struggling readers." Teacher B stated, "I wish I felt more confident in using RtI strategies. I think additional hands-on training and maybe some mentorship would help me a lot." Finally, interview question eight sought to elicit information on the challenges that RtI teachers face when implementing research-based instruction to support struggling middle school readers. Teacher A stated, "one challenge is that not all research-based models fit every student. Sometimes it requires tweaking or combining strategies to find the best fit."

RQ2. What Is the Impact of Instructional Strategies Used in RtI to Improve Reading Literacy in Struggling Middle School Students?

Research question two focused on the impact of RtI strategies used in RtI classes. The research findings revealed themes of instructional strategies, progress, and data-driven decision making. For the theme of *instructional strategies*, teacher A stated, "I often use multisensory techniques and leveled reading materials within the RtI framework to support my struggling readers. These seem to resonate with students the most." Teacher B replied, "I try to use a mix of strategies with my struggling readers, but I often find myself leaning on what's familiar, even if it's not always within the RtI recommendations." Next, question six asked about the responsiveness of students receiving intervention services. For the theme of *progress,* teacher A replied, "When I've used research-based instructional models, many of my struggling readers have shown significant improvement. They become more engaged and confident." Teacher B stated, “some of my struggling readers do show improvement, but it's not consistent across the board."

For the theme of *data driven decision making*, both teachers reported that although they used data to make student selection choices, the primary referral source was teacher input. Both teachers report “relying heavily on their intuition and teacher input for student selection despite acknowledging the value of data.” The need for a consistent system for progress monitoring and data tracking further emphasizes the gap between the perceived importance of evidence-based strategies and their application. Both teachers also shared the same sentiment that while teacher input is essential, teachers must understand that data must be a primary driver in placing students in RtI.

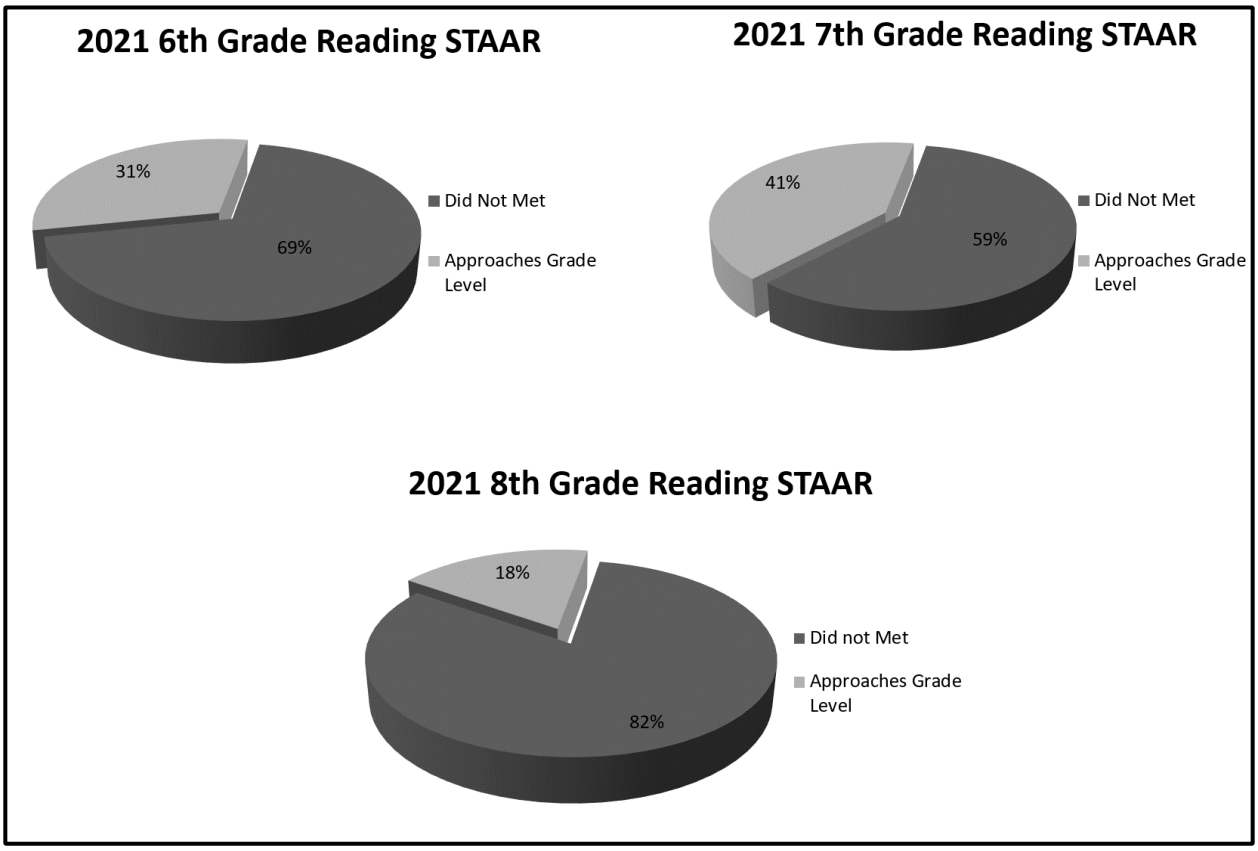
Question seven of the semi-structured interview referred to measurable improvements made by students. Teacher A stated, "Yes, I've definitely seen improvements. For example, one student started the year reading below grade level, and after implementing a research-based model, he's now reading just slightly below or at grade level. It's encouraging." Teacher A also stated, “This year I used a phonics-based program during intervention time. I know here we use a more whole language model for intervention instruction” Well, I know my students, and I know what they need. That is what I do. When students can answer questions and talk to other students about their reading, I know they are making progress. Teacher B replied, "I've seen slight improvements in a few students, but it's hard to gauge if that's directly from the research-based approach or other factors. For some, I'm still trying to find what works best." Teacher A stated, “One area of concern is the idea that general education teachers don’t always use data when referring students to intervention” “They rely more on intuition to determine who needs the extra help.” Finally, question ten asked what elements of research based instructional practices have the greatest impact on improving outcomes for struggling readers. Teacher A replied, "In my opinion, the structured and sequential approach of research-based models has the most impact. When students can predict and understand the structure of their learning, it builds their confidence and comprehension." Teacher B stated the following: "From what I've seen, consistent support and clear communication between the teacher, student, and parents are crucial. The instructional model can only do so much without these."

According to Pak et al. (2020), high-quality instructional materials, which align with state standards, can facilitate the implementation of evidence-based pedagogy in classrooms. These materials achieve this by directing teachers' efforts towards standards-focused content and instructional approaches that support the needs of struggling learners. The study used 2021

Reading STAAR scores in the examination of the current context of the study. Moreover, the quantitative data helped answer research question two: *What is the impact of instructional strategies used in RtI to improve reading literacy in struggling middle school students?* Figure 6represents the percentages of students who did not meet standard (failed) or the number of students who approached grade level (passed) the summative STAAR reading assessment.

Figure 6

Pie Charts Displaying 2021 STAAR Read



Discussion

To explore intervention teachers' perceptions of RtI instruction implementation, a ten-question semi-structured interview provided insights into four themes: consistency and fidelity, professional development, and collaboration (Greenfield et al., 2010). Within the theme of consistency and fidelity, both intervention teachers incorporated RtI strategies into their daily

lessons, particularly emphasizing guided reading. Teacher A reported success in differentiation and increased student engagement, while Teacher B faced challenges related to student motivation. Notably, neither teacher mentioned continuous progress monitoring or a systematic student data-tracking approach. Teacher B leaned heavily on personal judgment, indicating a potential reliance on intuition over evidence-based monitoring. This result was supported by research from Stecker et al. (2008), who found that progress monitoring involves assessing both the performance level and the rate of improvement in students. Educators must make various decisions about selecting specific tools and procedures for guiding instructional choices when incorporating progress monitoring. The theme of professional learning and collaboration revealed that both teachers felt confined within an intervention silo and advocated for the integration of their work into a comprehensive action plan for struggling readers. Teacher B expressed frustration with colleagues passing on students without proper support. Both teachers emphasized the need for parental literacy education and emphasized the importance of at-home support for struggling readers.

Delving into the impact of instructional strategies used in RtI, the study identified several key themes. Regarding instructional strategies, teacher A employed multisensory techniques and leveled reading materials, noting their resonance with struggling readers. In contrast, Teacher B admitted to leaning on familiar strategies, even if they did not align with RtI recommendations. Regarding progress, Teacher A observed significant improvement in struggling readers' engagement and confidence when using research-based instructional models. Teacher B, on the other hand, reported inconsistent improvements among struggling readers. This result further supported the findings of Greenfield et al. (2010) that teachers encountered difficulties in assessing the quantity and quality of evidence-based instructional approaches over time. Data-

driven decision-making emerged as a theme, with both teachers acknowledging the value of data but primarily relying on teacher input for student selection. Both stressed the need for a consistent progress monitoring and data tracking system. Measurable improvements were discussed, with teacher A citing specific examples of progress using a phonics-based program. Teacher B observed slight improvements but found it challenging to attribute them directly to the research-based approach.

Finally, the impact of research-based instructional practices was explored. Teacher A highlighted the structured and sequential approach as having a significant impact, fostering confidence and comprehension. Teacher B emphasized the importance of consistent support and clear communication between teachers, students, and parents. The study contextualized its findings using 2021 Reading STAAR scores, and quantitative data was employed to address Research Question 2, providing insights into the impact of instructional strategies on improving reading literacy for struggling middle school students. The accompanying figure illustrates the percentages of students failing to meet the standard or approaching grade level on the summative STAAR reading assessment. Finally, the quantitative data supports that current RtI instruction was not meeting the needs of struggling learners.

Limitations

While this evaluation study has provided valuable insights, it is crucial to recognize and address certain limitations that may have influenced the research process and the interpretation of the findings. The limitations discussed in this section primarily pertain to the sample selection, the absence of a control group, sample size, and limited generalizability. In addition, this study's validity, generalizability, and applicability would have been reinforced by a larger sample size of participating teachers.

Future implementation design should incorporate input from general education teachers to gain insight into their implementation of RtI within the classroom perception of the RtI process. In general, additional investigation is necessary to understand how RtI practices, when used with fidelity, impact student outcomes and teacher practice.

Recommendation for Future Evaluation

Based on the insights and findings gleaned from this study, several recommendations for future research and practice emerge. Firstly, a longitudinal study is warranted to assess the sustained impact of RtI practices and instructional strategies on struggling middle school readers. Such a study would provide a comprehensive understanding of the long-term benefits and persistent challenges that may require ongoing attention. Additionally, further investigation should explore the seamless integration of intervention practices within the regular lesson cycle to maximize student outcomes, addressing the gap between teachers' perceptions and the practical application of evidence-based strategies.

The study emphasizes the critical importance of ongoing professional development for educators in RtI. Future research could identify effective methods and strategies to provide teachers with the necessary training and support to enhance their instructional capabilities. Furthermore, to bridge the gap between teacher perceptions and the collaborative ideals of the RtI framework, there is a need for research into strategies that promote enhanced collaboration and communication among educators. This research would contribute to a more integrated approach, ensuring students receive the comprehensive support they require. Moreover, the development and implementation of a systematic phonics-based system targeting the foundational needs of struggling readers while maintaining student engagement and motivation is recommended to improve reading outcomes. Lastly, to systematically align campus RtI

practices with evidence-based RtI frameworks, the planning phase of the Plan-Do-Study-Act cycle should involve the establishment of a network improvement committee charting a course forward to enhance the effectiveness of RtI practices. These recommendations aim to advance the support systems for middle school students encountering reading literacy challenges within the RtI framework.

Conclusion

Although strengths were found within the data analysis, there is still a need for an iterative implementation design that addresses the themes and findings from the research. Effective collaboration and streamlined communication between educators are paramount for successfully implementing evidence-based reading interventions. Recognizing the current gaps and addressing them systematically has the potential to enhance student reading outcomes and levels significantly. The following steps for implementation are to research a systematic phonics-based system that targets the foundational needs of struggling readers while ensuring student engagement and motivation for learning. In addition, the planning phase of the Plan-Do-Study-Act cycle should include a network improvement committee to chart a course forward for aligning campus RtI practices with an evidence based RtI framework. Chapter 4 will review the literature behind the pedagogical practices used to help struggling students and determine, through data analysis, if Reading Horizon Elevate could be a scaffold to close the reading gaps.

Chapter 4

The purpose of this study was to provide a program evaluation of Reading Horizons Elevate (RHE). This chapter is a second iteration study focused on improving reading outcomes for struggling middle school readers. Positive implications from this study may provide the field with specific strategies and a framework for remediating struggling readers at the secondary level through targeted RtI. In addition, the results from this study provided documented support to the literature on specific pedagogical practices employed with students beyond elementary grades that close academic reading gaps. The research shows that intentional adult action is required to close reading gaps.

Literature Review

Closing Reading Gaps with Online Intervention

Deep text comprehension is a critical skill for children that can significantly impact their academic success and future opportunities. According to Suparlin et al. (2022), reading comprehension is a complex cognitive activity wherein the reader actively extracts and constructs meaning from written language. Students who have learning disabilities and special educational needs, in addition to difficulty understanding what is read, may face challenges academically and later in life. According to Dockx et al. (2020), the methods used for teaching decoding skills, general language comprehension, and reading strategies can impact a person's ability to understand what they read. According to Capodieci et al. (2020), it is essential to understand that reading comprehension involves many cognitive abilities, including language skills like phonemic awareness, vocabulary, and grammar, as well as cognitive functions such as knowledge storage and information retrieval. Metacognition within the reading process includes

understanding, controlling, and self-monitoring the comprehension process and higher-level skills, such as making inferences supported by text evidence (Capodieci et al., 2020).

The COVID-19 pandemic significantly affected education by warranting nontraditional learning environments, such as virtual learning, due to nationwide school closures. This shift led to limited access to high-quality instructional materials and difficulties in social-emotional adjustment due to prolonged isolation (Branje & Morris, 2021). Overall, the COVID-19 pandemic has presented significant challenges for education. The unprecedented challenges, however, spurred innovation and new approaches to teaching and learning. Alqahtani (2020) agreed, stating that there have been significant changes in the field of learning in recent years. With the incorporation of new digital technology, online software, and more accessible devices with educational applications, the learning environment has become more enriched and effective for students.

Theoretical Framework: Iteration Two

The theoretical framework for this study was grounded in constructivist learning theory. This theory employs several tenets that can lead to success in the academic environment. For example, constructivist learning theory values student-directed learning activities that foster the construction of new learning for the individual (Kwan & Wong, 2015). Additionally, this learning theory posits that people construct their own knowledge by engaging in meaningful and relevant learning experiences. Learning environments that foster constructivism encourage students to connect new ideas and experiences with what they already know, leading to a more concrete understanding of abstract concepts (Bransford et al., 2000). Moreover, Brooks and Brooks (1993) found that “when teachers recognize and honor the human impulse to construct new understandings, unlimited possibilities are created for students” (p. 21).

The expectation for student-centered and teacher-facilitated learning environments is deeply rooted in the constructivist theory of teaching and learning. Despite a prevailing perception that constructivism negates the role and expertise of the instructor, the system is genuinely a collaboration between instructor and student. According to Kingir et al. (2020), the constructivist learning theory contributes to positive learning outcomes because the student shares a degree of ownership in the learning process and the necessity of displaying self-efficacy through motivation. Bransford et al. (2000), defines the teacher's responsibility in the constructivist-lead classroom as creating lessons with systems that enable learners to store and effectively retrieve pertinent information. Constructivism recognizes that these lessons must activate a learner's prior knowledge and experiences in order to serve as a foundation for new learning and subsequent retrieval. Additionally, according to Kingir et al. (2015), a constructivist classroom employs learning strategies or cognitive strategies to help students organize information and maintain meaning while empowering the learner to self-monitor their cognition, as part of their ownership. While Schunk (2020) asserted that constructivism does not accept absolute truths and that knowledge is discovered through trial and error, Xin et al. (2016) insisted that the constructivist paradigm is sustained only when students actively grapple with content to construct meaning and knowledge. In a constructivist learning environment, instructors can encourage students to view new challenges as chances to utilize their current knowledge and expertise as the starting point to enhance the efficiency of familiar tasks such as reading.

Constructivism's role in modern education values the learner's ability to use background knowledge integrated with new information to construct deeper meaning. In fact, constructivist theorists such as Jean Piaget, Lev Vygotsky, and Jerome Bruner shifted knowledge acquisition to focus on the learner rather than environmental factors (Shunk, 2009). When teaching reading,

educators can make this shift from environment to learner by tapping into students' existing knowledge, interests, and personal experiences related to the topic or text being explored. This connection to prior knowledge helps students make meaningful connections and deepen their understanding of the material.

While the theoretical framework for this study was grounded in the constructivist learning theory, which values student-directed learning activities that foster the construction of new learning for the individual (Kwan & Wong, 2015), an adjunct to these theories was also reviewed and utilized. Bentley and Sieben (2019) highlight Cognitive Load Theory (CLT) as an adjunct to constructivist learning theories. According to Bentley and Sieben (2019), instructional design provides implications for teaching and learning related to the limitations of short-term and working memory and their consolidated impact on long-term memory. Bruner's theory suggests that concepts should be presented to learners in differentiated modalities, which increases instances of transfer to deeper learning and long-term memory (2020). Indeed, according to Bentley and Sieben (2019), CLT "affords teachers with the choice of instructional teaching resources that are explicit, provide direct instruction, and maximize the opportunity for their learners to acquire knowledge" (p.49). Kuusisaari (2014) suggested the theoretical premise of CLT echoes Vygotsky's theory of the Zone of Proximal Development which discusses the learner's level of efficacy with and without guidance from an instructor or competent peers.

A complimentary tenet of the constructivist theory is the utilization of small group instruction. More specifically, social constructivism implies that knowledge constructed through personal experiences and shared in the social setting fosters increased connections within a collective group (Schreiber & Valle, 2013, p. 396). In addition, according to Ozen et al. (2017), during small group instruction, teachers have the opportunity to teach sub-skills to small group

participants based on individual needs. Such just-in-time instruction emanates from Vygotsky's Zone of Proximal Development (ZPT), which values various academic abilities within a group. Collaborative learning is a key aspect of constructivism, which emphasizes the social element of learning. Incorporating cooperative learning activities like group projects, peer feedback, and discussions into reading instruction can be helpful. Collaborative reading tasks like shared reading or literature circles can help students work together to understand text, share insights, and build on each other's ideas. Collaboration encourages active participation, multiple perspectives, and the creation of shared knowledge.

Personalized learning, commonly referred to as individualized learning models, is derived from constructivist theorists such as Bruner, Piaget, and Vygotsky. As Mustafa and Fatma (2013) reported, constructivist educators aim to provide learners with appropriate educational technology that facilitates critical thinking, reflection, and idea development. According to Shemshack and Spector (2020), personalized learning is a complex teaching and learning model based on the individual needs and goals of the learner, which may also incentivize effort, increase commitment to learning, and lead to a better understanding of the content. In addition, personalized learning aligns with constructivist frameworks in that the learner's individual needs and personal experiences interweave to create a customized pathway toward closing educational gaps (Shemshack & Spector, 2020). Pedagogy underpinned in constructivism allows the learner to be self-paced and have a voice and choice in their learning modality. Within the last two decades, educational technology software advances have opened new possibilities for personalized learning remotely and in the classroom. Shemshack and Spector (2020) found that technology-enabled learning systems may increase the efficacy of struggling learners in addition

to combating the "weakness of one-size-fits-all" intervention programs (p.3), which make students into merely receptacles of information.

Constructivist Principles and Technology Integration

RHE was evaluated to determine how the program's implementation improved reading outcomes for struggling readers. RHE and the application of constructivist principles enable educators to create an environment that promotes active engagement, critical thinking, and meaningful interactions with texts. The constructivist principles that this program satisfied are as follows: student-directed learning activities that foster the construction of new learning; construction of knowledge by engaging in meaningful and relevant learning experiences; connecting new knowledge to prior knowledge to develop a more concrete understanding, presenting concepts to learners in differentiated modalities; student ownership, and personalized learning. RHE promotes active learning, and the same principle can be applied to reading instruction. Educators can encourage students to actively engage with texts by using strategies such as predicting, questioning, summarizing, and making connections. Subsequently, these strategies help students construct meaning, monitor their comprehension, and develop critical thinking skills as they interact with the text, which fills the tenets of construction of new knowledge by building on prior knowledge, relevant learning experiences, and ownership through monitoring. Additionally, RHE utilizes educational technology to offer students a self-paced digital platform for mastering their skills. The digital, self-paced platform relies on the principles of personalized learning, employing various modalities to present new concepts in a differentiated manner. For example, in the Reading Horizon Elevate digital component, learners are encouraged to apply and evaluate their ideas within practical and meaningful contexts. The digital platform of RHE in no way minimizes the importance of the instructor, but rather

empowers the teacher to use systems that enable learners to store and effectively retrieve pertinent information and opens opportunities for teachers to utilize small group instruction to support students with academic gaps.

Blended Learning as an Intervention Pathway

Blended learning, an innovative approach to education, combines traditional classroom instruction with online learning components to create a dynamic and interactive learning experience for students. Dube and Wen (2021) stated that "web-based technology was changing education by generating new forms of learning and listed ten trends: e-books, blended e-learning, open sources, learning objects, e-collaboration, mobile learning, and personalized learning" (p. 1931). Integrating learning analytics into educational practices enables personalized instruction, targeted interventions, and the optimization of blended learning environments (Lu et al., 2018). Siemens (2013) defined learning analytics as "the measurement, collection, analysis, and reporting of data about learners and their contexts, for the purposes of understanding and optimizing learning and the environments in which it occurs" (p. 1382). Not only can blended learning support personalized learning, but blended learning offers students diverse modalities and individualized pacing to engage with educational content. The incorporation of online platforms facilitates student progress tracking and provides prompt feedback, enabling them to promptly identify areas requiring additional support and concentrate their efforts accordingly. Wisniewski et al. (2020) concluded that the way feedback is provided to students has been identified as a significant factor in enhancing the quality of learning experiences. In addition, Lu et al. (2015) suggested combining online learning experiences and traditional pedagogy inputs increases student motivation, which may lead to increased student efficacy in reaching reading goals (p.220).

Problem of Practice

On one middle school campus in East Texas, only 64% of students scored at the approaches level and 36% of the students failed the reading portion of the State of Texas Assessments of Academic Readiness. In the evaluation study of investigating teacher perceptions of RtI instruction and the impact of instructional strategies used in RtI, a systematic phonics-based program was identified as a main driver to improve RtI instruction and reading outcomes for struggling students.

This study evaluated effectiveness of RHE within RtI for the improvement of reading outcomes in struggling middle school students in addition to exploring teacher perception of the implementation of RHE as a RtI instructional framework.

Research Questions

RQ1: How do intervention teachers perceive the implementation of RtI instruction?

RQ2: What is the impact of instructional strategies used in RtI to improve reading literacy in struggling middle school students?

Methodology

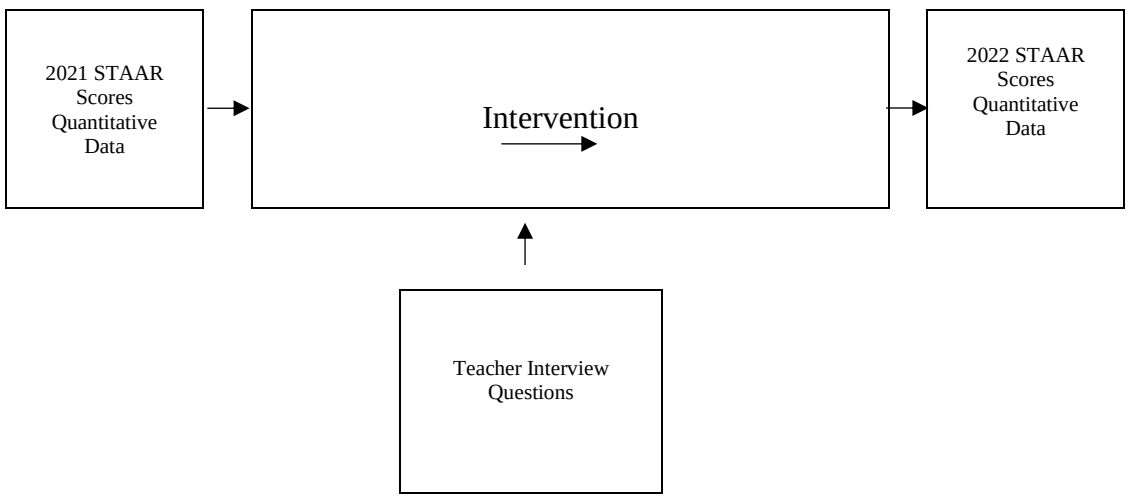
Research Design

Design-Based Implementation Research (DBIR), as outlined by LeMahieu et al. (2017), seeks to provide a systematic approach to understanding how change efforts function in real-world contexts by collaboratively designing, testing, and refining interventions in iterative cycles to improve theory and practice. The study employed a mixed-methods design to collect quantitative and qualitative data to determine the effectiveness of RHE, a phonics-based reading program. Particularly, this study used a mixed-methods with an experimental embedded design. According to Shrestha and Giri (2020), mixed-methods design provides researchers with the

tools and the framework for responding to complex research inquiries by integrating qualitative and quantitative data collection methods. Therefore, this study can be categorized as an embedded design, allowing the researcher to use qualitative and quantitative data collection methods without diminishing the impact of the other. As the model indicates, the quantitative experiment is conducted first to gather baseline information on the research topic. Qualitative data is also gathered to provide a closer examination of the data sets. The benefits of the embedded exploratory design included the ability to triangulate data, provide for more thorough investigations, and helps the researcher to gain a more general context of the problem of practice.

Figure 7

Embedded Design Model



Note. The figure displays the flow and application of interventions, and the data collection tools sequence and scope.

Context of the Study

This study aims to evaluate the effectiveness of RHE as an intervention for improving reading ability in struggling readers in grades six through eight. A mixed-methods research design use employed to conduct this study. More specifically, research was conducted at a sixth through eighth suburban-rural middle school in East Texas. This East Texas Middle School was comprised of 251students with 48.61% Female, 51.39% Male, 34.66% Hispanic, 19.52% African American, 40.64% White, 4.38% Two or More, 87% Economically Disadvantaged, 65.34% At Risk, and 19.52% Emergent Bilingual. RHE was implemented to address the gap in literacy performance, as evidenced by the STAAR reading exam. In addition, due to the 2019

accountability rating, this campus was labeled as having comprehensive targeted support or improvement required.

Participants

Convenience sampling was used to recruit participants for the evaluation study. According to Andrade (2021), convenience sampling is a research method commonly used when time and resources are limited. It involves selecting participants based on their availability and willingness to participate rather than through random selection. This study employed convenience sampling, which is particularly useful when obtaining a representative sample is challenging, as is often the case in pilot studies or with small populations. Due to unforeseen circumstances, the intervention study only consisted of one participant. The participating teacher had twenty-seven years of experience and taught intervention classes for grades six to eight. The participating teacher was a white female. This teacher was highly qualified by the state of Texas's teacher credentialing standards.

Table 3

Demographic Data

Class	Gender	Race	Grade band	Years of Service	Intervention Experience
A	Female	White	6th – 8th	27	Yes

Instrumentation and Data Collection

The mixed-methods study utilized quantitative and qualitative data sources approved by the University Institutional Review Board (IRB). The quantitative data set derived from Spring of 2022 Reading STAAR results. There were 28 students who had a 2021 STAAR score and a 2022 STAAR score. Some students were either home schooled and did not take STAAR or

moved from out of state; subsequently, those students did not have a prior year's STAAR score. STAAR reading data was used to determine the effectiveness of RHE by tracking and comparing a student's prior year's STAAR results and their score after the intervention. The STAAR Reading test is a crucial component of assessing students' reading proficiency in Texas. Administered to students in grades 3-8 and high school, this standardized exam evaluates their ability to understand various types of texts, including fiction, nonfiction, poetry, and drama. It also measures their comprehension of literary terms and devices, such as theme, characterization, and point of view. For educators, the Reading STAAR test serves as a valuable tool in identifying students who may require additional support and in monitoring overall student progress. In addition to quantitative data, qualitative data was collected through semi-structured interviews. The open-ended questions allowed the participant to reflect and discuss the implementation of RHE and provide insight into future study of the intervention. Furthermore, the semi-structured interview provided information on the implementation of RHE, teacher perceptions on the impact of the program, and suggestions for future iterations.

Data Analysis

Qualitative

Inductive thematic analysis was used to examine the open-ended semi-structured questions to better understand the perception of the intervention, RHE. Responses were captured using a Google document, recorded, and later transcribed for increased accuracy during reporting. The interview with the teacher lasted about 40 minutes. The participating teacher was aware of the purpose and intent of the study and signed consent prior to the interview and permitted audio recording (see Appendix B).

Quantitative Analysis

A pairs samples t-test was utilized to determine if there was a statistically significant change in reading outcomes due to the intervention from one year to the next. Before applying the statistical test, the researcher determined that the data assumptions were violated. The researcher switched to the Wilcoxon Signed Rank, a nonparametric test to determine the impact of RHE on improving reading outcomes.

Findings

RQ1: How do intervention teachers perceive the implementation of RtI instruction?

Research question one, focused on understating teacher perceptions of implementing RtI instruction. The teacher revealed insightful themes, which answered the first research question: *How do intervention teachers perceive the implementation of RtI instruction?* From the interview data, three themes resonated, which included: impact, appropriateness, and transfer. For the first theme of *impact*, teacher A stated, "I think it's gone in a positive direction. It has more than one component to it, so it seems to hold the kids' attention." Based on the interview findings, the teacher reported a positive experience with the program partly because the program uses a multi-strategy method. In addition, RHE accommodates multiple learning styles. The teacher reported that she saw the benefit of the skills in RHE for struggling readers. For the theme second of *appropriateness*, teacher A stated, “If you start it with the 8th grade at the start of the year. You will probably have time to get through all six books. The problem is with COVID and some kids virtual and things like that. But my 8th grade students that have been here from the beginning they should get pretty close to finishing.” In addition, when asked about RHE being appropriate for secondary students, teacher A replied, "If they are weak in phonics or lacking knowledge in phonics absolutely." The interview provided more confidence in the selection process for students. Teacher A reported, “most students in the program are two years below grade level in reading.”

For the third theme of *transfer*, teacher A was concerned about students' ability to transfer the skills in other classrooms and stated,

> Umm they haven't specifically said umm I've used the phonetic skill to decode a science word or social a studies word. No, they haven't done that because this program is the fundamental skills of reading. So, umm it is until they get to the end of chapter 4, where they start umm getting into multisyllabic words. They're not they are going to struggle to make the link to content subject areas. Umm, whenever they get to the second decoding skill then we start doing you know like a three-syllable word. And umm, when they get to that point they should be able to transfer to an unfamiliar word in history.

The interview participant was unsure or confident if students were using these learned skills in other classes. In addition, there needs to be more communication between the intervention and general education teachers. Finally, after the interview, a question persisted about how student progress is effectively communicated with parents. The RtI framework's effectiveness relies heavily on open channels of communication not only between teachers, but also with parents. The concluding thoughts from the interview highlight this vital aspect. Close communication with families is vital when working with students and struggling learners.

RQ2: What is the impact of instructional strategies used in RtI to improve reading literacy in struggling middle school students?

The purpose of the STAAR test is to evaluate students' proficiency in different subjects such as math, reading, and science. It gauges their comprehension of the Texas Essential Knowledge and Skills (TEKS) curriculum standards. The test results are helpful for educators and parents to identify areas where students require further improvement and to gain an understanding of the effectiveness of TEKS-based instruction. Moreover, the STAAR test

determines if a student is prepared to progress to the following grade. STAAR reading uses Lexile scores to determine the readability of a particular passage. The Lexile formula is widely used on computers to assess how easy it is to read a text. It evaluates various factors, including the number of syllables in each word, the length of sentences, and the number of sentences in a paragraph to determine readability (Clarification Regarding STAAR & Lexile, n.d.).

A Wilcoxon Signed Rank test was conducted to determine the impact of Reading Horizons phonics-based instruction on student outcomes using the STAAR reading assessment. Scores were evaluated from 2021 and 2022 to determine if there was a statistically significant impact. The Wilcoxon Signed Rank test was used because the data violated the assumptions of the paired samples t-test. The results indicated higher performance on the 2022 STAAR reading test (*Mdn* = 55.00) than on the STAAR test taken in 2021 (*Mdn* = 51.50). This difference between conditions was statistically significant with $W = 100.00$, $p = .02$. The effect size for this analysis ($r_{rb} = .50$) fell within Cohen's (1992) convention for a moderate effect.

Table 4

STAAR Comparison from 2021 to 2022

Grade	Number of Students	Passed 21'	Passed 22'	% Passed 22'
6th	10	$n = 5$	$n = 5$	50%
7th	11	$n = 7$	$n = 8$	73%
8th	7	$n = 4$	$n = 6$	86%

The chart displays the number of students who passed STAAR in 2021 compared to the number of students who passed in 2022. In addition, the chart displays the percentage of students who passed in 2022. The results indicated a statistically significant test result. Specifically, twenty-eight had a pre-intervention score and a post-intervention score. Of those twenty-eight

students, nineteen passed the 2022 Reading STAAR test. It is important to note that in sixth grade, students passing or failing remained the same. While in seventh and eighth grade, more students passed the 2022 STAAR than in 2021.

Discussion

The findings of research question one, which aimed to understand teacher perceptions of implementing RtI instruction, have provided valuable insights into the experiences and perspectives of intervention teachers. Three key themes emerged from the interviews: impact, appropriateness, and transfer.

Regarding impact, the teachers expressed positive sentiments about the RtI instruction, emphasizing its multi-strategy approach and the ability to capture students' attention. Teacher A's comment on the program having "more than one component" suggests that the comprehensive nature of RHE contributes to its effectiveness. The acknowledgment of accommodating various learning styles further reinforces the positive impact reported by the teacher. The design of RHE strongly emphasizes student-directed learning activities, a central component of constructivist theory. By providing students with a range of strategies to approach reading, the program empowers them to actively construct their understanding. This student-centered approach resonates with the collaborative nature of constructivism, where the teacher serves as a facilitator, guiding students in their learning.

Regarding the theme of appropriateness, the challenges posed by external factors such as COVID-19 and virtual learning were highlighted. Teacher A's comment about starting with 8th-grade students at the beginning of the year stressed the importance of planning and time management for successful implementation. The teacher's recognition of RHE appropriateness for students weak in phonics aligns with the intended target population, as evidenced by most

students in the program being two years below grade level in reading. The theme of transfer revealed concerns about the application of learned skills in other academic contexts. Teacher A's uncertainty about students using phonetic skills in subjects like science or social studies points to a potential gap in integration. The need for better communication between intervention and general education teachers was identified as crucial for addressing this issue. The progression of skills in RHE, from fundamental to more complex decoding, was outlined as a potential pathway for improving transferability to unfamiliar words in various content areas.

One noteworthy finding is the ambiguity surrounding how student progress is effectively communicated with parents. The importance of open channels of communication between teachers and parents was emphasized as crucial for the overall effectiveness of the RtI framework. The need for increased communication between intervention and general education teachers and parents highlights an area for improvement in the implementation of RtI instruction.

The findings from the interviews shed light on the multifaceted nature of teacher perceptions regarding the implementation of RtI instruction. While positive impacts were reported, challenges related to appropriateness and transferability surfaced, emphasizing the need for careful planning, communication, and integration of skills across subjects. The identified concerns regarding communication with parents underscore the importance of a collaborative approach to ensure the success of the RtI framework in supporting struggling learners.

Research question two aimed to investigate the impact of instructional strategies, specifically RHE, within the RtI framework to enhance reading literacy among struggling middle school students. The year-to-year STAAR results were analyzed to explore the intervention's influence on reading outcomes. The findings revealed a statistically significant test result, with twenty-eight students exhibiting pre- and post-intervention scores.

The focal point of research question two was the efficacy of Reading Horizons in enhancing reading outcomes. Semi-structured interviews unearthed critical themes concerning the implementation and teacher perceptions of phonics-based interventions for struggling middle school readers. The intervention teacher noted that most engaged students were significantly below the expected reading level. A systematic change in teaching practices was revealed as intervention teachers incorporated whole-language strategies like guided reading and sight words. The intervention provided multi-modal learning experiences such as whole-group mini-lessons, online blended learning modules, dictation, and phonetic practice. In terms of program fidelity, the teacher expressed positivity about the accessibility of data through the Reading Horizons teacher interface. However, a notable gap in knowledge and integration of RHE persisted in general education classrooms. The interviewee reported a lack of inquiries from general education teachers about the intervention.

The interview process served as a valuable source of information on implementation and progress within the RHE program. It offered insights into the level of implementation and the participating teacher's experiences, instilling confidence in the student selection process tailored to their needs. Despite most students being two years below grade level, exposure to robust phonics instruction within the program proved beneficial. The integration into the teacher's daily instructional program was noted, with the teacher contributing iterative ideas for future program effectiveness. However, a concern emerged regarding transferring acquired skills to other content areas. The interview participant sought clarification and confidence regarding students' application of learned skills in other classes, emphasizing the need for improved communication between intervention and general education teachers. The ability of students to transfer their decoding skills resonates with the constructivist perspective that emphasizes the active

application of knowledge to various situations (Xin et al., 2016). The discussion around transferability emphasizes the need for a comprehensive, integrative approach within the constructivist framework. The lack of evidence of skills transfer highlighted an area for potential intervention refinement and collaboration enhancement for comprehensive student support.

Implications

This study highlights important factors to consider for improving reading outcomes among struggling readers. Firstly, district and campus stakeholders should develop evidence-based frameworks and practices for RtI. A standardized system helps reduce bias and inequity that can leave some learners behind. By collaborating to identify and meet the needs of students, educators can personalize instruction and interventions to help all students succeed. This involves regularly monitoring progress, analyzing data, and adjusting interventions as necessary to ensure meaningful progress. With a consistent system in place, schools can provide every student with the support needed to thrive. Moreover, the implications indicate that phonics-based instruction can improve reading outcomes for struggling readers, and schools should consider integrating this approach into curricula and instructional practices. Educational institutions should provide professional development opportunities for teachers to enhance their understanding and implementation of phonics-based instruction. In addition, RHE is a multi-modal intervention, integrating technology, direct instruction, small-group, and one-on-one instruction modes. Research within the literature review supports a multi-strategy approach to instructing struggling readers, which may impact motivation, interest, and effective foundational skill building.

Limitations

There are limitations and constraints of the research methodology, data collection, or analysis that could impact the interpretation and applicability of the findings. The comprehensive study aimed to evaluate the effectiveness of RHE and the program's impact on improving student reading outcomes. Limitations may occur at any level of a research study, such as participant sampling, statistical analysis and interpretation, or process control. Limitations to the current study pertained to how participants were sampled and the selected treatment group. Students were selected based on the prior year's data. Additionally, the intervention time was scheduled within the day, five days a week, providing more consistency, yet lacking the fluidity to move kids in and out of the intervention. Furthermore, the program itself required students to engage in the learning of phonics rules with the use of signs and symbols that are exclusive to Orton Gillingham-based dyslexia programs. Teachers reported low engagement during these times of the lesson cycle, and limited engagement during critical learning activities may negatively affect learning outcomes. Additionally, participant sampling can be a source of limitation within research when the sampled group is too small and does not represent a large population (Queirós et al., 2017). The sample size was a limitation of this study. In addition, a convenience sample was used due to the lack of access to more participants. When a sample size is too small, it may decrease the validity and reliability of the research findings. Moreover, the study did not have a control group. Considering the potential impact of not having a control group in research is essential. Without a control group, it can be challenging to determine whether any observed effects or changes are genuinely a result of the intervention or treatment. This could limit the validity and generalizability of findings and may make it difficult to draw meaningful conclusions or make recommendations based on the results. Kinser and Robins (2013) suggest

that the use of a research design that employs a control group minimizes bias and increases the validity of a study. Finally, the researcher bias may have impacted the study's validity, reliability, and generalizability. According to Galdas (2017), researcher bias occurs when the researcher's personal beliefs, values, or experiences influence the study's findings.

Conclusion

This study evaluated the implementation of RHE and the intervention's impact on improving student reading outcomes. Overall, the study provided insight into the application of phonics-based interventions for struggling readers, even within a middle school context. The research in chapter 4 highlights the significance of evaluating the improvement of student reading outcomes before and after the application of a phonics-based reading intervention. Chapter 5 provides a synthesis of the current knowledge, practices, and understandings with the results of the conducted research for the purpose of offering more informed recommendations for supporting struggling middle school readers, as well as highlighting any limitations or better methodology for future research in this field.

Chapter 5

Evaluation of Phonics-Based Intervention for Improving Reading Outcomes

This chapter aims to bring together the research findings, improve understanding of the results, and contribute to the existing knowledge in the field. Its organization concentrates on synthesizing the data collected during the research process, analyzing the results, and formulating conclusions that align with the research objectives and questions established at the beginning of the study. Additionally, the chapter explains the essential findings obtained from the data analysis, emphasizing their significance and relevance to the research field. Lastly, the chapter concludes by summarizing the significant findings, addressing any limitations encountered during the research, and offering recommendations for future studies based on the outcomes obtained in the present research endeavor.

The Improvement Science framework is valuable for systematically improving systems, processes, and outcomes across various fields, including healthcare, education, and business. Improvement Science offers a structured approach to identifying areas for improvement, implementing interventions, measuring progress, and refining interventions based on data collection and iterative adjustments (Bryk et al., 2015). The framework aims to increase efficiency, effectiveness, and quality, reduce errors and variability, encourage innovation and learning, and achieve sustainable and scalable improvements. The Improvement Science framework provides organizations and practitioners with evidence-based methodologies to investigate complex problems in a disciplined and rigorous manner, continuously improving their practices to achieve better outcomes.

According to Pape et al. (2017), a dissertation in practice provides a structure for scholar-practitioners to acquire the expertise, abilities, and attitudes required to collaborate with their

peers in educational organizations and to confidently tackle any obstacles that may arise in their future endeavors. It is important to note that the six principles of Improvement Science heavily influence a dissertation in practice or an applied dissertation. In addition, the Plan-Do-Study-Act cycle (PDSA) is to improve processes and achieve better results through continuous improvement. It involves analyzing the current process, planning, and implementing changes, studying the outcome, and acting on the findings to improve the process further. This cycle can be applied to various areas, including business, healthcare, and education, leading to increased efficiency, productivity, and quality. By continually repeating the cycle, scholar-practitioners can design interventions for optimal effects, increasing the ability to scale improvement within improvement networks. Christoff (2022) argues, "change must occur for any improvement effort to be successful" (p. 198). Therefore, this chapter includes information on the iterative changes between the evaluation and intervention studies.

Discussion of the Results

The key findings and implications of evaluating and implementing evidence-based RtI practices and a phonics-based intervention suggest that these interventions positively affect effective reading intervention strategies and improve student outcomes in reading. The study incorporated a mixed-methods approach to ensure a thorough narrative detailing the research findings.

The Evaluation

The evaluation study aimed to examine the alignment of current practices with findings from the literature on the RtI framework. Although strengths existed within the data analysis, there is still a need for an iterative implementation design that addresses the themes and findings from the research. The following steps for implementation are to research a systematic phonics-

based system that targets the foundational needs of struggling readers while ensuring student engagement and motivation for learning. In addition, the planning phase of the PDSA cycle should include a network improvement committee to chart a course forward for aligning campus RtI practices with an evidence based RtI framework.

The study emphasizes the challenges that occur when practitioners lack an understanding of evidence based RtI practices and pedagogical strategies. In addition, the study highlights policy changes that govern student selection, instructional strategies, and high-quality curriculum materials for effective intervention. Future research can enhance understanding of how embedded professional development impacts teacher efficacy in implementing effective interventions for struggling readers by relying on best practices.

The Intervention

This study evaluated the implementation of Reading Horizons Elevate (RHE) and the intervention's impact on improving student reading outcomes. Overall, the study provided insight into the application of phonics-based interventions for struggling readers, even within a middle school context.

The body of research recognizes the benefits of phonics-based instruction in teaching reading and writing to young learners. However, there are also some common challenges that come with this approach. One of the biggest challenges is that not all students learn at the same pace, and some may struggle with applying certain phonics rules. When schools implement interventions that do not consider individual students' Zone of Proximal Development, it may result in a lack of confidence in their literacy and communication skills. Another challenge is that phonics-based instruction can be quite repetitive and perceived as immature, which can lead to disengagement and boredom in some students. Additionally, implementing phonics in the

classroom can be challenging for educators needing more training and experience. Despite these challenges, with job-embedded professional development and instructional coaching, phonics-based instruction can be a valuable tool in helping students develop strong literacy skills.

The participating teacher in iteration two reported a pleasant experience implementing the intervention and increased engagement due partly to the program's multi-model approach, including a technology component. The qualitative data provided notable information about the implementation of the intervention and elicited teacher perceptions related to the program's efficacy. In summary, this research highlights the significance of evaluating the improvement of student reading outcomes before and after applying a phonics-based reading intervention.

Recommendations for Practice and Further Study

Bryk's work on Improvement Science has significantly impacted intervention iteration in many research areas. By focusing on continuous improvement, researchers can identify and address problems in their interventions, leading to better outcomes for those involved. This approach allows for a more systematic and data-driven approach to intervention development, ultimately leading to more effective interventions. Bryk et al. (2015) assert that sustainable improvement work is relevant to the researcher, and the problem of practice is well-defined. Additionally, the emphasis on collaboration and communication within the Improvement Science framework encourages researchers to work closely with stakeholders and target populations to ensure that interventions are culturally appropriate and relevant to the needs of those they are designed to serve. Overall, Improvement Science has proven valuable for researchers seeking to develop and implement effective interventions in various fields, especially social sciences.

Based on the findings from the evaluation study, schools should adopt evidence-based policies and procedures that best support their RtI implementation. In addition, it is

recommended that practitioners conduct root cause analysis on their current intervention practices before designing an innovation. According to Bryk et al. (2015), researchers must have a comprehensive understanding of the organization or system that produces the occurring outcomes. Only then can sustainable improvement take place.

Pape et al. (2022) echoes the work of Bryk et al. (2015), asserting that in order to improve something, one must first be able to measure it. This is particularly important when it comes to improving at scale. A practitioner or organization must measure the appropriate indicators and track improvement over time if they desire to progress. Measurement allows researchers to identify areas for improvement and make data-driven decisions about how to move forward. Without this measurement, a researcher is simply flying blind and hoping for the best. Moreover, if the improvement is to be scaled, researchers must mitigate design factors that threaten a study's validity, reliability, and generalizability.

Further research is necessary to investigate the impact of a phonics-based program within the research design that has both a control and treatment group. The intervention study only consisted of a treatment group. Future research can examine how embedded phonics instruction works for struggling readers and entire grade levels. Such findings would be valuable to the research that supports phonics-based instruction instead of whole-language approaches.

In summary, relying on the body of research on effective RtI practices and implementing the Science of Reading-based instruction within the school setting can provide critical baseline data for future research in the reading area, especially at the secondary level.

Conclusion

This study's findings highlight the urgency for strategically implementing best practices for effective RtI strategies, systematic ways to identify struggling students, tracking growth over

time, and data-driven decision-making. The evaluation study required an evidence-based, high-quality instructional curriculum to address foundational phonological gaps. According to Kuhfeld et al. (2023), allocating additional resources specifically to struggling learners attending schools in high-poverty areas is recommended to prevent the further widening of academic gaps. This targeted approach ensures that these students continue to advance and strengthen their fundamental reading skills.

Finally, in using a phonics-based intervention, the intervention study revealed the efficacy of improving reading outcomes for struggling readers using quantitative and qualitative measures. An intervention teacher reported student engagement due to the program's multi-modal student learning experience. The study also revealed the positive correlation between using effective RtI policies and procedures and research-based high-quality instructional materials and their impact on increasing outcomes for reading performance.

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Appendix A

Semi-Structured Interview Questions

1. How would you describe the current level of RtI instruction implementation in your setting?
2. What specific strategies do you use most frequently to support struggling readers within the RtI framework?
3. How consistently do you feel RtI strategies are being implemented across your school or district?
4. Can you provide an example of a success story or challenge you've faced when using RtI instruction with a struggling reader?
5. How well-equipped do you feel in using RtI strategies for struggling readers? Are there any resources or trainings you wish you had?6. In your experience, how have struggling readers responded to research-based instructional models?7. Have you observed any measurable improvements in reading outcomes after implementing a research-based model? Can you share some examples?
8. What challenges, if any, have you faced when implementing research-based instructional models for reading?
9. How do parents or guardians of struggling readers perceive the impact of research-based instructional methods?
10. In your opinion, what elements of a research-based instructional model have the greatest impact on reading outcomes for struggling readers?

Appendix B

Reading Horizons Elevate Semi-Structured Interview

1. Generally, how do you feel that your work with Reading Horizons Elevate has gone this year?
2. How has your teaching changed this year due to the implementation of Reading Horizons Elevate strategies?
3. Do you see yourself using these strategies beyond the program?
4. What has been the most challenging aspect of implementing your Reading Horizons Elevate this year?
5. What supports have been most useful as you have implemented your Reading Horizons work this year?
6. Overall, do you think this program is appropriate for secondary students?
7. When do you think is the appropriate time to use this for students that or lacking?
8. What changes have you seen in your school's ELAR department since implementing Reading Horizons Elevate?
9. Do you feel that your school has made it a priority to implement Reading Horizons strategies?
10. How do you see your school's future with implementation of Reading Horizons Elevate?
11. How have you communicated information with the parents of students in this program?
12. Have there been any adjustments to the program to try to support more students and give a broader base?

Biosketch

Johnny Walker is an innovative educational leader with a notable school improvement and turnaround background. Johnny's educational journey began at Wiley College, where he earned a bachelor's degree, followed by his master's at Stephen F. Austin and a doctorate in education, emphasizing school improvement, from the University of Texas at Tyler. His strong belief in the transformative power of effective teaching and learning has been a primary driver in his mission to provide better learning outcomes for all students. Johnny's passion for supporting teachers and providing coaching that improves teacher effectiveness continues to be a crowning achievement in his career as he has served as a teacher, instructional specialist, associate principal, and principal.