2023

THE ROLE AND EFFECTIVENESS OF RESPONSE TO INTERVENTION TO IMPROVE ELEMENTARY STUDENTS' READING SKILLS AND ABILITIES

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THE ROLE AND EFFECTIVENESS OF RESPONSE TO INTERVENTION TO IMPROVE ELEMENTARY STUDENTS' READING SKILLS AND ABILITIES

by

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A dissertation submitted in partial fulfillment of the requirements of the degree of

Ed. D. in School Improvement

School of Education

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College of Education and Psychology The University of Texas at Tyler

December 2023

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November 1, 2023 for the Doctorate in Education in School Improvement degree.

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Dedication

This academic achievement is dedicated to my created family. My husband, Christopher, and my two sons, Phoenix and Thorin. Christopher, your unwavering support throughout this process has been incredible. I want to thank you for all the sacrifices you have made to help me be here today. I love you dearly. To my oldest son, Phoenix, you are the "why" behind this journey. Thank you for always sharing your kind words of encouragement. I love you. To my youngest son, Thorin, you are the "drive" behind this journey. You are the light that has guided me to finish. Everything I do is for my family and here's to us and our future endeavors.

I am honored to be a part of the first doctoral cohort for School Improvement at The University of Texas at Tyler. I want to thank my cohort members for their encouragement through the years and the friendships created along the way. Thank you to my "buddy group" for all the support and late-night questions. We did it!

Acknowledgments

I wish to thank the committee members who were more than gracious with their time. A special thanks to my committee chair, Dr. Joanna Neel, for countless hours reading, continuous words of encouragement, and your unwavering guidance. Dr. Neel your positivity and heart-felt connections to your students is unmeasurable. I am so blessed to have completed this journey under your guidance.

To all the professors I have had at The University of Texas at Tyler, thank you. I have been fortunate to have received all my degrees from UTTyler, and every professor along the way has played a part in this journey. Finally, a special acknowledgement to the professors who made this program possible, thank you.

Abstract

EFFECTIVENESS OF RESPONSE TO INTERVENTION

Elementary students at a local elementary school were having reading difficulties and demonstrated a decreased performance on intervention measures, formal and summative assessments. Success in reading is imperative because students must read the content throughout their educational career and students must read the content on state assessments. Students' success on state assessments determines placement of future intervention groupings in the next grade level, eligibility in extra-curricular activities and ultimately eligibility for high school graduation. The purpose of this evaluation study was to evaluate a pre-existing program to examine whether the implementation and use of Response to Intervention (RTI) was effective in improving students' reading abilities and skills for elementary students performing below grade level. The research questions addressed teachers training and understanding for RTI as it applied to student's reading performance in the grade level course. The research design was a mixed-methods design. This evaluation study had two phases. Phase one of the study was the evaluation of the problem of practice. Phase two of the study was the evaluation of an intervention to address the problem of practice. Data were collected from semi-structured interviews and informal observations (not related to teacher evaluation) with ten educators, one instructional specialist, and RTI data. In addition, data were collected from classroom formative assessments, district summative assessments, and state level summative assessments. The data indicate that the evaluation of the problem of practice RTI was not effective in improving students' reading performance. Additionally, the data indicate from the evaluation of the intervention indicate RTI was effective in improving student's reading abilities. The implications for change include better

initial RTI training, improved RTI implementation coaching, improved fidelity of RTI implementation, improved students' reading abilities and scores on district and state assessments.

Key Words: Response to Intervention, intervention, students, tier

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Chapter One: THE PROBLEM OF PRACTICE

Introduction to Improvement Science Dissertation in Practice

This dissertation is one that was an improvement science dissertation in practice. Hinnant-Crawford (2020) described improvement science as, "a methodological framework that is undergirded by foundational principles that guide scholar practitioners to define problems, understand how the system produces the problems, identify changes to rectify the problems, test the efficacy of those changes, and spread the changes" (p. 1). Traditional studies aim to offer a proof of concept and only assess the impact of improvement but lack in guiding the practitioner through the processes of school improvement. The process of improvement science in education is built upon iterative cycles to increase learning-by-doing (Bryk et al., 2015). Today, educational practitioners apply improvement science frameworks to address specific problems of practice in education. A leading proponent of improvement science methods in education is the Carnegie Foundation for the Advancement of Teaching. The Carnegie Foundation defines six core principles of improvement science listed in Table 1.

Table 1

Carnegie Foundation of the Advancement of Teaching

The Six Core Principles of Improvement
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.

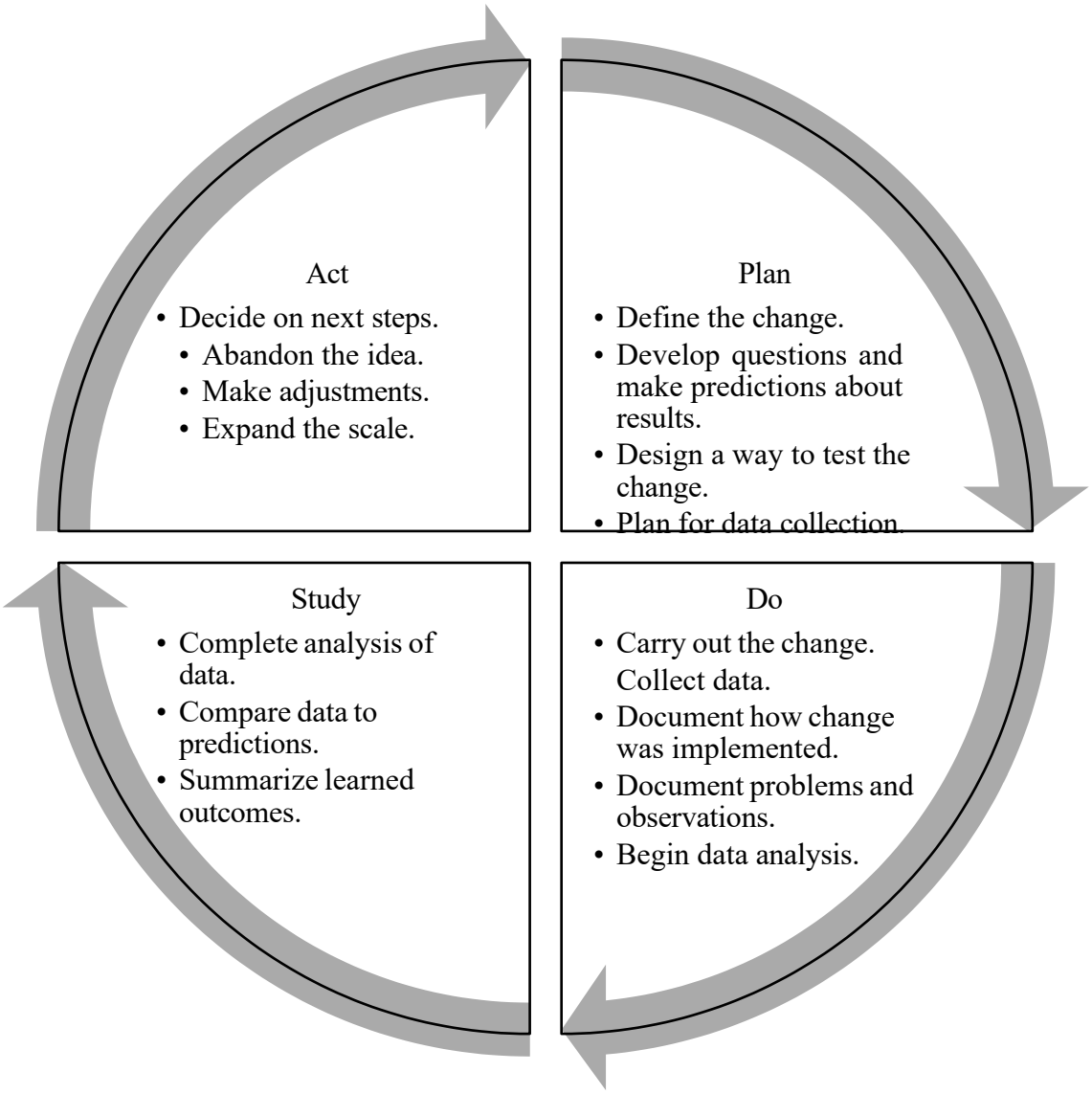
4. We cannot improve at scale what we cannot measure.
5. Anchor practice improvement in disciplines inquiry.
6. Accelerate improvements through networked communities.

Introduction to the Plan, Do, Study, Act Cycle

Within improvement science, one of the basic methods of inquiry is the Plan-Do-Study-Act (PDSA) cycle. Each cycle is rooted with a hypothesis centered around a working theory of improvement. During the iterative cycles, predictions are made about end results and compared to real-time outcomes within the cycles According to Berk et al. (2015), PDSA cycles are a flexible tool in the tool belt of practitioners utilized to guide the learning process at different stages (p. 122). This tool was utilized throughout this dissertation as an outline in chapters three and four. Chapter three consisted of a Plan, Study, Act (PSA) cycle and chapter four consisted of a complete PDSA cycle. As outlined in Figure 1, each cycles includes four stages carried out repeatedly with the goal of answering new questions that develop throughout the method of inquiry.

Figure 1

Plan, Do, Study, Act Model for Improvement



Two Phase Nature of Dissertation

The dissertation was developed in two phases. The first phase was to study and analyze an actionable problem of practice. The goal for the initial phase was to propose and conduct data collection and analysis on adult actions and the impact of the actions on the current Response to Intervention (RTI) implementation. Within the first phase, a theory of change and further recommendations for the intervention evaluation was proposed. The second phase was to evaluate the intervention that addressed the problem of practice.

Background of the Problem

An improvement science dissertation encompasses identifying an actionable problem of practice, developing a change theory, implementing, and studying the change systematically through short PDSA cycles, and reporting the findings (Hinnant-Crawford, 2020, p. 29). The problem of practice that existed at the research setting was that some students were demonstrating significant reading difficulties. The setting for this study was one elementary school located in Texas. The student population of the campus was 707 students in grades pre-kindergarten through fifth grade. The student demographics were 20.7% African American, 19.2% Hispanic, 55.3% White, 0.4% American Indian, and 4.4% two or more races (TEA, 2021). The school's enrollment has increased from year to year. RTI was implemented at the evaluation study site for the last ten consecutive years; however, in the last eight years, RTI training has not been provided to new teachers with zero years of service nor teachers who are new to the campus and/or district. As a result, fidelity of implementation of RTI was compromised. Educators were either not implementing a response to intervention framework or implementing only parts of a structured framework. For the last four consecutive years, the school's standardized state test performances in reading were declining. In addition to the

declining reading performances on state tests, the students who were not meeting grade level expectations showed minimal improvement from year to year.

When academic data from formative and summative assessments as well as progress monitoring data indicates a student in performing below grade level proficiency, educators are required to pursue research-based intervention strategies to decrease a student's achievement gap (Jones et al., 2012). If educators are unable to decrease the achievement gap, the ending result is often a referral to special education services. If evaluated and a determination is made to qualify for special education services, those students would receive supports through an Individualized Education Program (IEP). However, over-classification or misclassification can lead to an increased number of students received special education services when they may not be warranted (Thorius & Maxcy, 2015).

With the Individuals with Disabilities Act (IDEA, 2004) a pathway was paved for the utilization of multi-tiered system of support system to provide additional levels of support for all students (Berkeley et al., 2020). The multi-tiered system of support came as a result to decrease the number of students in special education programs and assist in decreasing the rising cost special education services. The Response to Intervention framework was designed to transition learning for all students. Thus, making the paradigm shift from a model that waited for students to fail to a model of prevention that offered students extra support through the learning process. (Richards et al., 2007). The introduction to the RTI framework also created a paradigm shift in educational school systems. Educators were required to explore other research-based interventions, teaching strategies, and approaches to teaching before recommending a student be evaluated for special education services (Barnes & Harlacher, 2008).

According to research, multi-tiered level of supports has had a significant influence on early intervention efforts in schools as well as the identification and remediation of students with special education needs by teachers (Swanson et al., 2012). Nevertheless, even though RTI has advanced significantly since its inception, practitioners are still looking for solutions to frequent challenges that hinder the programs' effectiveness and implementation (Al Otaiba et al., 2019). According to Gersten and Domino (2006) while RTI has many benefits, such as the ability to identify struggling students earlier, a reduction in referrals to special education, and a decrease in the overrepresentation of minorities in special education, there are also many challenges to implementing an RTI program successfully. According to common challenges include deficient treatment validity, ambiguity in the disability diagnosis process, and a lack job-embedded professional development for educators. The findings in Thomas et al., (2020) further supports the findings in Gersten and Domino (2006); Castillo et al. (2016); and Castro-Villarreal (2014) that the fidelity of teachers' constancy is crucial for the integrity with which RTI is administered and implemented. To successfully implement RTI, it is crucial to have a clear understanding of how teachers' perceptions affect instructional practices in the classroom because teachers are frequently asked to modify their preconceived notions and beliefs about the best teaching strategies for struggling students (Castillo et al., 2016). Educators are frequently challenged in their thought processes and theories surrounding best teaching practice that support academically struggling students. For RTI to be successfully implemented, practitioners must understand how instructors' perspectives impact instructional techniques in the classroom (Regan et al., 2015).

Although the premise of RTI is not new, the momentum of RTI in educational reform originated from federal legislation. No Child Left Behind (2001) originated with the premise of

all students regardless of race, ethnicity, or economic status were entitled to equitable access to a free and public education.

Statement and Definition of the Problem

The fidelity of the implementation of RTI programs is compromised when general education teachers do not receive initial training of the RTI framework. In addition, additional comprises arise when job-embedded professional learning is not provided as a coaching tool and when the programs implemented for intervention purposes do not follow a structured framework. The problem was inconsistent training, conceptual understanding, and implementation of RTI programs at one elementary campus in Texas. Despite intervention efforts of general education teachers and master teachers, students were not demonstrating growth from year-to-year performances and as a result, referrals for special education services increased.

While research on the tiered instruction approach paradigm is expanding, many of these studies concentrate on how well RTI affects students' academic and behavioral results (Milburn et al., 2017). Even though the fundamental elements of the academic interventions often used in RTI are not new to the classroom (Preston et al., 2016), there is a shortage of research on how instructors see these interventions and how they are applied within the RTI framework (Zhou et al., 2019) discovered that although there is still much to learn about the academic and social/behavioral outcomes of students who participate in RTI, there are few studies available that explore the relationships between variables influencing implementation delivery and the use of evidence-based approaches. A large portion of current research is done on the perspectives of educators and contextual factors of RTI implemented a qualitative design method research (Barton et al., 2020). There is a lack of research with mixed-methods evaluation studies completed to determine if there is a significance in teacher perspectives, job-embedded teacher

training, and teacher conceptualization related to student performances when implementing response to intervention.

As RTI framework and approaches are being implemented by public school educators it important to consider variables such as teacher perspectives, job-embedded training, and teacher understanding that impact the success of the students. Although the RTI framework incorporates the entire school body, teachers are at the forefront in the classroom delivering core classroom instruction, Tier 1 instruction as well as delivering supports and interventions for Tier 2 and Tier 3 instruction (Thomas et al., 2020). According to the research done by Castro-Villarreal, Rodriguez, and Moore (2014), successful implementation of RTI starts with teachers at the classroom level. Given teachers integral role in the implementation of RTI it is vital to examine and study teachers' perceptions, attitudes, beliefs, understandings, and challenges as they relate to RTI to determine the most appropriate plan of action, interventions, and supports required for effective implementation and long-term sustainability of RTI (Castro-Villarreal et al., 2014). As teachers are the primary source of responsibility for RTI implementation in the general education classroom, the program's effectiveness is ultimately determined by the systems and features in place to support the entire school system (Bean & Lillenstein, 2012). Therefore, it is imperative that teacher perspectives' of RTI and RTI implementation are better recognized and determined throughout the implementation process. The issue is that the literature has not fully addressed the school-wide systems that impact teachers and teacher perspectives regarding RTI. Failure to address these concerns could ultimately result in issues in RTI implementation and fidelity of the RTI program and process. As a result, it is crucial that the ideas and perspectives of teachers are examined since they are at the center to the successful implementation of the RTI framework.

Purpose and Significance of the Study

The purpose of this mixed-methods evaluation study was to evaluate a pre-existing program to understand whether the implementation and use of RTI was effective in improving students' reading abilities and skills in an elementary setting. In addition, the researcher is trying to determine initial teacher understanding of RTI, implementation of tiers of structured support, and to what extent over time did this impact student experience. A teacher's confusion or misconceptions often occur due to a lack of RTI program implementation, job-embedding learning, and inconsistent or unstructured frameworks. In collaboration with the adult participants, teacher input assisted in identifying gaps in understanding, implementation, or even in the implementation of resources utilized for the various tiers of instruction.

The purpose of RTI programs is to improve instructional quality, provide a system for identification of learning disabilities, and to address academic learning difficulties. However, there is a gap in RTI program policy and RTI program implementation (Thomas, Conoyer, & Lembke, 2020). Effective RTI programs should be the result of a collaborative effort between teachers, administrators, and parents.

The study will seek to answer the following research questions: 1) To what extent do students demonstrate growth over time with interventions in the classroom? 2) To what extent does teacher understanding and implementation of response to intervention correlate with student success, 3) What challenges are present when implementing a response to intervention model?

Consultation with other educators and RTI team members will assist in the successful implementation of RTI programs. In this evaluation study, the qualitative data collected through interviews, informal classroom observations, and focus groups revealed how teachers implement RTI, how that RTI implementation associates with student success, possible barriers to the

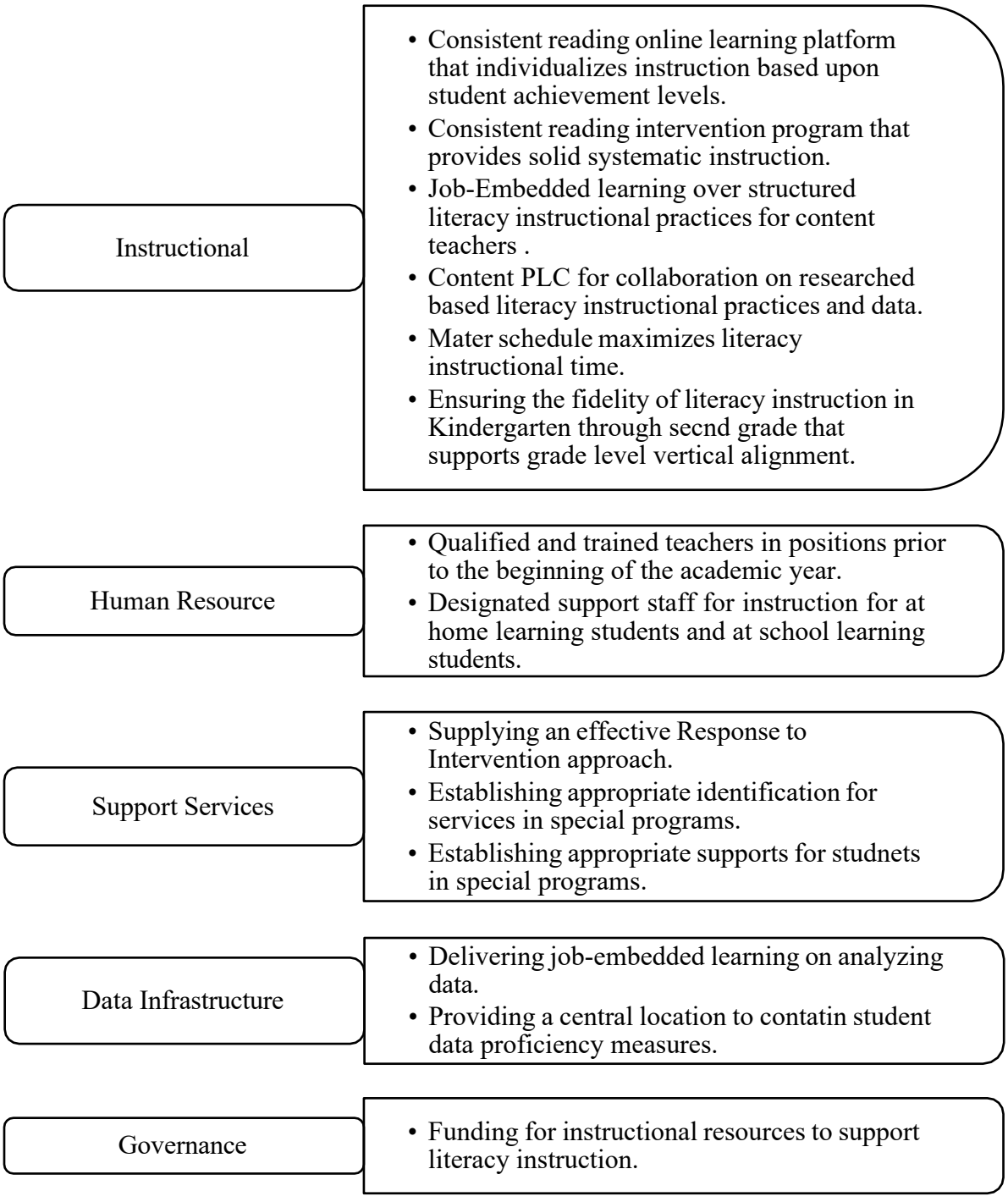
successful implementation of RTI, and the gap between proposed implementation measures versus what is being implemented in the classroom.

The System

One of the six principles of school improvement is to see the system that produces the current outcomes (Bryk et al., 2015). One of the tools utilized by improvement scientist to aid in the illumination of the system is a systems map. According to Hinnant-Crawford (2020), "a systems map depicts the components and the limits of a system at a certain point in time; therefore, resulting in the map changing over time" (p.105). As outlined in Figure 2, the identified domains include instructional, human resource, support services, and governance. Within the instructional domain, one crucial problem is the need for a continuously consistent reading intervention program that is structured literacy program with direct instruction techniques. At the campus support level, inconsistent job-embedded leaning at the beginning of the year and throughout the year was observed. In addition, there needed to more stable and grade level aligned literacy instruction from kindergarten through second grade. In relation to the human resource domain, the campus was unable to ensure qualified teachers at the begging of the year. Furthermore, there was a shortage of staff assigned to support teachers and students through virtual learning. Regarding data infrastructure, the campus needed to provide a central location to contain student various student data measures. Within support services, there were concerns about initial RTI training for new educators to the profession and new teachers to the campus as well as support training throughout the instructional school year.

Figure 2

System Improvement Map



Root Cause Analysis

According to Perry et al.(2020), "in order to navigate problems of practice in their complexity, best practice is to deconstruct complex problems into their sub-problem component parts" (p. 59). To deconstruct the problem of practice in this mixed-methods evaluation study, the researcher and practitioners constructed a casual systems analysis that included a fishbone diagram, a system improvement map, and a driver diagram to explore and uncover root causes.

The fishbone diagram (Figure 1.3) was a framework that supported the identification of root causes in the problem of practice. According to Perry et al., (2020) the first step in addressing a problem is identifying root causes and then develop possible strategies to address the problem of practice. The completion of the fishbone identified six possible categories of causes: teacher understanding or knowledge, teacher experience, administrator support, resources, policies and practices, and implementation.

Within one of the first category of implementation, the Networked Improvement Community (NIC) identified universal screeners or diagnostic tools being underutilized. Various assessment tools were provided in abundance for grades kindergarten through second, such as Star Renaissance, Reading Horizons, mClass, and iReady. Each assessment tool had district and campus level requirements for completion. This resulted in an overload of student data over various state standards that led to teachers being overwhelmed. In addition, the surplus of assessments and data made it challenging for educators to make instructional decisions in the classroom. At times, this resulted in an unclear understanding of diagnostic tools.

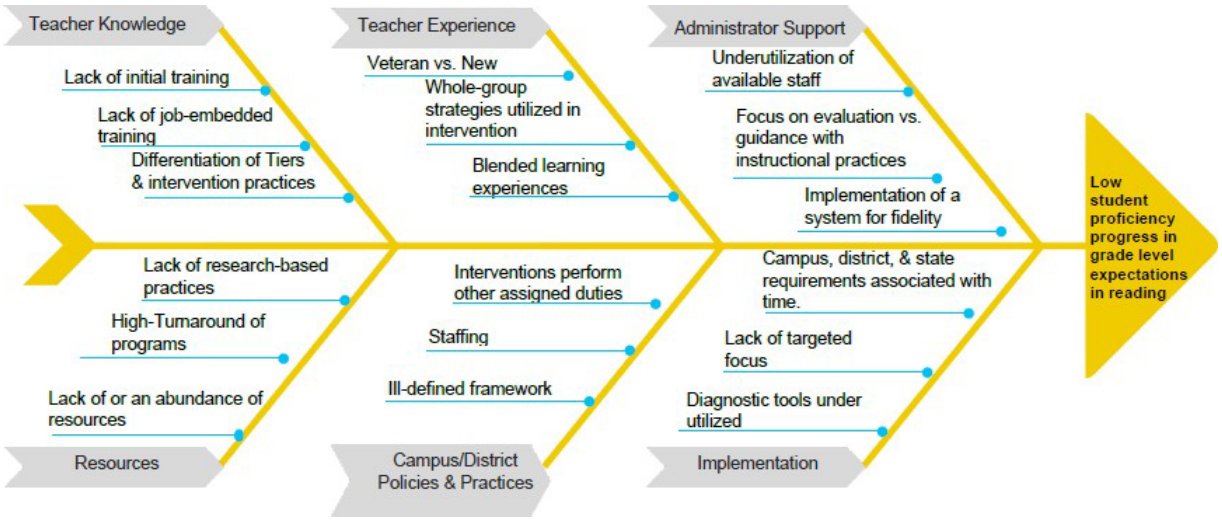
Within the administrator support category, a significant variable from the pandemic was the support from an instructional supervisor for in-person student learning and at-home student learning. Educators and administrators were faced with challenges for staffing during the Covid-

19 pandemic. Educators had to have a two-day crash course for a newly adopted learning management platform that normally would have been conducted over several weeks. Administrators were tasked with evaluating teachers but were not provided with instructional guidance on coaching teachers through the learning management platform.

The teacher experience category included three factors contributing to low student performance proficiency. The first factor presented was the experience of the teacher. Teachers with experience outside of the district brought with them previous experiences of the implementation of Response to Intervention. New teachers to the district and new teachers to the profession obtained learned knowledge of Response to Intervention (RTI) in their teacher prep programs. There needed to be a better understanding of the RTI framework components for implementation fidelity. It was also observed that there needed to be more consistent intervention strategies implemented during the intervention instructional time.

Figure 3

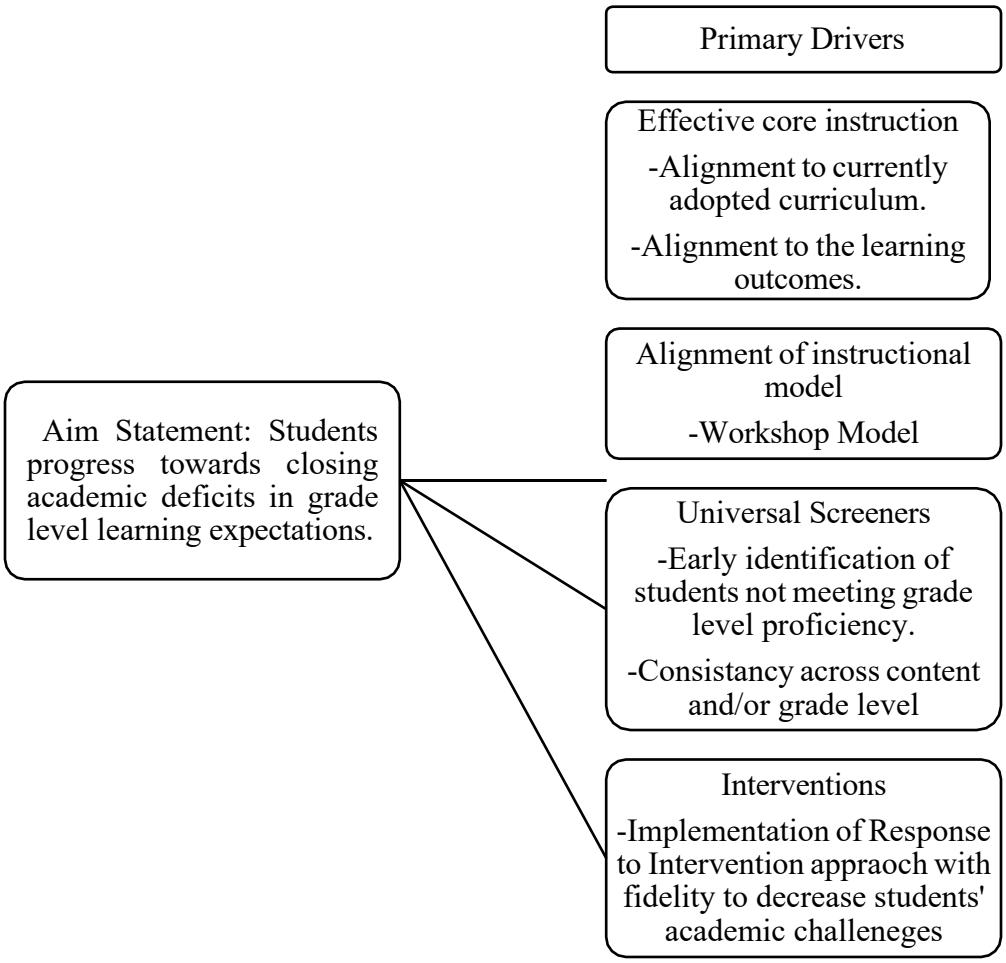
Fishbone Diagram for Low Student Proficiency Performances on District Assessments



Further, the campus instructional leadership team completed a driver diagram as a tool to illuminate the set of changes toward a solution (Bryk, Gomez, Grunow, & LeMahieu, 2017). The first process in creating a driver diagram was creating an aim statement. The instructional leadership team was confident the aim statement described the desired outcome. The second step was identifying primary drivers. Primary drivers are described as likely factors of the system that influenced the aim statement (Hinnant-Crawford, 2020) The instructional leadership team identified effective core instruction, alignment of an instructional model, universal screeners, and interventions as primary drivers. The instructional leadership team concluded these primary drivers would lead to students to proficiency in their grade level content standards. The driver diagram created by the instructional improvement team is outlined below as Figure 1.4.

Figure 4

Driver Diagram



As a result of the meetings with the networked improvement committee, the instructional leadership team pinpointed the RTI framework as a pathway that could direct the campus towards short-term and long-term goal attainment of students becoming proficient in grade level expectations. The RTI framework provided identification of students that were academically struggling, targeted core instruction and interventions based on date, and frequent student

progress monitoring. The instructional leadership team made the decision to focus their improvement efforts on literacy for the first iterative cycle.

Positionality

As in all research, it is important to understand that no research can be 100% objective. It is fair to state that to some degree the positionality of the researcher influences the relationship between oneself and the problem of practice. The researcher is a white middle class female born in Texas and raised in various locations of the state. The researcher has numerous college degrees in education from one local university. The researcher has been employed within the research site's district for eight years as a classroom teacher at the research site.

In terms of researcher bias, prejudice was reduced when analyzing and interpreting data by incorporating all material and neither disregarding unpleasant comments or inflating others to reach expected study outcomes. To acquire minimally biased data, the data was interpreted objectively rather than subjectively. The researcher did not interject their own thoughts, perceptions, nor experiences during the interviews, surveys, and informal classroom observations.

Additional limitations included variables related to the participants in the evaluation study. While all the instructors engaged in their school's RTI program, their levels of expertise varied. The research was conducted at one elementary school, in one district, ranging in grades from kindergarten to second in the first iteration and ranging in grades from kindergarten to fourth. The small sample size may have limited the capacity to apply the findings in other contexts. Although small in sample size of the evaluation study participants could provide insights to RTI implementation to similar campuses.

Chapter Two: REVIEW OF SCHOLARLY AND PROFESSIONAL KNOWLEDGE

Review of the Scholarly Knowledge- The Student Lens

Response to Intervention (RTI), which developed out of the Individuals with Disabilities Education Act (IDEA) of 2004, represents a paradigm shift in how national school systems identify students with learning disabilities (Cowen & Maxwell, 2015). RTI restructures the way core-instruction is provided in the classroom, how students are assessed, and how intervention support services are provided so they are aligned with research-based practices. Although RTI has been acknowledged as a formal education framework for public education schools for almost 20 years, there are still many obstacles preventing the program's effective implementation (Balu et al., 2015; Fan et al., 2016). Although RTI has the capacity to improve the educational outcomes for all students, it continues to be highly criticized and scrutinized due to the numerous challenges general education teachers experience when attempting to implement the framework with its intended fidelity (Balu et al., 2015; Werts et al., 2014). For educational reforms to be implemented, sustained, and successful in the classroom, the transformation must be desired by the instructors (Wilcox et al., 2013). As a result, it is crucial that school systems identify root causes and address those primary drivers that may be potential factors in contributing to the negative opposition to the program. Any educational reform must recognize that teachers are the key to student achievement, and it is imperative to comprehend their viewpoints, perspectives, and experiences (Meyer et al., 2015).

Review of the Scholarly Knowledge- The Adult Lens

No Child Left Behind

The No Child Left Behind act (NCLB) of 2001 was a reauthorization of the Elementary and Second Education Act. In effect from 2002-2015, the NCLB act placed importance on research-based instruction and interventions. As a result, expanded the federal government's reach into K-12 school systems (Cowen & Maxwell, 2015). NCLB required states to develop academic standards, state-wide assessments, and accountability measures for local education agencies (LEA) and school systems (Dee & Jacob, 2011). NCLB developed as a result due to concerns that the American education system was not as competitive as other world-wide education systems. It considerably enhanced the role of the federal government and its role in holding school systems and educators accountable for students' yearly academic progress (Holbein & Ladd, 2017). NCLB imposed several requirements on LEA and school systems to ensure accountability. Through NCLB, education agencies and school systems were held accountable for improving academic performance for all students, lengthening the time in the general education classroom for students with disabilities, and for decreasing the over-identification of racial minority groups in various disability classifications (Duncombe et al., 2008). Along with holding educators, institutions of higher learning, and districts responsible for the results of education, NCLB required that all educators be highly qualified and for high quality teachers to utilize research-based instruction with all students in all academic settings (Hanushek & Rivkin, 2010).

It was the goal of NCLB's assessment and accountability measures to highlight the underperforming student populations and hold school systems accountable for how students performed on the general education curriculum. An emphasized focus was placed on student

outcomes for historically low-performing student subpopulations that included emergent bilingual students, students receiving special education services, impoverished students, and minority students (Hanushek & Rivkin, 2010).

Although many educational reformers had mix feelings about NCLB, the act brought to light various aspects of student data that were less transparent prior to the reauthorization. NCLB held school systems accountable for how students learned and how they achieved success (Dee & Jacob, 2011) School systems were tasked with reporting data on subpopulations such as students of race, students of poverty, students receiving special education services, and emergent bilingual students. This new way of viewing student data pushed school systems to provide additional support for struggling students (Ysseldyke et al., 2008). The increased awareness of underperforming subpopulations of students, presented on of the biggest challenge faced by educators is the delivery of general education instruction that was responsive to not only academic ability but also the linguistic and cultural abilities (Hoover & Soltero-Gonzalez, 2018). General education teachers have difficulties in understanding the second-language acquisition process, as a result, these challenges proceed into the RTI process. This challenge of understanding for general education educators results in the increased special education referrals for students in subgroups with a targeted struggles of literacy development (Colombo et al., 2013; Hoover & Soltero-Gonzalez, 2018) In addition to the high-quality instruction given to all children in the general education setting, NCLB called for the deployment of systematic educational methods that offer evidence-based interventions to struggling students in order to fulfill the needs of these students (Mohammed et al., 2016).

Individuals with Disabilities Education Act

After the passing of NCLB (2001), the reauthorization of the Individuals with Disabilities Education Act (IDEA) occurred in 2004. IDEA strived to address issues in education caused by low expectations and a lack of attention to alternative research, teaching strategies, and resources. To address the issues in education there are six key principles of IDEA. The first principle mandated that students with a disability had the right to receive a free and appropriate public education (Yell et al., 2021). The second principle required the school systems to conduct appropriate evaluations of students suspected to have a disability (West et al., 2022). Evaluations were to be completed by a team of trained evaluators that must deploy researched evaluation materials and procedures in addition the evaluations were to be administered in a non-discriminatory basis. Within the evaluation process, the completed evaluation must be focused with the child's education and future instruction in mind. The last requirement is that an adequate examination promptly determines and recommends whether a child qualifies for special education services (Turnbull, 2005). The third principle established in IDEA was the Individualized Education Plan (IEP). The IEP is a document that must include present levels of academic performance, annual goals and objectives, services, and supplemental supports to be received, and explanations with supporting reasoning as to why a student is not participating in the general education classroom setting. IDEA placed emphasizes on the importance of placement in a general education environment. The fourth principle of IDEA as it relates to students, guaranteed placement into the Least Restrictive Environment (LRE). As a result, the IEP team must consider a range of options to provide students access to the general education environment. Such options often include but are not limited to alternative instructional methods, supplementary aides, classroom modifications. Principle five of IDEA included provisions for

parent participation in determination of placement of their child. As a result of IDEA, state governing school agencies and school boards had to ensure parents of the student with a disability were participating decision members of the team in determining placement and LRE of their student. In addition to the provisions for parent participation, the last principle established procedural safeguards to help enforce the rights of the student and parent under federal law. Under this provision parents had the right by law to request Independent Educational Evaluation (IEE), review all documents relating to their student's educational career, and to receive prior notice including to meetings about their student's evaluation, identification, and placement. In addition to the several provisions outlined under the reauthorization of IDEA (2004), the educational reform act further pushed for the adoption of research-based teaching methods in classrooms and increased accountability for educators in terms of all students' academic progress (West et al., 2022). If a student's educational requirements or deficits are the consequence of inadequate core instruction, they are not eligible for IDEA services. As a result, the evaluation process must establish if a student has a specific learning impairment, schools must utilize a rigorous procedure to examine whether a student responds to scientific, evidence-based intervention. Additionally, IDEA permits school-wide approaches, research-based early literacy programs, early intervention programs, and behavior supports to support students and prevent unnecessary placement in special education programs.

With the reauthorization of IDEA, RTI became an option for school systems when determining eligibility for special education services (Al Otaiba et al., 2019). RTI emerged in special education research in the early 2000s; however, as it provided a practical framework for providing high-quality, research-based instruction, and interventions to all students, RTI

transitioned from being solely a special education program approach to a general education approach and strategy (Gomez-Najarro, 2020).

Every Student Succeeds Acts

The Every Student Succeeds Act (ESSA) of 2015, is the most current reauthorization of the Elementary and Secondary Education Act (ESEA) of 1965 and replaced the No Child Left Behind act of 2002. Under ESSA, control was also returned to the local and state levels to determine how to satisfy the requirements of the many student populations that routinely underperform (Black, 2017; Duff & Wohlstetter, 2019; Edgerton, 2019). This act raised the emphasis on improving results for all children, but notably those who have previously been underserved in public schools. ESSA shifted away from utilizing standardized test results as the main measure of student advancement and mandated the use of several metrics to track students' learning and progress (The Congressional Digest, 2017). The significance of high-quality early childhood education was highlighted through the act, and schools were compelled to concentrate their efforts on building and strengthening their early education programs, particularly preschool preparation (Perez, 2018).

ESSA has two primary goals. The first goal is to align education programs for all students to be college and career ready. The second goal is to broaden the federal emphasis on equity by allocating resources for students with various risk factors such as emergent bilingual students, impoverished students, students from minority populations, and students with disabilities (Young et al., 2017). This objective arose from the recognition that it is became increasingly unlikely that students would be able to earn sustainable earnings after high school if they only have a high school education (English et al., 2017). ESSA (2015) aimed to strengthen the foundations established by NCLB (2001) and IDEA (2004) to better prepare students for life following high

school by emphasizing the utilization of evidence-based practices. According to Darling-Hammond et al. (2016), defines evidence-based according to ESSA (2015) as:

> "An activity, strategy, or intervention that demonstrates a statistically significant effect on improving student (or other relevant) outcomes based on strong, moderate, or promising evidence from at least one well-designed and well-implemented experimental or quasi-experimental study, or a rationale based on high-quality research findings or positive evaluation which suggests the intervention is likely to improve outcomes (p.6).

In addition, under ESSA (2015), the emphasis continued the utilization of a multi-tiered support system as a method of better serving the needs students that were struggling and enhancing the outcomes for all students (Lane et al., 2013).

Multi-Tiered Systems of Success

Sailor et al. (2021), defined multi-tiered system of supports as, "a fully integrated set of practices and interventions directed to academics and behavior, with emerging applications to social and emotional learning in the teaching/learning process" (p.24). MTSS is centered on the utilization of evidence-based approaches, data-driven decision making, parental interactions, and progress monitoring. The purpose of the MTSS framework is to assist educators in providing differentiated supports for students' strengths and challenges in the areas of academics, behavioral, and social and emotional (Avant, 2014).

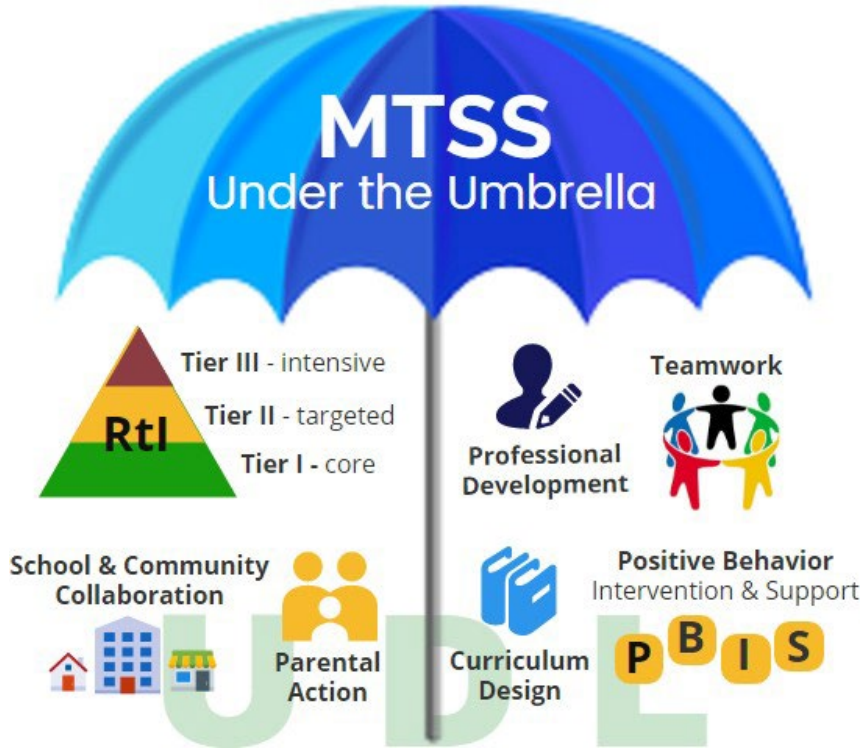
When implemented with fidelity, MTSS had the potential outcome to benefit all students, particularly culturally and linguistically diverse children, in a variety of ways by reducing improper identification and instruction (Hoover & Soltero-González, 2018). A school-wide system encompassing a MTSS framework that incorporated both RTI and positive behavioral

interventions, school and community collaboration, parental engagement, and supports can offer the basis for effective instruction by fulfilling all students combined academic and behavioral needs (Scott et al., 2019).

Among those in education, Response to Intervention (RTI) and Multi-Tiered Systems of Support (MTSS) are often used interchangeably. The nature of RTI is to provide academic intervention to struggling students (Fuchs & Fuchs, 2006). The nature of MTSS is to provide academic, behavior, and aspects of social and emotional interventions to students (Sailor et al., 2021). As outlined in Figure 2.1, RTI is incorporated under the MTSS umbrella.

Figure 5

Multi-Tiered System of Support



Source. California State University of Los Angeles, Charter School of Education, (2016).

Overview

Although there are different perspectives on the key components of the Response to Intervention model, which is an evolving model, there is a common theme that runs through the literature. Response to intervention consists of the recognized elements listed below and is often implemented in a sequential, linear way. One of the first key elements of a response to intervention framework is the use of many tiers of interventions with academic backing. It is based on the public health approach, which calls for progressively more aggressive interventions for those who don't respond to standard treatments. There is no predetermined number of stages, however RTI frequently includes three levels of intervention (Fuchs & Fuchs, 2006). In Tier I, all students are screened universally, and classroom-based interventions are progress-monitored. If students are unsuccessful in Tier One, they are transitioned to Tier Two, where they start receiving supplemental education in small groups with regular progress monitoring. With further progress monitoring in small groups or individually for students who did not respond in earlier levels, Tier three interventions are more intensive and frequent. Although students may be sent for a special education evaluation at any point throughout the implementation of this model, in general, referrals are made when Tier Three is unable to meet the needs of the student (Fuchs & Fuchs, 2017).

In addition to multi-tiers of intervention, another principle component of RTI is the implementation of universal screeners. Students who are at risk in general education (Tier I) are found through screenings that are universally administered. The screenings, which usually take place three times a year, should be predicative of future reading results and concentrate on certain skills. The benchmark expectations are compared to the performance results of the pupils,

and Tier Two intervention support may be provided to students who do not reach the criteria (Stahl, 2016).

Along with multi-levels of support and progress monitoring, progress monitoring is an additional common theme in principles of RTI. Monitoring student progress toward a certain objective is an essential component of accountability. To assess whether kids should progress to the next tier of intervention, data analysis is used to determine how frequently the monitoring procedure is conducted depending on the needs of the individual students (Steckler, 2008). As an illustration, a student in Tier Two might have a weekly assessment to ascertain whether acceptable development is being made. If the student is responding to the intervention, progress monitoring would suggest continuing support in Tier Two or possibly a transition back to Tier One if significant progress is shown. However, progress monitoring would imply a potential transition to Tier Three for more frequent interventions at a higher degree of support if the student's evaluations do not show that the student is responsive.

The final common principle seen in the literature includes data-based decision making. This makes it possible to record and evaluate progress monitoring. Making informed judgments about transferring students across tiers, changing the frequency and intensity of treatments, and figuring out when students achieve exit criteria are all done using the data (Al Otaiba et al., 2019). A key element to a response to intervention model's effectiveness is staff development and capacity building. It should provide a justification for the Response to Intervention as well as continuing assistance and instructions for the implementation procedures (Castillo et al., 2018).

Approaches to Response to Intervention

RTI is a proactive approach with the goal to identify struggling students before they fall to far below meeting grade level expectations. The RTI model has a purpose to assist students in

receiving the suitable education and interventions required to enhance their academic achievement. The federal government requires a multi-tiered model if a school system chooses to use an RTI model to intervene early and identify students with learning difficulties, while it does not specify a necessary set of processes. Due to this, there are numerous options available for RTI implementation, albeit two fundamental models are typically used (King & Coughlin, 2016)

The first commonly utilized RTI model is the problem-solving approach. The problem-solving approach is framed around a problem-solving process cycle, like a Plan, Do, Study, Act (PDSA) cycle. Within this cycle a team of educators have four components to the cycle. First, a team of educators define a problem and root cause. Second, the team of educators develop an intervention plan to address the problem(s). Then, the team of educators implement the plan. Last, the team of educators evaluate the plan for effectiveness and improvement. This model encompasses a variety of instructional intervention options. Due to abundance of intervention options, students can receive a tailored instructional plan that is individualized for their specific academic requirements.

The problem-solving approach involves collaboration with a school-based team to consider student proficiency data to identify and determine academic challenges, develop plans for interventions to be delivered, and evaluate the effectiveness of the interventions. Students receiving tiered support in the problem-solving approach to RTI receive individualized interventions based upon their own academic needs and academic data from universal screeners and progress monitoring measurements. (King & Coughlin, 2016).

The second commonly utilized RTI model is the standard protocol approach or standard treatment protocol to RTI. Although the problem-solving approach involves differentiated interventions from student to student, the standard protocol approach does not include

differentiation to student interventions. The standard protocol approach utilizes one research-based intervention for all students identified in a Tier of support. According to research (Fuchs & Fuchs, 2006; Fletcher & Vaughn, 2009) this model is utilized due to more accurate implementation of the intervention and measure for fidelity.

The problem-solving approach and the standard protocol approach utilize similar steps. Both protocols implement universal screeners to assess general core instruction and to identify struggling readers. Within Tier 1 support, both protocols utilize progress monitoring to assess a students' individual areas of weakness and areas of improvement. In addition, within in both protocols, Tier III prerequisites and implementation are also similar. Under both models, students are transitioned to Tier III support due to insufficient progress in response to Tier II interventions. Depending upon the progression or lack of progression student academic data may indicate a need for a comprehension evaluation for special education services (Preston et al., 2016).

Where the problem-solving approach and the standard protocol approach differ is within Tier II support. Within the problem-solving approach an instructional team makes decisions based upon each students' academic needs. Students receiving Tier II instruction receives individualized instructions based upon progress monitoring measures (Fuchs & Fuchs, 2017). Within the standard protocol approach, the educator delivering Tier II instruction makes to the decisions around a standard protocol. Students struggling academically one evidence-based intervention that addresses a range of skills (King & Coughlin, 2016).

Working Theory of Improvement

One of the foundational building blocks of school improvement science is learning how to see the system. One tool practitioner used to see the system is a driver diagram. According to

Bryk et al. (2015), a driver diagram is a tool utilized for organizing various changes the system is trying out. A driver diagram is a concrete method of thinking about target specific changes that could improve a problem of practice (Perry et al., 2020). A driver diagram is a concrete method of thinking about target specific changes that could improve a problem of practice (Perry et al., 2020). As outlined by Figure 4, the measurable improvement aim is to close achievement gaps among elementary grade students. Primary drivers are a small set of improvement hypothesis (Bryk et al., 2015). Primary drivers are the targets of the casual system. Figure 2 identifies effective core instruction, an alignment of instructional model, utilization of universal screeners, and implementation of interventions follow a RTI approach.

Previously reviewed research suggested that one barrier to implementing RTI with fidelity is effective training and support for teachers within implementation practices (Thomas et al., 2020). A possible working theory of improvement is job-embedded professional learning targeted for teachers in developing their conceptual knowledge of RTI, implementation practices, and intervention supports.

To address teacher knowledge on RTI processes there needs to be a focus on the development of teacher capacity through job-embedded professional learning. Croft et al. (2010) described job-embedded professional development as learning that occurs in the day-to-day teaching practices and is aimed to enhance teachers' instructional practices. Zepeda (2017) defined job-embedded professional learning attributes as: relevant to individual teacher, feedback is built into the capacity building process, and it facilitates the application of new skills into practice. In order for job-embedded professional learning to be practical and effective teachers must be provided with various opportunities to learn and build their capacity. Formats

for job-embedded professional learning include but are not limited to action research, coaching, and data teams (Croft et al., 2010).

Chapter Three: EVALUATION OF THE PROBLEM OF PRACTICE

Introduction

This mixed-methods evaluation study examined the effectiveness of Response to Intervention (RTI) to address reading abilities and skills of elementary students not meeting grade level proficiency. The problem of practice that existed at the research setting was that students participating in reading interventions were reading below grade level and not demonstrating growth in their performances from year to year.

In the 2020-2021 academic school year an elementary school in Texas was the location of the research site. This evaluation mixed-methods study aimed to evaluate a current practice implemented, RTI with elementary teachers in grades kindergarten through second grade. RTI is a multitier framework of supports that focuses on providing targeted instructional interventions to help meet the academic needs of students. Diagnostic scores from a norm-referenced computer adapted assessment, Star Renaissance, indicated that students progressed in their overall performance in early literacy skills despite instructional challenges due to the COVID-19 pandemic.

Literature Review

Response to Intervention (RTI) combines a support team of educators to assist students who are identified as at-risk and struggle with academics and behaviors in the school system (Fox et al., 2010). Ineffective instructional interventions in an RTI framework can increase the achievement gap among students as well as increase the number of students referred for special education services. In order to identify students who are not meeting grace level proficiency and monitor those students specific components are utilized in the RTI approach such as universal screeners, progress monitoring, and multi-tiers of instruction.

Components of Response to Intervention

Universal Screeners

A central component of RTI is the utilization of a universal or class-wide screener. Universal screeners are assessments that are administered to all students in which the data is used to identify various performance levels of the students. According to Fuchs and Fuchs (2017), the purpose of the universal screeners is to identify the students that are likely at-risk for underperformance. School systems typically apply universal screening tools two to three times per academic year allowing for screeners to identify students who were not identified in previous screeners and monitor those previously identified (Hughes & Dexter, 2011). When universal screeners are reiterated throughout the year, data decisions are determined whether instruction, instructional materials, or classification of students receiving interventions supports need to be adjusted (Fuchs & Fuchs, 2006). Hughes and Dexter (2011) noted there is a discrepancy within the research for universal screening that different threshold scores and levels of at-risk resulting in difficulty for comparisons.

Continuing Progress Monitoring

Progress monitoring is component of the Response to Intervention (RTI) framework. The purpose of progress monitoring is to continuously assess student progress or performance in identified areas of deficits from the universal screener and make data decisions to improve student outcomes. Progress monitoring is an iterative process with the RTI model. Progress monitoring assessments are short assessments that involves frequent measurement of skills use to obtain data information about how students' progress toward academic proficiency (Stecker, Fuchs, & Fuchs, 2008). Although, educators utilize various methods of formative assessment techniques, the most frequently utilized methods with RTI progress monitoring include mastery

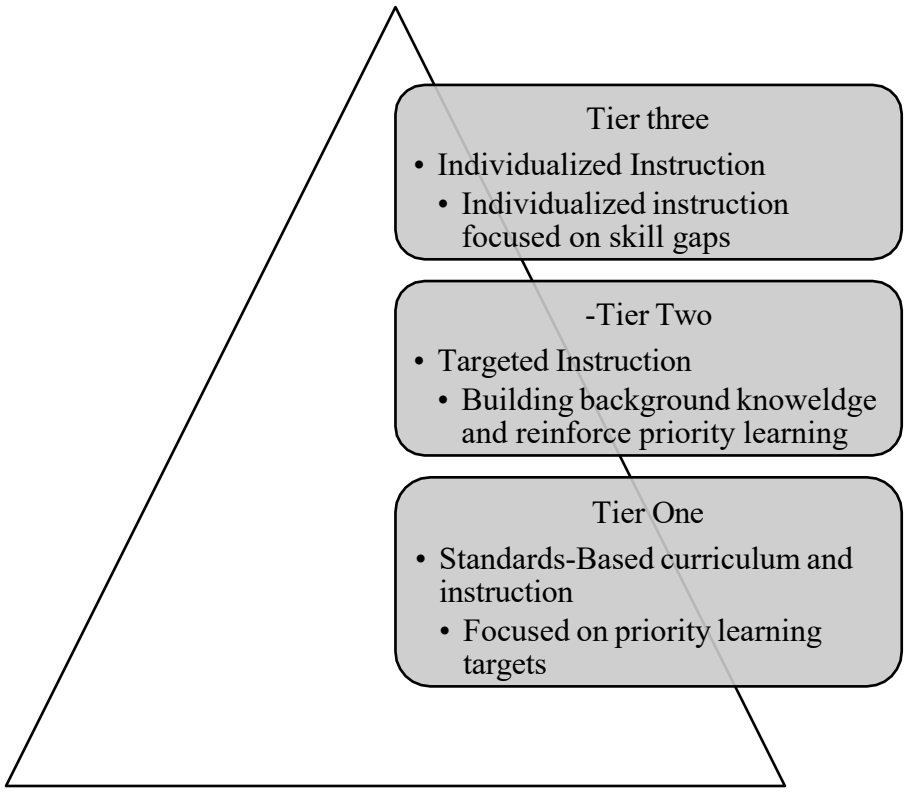
checks, curriculum-based assessments, and curriculum-based measurements (Busch & Reschly, 2007).

Tiers of Instruction

RTI is a multi-tiers approach with typically consisting of Tier One, Tier Two, and Tier Three as outlined in Figure 3.1. These tiers of instructional intervention consist of universal research-based classroom instruction, targeted interventions for specific groups of students, and highly targeted individualized and intense interventions (Fuchs & Fuchs, 2006). Response to Intervention incorporates assessment and intervention supports within a multitiered prevention framework to improve student achievement. With RTI, school systems identify at-risk students, progress monitor, and implement research-based interventions with adjustments to intensity.

Figure 6

Response to Intervention Tiers



Note: Sourced from the National Center on Educational Outcomes (2020).

To address the individual needs of students, the RTI framework permits an educator to address varying levels of intervention specific to each student (Hunter et al., 2015). Each tier will be discussed in this section.

Tier One

In Tier One of an RTI program, students are receiving supports through effective core instruction that utilized research-based instructional strategies. According to Al Otaiba et al. (2014), Tier One instruction demonstrates the education received by all students in the general

education classroom. Tier One instruction incudes research-based core curriculum and differentiated instructional strategies.

Tier Two

When students do not demonstrate adequate progress with Tier One instruction, implementation of additional interventions are required. The second tier of intervention occur in addition to continual interventions from Tier One. Tier Two instruction is still delivered in the general education setting but with varying interventions centered around student needs. Progress monitoring, data collection, and the RTI approach to problem solving are all contributing factors when determining which interventions are best suited for the development of the student's abilities. RTI literature suggested that interventions in Tier Two be implemented in a small group setting due intensity of interventions and time frame considerations for student success (Al Otiaba et al., 2014). Small group instruction allows the teacher to reteach skills that students have not mastered. Progress monitoring is also conducted by teachers when students are transitioned into Tier Two and Tier Three. If students are not demonstrating progress or mastery in Tier Two, the RTI team evaluates data collected from progress monitoring and evaluates if they should be transitioned to Tier Three instruction.

Tier Three

When students demonstrate a lack of progress in their learning and abilities from Tier One and Tier Two instruction, more intensive instruction from Tier Three is required. Research supports successful student outcomes for many students to interventions implemented in Tier Two and Tier Three (Fuchs, Fuchs, & Vaughn, 2014). Alternatively, if students demonstrate learning difficulties after interventions implemented from Tier One and Tier Two, a more intensive instruction intervention method must be utilized in Tier Three. Imbedded in Tier Three

is a methodical approach provided to students by the implementation of special education and accompanying services apart from general education instruction (Jennings, McDowell, Carroll, & Bohn-Gettler, 2015). Not to be concluded, not all students receiving intervention instruction in Tier Three will receive special education accommodations and services. Not all interventions implemented in Tier Three are specifically designed for special education services. Special education referral and placements are considered for some students within Tier Three. At times, students may need intervention support in Tier Three to assist in closing their achievement gap(s) (Fuchs & Vaughn, 2012).

Data-Based Decision Making

RTI is centered around the concept that intervention supports are provide to students early, student performance is monitored through a system, and adjustments are made intentionally to respond the individual needs of the student (Fox et al., 2010). One of the features included that allows the model to be effective is the utilization of data-based decision making. At all components of RTI, decisions are made based on the analysis of student data and student performance levels (Boxterman & Whalen, 2013). Types of data-based decisions made by the RTI committee including screeners, instruction planning, evaluation of student progress, identification for intervention changes, and evaluating the overall effectiveness of instruction. In addition, data teams must also make decisions about their elected approach to implementing RTI.

Approaches to Response to Intervention

There are two approaches commonly utilized for RTI, the problem-solving approach and the standard treatment protocol approach (Fuchs & Fuchs, 2006). Both approaches to RTI utilize universal screeners, early interventions for students demonstrating academic deficits, multiple tiers of intervention support, and progress monitoring to make informed decisions (King &

Coughlin, 2016). The two approaches are different in how instructional decisions and tier placements are made, and they differ in the number of interventions utilized with individual students (King & Coughlin, 2016). The two approaches are similar in that they both utilize a tiered model of instruction that increases in intensity of the intervention. Within the problem-solving approach to RTI, a team collaboratively makes decisions based on data for interventions. In addition, the team makes decisions on selecting a variety of interventions to respond to the academic needs of the student. However, in the standard treatment protocol approach, the goal is to provide a single research-based intervention for students with aligned academic deficits.

Problem-Solving Approach

King and Coughlin (2016) described the problem-solving approach (PSA) as a method of sustainability of an RTI multitiered intervention model through the development of classroom expertise and collaboration. The problem-solving approach tends to be a more flexible approach in determining the abilities of students (Fuchs & Fuchs, 2006). The PSA model is utilized to assess individual student's academic abilities, make recommendations on research-based interventions, and monitor the effectiveness of the interventions (Fuchs & Fuchs, 2006). Within the PSA model, a RTI committee makes decisions on interventions. In the problem-solving approach, students receive small group or one-on-one instruction within the general education classroom.

Standard Treatment Protocol Approach

The standard treatment protocol approach implements one consistent intervention that is selected by either an instructional specialist or a team that addresses a variety of students' academic needs. The focus of the standard treatment protocol approach is on providing a singular research-based intervention to a group of students with similar academic difficulties (King &

Coughlin, 2016). This approach benefits a school system by being cost-effective and efficient for teacher training in one intervention program (King & Coughlin, 2016). As a result, the standard treatment protocol approach addresses specific skill areas and does not address individual targeted interventions centered on the needs of individual students.

Included in both models, students transition through instructional tiers based on their level of performance or response to instruction implemented at each tier. If students are responsive to the intervention and adequate academic gains are made, they are transitioned to a lower tier of intervention instruction. However, if students are not responsive, they transition to a more intensive tier of instruction. If students are receiving intensive instruction and are still not making adequate progress measure, then further special education evaluation is warranted.

Research Questions

This mixed-methods evaluation study aimed to examine the effectiveness of implementing RTI model in a reading intervention program for students who were identified as performing below grade level. This evaluation study focused on addressing the following research questions:

1. To what extent do students demonstrate growth over time with intervention in the classroom?
2. To what extent does teacher understanding of implementation of RTI correlate with student success?
3. What challenges are present when implementing an RTI model?

Target Population and Participants

The setting for the evaluation of the problem of practice was one elementary school located in Texas. The total student population was 653 students in grades pre-kindergarten through fifth grade. The demographics of the campus were 22.4% African American, 19.6% Hispanic, 52.53% White, 0.4% American Indian, and 4.4% two or more races (TEA, 2021). The school's enrollment has increased each school year. RTI was implemented at the site for the last ten years; however, in the last eight years, initial RTI training has not been provided to new teachers to the profession and new teachers to the district. For the last four years, the school's district assessments and state standardized assessments in reading did not indicate student growth from year to year. As a result, the school placed more emphasis on RTI in reading content courses. For the 2020-2021 school year, students were historically underperforming on reading.

Participants

The study participants were six general education teachers within an elementary school setting in Texas. The participants were all educators implementing RTI in their classrooms and were willing to participate in the evaluation study. The names in the study are pseudonyms and are coded to protect the identity of the educators, research site, and school system. The study participants were individuals with varying backgrounds, experience, and grade levels. Table 2 provides an overview of the participant profiles.

Table 2

Profile of the Participants-Evaluation of the Problem of Practice

Participant	CT20A21	CT20B21	CT20C21*	CT20D21*	CT20E21*	CT20F21*

Grade Level	Kindergarten	Kindergarten	1st	1st	2nd	2nd
Years of Teaching Experience	3	1	20	10	7	6
Years Teaching at Research Site	2	1	20	10	7	6

*Indicates the teacher has received prior training and/or prior job-embedded training involving RTI.

Current Intervention

While working with an instructional leadership committee; a problem of practice was identified: thirty-two percent of third grade students did not meet progress on the 2019 third grade Reading on the State of Texas Assessment of Academic Readiness (STAAR), resulting in a continued achievement gap, as outline in Appendix A. The instructional committee decided to take a proactive approach and analyze instructional systems in grades not accessed by STAAR. Following the identification of this issue, the instructional leadership committee began discussing root causes and strategies to address the achievement gap. Through multiple discussions, the instructional intervention model, RTI, was identified as the avenue to move the campus towards meeting short-term and long-term goals of students being grade level proficient.

This study evaluated the effectiveness of the adopted RTI model regarding closing achievement gaps and supporting successful student outcomes in literacy. Specifically, the research questions asked were: 1) to what extent do students demonstrate growth over time with interventions in the classroom, 2) to what extent does teacher understanding of the implementation of RTI correlate with student success, and 3) what challenges are present when implementing an RTI model?

The RTI Process at the Research Site

This study utilized a RTI framework that included a Plan, Study, and Act (PSA) model to combine. All students were administered the Star Renaissance early literacy or literacy assessment as a universal screener at the beginning of the year to gather baseline data that educators used to make instructional decisions to support successful student outcomes. Teachers engaged iterative process of the PSA cycle by meeting with guardians of students who had challenges in Tier One instruction. Teachers also collaborated in creating intervention plans that supported those students and progress monitored student progress towards standard proficiency. For students not meeting proficiency, the teachers collaborated with the RTI instructional leadership committee. Teachers and the committee reviewed data points, intervention observations and notes to determine if placement in Tier Two of more intensive instruction was needed. General education teachers were responsible for providing small group instruction for students in Tier Two and Tier Three during the instructional school day utilizing Reading Horizons. In addition to small group intervention, students used the comprehensive adaptive platform within Star Renaissance, Freckle to supplement literacy instruction for fifteen minutes daily. Students who did not demonstrate growth over time in Tier Three of instruction, would be referred for a special education evaluation by the RTI committee.

The research site defined quality classroom instruction for Tier One instruction through the district adopted five dimensions of powerful classrooms. In the first domain the content within the classroom in which represented research-based disciplinary understandings. In the second domain, cognitive demand of classroom interactions maintained productive intellectual challenges. The third domain, equitable access to the content for classroom activities were structured to support active engagement. The fourth domain included agency, authority, and

identity. In this domain students had the opportunity of building on ideas in ways that create agency. Finally, the fifth domain included use of assessment. The research site defined Tier Two instruction intervention as a mixture of progress monitoring assessments, targeted academic supports provided to students through the Reading Horizons small group instruction in addition to Tier One core instruction. Progress monitoring was completed at the end of every Reading Horizons chapter or every three weeks to determine if changes needed to be made to student's intervention path. The research site defined Tier Three instruction as intensive skills-based instruction that built upon Tier Two interventions. General education teachers progressed monitored students in Tier Three every week on specific skills and standards to determine if changes need to be made to a student's intervention path.

RTI meetings with grade level teachers and content aligned teachers were held once a week. This meeting reviewed student work samples, data points, and small group instructional practices. During the teacher meetings, the educators discussed Reading Horizons program implementation. Also, within this meeting, teachers discussed progress monitoring assessments that vertically aligned with grade levels. RTI meetings with the instructional leadership team were held every six weeks, where the team discussed notes and discussions made in the teacher meetings, data points over time, and academic goals for students in Tier Two and Tier Three. During the team meetings, it was determined that the goal each student in Tier Two and Tier Three was to demonstrate one to two months of growth within a six-week period. A performance tracking spreadsheet was utilized to determine which students were demonstrating targeted growth. Based the data in the performance tracker, the team made decisions for which student needed an increase in their tier designation, a decrease in their tier designation, or to remain in their tier designation.

Research Methodology

The mixed-methods evaluation study included qualitative and quantitative data sources to learn about the effectiveness of the Response to Intervention (RTI) model implemented at the research site. A mixed-methods study was determined to be appropriate because a mixed-methods research design allowed the researcher to utilize diverse methods while combining quantitative and qualitative data sources in a single study. Quantitative data source included scores from beginning and end of the year for Star Renaissance. The qualitative data will include teacher surveys, observations, and focus group interviews.

Quantitative data were collected from student performance tracking documents to determine challenges and improvements in students' literacy performance proficiencies. Qualitative data collected from teacher surveys, teacher interviews, and focus groups. Qualitative data from the surveys will assist in understanding teacher perceptions of RTI, teacher perceptions of student progress, and if any challenges are present when implementing a RTI approach. All data sources were approved by the Institutional Review Board (IRB). All participants provided a signed informed consent prior to the collection of the data.

Participants in this evaluation of the problem of practice study were general education teachers in an elementary setting. The participants were employed in grade kindergarten through second grade. The general education teachers selected had experience with and RTI program in their classroom due to policy from the campus and district. Not all participants in the study received formal training prior to the evaluation study. General education teachers participating in this study were derived from voluntary response sampling. In this evaluation study of the problem of practice, a survey was sent via email to all general education teachers at the research site. The participants volunteered themselves to participate in the study.

Data Collection: Quantitative

Quantitative data was collected from the student performance tracking spreadsheet to answer research question one: To what extent does students demonstrate growth over time with interventions in the classroom? The data collected from the performance tracker was the beginning of the year and end of the year Star Renaissance diagnostic scores. This data was used to determine student's individualized proficiency in literacy over the course of an academic year. The Star Renaissance scaled score represented student performance over time. For students to be considered meeting grade level expectations, their scaled score should correlate with their current grade level and time of year and context the district. For example, for the 2020-2021 academic school year, students in first grade approaching grade level should have had a score of 61, meeting grade level expectations a score of 75, and mastering grade level should have had a score of an 86. Students performing under the cut score threshold were identified as needing urgent intervention. Students identified as approaching grade level were identified as needing intervention. Students identified as meeting grade level expectations were on watch. The instructional leadership team provided the researcher with copies of the performance tracker at the end of each benchmark with all identifiable information removed. The researcher assigned a code for each data set.

Data Collection: Qualitative

Qualitative data included teacher surveys, informal observations, and focus group interviews to answer research questions two and three: 2) to what extent does teacher understanding of implementing RTI correlate with student success, 3) what challenges are present when implementing an RTI model (see Appendix B and Appendix C)? The survey utilized Qualtrics software and was sent via email to teacher study participants. Responses were

anonymous. The survey questions centered around teacher training and understanding of RTI, teacher perceptions of adopted RTI model, teacher perceptions about student engagement, and instructional materials for Tier Two and Tier Three instruction. Before the survey was sent to participants, the researcher collaborated with professors and colleagues to enhance survey questions and methods. The researcher developed codes and from there common themes to develop patterns within the survey data. The researcher directly quoted research participants in the discussion of results.

The informal observations occurred by the researcher during general education teachers' small group instruction of Tier Two and Tier Three. The informal observations were not connected to teacher appraisal. Classroom observations were an essential component of the problem of practice that allowed the researcher to study the teachers' understandings and knowledge of implementing the RTI model. The researcher utilized an observation protocol (Appendix B) that the research site already utilized to record descriptive notes. The researcher entered the classroom at the beginning of small group instruction to avoid distractions in the classroom. The observation protocol document contained information about the date, time, duration, grade level, subject area, skills or learning objective taught by teacher, student and teacher interactions, student and student interactions, and evidence of Tier Two and Tier Three intervention evidence. The focus of the observations was to evaluate teacher understandings of RTI implementation as they relate to student success and what if any barriers were present during implementation of tiered instruction. No student data or identifiable information was recorded on the observation protocol document. After the observations were complete, the researcher exited the classroom.

Study participants and the researcher pre-scheduled observations that lasted 45 minutes each. The dates and times of the observations were mutually agreed upon before the researcher conducted the observations. The researcher watched, listened, and documented intentional or unintentional student performance using descriptive note taking. The researcher tracked notes using a research journal. Additionally, the researcher refined codes and themes in observations through repetitive cycles. Themes were documented in a spreadsheet to track trends over time. The informal classroom observations served as a triangulation technique to better enhance the reliability of interview findings (Merriam & Tisdell, 2016).

The focus group interview questions followed a semi-structed format. The researcher predetermined the set of open interview questions. The interviews consisted of ten open questions that elicited information and allowed the participants the opportunity to discuss issues that were of importance when implementing RTI. The intention of the focus group was to address challenges faced by educators when implementing a RTI model. The focus group interview protocols were described to participants. The researcher asked the questions during the focus group interviews but did not engage in conversation outside of asking the questions. The researcher did not want to influence any bias from the participants when responses were provided. The researcher wanted to elicit original perceptions and responses from participants. The focus group interviews were verbally recorders using an electronic device. This allowed the researcher to concentrate and be present during the interviews rather than documenting responses. The interviews were transcribed from audio to written form. Data analysis required listening to the audio recordings multiple times to confirm accuracy. The interview protocol was used to support the transcription process. After the transcription of the data, codes and themes

were developed and recorded on spreadsheet to document trends over time and unexpected trends. The researcher directly quotes participants responses in the discussion of the results.

Data Analysis Plan

Institutional Review Board (IRB) approval was obtained prior to data collection. Before collecting data, the researcher assigned each participant and identifier code such as CT20A21, CT20B21, CT20C21, CT20D21, CT20E21, and CT20F21 to enhance confidentiality. The participant identifier codes were utilized during data analysis eliminate the use of identifiable names. At the beginning of the study, the analysis strategy was inductive; the instructional leadership team was reviewing pieces of data and deriving commonalities (Merriam & Tisdell, 2016). Inductive thematic analysis was used to analyze the teacher interviews, teacher surveys, and focus groups. The analysis included five of the six phases in thematic analysis, familiarization of the data, generating codes, searching for themes, reviewing themes, and defining and naming themes (Braun & Clarke, 2006). The researcher implemented and open-coding approach. The implementation of an inductive approach established data analysis was directed by the data collected. The teacher surveys were anonymous and were collected using Qualtrics survey software. The researcher downloaded the survey report responses analyzed each report making notes and observations in a spreadsheet. Descriptive codes were assigned to aspects of the data from the teacher response. The researcher analyzed the codes creating themes. Finally, the researcher reviewed the themes to ascertain if they represented the data and aligned with the research question.

Limitations

This study was not without its limitations. Caution should be utilized when generalizing about this evaluation study to other school systems. This evaluation study included six adult participants in an elementary school setting in Texas.

Foremost, during the 2020-2021 instructional school year, students in the state were provided an option of in person learning or at home learning. Teachers were tasked with providing face-to-face instruction to students as well as digital instruction to students. Due to federal, state, and district protocols, teachers were unable to effectively implement a Response to Intervention model with fidelity.

In addition, at the research site, the campus had the highest teacher absence rate per student ratio compared to any other campus in the district for the 2020-2021 Fall semester or first two nine weeks of instruction. Educators were required to have instruction released on the district adopted learning management system in case they were out due to a positive illness. At this time, it was mandated that positive results of an illness and systems required teachers to social distance for a minimal of ten days and had to be clear of symptoms for five days.

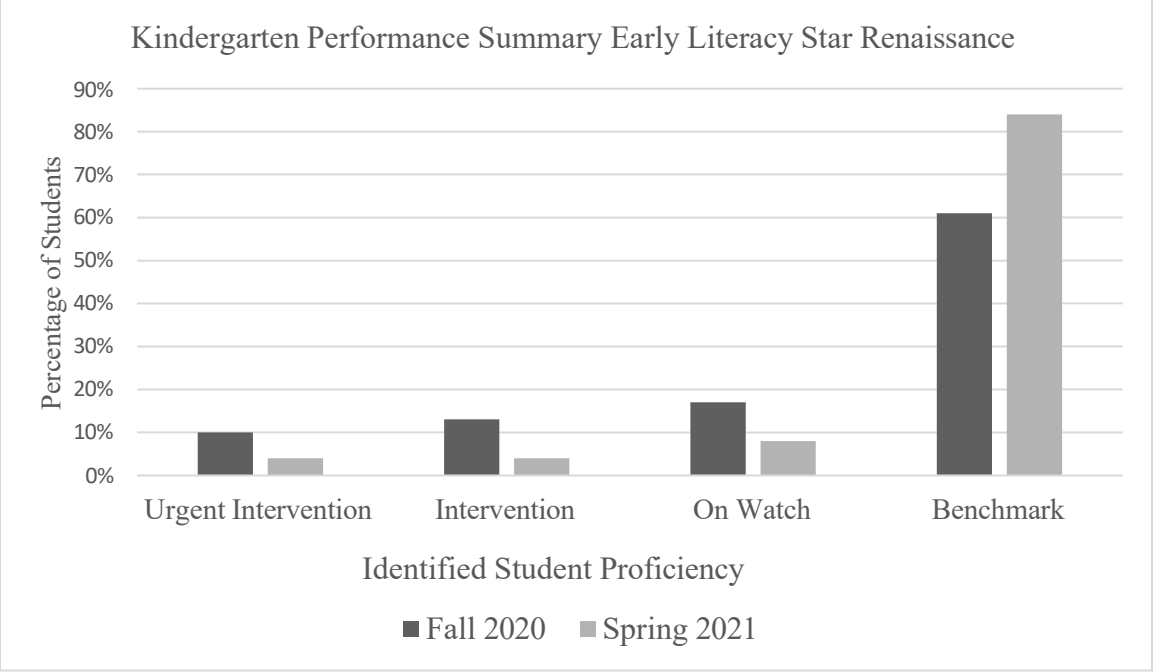
Results

To address research question one, to what extent do students demonstrate growth over time with intervention in the classroom, beginning of the year data and end of the year data were collected from grades kindergarten through second. As outlined in Table 3, at the beginning of the year Star Renaissance diagnostics data indicated kindergarten student proficiency rates in early literacy skills as 10% of students required urgent intervention supports, 13% of students required intervention supports, 17% of students identified as on watch for needing intervention supports, and 61% of students met beginning of the year threshold score. Respectfully, by the

end of the year, Star Renaissance diagnostic data for kindergarten students identified 4% of students needing urgent intervention. This was a decrease in the number of students identified as needing urgent intervention from the begging of the year data. Students identified as intervention supports needed decrease from 13% at the begging of the year to 4% at the end of the year. Additionally, students identified as on watch for intervention supports decrease from 17% to 8%. Resulting in a significant increase of students meeting benchmark expectations by the end of the year at 84% of students.

Table 3

Beginning and End of the Year Kindergarten Star Renaissance Student Performance

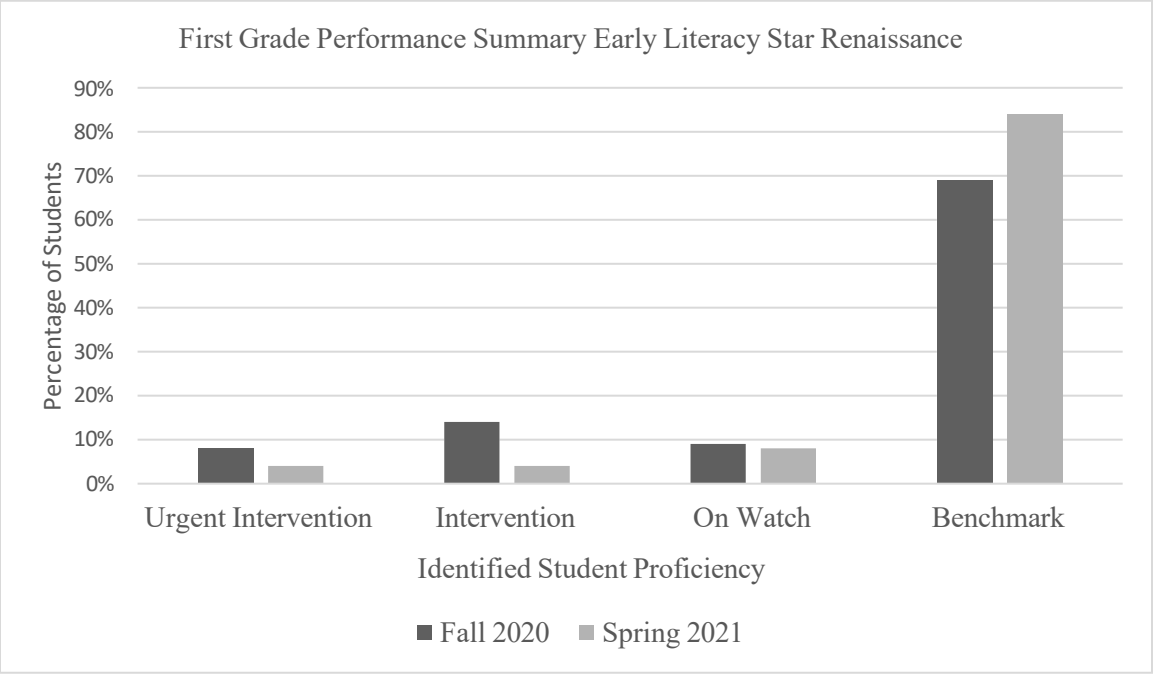


In addition to kindergarten data being collected, first grade beginning of the year and end of the year data points were collected from the Star Renaissance literacy diagnostic assessment

as outlined in Table 4. The students were identified as requiring urgent intervention, intervention supports needed, on watch for a possible need for intervention supports, and meeting grade level benchmark. From the begging of the year 85% of students were identified as needing urgent intervention services. This decreased at the end of the year where 4% of students required urgent intervention supports. Students identified as needing intervention decreased from 14% at the beginning of the year to 4% by end of year. On watch students or students that could possibly demonstrate signs of needing intervention at various times of the year decreased from 9% to 8%. Finally, students who were identified as meeting benchmark or meeting grade level expectations increased from 69% to 84%.

Table 4

Beginning and End of the Year First Star Renaissance Student Performance

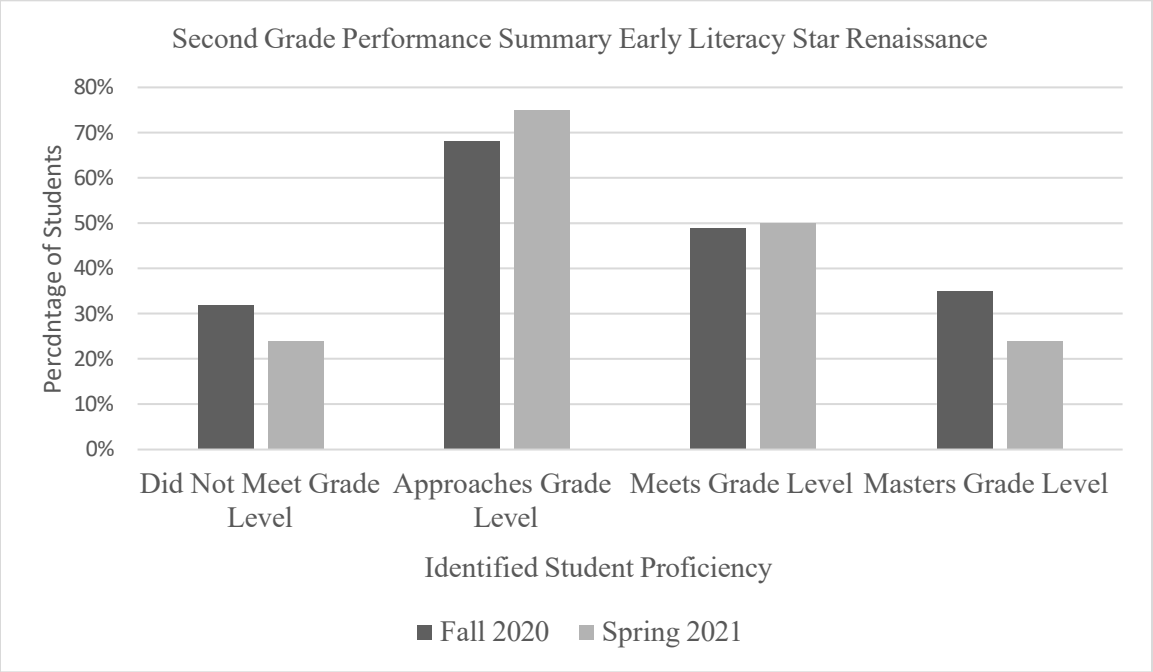


Finally, data from Star Renaissance diagnostic assessment was collected for students in second grade as outlined in Table 5. Domain labels for second were different from kindergarten

and first grade to reflect a seamless transition with terminology reflecting state assessment labels. The beginning of the year data indicated that 32% of students did not meet grade level expectations, 68% of students were approaching grade level expectations, 49% of students were meeting grade level expectations, and 35% of students were mastering grade level expectations. The district in which the research site is located designated cut scores for each domain. By the end of the year, the Star Renaissance data indicated that a decrease from 32% of students to 24% of students were identified as not meeting grade level expectations. Students identified as approaching grade level increased from 68% to 75%. Students within the meeting grade level domain went from 49% to end of the year 50%. Finally, students mastering grade level expectations decrease from 35% to 24%.

Table 5

Beginning and End of the Year Second Star Renaissance Student Performance



To address research questions two and three: 2) to what extent does teacher understanding of implementation of RTI correlate with student success, 3) what challenges are present when implementing an RTI model? Data was collected from teacher surveys, informal observations and focus group interviews were conducted. The questions centered around eliciting responses about prior training, teacher understandings and perceptions of a RTI model, and instructional strategies provided to students within the three tiers of support.

The first open question on the participant survey asked teachers to describe previous training experiences of Response to Intervention training provided by the campus. From this data, two themes emerged: *quantity* and *quality*.

For the theme of *quantity*, three out of the six study participants identified as not having any previous formal training over RTI. Study Participant CT20F21 responded they, "began their career in the district at a time where several staff in student support services were being replaced and I think the training for intervention was not a big rock." Similarly, study participant CT20A21 stated, "I have never had to go and do a formal professional development training. I got a crash course in a PLC once during my first year of teaching." Alternatively, study participant CT20C21 responded by stating, "I have received several PDs (Professional Development) while I have been a teacher. But I will say the last few years there hasn't been a focus from anywhere to retrain or even train new teachers."

For the theme of *quality*, three out of the six study participants provided responses about the quality of previous trainings. One study participant stated a previous training was "an all-day training with very detailed information. I left there fully aware of what RTI is and what my role was." A second study participant stated, "I got a 30-minute slideshow presentation about RTI

and I remember some parts because I remembered it from college. Needless to say, I didn't walk away with a better understanding of RTI."

The second open question on the participant survey asked teachers to describe if they felt they were prepared to support students in Tier One, Tier Two, and Tier Three intervention instruction. From the data, two themes emerged: *instructional strategies* and *challenges*.

For the theme of *instructional strategies*, five out of the six participants stated they felt well prepared to support students in all tiers. One study participant stated, "using the Reading Horizons program as one intervention with students has helped me meet the needs of my students. I see growth." A second study participant explained, "using a blended learning style of teaching has given me opportunities to support my students using various aspects of instruction with pace of content, place of learning, path of learning, and time of learning skills." One of six participants stated they felt they were not prepared to support students in all tiers responded, "when it comes to the top of intervention supports, I find it hard to help because I don't have enough resources or training."

For the theme of *challenges*, three out of the six participants that stated they had not received formal training also noted that not receiving the training was a challenge. One of the participants responded, "I am going off my learned knowledge of what I think RTI is and should be." One of the three participants that also did not receive training stated, "I remember what I was taught in my teacher preparation program about RTI, but there is a difference in learning about RTI and actually going through the process in a job setting." All participants stated that another challenge to being prepared to support students centered around the numerous requirements of delivering online and in-person instruction.

The third open question on the participant survey asked teachers to describe the instructional strategies they utilized for each tier of instruction. From the data, two themes emerged: *differentiation and instructional strategies*.

For the theme of *differentiation*, teachers indicated that time was a contributing factor. All participants in the study discussed a lack of time during teacher preparation periods. Study participant CT20E21 stated, "when there is not time during my planning period because I have to plan for online learning, I am not able to effectively make differentiation decisions for the students that are in-class learning." Study participant CT20F21 explained, "I am tasked with learning a new curriculum, new online-learning platform, and between those two things and students learning at home, there isn't enough time." Four out of the six participants also stated that the lack of teacher-to-teacher collaboration with their respected grade levels inhibited the effective implementation of differentiation. Study participant CT20B21 stated, "my biggest resource is my team but because of Covid-19, my team is absent, or I am absent. If we are all here, we are so afraid to all meet in one location due to a high risk of becoming ill."

For the theme of *instructional strategies*, all the study participants described using the Reading Horizon program purchased by the district for Tier One and Tier Two instruction. All the study participants indicated using supplemental resources such as the Freckle companion through Star Renaissance, district created resources, curriculum resources from the adopted curriculum, or teacher created resources. Four out of the six participants indicated that resources were limited for students in Tier Three. Study participants CT20A21 and CT20B21 stated, "they do not have enough resources to meet the varying needs" of students in Tier Three. All participants stated they used the district curriculum supplemental materials that included materials for phonics, phonemic awareness, vocabulary, leveled readers, and writing.

The fourth open question on the participant survey asked study participants their perceived perceptions on whether students who were taught at their instructional level were more successful. All participant responses indicated that the study participants perceived that teaching students at their functional level increased student performance. Study participant CT20C21 stated, “scaffolding instruction in a way that reflects the students’ abilities assists students in making instructional gains.” Two out of the six participants stated that providing individualized instruction based on the needs of the students increases their learned knowledge and was evident on progress monitoring measures. The same two study participants noted that skills and concepts need to be constantly spiraled into instruction to continue making progress. One theme of *differentiation* emerged from four of the study participant responses.

For the theme of *differentiation*, study participant CT20B21 stated, “students are successful at their functional level when they able to receive materials at their level.” Study participant CT20A21 stated, “for students in Tier One and Tier Two, I feel like I have enough resources to deliver instruction at a students’ ability level. However, for students identified in Tier Three, I have had to reach out to our special education teacher for suggestions. With that support I have seen those students demonstrate progress.” Study participant CT20C21 stated, “instruction in my whole group lesson, instruction in small groups, instruction in stations, and utilizing an online program has allowed my students to demonstrate growth.”

The fifth open question asked the study participants about their perceptions on the support provided by instructional leaders and supervisors. All participants stated they felt supported by their administration and instruction team(s). Study participant CT20E21 stated, “I think because we have had a consistent administration team, even with new curriculum and continuous changes in Covid-19 mandates, we are still having in-depth data talks and making

decisions for student success as a unified team." All the study participants indicated that if there were a need of support, they felt comfortable in acquiring support from the research site's instructional leadership team.

Observation Results

RQ2: To what extent does teacher understanding of implementation of RTI correlate with student success?

Observation results. An observation protocol was utilized to collect data that answered research question two as outlined in (Appendix C).

Utilizing the observation protocol form that was already being implemented to informally observe teachers, the teacher conducted pre-arranged observations of RTI implementation in the classroom. The researcher chose to conduct classroom observations to provide evidence of implementation. The single page protocol form contained information in about the descriptions of the classroom such as date time, and subject area. In addition, the protocol form contained descriptions about the tier of instruction, student grouping size, and instructional practices. The form included sections for the researcher's comments and observations. Finally, there was a section that contained descriptive notes, observed dialogue, and accounts of the events.

To answer research question two, to what extent does teacher understanding correlate with student success, the observation protocol was utilized. The observation forms were sorted by the Fall and Spring semester. Each study participant agreed to three informal observations in the Fall and three informal observations in the Spring. The researcher completed thirty-six observations, three per study participant per semester. At the end of each term semester, the forms were transferred to one single document and analyzed for open coding. Once the data was

analyzed the codes were then categorized into major themes. Analysis of the qualitative data source led to two major themes emerged from the observation protocol forms.

Theme 1: Implementation. Not all participants had received formal training over RTI and RTI implementation. The fall observation data indicated that out of the eighteen pre-arranged observations conducted, seven of those observations included a tiered level of instruction. Within these seven observations, it was noted that teachers where meeting with small groups no larger than three students. Instruction provided during these times included the district adopted curriculum for Tier One students and Reading Horizons for Tier Two students. Eleven of the observations conducted by the researcher included direct instruction from the study participants to students on accessing material through an online learning management system. The researcher observed within these eleven observations students were sitting at their arranged seats and receiving grade level instruction. Instruction within the learning modules included a video of a teacher providing direct instruction and interactive components at their respected grade level. Study participants were observed assisting students with trouble-shooting technology difficulties. It should be stated that during focus group interviews, participants stated they were required to utilize the newly adopted learning management system in case students or teachers were absent due to illness.

The Spring observation data indicated that out of the eighteen observations conducted by the researcher, all observations included small group instruction or one-on-one instruction. Zero of the observations conducted in the Spring semester included whole group direct instruction. Utilizing the observation protocol and coding four out of the six study participants were observed utilizing the district curriculum supplemental resources for Tier One instruction and utilizing Reading Horizons for Tier Three instruction. Two out of the six study participants were observed

utilizing various resources from the district curriculum for Tier Three instruction. The other four participants were observed utilizing a teacher created resource for Tier Three instruction.

Theme 2: Instructional practice. Despite not having formal training or a formal systematic model in place, teachers demonstrated a variety of methods to differentiate instruction. These methods included small group instruction, one-on-one instruction, a technology component, flexible grouping, and standard-based station teaching. This demonstrated a variety of methods utilized to support individualized student learning. Study participants observed implementing the Reading Horizons program, were observed progressing throughout the chapter. These observations indicated that the study participants understood the intervention being implemented. Study participants observed implementing the district's supplemental curriculum resources indicated instructional decisions and instructional decisions were based on the administered universal screener and progress monitoring measures. Compared to the Reading Horizons intervention, the curriculum supplements targeted one specific skill in isolation.

Focus Group Results

RQ3: What challenges are present when implementing an RTI model?

Theme 1: Challenges in RTI implementation in the general education classroom. Study participants implementing a RTI program identified several barriers in implementing interventions. These barriers included lack of time, student attendance, staff attendance, and lack of materials. Student attendance, staff attendance, and materials for Tier Three supports were barriers expressed by all participants. All study participants noted due to COVID-19 student and staff attendance was at an all-time high. Five out of the six participants expressed time as a factor due to requirements to provide instruction in-person and on a learning management platform.

Five out of the six study participants stated they had intervention materials for students in Tier One and some material for Tier Two instruction but needed additional resources for various skills in Tier Two and Tier Three.

As evidenced by the study participants, a lack of time was a challenge. According to study participant CT20A21, “We are expected to teach in person with protocols. We are expected to teach virtually and also have stuff online. My planning time is filled with figuring out how to put stuff online. Its hard to fit in everything.” Additionally, study participant CT20B21 explained, “If half of my class is here, my time is spent making sure the students are safe and not at risk of becoming sick. Its hard even think about interventions when everything else is going on.” Another challenge presented in the data was the lack of a time during conference periods. Teachers were constantly using planning times for virtual sessions with students who were at home learners and preparing content for the district’s adopted learning management platform. Study participant CT20C21 stated, “there isn’t enough time to even think about intervention. I am trying to survive and stay healthy.” According to participant CT20D21, “RTI includes more work than I have time for right now. It isn’t a priority.”

Student and staff attendance was a challenge to RTI implementation. Participant CT20E21 stated, “Students have the option to learn at home on a computer. It’s not even possible for me to provide support for students that are not at school.” As noted by study participant CT20F21, “Students can choose to learn at home. Those that are here if they get sick, they are out for a minimum ten days. If I get sick, I am out for a minimal ten days. If they aren’t here, I can support them. If I am not at work, I can’t provide support to them.”

Another challenge expressed by the participants was a lack of materials. Participant CT20A21 stated, “even if the students are present and I am present, we are expected to social

distance. We have not been given resources to support students are different instructional levels that follow social distancing protocols." As stated by participant CT20B21, "if I have a resource that I use for a group of students in Tier Two instruction, I have to either have multiples of the resource to ensure students are not becoming cross contaminated." Study participant CT20C21* explained, "We have Freckle that is an adaptive learning platform based on Star Renaissance scores, but students are already on the computer so much, I feel like putting kids on the computer for their entire instructional day is not supporting them."

Theme 2: Teachers' Knowledge of RTI Implementation. All participants knew the tiers implemented in the RTI model. Five out of the six participants did not know all the components of RTI with fidelity. An interesting response from participant CT20B21 stated, "All students are receiving RTI. All students are in Tier One unless they are below grade level and then they are moved up in the tiers." Despite several participants stating they had not received in-depth training, participants shared a variety of instructional strategies that they used to differentiate instruction in the general education classroom. These strategies included small group instruction based on performance levels, flexible student grouping for stations, one-on-one instruction, and technology usage. Study participants described utilizing the Reading Horizons resource helped them provide intervention to students that were below grade level expectations. Study participants also shared students using Freckle assisted in meeting the needs of students because it was connected to their progress scores from begging of the year data from Star Renaissance.

Discussion

The results from this evaluation study indicated that students' literacy abilities and skills did improve throughout the academic school year as observed in the data collection from the Star

Renaissance benchmark. The Star Renaissance data for kindergarten and first grade did prove to increase the student performance proficiency levels from begging of the year to end of year. The Star Renaissance data for second grade approaches did show improvement but it also showed a decrease from beginning of the year to end of the year for students mastering grade level expectations. Although it cannot be concluded that the implementation of a RTI model was the root cause of increased student performance.

The data analyzed from the informal teacher observations indicated that teachers were not implementing RTI with fidelity in the first semester of data collection. During the second semester of the first-year iteration, RTI implementation was improved, but not without its limitations. Informal teacher observation data support that teachers were implementing evidence-based interventions such as Reading Horizons, Freckle, and the district adopted curriculum companion program. The data indicated teachers were implementing strategies and resources provided that aligned with research-based practices for Tier Two, such as Reading Horizons, teacher modeling, district adopted curriculum companions, and differentiated instructional practice. However, observations on instructional practices and interventions in Tier Two and Tier Three did not display variations of intensity of instruction. In addition, the observations provided evidence that teachers needed additional support in differentiating strategies and interventions for students in Tier Two and Tier Three.

In the semi-structured interviews, findings indicated that teacher's perceived challenges such as time, knowledge, and available resources impacted their ability to effectively implement various aspects of the RTI model. This was validated by the data collected through the focus group interviews. The feedback from this qualitative data source provided insight that teachers needing more professional learning and training for delivery of instructional strategies for Tier

Two and Tier Three. The data collected in the focus group brought forth the limitations of Covid-19 and its impact on teaching practices. Teachers reported that due the district adopting an online learning management system and requiring all teachers to utilize the platform, it resulted in a barrier for implementation of RTI. Teachers were tasked with delivering instruction online, in person, through video conferencing, and through a recording.

Conclusion

Within any evaluative research, there will be outcomes that are not expected. At the beginning of the second iteration year, it is recommended that general education teachers receive professional learning with a focus on the research site's RTI process, instruction in Tier Two and Tier Three, and interventions available for Tier Two and Tier Three. It is also recommended that job-embedded training occur throughout the year to build teacher capacity. Finally, it is recommended that the teacher surveys include questions that elicit teacher responses about their perceived perceptions on student achievement and student performances within the tiers of instruction. The results from this survey could provide the researcher with valuable information on RTI decisions, professional learning needs, and the needs of the teacher. This information could also assist with obtaining data on possible variations in the process between classrooms that need to be cohesive at the campus level to improve the outcomes of the RTI process.

Chapter Four: EVALUATION OF THE INTERVENTION

Introduction

This mixed-methods study evaluated the impact of Response to Intervention (RTI) on student academic performance utilizing job-embedded learning to increase teacher capacity in implementation practices. A problem of practice was constructed from the first iteration of a Plan, Do, Study (PDS) cycle. The previous PDS cycle evaluated the effects of implementing an RTI model on student success and what challenges are inhibiting implementation at the classroom level. The first iterations findings indicated the need for additional professional learning that focuses on the fidelity of the RTI implementation process, interventions in Tier Two and Tier Three, and ensuring that all decisions embedded in the RTI process are data-driven.

Literature Review

Job-embedded Professional Learning

As defined by Zepeda (2017) job-embedded learning defines professional development as a continuous cycle that is evident throughout school's culture. Zepeda (2017) identified three attributes of job-embedded professional learning: relative to individual teacher, feedback is ongoing and continuous, and the acquisition of new skills are transferable into teacher practice. Job-embedded professional learning is characterized as reoccurring on a regular basis, aligned with school improvement goals, active engagement rather than passive, and focuses on how to address students' learning needs (Zepeda, 2019). Job-embedded learning provides teachers with various opportunities to learn and build their craft. Job-embedded professional development can occur in many capacities such as coaching, mentoring, action research, professional learning communities, and data-driven teams (Croft et al., 2010). Professional learning opportunities

allows educators better understand RTI to be able to improve their instructional practices and meet the needs of student learners. A study conducted by Castillo et al. (2016) researched the impact of direct and intense RTI training and job-embedded mentoring on teachers' RTI program implementation abilities. According to the findings conducted by Castillo et al. (2016), receiving job-embedded mentoring and peer collaboration improved perceived RTI implementation skills. Various job-embedded learning opportunities can be conducted through action research, professional learning communities, data-based decisions making teams, and coaching.

Action Research

Action research change how educators collaborate, learn from, and cooperate with one another while enhancing their instructional strategies (Zepeda, 2017). When a school system implements action research, if implemented properly, can have several benefits. The benefits of action research are that it creates a systemwide mind-set for school improvement, instills a commitment to continuous improvement, and impacts directly to practice (Glanz, 2014). Action research is a format for job-embedded professional development that permits teachers to systematically investigate aspects of their teaching practices (Croft et al., 2010).

Professional Learning Communities

PLC's have restructured how teachers collaborate on their work and the impact of their instructional strategies (Zepeda, 2017). PLC's can be the forum for job-embedded professional development (Croft et al., 2010). Through professional learning communities' teachers may overcome perceptions of isolation, establish shared accountability for all students, and have access to instructional practices and knowledge (Croft et al., 2010). DuFour and Reeves (2016) described that often PLCs are a rebranded traditional faculty meeting or grade level meeting that results in little to no effect on student achievement. When school systems effectively implement

a PLC model, they must: work in collaborative teams, establish a guaranteed and viable curriculum, use assessment processes, and analyze data to identify students needs for intervention or enrichment (Dufour & Reeves, 2016). Within a PLC model, educators will often implement a data-driven protocol to obtain insight into student performance.

Data-Driven Teams

Data-based decision making is an essential component for school improvement. According to a study completed by Schildkamp, Poortman, Ebbeler, and Pieters (2019) the foundations to creating a culture of effective data teams include: 1) establishing a vision, norm, and goals; 2) providing individualized support; 3) intellectual stimulation; 4) creating a climate for data use; and 5) networking to connect different parts of a school system. Data-informed decision making combined with professional knowledge of educators, can correlate to positive measures of achievement and learning in school systems. Effective data use and analyzation requires collaboration and leadership (Datnow et al., 2013). Teachers need to be able to communicate and engage with parents, other educators, and students on student outcomes. As a result, for teachers to improve student learning and the overall school system, they must collaborate on the data analysis and findings. Job-embedded learning can also utilize the knowledge of an instructional coach to build school improvement efforts.

Coaching

Zepeda (2019) outlined coaching as a process in developing critical thinking skills and problem-solving to better understand the impact of instruction on student success. Coaching is a component of professional learning studied by Freeman et al. (2017), who described how coaching is conceptualized and operationalized with a multi-tiered system of support (MTSS). Knight (2019) examined how the use of instructional coaching should be used to support

educational innovations. In Knight's (2019) examination of instructional coaching the definition of instructional coaching follows a framework model that is defined as partnering with teachers, analyzing current reality, goal setting. Identifying and explaining teaching strategies to achieve the target goal, and providing support until goals are achieved. Desimone and Pak (2017) highlighted there is a limitation in empirical evidence that supports coaching improves teacher practice. Desimone and Pak (2017) addressed this limitation by conceptualizing instructional coaching with a framework with five features of effective professional learning: content focused, active learning, coherence, sustained duration, and collective participation.

Research Questions

The critical questions in this mixed-methods study were intended to evaluate an intervention t

1. To what extent do students demonstrate growth over time with interventions in the general education classroom?
2. To what extent does teacher knowledge of RTI implementation correlate with student success?
3. What barriers are present when implementing an RTI approach?

Target Population and Participants

The setting for the evaluation of the intervention was located at one elementary school in Texas. The total student population consisted of a total of 707 students in pre-kindergarten through fifth grade. The demographics of the campus was 20% African American, 10.2% Hispanic, 53.9% White, 0.4% American Indian, and 4.4% Two or more races (TEA, 2022). The campus saw an increase in student enrollment compared to the prior academic year.

The study participants were nine general educator teachers. Four out of the nine participants were self-contained teachers, meaning they taught all content with one set of students. Five out of the nine participants were departmentalized teachers meaning those teachers taught one or two subject areas to several groups of students. For this study, the participants that were departmentalized provided instruction for Reading, Language Arts, and Social Studies to approximately forty students each. The participants were all teachers that were implementing RTI in their general education classroom and were willing participants in the study. The code names in the study as pseudonyms and are coded to protect their identity, as well as the campus identify, district identity, and school system. The participants in the study had varying levels of background experience and knowledge. Table 6 provides a profile overview of the study participants.

Table 6

Profile of the Study Participants-Evaluation of the Intervention

Participant	CT20A21	CT20B21	CT20C21*	CT20D21*	CT20E21*	CT20F21*	CT20G22	CT20H22	CT20I22
Grade Level	K	K	1st	1st	2nd	2nd	3rd	3rd	3rd
Years of Experience	4	2	21	11	8	7	25	1	1
Years Teaching at the Research Site	3	2	21	11	8	7	3	1	1

*Indicates the teacher had prior training and/or prior job-embedded training involving RTI.

The Intervention

A networked improvement committee (NIC) was established in the Summer of 2021. The purpose of the NIC was to bring together the researcher, practitioners, and other stakeholders to review the 2020-2021 plan, study, act (PSA) data, which disclosed obstacles in RTI implementation, fidelity of utilization of Tier Two and Tier Three intervention materials, and student proficiency performances. Possible causes of fidelity included the lack of initial RTI training for teachers as well as job-embedded support. After reviewing end of the year data, the NIC created and intervention plan. The focus of the intervention was to provide teachers with initial RTI training that encompassed an in-depth coverage of universal screeners utilized, progress monitoring measurements, intensive academic intervention supports in Tier Two and Tier Three, and job-embedded professional learning for study participants.

The purpose of the initial RTI training for teachers was to provide educators with a solid conceptual understanding of the elements of RTI. The plan for training included one day of professional development prior to the beginning of the 2021-2022 academic school year. In addition, to support teacher with job-embedded professional learning throughout the year, the campus RTI coordinator held monthly training sessions and coaching sessions for study participants. All trainings would be led by the campus RTI coordinator. In addition, teachers also received individual support from various members of the instructional leadership team.

Research Methodology

Research Design

According to Philippakos, Howell, and Pellegrino (2021), design-based research (DBR) methodology is a collaborative effort between researcher and practitioner conducted through iterative cycles that are based on a specific theory, design, and testing of approaches in genuine

instructional contexts. The DBR A mixed-method research design allowed the researcher to address the research questions using Star Renaissance benchmark data as the primary source and was supported by the data collected from focus group interviews, survey data, and observational data.

The study implemented a mixed-methods design that included quantitative and qualitative data sources to evaluation the intervention. The plan, do, study, act (PDSA) was an iterative cycle used throughout this study by the researcher. Data collection included pre- and post- assessment data were collected as phases of the PDSA cycle.

Data Collection: Quantitative

The quantitative data collected in this study was collected from a student performance tracker spreadsheet to answer research question one: to what extent do student demonstrate growth over time with interventions in the general education classroom? Data points were collected from beginning of the year and end of the year Star Renaissance diagnostic. This data was utilized to understand individual student's proficiency levels throughout the 2021-2022 academic school year. For the students to be considered on grade level for reading, their individual scaled score should be related to their grade level and time of year within their respected district. For example, for the 2021-2022 school year, students in the first grade approaching grade level expectations should have had a scaled score of 65, meeting grade level proficiency a score of 79, and mastering grade level proficiency should have had a score of 90. Students at risk or below cut score boundary were identified as requiring urgent intervention. Students who were identified as approaching grade level proficiency were identified as requiring intervention. Students who were identified as meeting grade level proficiency were on watch for the possibility of need intervention support for specific academic skills. The research site's

instructional leadership team provided the research with a copy of the performance tracker at the end of each assessment deadline with all identifiable information eliminated. The researcher assigned a code for the data sets.

Data Collection: Qualitative

Qualitative data collection methods utilized in this study were teacher surveys, informal observations, and focus group interviews to answer research questions two and three: 2) to what extent does teacher knowledge of RTI implementation correlate with student success, 3) what barriers are present when implementing an RTI approach see Appendix B and Appendix C? The survey utilized to collective qualitative data. The qualitative data collected from the surveys included five open-ended questions. The open-ended questions elicited the perceptions of the study participants on the processes and systems within implementing RTI in the general education classroom. The survey also collected the teachers' responses on descriptions of implementation accounts for Tier Two and Tier Three, support teachers needed to successfully implement the multi-tiers of instruction, what if any, barriers are impacting teacher and student success.

The informal observations occurred by the researcher during the study participant's instruction in Tier Two and three. Each observation was pre-scheduled with the teachers and lasted for 45 minutes. The dates and times of the observations were agreed upon by the participant and the researcher. The researcher watched and observed intentional or unintentional student interactions by using descriptive note takes. The researcher did not interact with students and did not interact with the study participant during the observations. The researcher tracked notes in an observation protocol form. Additionally, the researcher consolidated notes and coded the data. From the codes, emergent themes in the observations were constructed through

repetitive cycles. The themes were documented in a spreadsheet to track trends in data over each semester.

The focus group interview questions were semi-structured. The researcher determined the set of interview questions prior to the interview. The aim of the focus group was to identify challenges present when implementing the RTI process. The researcher asked teachers the questions during the interviews but did not interact with dialogue other than asking the participants questions. The researcher did not want to influence or interject bias from teachers. The focus group interviews were recorded verbally. This allowed the researcher to be present and concentrate during the interviews rather than scripting responses. The audio of the interviews was transcribed. Data analysis of the interviews required the researcher to listen to the recording multiple times for accuracy. After the transcription, codes and themes were derived and recorded on a spreadsheet. The researcher provides direct quotes from teachers in the discussion of the results.

Data Analysis Plan

Institutional Review Board (IRB) approval was ascertained prior to the data collection process. Before collecting data, the researcher assigned each participant an identifier code such as CT20A21, CT20B21, CT20C21*, CT20D21*, CT20E21*, CT20F21*, CT20G22, CT20H22, and CT20I22 to establish confidentiality. The participant codes were used in the data analysis to remove the usage of identifiable name. The analysis strategy was inductive. Inductive thematic analysis was used to better understand data from teacher surveys, observations, and focus group interviews. The researcher conducted a detailed analysis using coding, categorization, and labeling to generate themes in the data. The data analysis plan followed an inductive thematic approach to compile and interpret data for analysis to address the research questions. The

researcher systematically analyzed the data followed by categorizing the data to conduct thematic analysis of the findings.

Limitations

This study was not without its limitations. Cautions should be utilized when generalizing the results of this study to other school systems. The study only included eight participants are one research site. The small sample size possibly limits the capacity to apply study results to other systems.

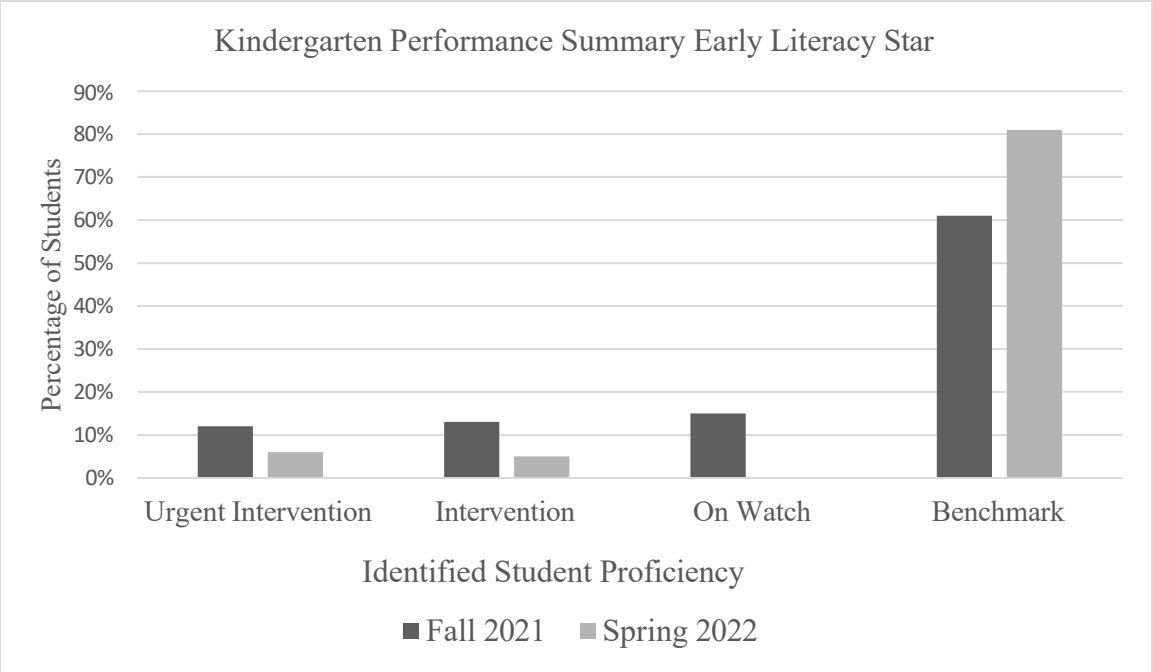
Additional limitations include variables related to the participants. All participants in the study implemented the research site's RTI model, each participant had various levels of experience. More experienced teachers could have had perceptions about RTI as opposed to new teachers to the profession.

Results

To address research questions one, to what extent do students demonstrate growth in grade level proficiencies with intervention in the classroom, beginning and end of the year data were collected from Star Renaissance scores for grade kindergarten through third grade as outlined in Tables 7-10. As outlined in Table 4., 16% of kindergarten students were identified as needing urgent intervention supports. That number decreased by end of the year at 6% of students being identified as needing urgent intervention supports. Students identified in the intervention category started at 13% for beginning of the year and decreased to 5% by the end of the year. Students on watch for possible intervention supports throughout the school year were 15% and declined to 0% of identified students. By the end of the year 81% of kindergarten students were meeting grade level expectations.

Table 7

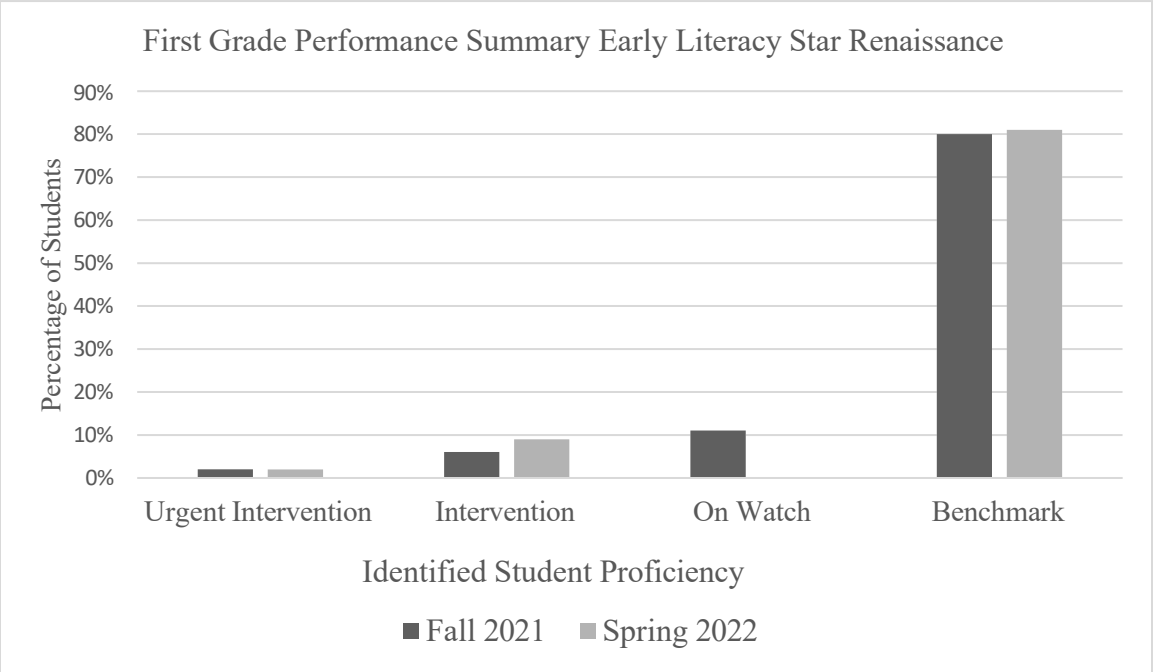
2021-2022 Beginning and End of the Year Star Renaissance Performance



Additionally, first grade student data from Star Renaissance was collected and is displayed in table 4.2. Students in first grade that were identified as needing urgent intervention remained unchanged from the beginning of the year to the end of the year at 2%. Between the beginning of the year and end of the year, students in the intervention category increased from beginning of the year to the end of the year from 6% to 9%. Resulting in more students requiring intervention supports by the end of the year compared to end of the year. The students in the on-watch category began at 11% and decreased to 0%. It should be noted that the decrease is not a result of the students performing on benchmark, but rather those students decrease in student success to requiring more intervention supports.

Table 8

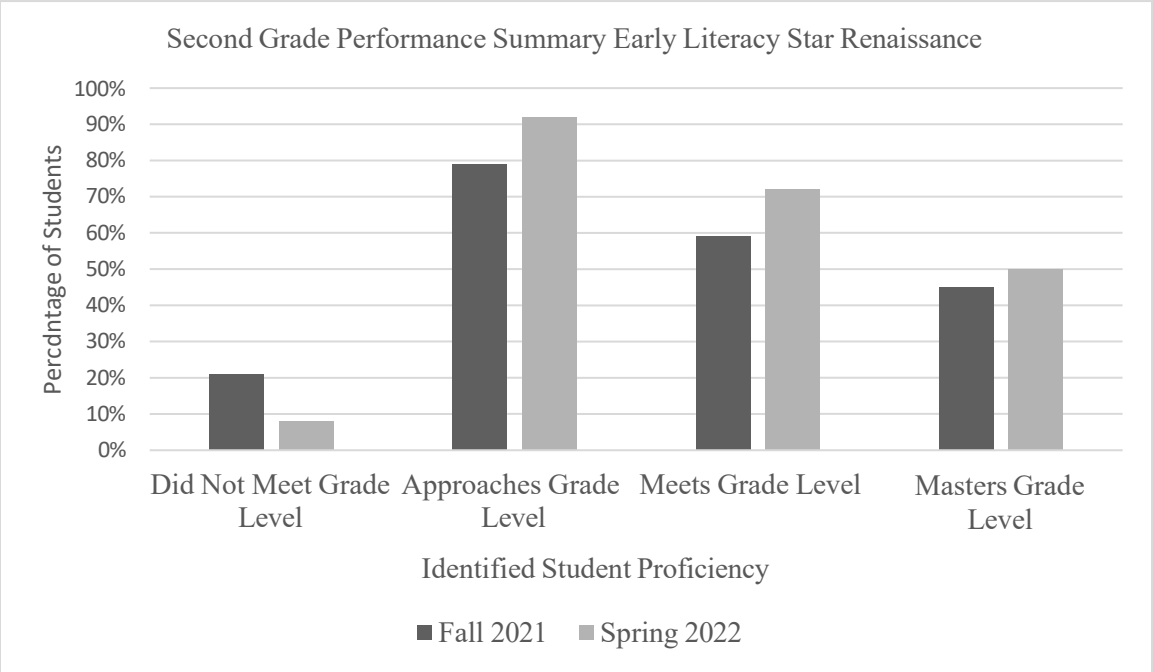
2021-2022 Beginning and End of the Year Star Renaissance Performance



Second grade student performance on Star Renaissance was collected and is detailed in Table 4.3. The categories for second data collection were reflective of STAAR performance levels. At the beginning of the year, 215 of students were categorized at not meeting grade level expectations, 79% of students were approaching grade level proficiency, 59% of students were meeting grade level proficiency, and 45% of students were mastering grade level proficiency. Compared to beginning of the year data points, the end of the year data presented a decrease in the number of students not meeting grade level expectations. More students were identified as approaching grade level at 92%. There was an increase to 72% of students meeting grade level proficiency. Finally, by the end of the year, 50% of students were mastering grade level standards.

Table 9

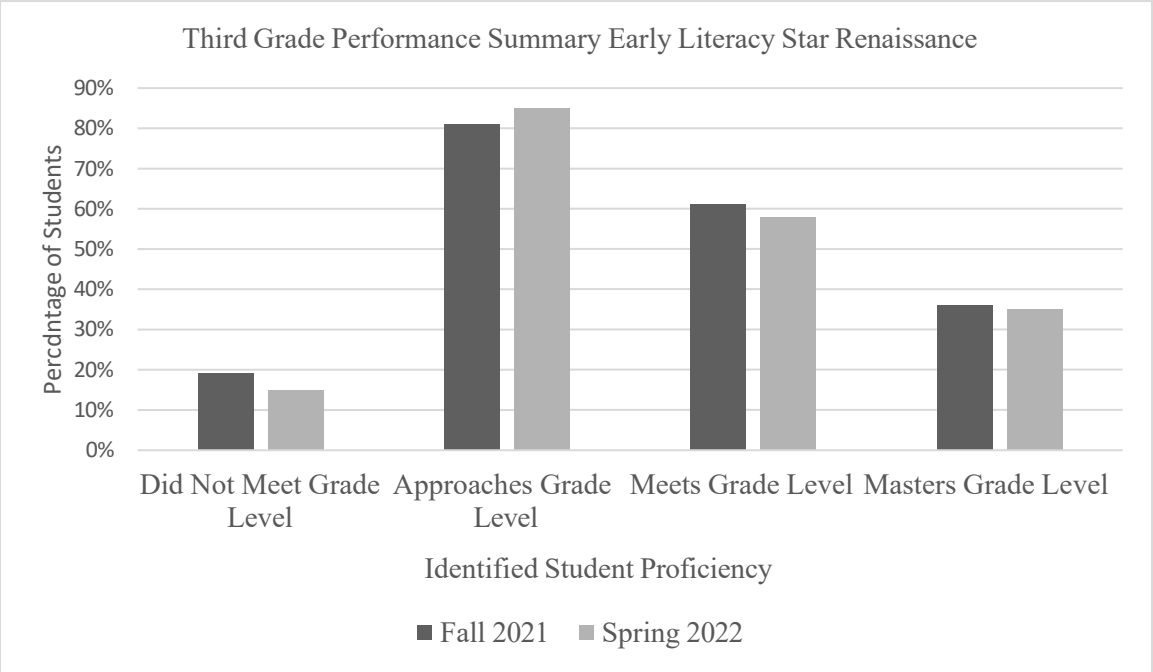
2021-2022 Beginning and End of the Year Star Renaissance Performance



Finally compared to the first iteration of the evaluation of the problem of practice, the evaluation of the intervention included third grade student data from Star Renaissance benchmark scores at detailed in Table 4.4. At the beginning of the year, 19% of students were not meeting grade level standards. By the end of the year that number decreased to 15% of the students not meeting grade level expectation. As a result, the number of students within the approaches category started at 81% and increased to 85%. 61% of students were identified as meeting grade level standards and by the end of the year 58% of students were meeting grade level expectations. Finally, 36% of students were mastering grade level expectations compared to end of the year 35% of students were mastering grade level.

Table 10

2021-2022 Beginning and End of the Year Star Renaissance Performance



To address research questions two and three: 2) to what extent does teacher understanding of the implementation of RTI correlate to student success, 3) what barriers are present when implementing an RTI model data was collected from surveys, observations, and focus group interviews. The data obtained from the surveys, observations, and focus group interviews provided the following themes: *teacher collaboration*, *teacher value of RTI*, *professional development*, and *unclear guidelines*.

Theme 1: Teacher Collaboration. For collaboration to occur, school systems must utilize resources effectively and provide teachers with continuous opportunities for teachers to share best instructional practices based on present data. Participants shared they felt supported and received ample collaboration from their instructional leaders and teacher colleagues. A few of the participants stated, “vertical collaboration is needed” in the qualitative data analysis.

During the focus group interviews, teacher CT20I22 stated, “this year we are able to collaborate because the medical restrictions are gone, so I think its time that we take what we are learning here together and transfer that to vertical alignment teams among content area teams.” Additionally, seven out of the nine participants felt supported by their grade level team but wanted to collaborate with content area teams to discuss specific interventions in various subject areas. For example, teacher CT20D21 responded, “I would like to see what this looks like in other grade levels. I think beginning with the end in mind would give us a more global view of RTI for our campus.”

Theme 2: Teacher Value of RTI. District leaders, principals, teachers, parents, students, and even the community are all key stakeholders in the program implementation at the campus level. However, teachers are at the primary stakeholders in the RTI program implementation at the campus level. As the primary stakeholders, educators must see the value in the process for it to be successful.

Theme 3: Unclear Guidelines. Teachers in the study reported they perceived RTI did influence their instructional practices for students identified as at-risk. However, due to unclear guidelines, teachers reported they were unsure about the application of RTI as it pertained to their campus and grade level. According to Al Otaiba et al. (2019), the Institute for Education Sciences reviewed existing research for RTI and issued a support guide, however the evidence-based recommendations within the guide have not been consistently implemented into procedural guidance for RTI implementation. According to the participants the concepts of RTI were clear, but specific guidelines were unclear. The participants in the study reported that guidelines did not appear to be consistent across grade levels. Eight out of the nine participants stated they better understood the components of RTI after the initial training but noticed a

discrepancy in the process because the research site did not provide clear and explicit guidelines to support their RTI instructional practices. Teacher CT20H22 stated, “the initial training was informative. The coaching and collaborative sessions were beneficial, but it seems like we are all on separate paths still trying to do the same thing.” Teacher CT20E21 explained, “it would be nice to have the training connect to a unified program that is directly listed, like a guide.”

Theme 4: Professional Development. The third theme is connected to the third research question. All participants agreed that the initial professional development at the beginning of the year was required to understand all components of RTI, including but not limited to universal screeners, intervention selection for Tier One, Two, and Three, implementing interventions, data collection, and progress monitoring. Six out of the nine study participants stated that a continuous process of professional learning is necessary. Study participant CT20G22 stated, “it’s also important to continue coaching teachers and implementing various approaches to have teachers better understand the RTI process.” When asked by the researcher what additional support is needed to maintain the fidelity of RTI, five out of the nine participants responded professional learning opportunities need to be reoccurring throughout the year as an ongoing process in connection with their respected grade level teachers. Throughout the data analysis of each interview and focus group, participants expressed a need for professional learning to better understand explicit and systematic instruction, particularly for Tier Two and Tier Three.

The quantitative and qualitative data collected in this evaluation study provided understanding on the impact of RTI, the impact of teacher understanding on RTI, and what challenges are present when a school system implements RTI. The findings of this evaluation study have led to suggestions for future iterations or research and presented the study’s research limitations.

Discussion

RTI is focused on delivering early targeted interventions to at risk students to address academic achievement gap (Fuchs & Fuchs, 2006). This can be a challenge for educators who need assistance in conceptualizing the process or have difficulties in individualizing interventions for students. As a result, on site job-embedded learning is a pivotal component in building teacher understanding of the process and building teacher capacity for improved implementation that ultimately results in successful student outcomes.

In response to research question one, to what extent do students demonstrate growth over time with interventions in the general education classroom, the end of the year Star Renaissance scores provided some validation that most students' reading performance progressed in a positive trend over the course of the academic year. This study was not without its limitations. Considering there was not a designated control group, it is difficult to conclude whether the results were a direct correlation of the RTI model or other contributing variables.

Regarding research question two, to what extent does teacher knowledge of RTI implementation correlate with student success, educators must understand how to implement components of RTI to target achievement gaps and target instructional needs of students to results in improved student outcomes. The culmination of the surveys, interviews, and observations indicated that teachers are more proficient in Tier One and at times more proficient in Tier Two instruction compared to Tier three instruction. Most teacher participants could identify students and their respected learning deficits. Data analysis indicated that teachers could effectively group students based on academic needs and select interventions to address academic needs. Alternatively, the focus groups and surveys indicated that teachers needed additional

training on instructional practices for Tier Three and teachers needed additional training on the interventions itself. If teachers do not

Concerning research questions three, what barriers are present when implementing an RTI approach, school systems must understand what challenges are faced by educators when implementing a RTI approach. The culmination of focus group data and interview data provided insight that teaches face several barriers when implementing RTI practices. The evidence highlighted teachers identified a gap in their understanding for Tier Three supports.

To better build teacher capacity and for teachers to support students in Tier Two and Three, the staff required additional supports. Interview results emphasized the need for educators to receive job-embedded professional learning on RTI process. If educators do not have a strong conceptual knowledge of the processes in RTI, there will be variations or deviations in implementation, which directly impact the fidelity of the program. In tandem, the variations in fidelity within implementation can impact student outcomes (Al Otaiba et al., 2019). The findings from this study provided information to improve future iterations of the study. However, there were study limitations that may have weakened the validity and reliability of the study findings.

Conclusion

The findings from this study presented provided insight into the academic gains in student abilities made use the RTI approach. When comparing the RTI implementation from iteration one to iteration two, the RTI framework was similar, however student cohort academic achievements demonstrated improvement from year-to-year. Teacher understanding in iteration two improved with selecting interventions for Tier One and Tier Two. In addition, teachers' perceptions on their understanding of RTI increased from the first year to the second year. The

improvement in teacher understanding and implementation practices could be attributed to the continuous job-embedded professional learning opportunities provided by instructional leaders for teachers. Furthermore, the findings revealed limitations in the study that could be refined for future iterations. It would be beneficial for future iterations to include Likert type questions on teachers surveys to obtain a more objective and reliable data source that has reduced possible biases. Future iterations could include a stronger quantitative data collection to have a greater in-depth descriptive statical measure. It is also recommended that for future iterations, a guide manual is created for the research site as a referencing tool for all stakeholders. Finally, for future iterations to occur, it is recommended that a professional learning path is created and individualized for stakeholders on components of RTI implementation that is developed over time to ensure mastery of each component before progressing to other components of RTI.

Chapter Five: DISCUSSION OF THE RESULTS

The purpose of this evaluation mixed-methods research study was to evaluate the effectiveness of Response to Intervention (RTI) had on student abilities and proficiency in reading. RTI is defined as a tiered prevention framework that includes the utilization of universal screeners, progress monitoring, and data to make decisions that support the learners in the academic setting (Lembke, McMaster, & Stecker, 2010). To determine the impact of RTI on student performance, the following questions were evaluated in this study: 1) to what extent do students demonstrate growth over time with intervention in the classroom, 2) to what extent does teacher understanding, and implementation of RTI correlate with student success, and 3) what challenges are present when implementing an RTI model? This chapter will discuss the results of the study, implications for practice, and future research.

Discussion of the Results

First Iteration: Evaluation Study

The first iteration of year one was an evaluation of an existing RTI model implemented at an elementary campus in Texas. The study was completed in the 2020-2021 academic school year. The aim of the study was to evaluate if the RTI framework impacted student success. Additionally, the study sought to identify the impact of teacher understanding of RTI and potential barriers in the implementation phase of RTI. The first iteration included limitations with small sample size of six participants. An additional limitation within the RTI program was not implemented with fidelity due to COVID-19 restrictions in school systems. The 2020-2021 school year began with students being provided the option to learn at school or learn at home which resulted in changes for instructional delivery and unforeseen challenges for school systems.

Regarding research question one, the extent to which the RTI model impacted students' performance, the study results indicated that student achievement did increase with the use of RTI for kindergarten and first grade. Second grade student achievement did show growth in fewer students identified as not meeting grade level expectations did. In addition, from the pretest and posttest, there was an increase of second grade students in the approach grade level and meets grade level domains. In the intervention iteration. Although, it cannot be conclusively stated that student achievement was the direct result of the RTI implantation at the research site.

Survey data, interviews, and focus groups data was collected to obtain teachers' perceptions of influencing factors on their ability to implement intervention tiers. The data collected was utilized to answer research question two: to what extent does teacher understanding, and implementation of RTI correlate with student success and research questions three: what challenges are present when implementing an RTI model? Results indicated that teachers had a strong understanding of identifying students were not meeting grade level expectations.

Second Iteration: Year Two

The second iteration study was designed mirroring the evaluation study completed in year one. The research site implemented the same problem-solving approach for RTI. Year two participants would receive early professional development from the campus RTI coordinator in coordination with receiving job-embedded professional learning opportunities throughout the year. The second iteration included kindergarten through third grade teacher participants. The second iteration began with an initial professional training on the processes of RTI and the components of RTI followed by coaching embedded throughout the academic school year. Research question one sought to ascertain if students demonstrated growth over time with

interventions occurring in the general education classroom. The year two iteration cycle included students in an end of the year state assessment grade. After a review of the end of the year data from Star Renaissance students demonstrated growth compared to beginning of the year data. It should be noted that the student performance levels cannot be concluded as a direct result of the RTI process. There are other possible identifying factors such as age maturity, engagement, environment, attention, motivation, or learner characteristics.

Research question two sought to ascertain if teacher knowledge of RTI implementation practices correlated with student success. Teacher interviews revealed that teachers obtained a better understanding of the RTI process which they perceived as possible correlations to students' success. Teachers received initial training and on-going coaching throughout the year to better build their understanding of the components of RTI at the research site. Teachers included in iteration one and then in iteration two reported having an increased understanding of RTI and intervention practices for Tier One and at times for Tier Two.

Research question three sought to identify potential barriers when implementing a RTI approach in a general education setting. When considering the data reported through interviews and focus groups, teachers reported that they needed additional knowledge about instructional practices in Tier Two and Three. Teachers reported utilizing various interventions for students and seeing success, but illustrated a barrier in intervention selection when students were not demonstrating progress. Teachers also identified unclear guidelines as potential barriers in the RTI process. Study participants brainstormed having a guide manual to utilized as a reference tool to ensure fidelity of implementation across the research site.

Recommendations for Practice Further Study

The mixed-methods study provided knowledge about the impact RTI has on academic student outcomes, teacher knowledge on RTI as it relates to student success, and barriers present when implementing a RTI approach. There are recommendations for the research site to continuously improve the RTI process. Recommendations for the research site to improve the RTI process are outlined in the following paragraphs.

Shared Vision

It is recommended that the leadership team create a shared vision for the implementation of the RTI program. There was an observed weakness in the RTI leadership. The RTI leadership team is recommended to focus on a vision that encompasses a well-defined plan for the RTI model. It is the role of the instructional leadership team to foster cohesion among members. A shared vision could be disseminated to the entire site to foster a unified understanding of long-term goals.

Guidebook for Program Implementation

Second, it is recommended that that the campus, district, or a collaboration between the two entities to create a guidebook for program implementation for teachers and a guidebook for evaluating fidelity of implementation. A guide for program implementation would ensure teachers have a reference tool that could be utilized to better understand the framework components of RTI. It would ensure teachers have the structure and resources necessary to be able to support the various academic needs of all students. The guidebook should include detailed information in relation to RTI such as universal screening, progress monitoring, and data-based decision making. In addition, the guide should also include information about implementation of instruction and interventions for Tier One, tier Two, and Tier Three. Last, the

guide should include guidelines for special education referral procedures. The information should be relevant to authentic learning experiences across various contents. It is also recommended the campus create a guide on evaluating implementation fidelity for instructional leaders would ensure those in leadership positions should have consistent practices in evaluating, building teacher capacity, and data collection.

Job-Embedded Professional Development

The third recommendation for this study is for the campus to provide teachers with opportunities for job-embedded professional development. Development opportunities should be integrated into the school day and individualized for teachers. It would be beneficial for stakeholders to create a professional development path that is tailored to individual teacher's career stages on RTI knowledge, implementation practices, and fidelity. For example, new teachers to the profession could receive professional learning that is centered around the conceptual understanding of RTI and effective Tier One interventions. Teachers with several years of experience could be given a needs assessment to determine if they need professional learning on Tier Two or Tier Three intervention selection and implementation. Tailored professional learning plans could assist in a greater understanding of the shared vision of the RTI process at the research site.

Conclusion

The two-iteration improvement science dissertation in practice was originally created to evaluate the effectiveness of RTI at an elementary campus. Through the Plan, Do, Study, Act (PDSA) phases of this study, the aim was to identify the knowledge of RTI implementation and the impact it had on student academic abilities. In the first iteration, the RTI model was evaluated utilizing student performance data from Star Renaissance, survey responses, and focus group

interviews from teachers in grades kindergarten through second grade. The Star Renaissance data indicated that student achievement in literacy did improve; however, the performance levels were below grade level expectations. The survey responses indicated the need for initial professional learning on the RTI approach and how to implement Tier Two and Tier Three interventions with fidelity. Based on the findings in iteration one, job-embedded professional learning was a targeted focus for the second iteration.

The second iteration cycle expanded the study to include teachers from the same campus to include kindergarten through third grade. Teachers were professionally trained by the campus RTI coordinator to increase teacher capacity in the RTI implementation process. The professional learning opportunities were delivered to teachers in variety. At the beginning of the year, teachers received a targeted learning opportunity that focused on universal screeners and Tier Two interventions and practices. Instructional leaders provided individualized support to teachers on instructional strategies and interventions through professional learning communities (PLCs) and individual conference meetings. PLCs were targeted to focus on RTI implementation and fidelity through coaching, collaboration, and strategies used to identify students that were not meeting grade level expectations. RTI meetings were conducted once six weeks to discuss student progress, interventions, and strategies for students in Tier Two and Tier Three. Data was collected from Star Renaissance scaled scores for literacy, survey, and focus group interviews. The data presented that teacher knowledge of RTI and teacher understanding of RTI implementation efforts in Tier One and Tier Two increased. RTI positively impacts the student's academic proficiency levels at the research site. Therefore, the research site will continue to implement the RTI framework through PDSA cycles.

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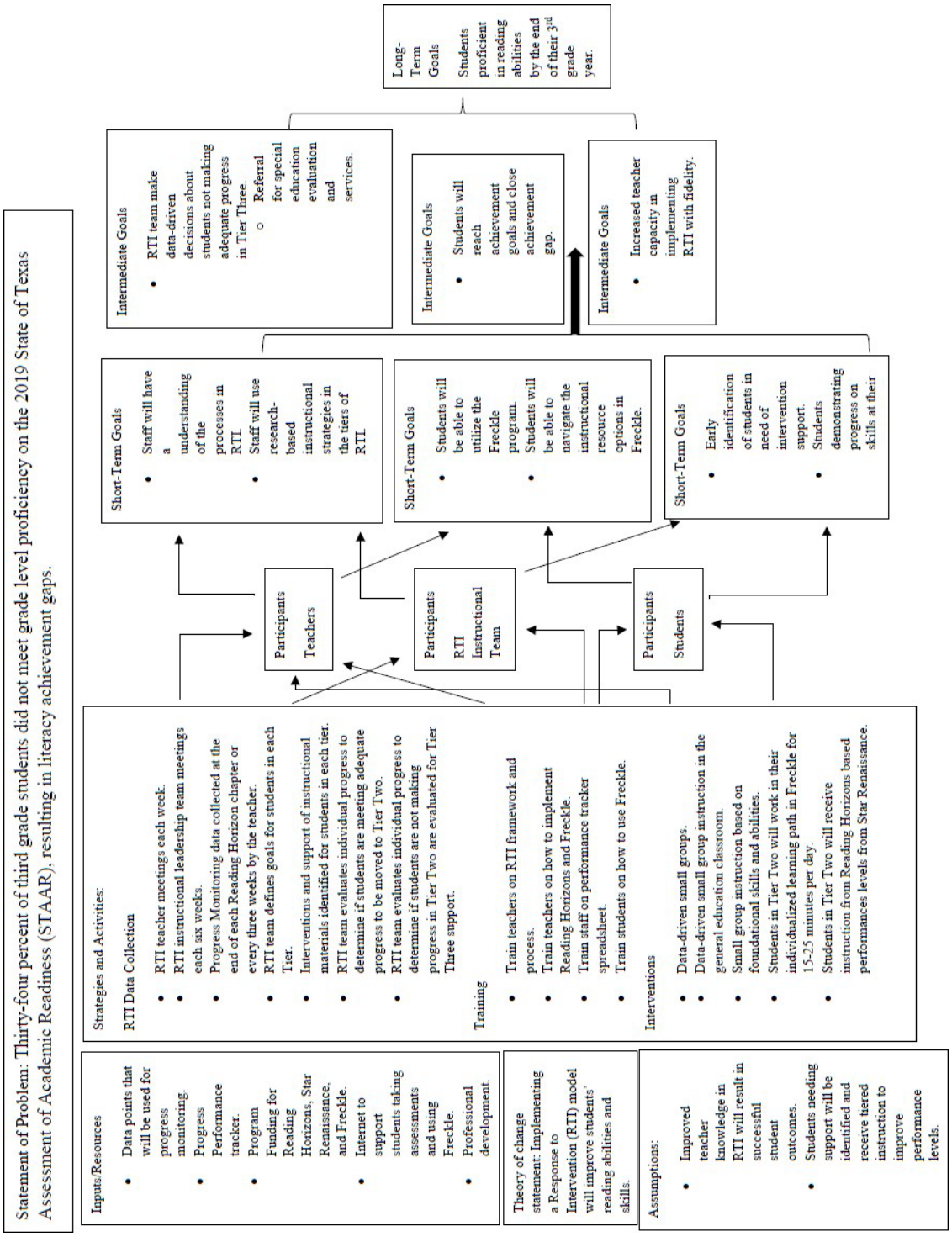
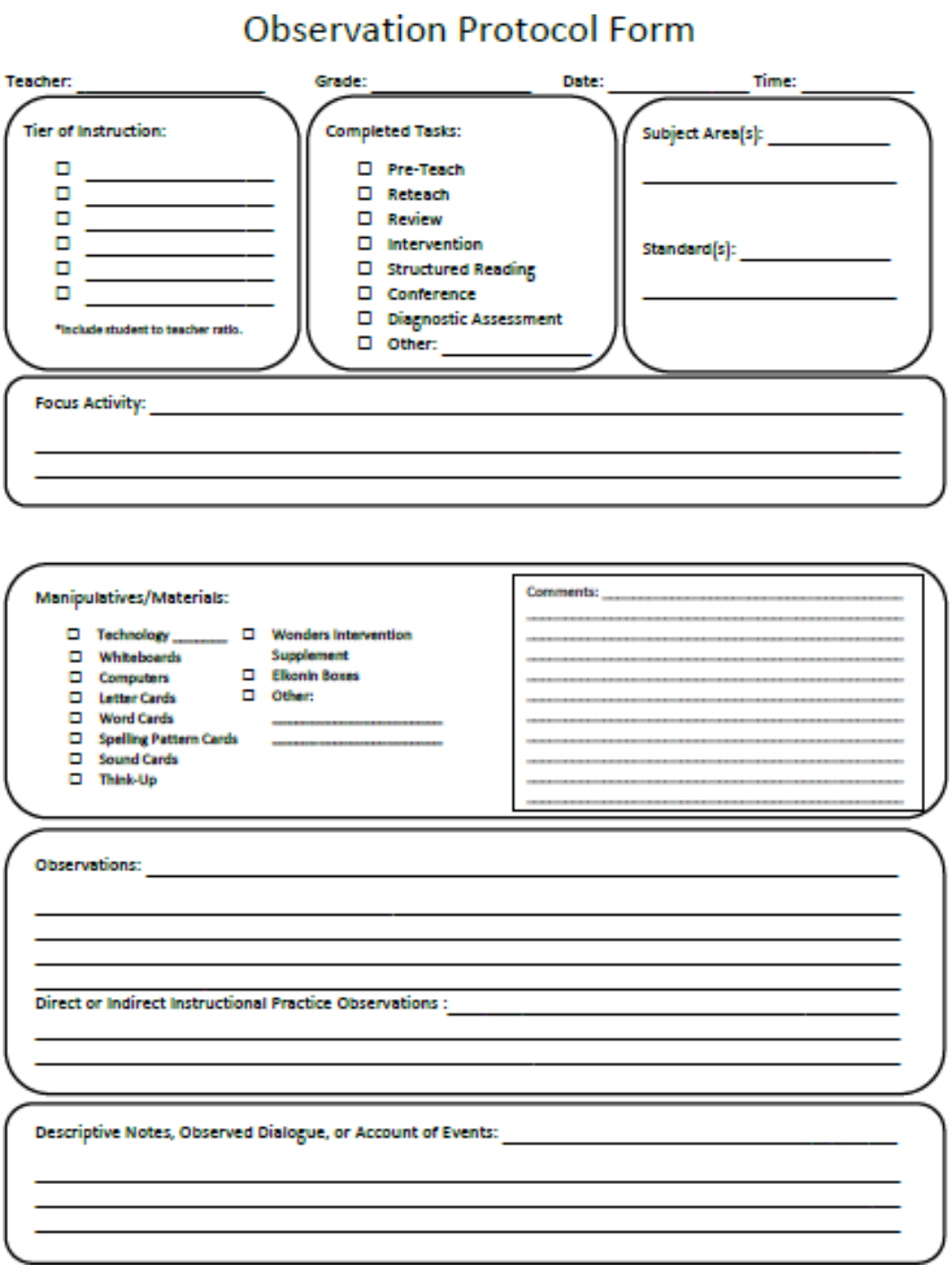
Appendix A

Logic Map



Appendix B

Observation Protocol



Observation Protocol Form

Teacher: _____ Grade: _____ Date: _____ Time: _____

Tier of Instruction:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

*Include student to teacher ratio.

Completed Tasks:

- ☐ Pre-Teach
- ☐ Reteach
- ☐ Review
- ☐ Intervention
- ☐ Structured Reading
- ☐ Conference
- ☐ Diagnostic Assessment
- ☐ Other: _____

Subject Area(s): _____

_____

Standard(s): _____

_____

Focus Activity: _____

_____

_____

Manipulatives/Materials:

- ☐ Technology _____
- ☐ Whiteboards
- ☐ Computers
- ☐ Letter Cards
- ☐ Word Cards
- ☐ Spelling Pattern Cards
- ☐ Sound Cards
- ☐ Think-Up
- ☐ Wonders Intervention Supplement
- ☐ Elkonin Boxes
- ☐ Other:

_____

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Comments: _____

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Observations: _____

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Direct or Indirect Instructional Practice Observations : _____

_____

_____

Descriptive Notes, Observed Dialogue, or Account of Events: _____

_____

_____

_____

Appendix C

Teacher Survey One

1. What previous training have you had on Response to Intervention? Please describe your training (if any) within the district or other districts.
2. How would you describe your previous training experiences in RTI?
3. Generally, how do you feel you work with the students in the RtI process?
4. How has your teaching changed this year due to implementation of strategies?
5. What has been the most challenging aspect of implementing response to intervention in the classroom?
6. What supports have been most useful as you have implemented your Rti process this year? What other supports are needed?
7. What changes have you seen in your school's climate since implementing daily RtI strategies?
8. Do you feel that your school has made it a priority to implement RtI? Why or why not?
9. Do you have any other comments?

Appendix D

Teacher Survey Two

1. What instructional strategies are you implementing for students in Tier One, Tier Two and Tier Three?
2. How would you describe your understanding of the RTI process after receiving training?
3. What are the differences in your interventions and practices for Tier Two?
4. In your opinion, how do students perform when receiving instruction at their functioning level?
5. Generally, how do you feel you work with the students in the RtI process?
6. How has your teaching changed this year due to implementation of strategies?
7. What has been the most challenging aspect of implementing response to intervention in the classroom?
8. What supports have been most useful as you have implemented your Rti process this year? What other supports are needed?
9. What changes have you seen in your school's climate since implementing daily RtI strategies?