Theses and Dissertations

8-16-2024

Examining Systems to Improve Third Grade Literacy: Focus on Schools with High Poverty Index

Brenda Kelley
University of South Carolina

Follow this and additional works at: https://scholarcommons.sc.edu/etd

Part of the Educational Leadership Commons

EXAMINING SYSTEMS TO IMPROVE THIRD GRADE LITERACY: FOCUS ON
SCHOOLS WITH HIGH POVERTY INDEX

by

Brenda Scott Kelley

Bachelor of Arts
Clemson University, 1995

Master of Arts
Furman University, 2004

Education Specialist
Furman University, 2019

_____

Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Education in

Educational Practice and Innovation

College of Education

University of South Carolina

2024

Accepted by:

Kathleen Cunningham, Major Professor

Peter Moyi, Committee Member

Suzy Hardie, Committee Member

Catherine Compton-Lilly, Committee Member

Ann Vail, Dean of the Graduate School

DEDICATION

This dissertation is dedicated to my family. To my husband, David, thank you for your daily encouragement, support, and prayers. Because of you, I can fulfill my dream of helping others while bettering myself. Your support has been continuous and ever present with every degree earned and has allowed me to work as a leader within the public school system for 28 years while serving our family as a wife, mother, and grandmother. Without you this would not have been possible. Thank you for always being my shoulder to lean on and my constant cheerleader. To my beautiful children, thank you for your support and prayers, during this project. You were my inspiration for accomplishing this milestone.   Because of your love and encouragement becoming "DiGi" has become a reality. I love you all more than you will ever realize!

ACKNOWLEDGEMENTS

ABSTRACT

This improvement project was designed to ensure students enrolled in elementary schools with a high poverty index received literacy instructional strategies that promoted literacy achievement. When analyzing Graham County School data, I noticed third-grade students attending high poverty elementary schools were not achieving literacy success at the same rate as third-grade students attending low poverty elementary schools. An improvement team, consisting of myself, administration, and teachers at a high poverty elementary school implemented the improvement science framework to further study the root causes of this problem. Utilizing the six principles of the improvement science framework, problem focused and user centered, attend to variability, see they system, embrace measurement, learn through discipline inquiry, and organize as networks (Bryk et al., 2017; Bryk, 2018; Wright, 2019), created an opportunity for intentional, efficient, and effective research that was designed, implemented, tested, and reviewed, thus created positive changes of literacy achievement for third-grade students while increasing efficacy for all members of the improvement team.

The improvement team discovered that administration and teachers were identifying third-grade students who were non-proficient readers but not identifying which area of reading the students were deficient. Additionally, all students identified as non-proficient readers were provided the same literacy intervention and not interventions designed to meet their specific instructional need. Through this discovery and the utilization of PDSA cycles, the improvement team designed a change idea that supported

teachers with administering assessments to determine a student's reading area of deficiency and designing targeted interventions for students identified as deficient in the areas of phonemic awareness and phonics.

Because of the success experienced by the improvement team and third-grade students, during this improvement project, organizing as a network as begun in the school district. Another Title I elementary school is utilizing the change idea tested with third-grade students identified as non-proficient readers in hopes to increase literacy achievement. Additionally, departments in the district, Student Services, Operations, Human Resources, Finance, and Instruction, are utilizing the improvement science framework to identify problems of practice, to identify possible factors causing the problem of practice, and designing PDSA cycles to create a positive change of action. The implementation of the improvement science framework will ensure effective and systematic continuous improvement actions are ensued throughout Graham County School District.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1
INTRODUCTION

Reading is an essential component for any human to survive in a modernized world (Cartwright et al., 2020; Janks, 2019). Fluent readers often take for granted how the skill of reading affords numerous opportunities of self-efficacy, happiness, peace, and knowledge continuously throughout each day (Ortlieb & Schatz, 2020; Kuhn & Schwanenflugel, 2018). While the skill of reading proficiency lies in the underskirts of most humans, non-proficient readers carry this burden daily as an enormous object of despair or hopelessness (Ortlieb & Schatz, 2020). This improvement science study is designed with the intent of utilizing a theory of improvement (Perry et al., 2020). This theory will provide a blueprint that acknowledges the system that produces a particular outcome and how a change may impact (a component of) the system to improve the outcome (Hinnant-Crawford, 2020).

The problem of practice of focus in this improvement project is third-grade students enrolled in high poverty elementary schools within the district achieve at lower reading levels than third-grade students enrolled in low poverty elementary schools. Creating opportunities for third-grade students to achieve grade level literacy skills throughout Graham County School District is the goal of this improvement research. The improvement team consisting of the administration, reading coach, instructional facilitator, District STEM Coordinator, Superintendent, and third-grade teachers utilized understanding the problem strategies (e.g. -"Five Whys"-) (Perry et al., 2020) to analyze root causes of lower reading achievement of third-grade students enrolled in a high

poverty school and created Plan Do Study Act (PDSA) cycles (Bryk et al., 2017) to support positive literacy instructional changes in hopes of increasing reading achievement for all third-grade students. Through the utilization of the six core principles of improvement science (Bryk, 2020; Wright, 2019), the improvement team answered the following improvement question: How can we create positive changes in literacy instructional routines, to support third-grade students of poverty to become proficient readers?

Third grade students of poverty not acquiring grade level reading achievement creates future learning barriers for students (Karasinski & Anderson, 2017; Lesnick et al., 2010). I identified this problem of practice while serving as the Executive Director of Early Childhood and Elementary Instructional Services. One responsibility of this job title was to work closely with reading coaches and administration to analyze current academic achievements of all students. As we studied data, we noticed a trend of lower percentages of reading mastery for students attending schools with high poverty indexes. Because of my sphere of influence, I was able to strategically work with an improvement team to determine appropriate pathways for improvement (Perry et al., 2020).

According to Perry and colleagues (2020), an actionable problem of practice from an improvement science perspective is (1) urgent for the organizational leadership, (2) within the individual's sphere of influence, (3) prioritized in a limited timeframe, (4) connected to the goals of the organization and included in strategic initiatives, (5) narrowed to specific practices, and (6) embedded in policy or procedures. This problem of practice encompasses each of the aforementioned components. Because of the urgency for all students to read on grade level and my availability to work closely with

administrators and teachers finding positive changes this problem of practice is actionable. Our focus on this problem of practice will potentially create positive changes that will increase student reading achievement and teacher and administration efficacy.

The two-fold aim of this improvement project is to (1) address critical barriers existing in the current system of literacy achievement of third-grade students enrolled in a high poverty school within the school system and (2) increase teacher and administration capacity of continuous improvement (e.g., improvement science) when addressing local problems. An improvement team collaborated to investigate how changes could be made to the current practice of ELA instruction within one elementary school to create a learning environment that increases reading achievement for all third-grade students enrolled in a Title I high poverty elementary school. According to Crow and colleagues,

> Generating a shared knowledge base and common vision of teaching and learning while assuming responsibility for student outcomes is crucial if we are to end the educational disparities experienced by children of color, children with disabilities, and students living in poverty (Crow et al., 2019, p. 289).

The findings of this improvement research will support districts with high poverty elementary schools needing literacy strategies that support reading achievement in third grade literacy instruction, support future studies, and professional educators within schools across Graham County School District to build comprehensive action plans to address literacy achievement gaps of students and future problems of practice in any realm.

This chapter will provide an overview of the system that experienced low reading achievement of third-grade students, historical literacy frameworks and professional

development utilized in elementary schools, and historical reading achievement data. Additionally, you will gain insight on how the problem of practice was identified and the steps needed to begin this improvement project through the utilization of the six core principles of improvement science. The remaining chapters will provide knowledge gained through research that helped to guide the improvement project, the action steps implemented through PDSA cycles, the outcomes of each PDSA cycle, and the implications of this improvement project within the elementary school and the school system.

The System

Historically, Graham County School District has strived to ensure all students become proficient readers, by intentionally creating reading achievement goals in the school and district strategic plans and school and district reading plans. Per the 2022 SC READY Reading (2022) scores, only 47% of third grade students in the district meet or exceed grade level expectations in reading. Graham County School District's third grade reading proficiency mirrors third grade reading achievement across South Carolina. In 2022, 48% of third-grade students in South Carolina met or exceeded grade level expectations in reading (State Scores by Grade Level, 2022). When analyzing Graham County School District's historical third-grade reading achievement, the percentage of students' reading achievement remained consistent: 44.9% in 2019 (Academic Achievement, 2019), 2020 reading achievement percentage is unknown due to the U.S. Department of Education waiving federal accountability requirements and granting flexibility assessments due to COVID-19 (Academic Achievement, 2021), 44.3 % in 2021(Academic Achievement, 2021), and 47% in 2022 (Academic Achievement, 2022).

The lack of success of all third-grade students achieving grade level reading proficiency in Graham County School District could be the result of numerous factors. It is the goal of the improvement team to utilize the core principles of improvement science (Bryk et al., 2015) to analyze the possible causes and then learn through disciplined inquiry on how to create positive changes of literacy teachers' instructional routines, thus support third-grade students of poverty to become proficient readers. Graham County School District educators are committed to every student and become frustrated when programs or initiatives fail to meet the needs of all students. As I worked with teachers across the district creating Multi-tiered Systems of Supports (MTSS) plans, they would often discuss their frustrations of how the interventions provided weekly or daily to students did not help struggling readers achieve grade level reading competency, thus viewing the interventions as an ineffective way to assist the struggling students. But with no other options, they would continue to provide the same interventions in hopes that one day something would click for the students.

Graham County School District, like so many others, has a practice of adopting, initiating, and implementing solutions through trial and error, which leads to solutionitis. Solutionitis is the tendency for actors to jump to conclusions about the best solution before fully defining the problem (Hinnant-Crawford, 2020). Graham County School District tried numerous literacy programs and initiatives in hopes of closing the literacy gap for students enrolled in schools with a high poverty index. Reading Recovery is an example of a literacy program utilized for over 10 years in Graham County School District. This literacy program provided individualized interventions to first grade students attending Title I schools who were non-proficient readers. While students made

great gains in reading achievement when working one on one with a certified Reading Recovery teacher, data show that the students often did not continue successful reading achievement when working within the general education classroom. As a 28 year veteran educator of Graham County School District and as superintendent, I must reflect on the possible factors contributing to students not able to transfer reading success from a one-on-one intensive intervention session to the general classroom, I surmise that the system did not provide an extensive support program for every teacher working with students receiving Reading Recovery interventions and general classroom teachers did not have the professional reading instructional knowledge to support and extend the student knowledge gained during the Reading Recovery sessions. Reading Recovery training was limited to staff who provided Reading Recovery instruction to students. The training consisted of formal course work and annual observations, referred to as "Behind the Glass" observations. Reading Recovery teachers would conduct a lesson, while a small group (i.e., -two to six), of Reading Recovery teachers and the regional Reading Recovery Teacher Leader observed and provided constructive feedback. Serving as a Reading Recovery teacher for three years, 1999 – 2001, I can attest to the dynamic Reading Recovery professional development provided. During my first year as a Reading Recovery teacher, the professional development was offered three hours each week after school. The next two years, I increased my Reading Recovery knowledge and literacy instructional skill set by meeting monthly with a Reading Recovery Teacher Leader and receiving vital constructive feedback concerning lesson plans and delivery of the lessons plans for each student receiving the Reading Recovery intervention. Because of this in-depth training offered to me as a Reading Recovery teacher, I knew the necessary

prompts, scaffolds, and strategies needed to identify and assist students in reading growth. Thus, when I taught non-proficient readers in the classroom, they gained reading achievement due to the incorporation of instructional strategies utilized within Reading Recovery sessions and in classroom literacy instruction. Because this intensive reading instruction training was offered only to educators serving as a Reading Recovery teacher, most classroom teachers were not adept in literacy instructional strategies needed to support struggling readers and scaffold literacy instruction. During the ten years of Reading Recovery instructional support within Graham County School District, the general education teachers did not have the extensive professional development of reading instruction as the Reading Recovery teachers, therefore the students received interventions in isolation rather than interventions continuing through all components of literacy instruction. If the district had utilized the improvement science framework to identify the root cause of lower reading achievement of students receiving Reading Recovery interventions in the general classroom, perhaps the program would still be utilized.

Another literacy intervention program utilized in Graham County School District is Literacy Level Instruction (LLI). This program is utilized for any student, kindergarten through fifth grade that is identified as a non-proficient reader. Students meet with a teacher in a small group setting (i.e., three to four) to complete daily 30-minute intervention lessons. According to empirical data collected from Graham County School District administrators, reading coaches, and interventionists some students did achieve proficient reading levels while working with this program, but most students did not.

Because of the knowledge gained from looking at published literature, I realized that my limited understanding of the essential components of reading and reading interventions in conjunction with the professional development and guidance offered to public schools by the South Carolina Department of Education adequate professional development of the five essential components of reading (Cassidy et al., 2010; *Components of Reading - Resources* 2023; National Reading Panel, 2000; Spear-Swerling & Zibulsky, 2013), professional development of screening for student reading deficiencies within the five essential components of reading, or professional development of appropriate interventions supporting the five essential components of reading were not provided to the teachers working in Graham County School District. If the aforementioned professional development had been readily available to public school districts and to teacher prep programs, I believe teachers would be more knowledgeable about the essential components of reading, less students would have needed literacy intervention programs and more students identified as non-proficient readers would have been successful in the intervention programs offered in Graham County School District.

Through my improvement research, I want to create learning environments that ensure all students become proficient readers but instead of utilizing a framework of trial and error, I want to lead our stakeholders through a transformation of mindset. Instead of leaning on products and quick implementations, I want our school leaders, employees, and community members to utilize the improvement science framework (Langley et al., 2014) to first work together to understand the problem in depth and then through collaboration and intentionality create action plans that will be the catalyst for Graham County School District to analyze and implement positive changes that will alter the

current literacy instructional strategies for the betterment of all students. The collaboration will allow for the improvement team to brainstorm possible areas of improvement, plan and implement one focus area strategy with testing in small iterations in a specified time frame, study the results from the tests, and then decide if the strategy was successful in addressing the focus area. If implemented changes create positive outcomes for literacy achievement (e.g., effective literacy instructional routines, increased student phonological awareness, increased student phonics acquisition, and increased student reading comprehension), the information learned will be shared with additional elementary schools within the district (Crow et al., 2019). Additionally, if the desired results are not achieved through the actions designed and implemented, the improvement team will repeat the aforementioned steps to identify components of the process that need to be revised or possibly deleted (Hinnant-Crawford, 2020). This process is a safeguard to ensure a proposed change idea does not cause a widespread negative impact before it is corrected. The change idea is tested quickly within a small population and changes, if needed, can be made after an analysis of the collected data. If the change idea creates positive results, then it can be shared with larger populations.

Graham County School District Elementary Reading Professional Development

Graham County School District encompasses 20 schools: one early childhood center, 11 elementary schools, four middle schools, three high schools, and one career and technology center, serving approximately 12,600 students. Currently, Graham County School District has six elementary schools identified as Palmetto Literacy Project Schools. Elementary schools are assigned this designation when more than 33.3% of third grade students score in the lowest achievement category, Does Not Meet

Expectations, on the ELA SC READY summative assessment (South Carolina Department of Education, 2021). The SC READY assessment has four performance levels: Does Not Meet Expectations, Approaches Expectations, Meets Expectations, and Exceeds Expectations (*South Carolina College-and-Career-Ready Assessments (SC READY)* 2024). Third grade reading levels are significant predictors of eighth grade reading levels, ninth grade course performance, and graduation and college attendance (Lesnick et al., 2010; Hernandez, 2012). Because of this research and the importance of every third-grade student reading proficiently, I felt compelled to analyze reading levels of third-grade students, living in poverty, within Graham County School District and implement an improvement science framework to create positive literacy changes for all third-grade students attending Wholeheartedly Elementary School (pseudonym).

All elementary schools (n=11) in the district utilize the same English Language Arts (ELA) curriculum (i.e., Balanced Literacy). Every third-grade classroom utilizes a three-block ELA framework equaling 150 minutes of daily ELA instruction: Block 1: Language and Word Study, Block 2: Reading Workshop, and Block 3: Writing Workshop (Fountas & Pinnell, 2001). The ELA instructional framework has been implemented districtwide in all third-grade classrooms for over 20 years. This ELA framework incorporates the essential components of reading instruction: phonemic awareness, phonics, vocabulary, comprehension, and fluency (Cassidy et al., 2010; *Components of Reading - Resources* 2023; National Reading Panel, 2000; Spear-Swerling & Zibulsky, 2013). All teachers, new and veteran, receive annual training on the three-block framework. New teachers are provided a weeklong training during the month of July, prior to the school year. All teachers are supported with coaching

provided by the Literacy Specialist assigned to each elementary school. This professional development provides teachers the opportunity to reflect and improve literacy instruction for all students. Table 1.1 describes each component within the three-block ELA framework utilized in all third-grade classrooms in the school district (Fountas & Pinnell, 2001, 2022).

Table 1.1 Balanced Literacy: Three-Block Structured Framework

Balanced Literacy: Three-Block Structured Framework		
Three Block ELA Framework	Instructional Context	Brief Definition
Block 1: Language/Word Study (60 minutes)	Shared Reading	Students read together a shared text and notate the meaning of the text with their voices.
	Phonics, Spelling, and Word Study	Students learn about the relationships of letters to sounds, structures of words, and meanings of words to help them in reading and spelling.
	Interactive Read Aloud	Students discuss with one another about a text they have heard read aloud.
Block 2: Reading Workshop (60 minutes)	Independent Reading	Students read individually and silently.
	Guided Reading	Students read a teacher-selected text in a small group; the teacher provides explicit teaching and support for reading challenging texts.
	Literature Study	Students discuss a student-selected text in a small group; the teacher facilitates discussions.
Block 3: Writing Workshop (30 minutes)	Independent Writing	Students work silently and individually on their own writing.

	Guided Writing	Small fluid groups of students meet to discuss aspects of writing and learn more about the writer's craft and conventions.
	Investigations	Students work independently or with partners on long-term projects.

The South Carolina Department of Education has designated six elementary schools in Graham County School District as Palmetto Literacy Project schools, including Wholeheartedly Elementary School. Because of this designation 144 employees, administrators, kindergarten teachers, first-grade teachers, second-grade teachers, third-grade teachers, and special education teachers in those schools, are required to complete literacy professional development. This professional development is mandated by the South Carolina Department of Education and structured around the science of reading which states that reading comprehension is a product of decoding and linguistic comprehension (Silverman et al., 2020). Because this professional development supports a strong focus on phonemic awareness and phonics, it is often viewed as contradictory of the current Balanced Literacy framework utilized in all elementary schools in Graham County School District.

At the onset of this training, the educators partaking in this professional development were obstinate about participating. This sentiment was shared profusely during faculty meetings and when conversing with Graham County School District employees. They expressed concern that the training would cause all vocabulary, comprehension, and fluency reading instruction to be dismantled and the focus would be

solely on phonics and phonemic awareness. After the first year of the training, teachers

and administrators, had a shift of thinking. At the conclusion of science of reading

professional development sessions, I conversed with teachers to collect empirical data on

their thoughts of the effectiveness and usefulness of the science of reading professional

development. Teachers shared they felt the professional development gave them insight

into the foundation of reading and how to better assist students who were non-proficient

readers. Because of the school district's commitment to every child, the teachers and

administrators began to appreciate the knowledge gained in Balanced Literacy and the

science of reading. Notably, they did not pit one framework against another. They

utilized the information from both frameworks to help identify students' reading

weaknesses and design interventions within the five components of reading: phonics,

phonemic awareness, fluency, comprehension, and vocabulary (Cassidy et al., 2010;

Components of Reading - Resources 2023; National Reading Panel, 2000; Spear-

Swerling & Zibulsky, 2013). Teachers began to analyze students who were reading below

grade level to identify which areas of reading needed explicit and systematic instruction

in conjunction with continuing the components of Balanced Literacy, such as guided

reading and shared reading. Specifically, Wholeheartedly Elementary School

administrators and teachers understand the importance of integrating authentic literacy

experiences while utilizing the Balanced Literacy framework and explicitly teaching

through modeling, explanation, small groups, and minilessons (Wharton-McDonald et al.,

1997). This explicit teaching encompasses the five components of reading, especially

with respect to decoding and linguistic comprehension (Cassidy et al., 2010; *Components*

of Reading - Resources 2023; National Reading Panel, 2000; Spear-Swerling & Zibulsky, 2013).

Graham County School District Analytics

According to the 2021 Report Card Poverty Index data, Graham County School District has a poverty index of 66.3% (South Carolina Department of Education, 2021). More than two-thirds of the students attending schools in the district are living in poverty. When analyzing schools of high poverty index and the reading achievement of students enrolled, the crisis becomes apparent; students living in poverty are achieving at lower reading levels. Graham County School District is offering a literacy instructional program that is not supporting the reading acquisition of students enrolled in elementary schools with a high poverty index. As Figures 1.1 and 1.2 showcase below, students attending schools with lower poverty index achieve higher reading levels in third grade. The data in Figures 1.1 and 1.2 were collected in November 2020 from every elementary school in the district identified in this study (Data & Instruction Site, 2021). All third-grade students in the district completed the following assessments: Developmental Reading Assessment (DRA) (Developmental Reading Assessment: Third edition 2022) and Measures of Academic Progress (MAP) (MAP Growth, 2022). The DRA and MAP assessments are utilized to identify reading levels, ELA strengths and limitations, and support the creation and implementation of intervention plans for reading acquisition of all third-grade students. The data collected in Figures 1.1 and 1.2 highlight the crisis of literacy achievement gaps of third grade students enrolled in elementary schools of high poverty index in the district.
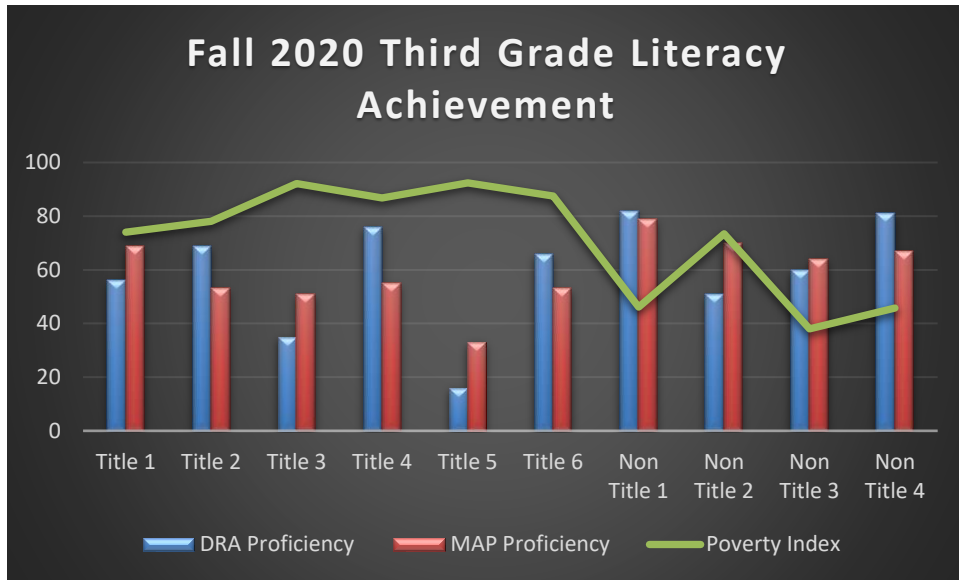
Figure 1.1 2020 DRA and MAP Third-grade Student Reading Achievement.
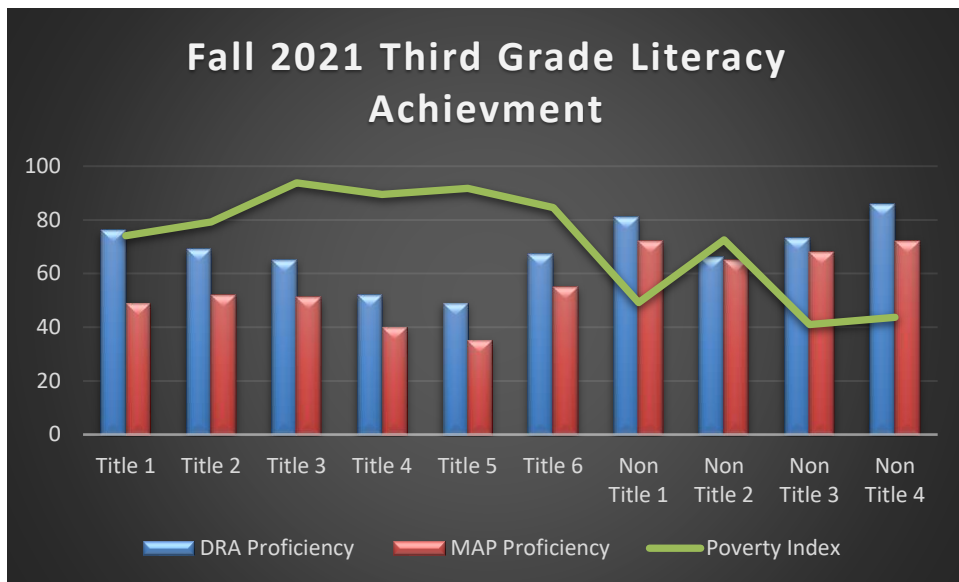
Figure 1.2 2021 DRA and MAP Third-grade Student Reading Achievement

While the data collected in fall 2020 and fall 2021 provided evidence of students enrolled in high poverty elementary schools achieved less reading proficiency, summative data collected in Spring 2019, prior to COVID, and Spring 2021 provided more evidence of this problem of practice (*Data Files*, 2019; *Data Files,* 2021). Table 1.2

highlights the third grade reading achievement data collected from 2019 and 2021 SC READY assessments of all third-grade students enrolled in Graham County School District. From the data collected fall 2020, fall 2021, spring 2019, and spring 2021, it is obvious that third grade students attending schools with a high poverty index have literacy achievement gaps when compared to students attending schools with low poverty index.

Table 1.2 Graham County School District 2019 and 2021 SC READY Data

School/District	2019 SC READY Third Grade ELA Meet & Exceed Percentages	2019 Poverty Index	2021 SC READY Third Grade ELA Meet & Exceed Percentages	2021 Poverty Index
Title 1 A	50.5	74.23	42.4	74
Title 1 B	36.8	75.14	37	78.1
Title 1 C	23.9	93.19	24.7	92.2
Title 1 D	28.4	88.11	30.8	86.8
Title 1 E	26.9	92.95	24.2	92.4
Wholeheartedly Elementary (Title 1 F)	30.4	83.98	32	84.1
Non-Title A	78.5	47.4	65.6	46.1
Non-Title B	54.8	71.56	47.1	73.4
Non- Title C	56.2	38.5	64.4	38
Non-Title D	61	42.31	69.5	45.8

The South Carolina Department of Education provides annual data that encompasses poverty indexes and academic achievement for every public school district in South Carolina. From these data the SCDE analyzes similar districts. Similar districts are identified when the poverty index falls within a five-percentage range higher and lower than the identified district. Per the South Carolina Department of Education (*Data Files,* 2022), Graham County School District currently has a poverty index of 65.9 percent. When analyzing similar districts in South Carolina, districts with a poverty index between 60.9 percent and 70.9 percent, this district falls in the top third of similar districts when comparing third grade students reading proficiently in 2021 but falls in the median range of similar schools when comparing third grade students reading proficiently in 2022. Table 1.3 and Table 1.4 describe the Graham County School District similar districts' poverty index and proficient reading percentages on the 2021 and 2022 state summative assessments. While both tables use the same numbering naming system when identifying similar districts, this identification process does not indicate the same school districts were identified by the South Carolina Department of Education as similar school districts in 2021 and 2022. Similar school districts, identified by the South Carolina Department of Education based on poverty index, change annually. Both Table 1.3 and 1.4 highlight similar school districts with a higher poverty index than Graham School District achieving higher percentages of students earning Meets Expectations or Exceeds Expectations on the 2021 and 2022 SC READY summative assessment.

Table 1.3 2021SC READY ELA Data and Poverty Index of Similar Districts

2021 SCDE Report Card Data		
Similar Districts	**Poverty Index**	**2021 SC READY ELA Meets Expectations & Exceeds Expectations Percentages**
Similar School District 1	63.9	49.7
Similar School District 2	64	48.9
Similar School District 3	65.4	47.1
Similar School District 4	61.9	45.5
Similar School District 5	69.3	44
Graham County School District	66.3	43.3
Similar School District 6	65.8	41.4
Similar School District 7	61.6	40.6
Similar School District 8	69	40.4
Similar School District 9	68	40
Similar School District 10	64.1	38
Similar School District 11	61.7	37.3
Similar School District 12	67.5	36.2
Similar School District 13	64.6	35.8
Similar School District 14	67.2	33.9
Similar School District 15	69.4	30.3
Similar School District 16	69.8	28.4

Table 1.4 2022 SC READY ELA Data and Poverty Index of Similar Districts

2022 SCDE Report Card Data		
Similar District	**Poverty Index**	**2022 SC READY ELA Meets Expectations & Exceeds Expectations Percentages**
Similar School District 1	68.2	63.7
Similar School District 2	68.9	57.3
Similar School District 3	61.9	55.5
Similar School District 4	66.7	55.3
Similar School District 5	67.3	54.8
Similar School District 6	61.1	48.5
Similar School District 7	67.5	48.4
Similar School District 8	64.9	48
Graham County School District	65.9	47.2
Similar School District 9	63.6	46.7
Similar School District 10	62.7	43.7
Similar School District 11	69.2	43.3
Similar School District 12	67.9	41.2
Similar School District 13	70.1	39.3
Similar School District 14	67.2	38.8
Similar School District 15	61.6	37.8
Similar School District 16	65.5	34.8

When analyzing and comparing similar school districts' data and deciphering

possible reasons for lower reading achievement within Graham County School District, I

noticed that similar school districts with higher reading achievement served student populations with rural poverty, low student enrollment, or high student enrollment with greater access to financial resources. Graham County School District's poverty index is 65.9 percent (*Data Files,* 2022). Due to the district resident population size, over 80,000, students enrolled in Graham School District live in urban poverty rather than rural poverty. Students living in urban poverty endure physical stressors, such as high exposure to crime and violence and living in decrepit neighborhoods with more population of concentrated poverty, that often create more disadvantages than students living in rural poverty (Miller et al., 2019). According to Jenson (2010), rural poverty occurs in areas with populations less than 50,000 and residents often have less access to support services and quality educational opportunities. While urban poverty occurs in areas with populations with at least 50,000 and residents deal with stressors such as crowding and violence and are dependent on city services (Berkowitz, 2021; Hair et al., 2015; Jenson, 2010; Miller et al., 2019).

Though many efforts and intentional action plans have been implemented, the school district continues to battle the goal of successfully creating learning environments within schools of high poverty that support third-grade students becoming proficient readers. The system continues to seek solutions that might create positive change but does not utilize a continuous improvement framework to ensure positive change occurs. Because many third-grade students enrolled in high poverty schools are not mastering the skill of reading, we must investigate and explore how to best support reading acquisition of third-grade students enrolled in schools of high poverty.

National and Local Literacy Attention

The United States of America and the State of South Carolina have committed time and resources to support helping all students become proficient readers. Annually, the National Assessment of Educational Progress (NAEP) is administered to selected fourth and eighth grade students across the United States of America to measure academic achievement levels in reading, math, and science (*The nation's report card: NAEP* 2023). NAEP allows parents, educators, and policy makers to measure success based on the data provided annually since 1969. While the National Assessment of Educational Progress (NAEP) assessment does not measure third grade reading proficiency, it does measure fourth grade reading proficiency. According to NAEP, 66 percent of fourth-grade students are reading at the NAEP basic level across the United States, 44 percent are reading at a NAEP proficient or advanced level (*NAEP report card: Reading* 2019).

In 2014, South Carolina passed the South Carolina Read to Succeed Act to ensure a comprehensive and systematic approach to reading was implemented in every South Carolina public school. Eight objectives were included in this legislation in hopes that every child enrolled in a public school would become a proficient reader (SC Read to Succeed Act, 2014). These objectives are:

> 1) classroom teachers use evidence-based reading instruction in prekindergarten through grade twelve, to include oral language, phonological awareness, phonics, fluency, vocabulary, and comprehension; administer and interpret valid and reliable assessments; analyze data to inform reading instruction; and provide

evidence-based interventions as needed so that all students develop proficiency with literacy skills and comprehension;

(2) classroom teachers periodically reassess their curriculum and instruction to determine if they are helping each student progress as a proficient reader and make modifications as appropriate;

(3) each student who cannot yet comprehend grade-level text is identified and served as early as possible and at all stages of his or her educational process;

(4) each student receives targeted, effective, comprehension support from the classroom teacher and, if needed, supplemental support from a reading interventionist so that ultimately all students can comprehend grade-level texts;

(5) each student and his parent or guardian is continuously informed in writing of:

(a) the student's reading proficiency needs, progress, and ability to comprehend and write grade-level texts;

(b) specific actions the classroom teacher and other reading professionals have taken and will take to help the student comprehend and write grade-level texts; and

(c) specific actions that the parent or guardian can take to help the student comprehend grade-level texts by providing access to books, assuring time for the student to read independently, reading to students, and talking with the student about books;

(6) classroom teachers receive pre-service and in-service coursework which prepares them to help all students comprehend grade-level texts;

(7) all students develop reading and writing proficiency to prepare them to

graduate and to succeed in their career and post-secondary education; and

(8) each school district publishes annually a comprehensive research-based

reading plan that includes intervention options available to students and funding

for these services.

The current utilization of Balanced Literacy in all third-grade classrooms supports the

objectives of Act 284. Teachers' capacity of identifying which areas of reading a student

is deficient is limited due to insufficient professional development offered in higher

education training programs, from the South Carolina Department of Education, or from

the school district. Thus, designing appropriate interventions is inadequate. Because

comprehension was listed several times in the objectives of Act 284, Graham County

School District inadvertently spent more instructional time on comprehension strategies

rather than identifying which areas of reading, as noted in the first objective of Act 284,

students needed explicit, systemic, and scaffolded support. Literature reviewed supports

the requirements of Act 284, thus supporting reading achievement. The concerted efforts,

nationally and locally, further support the importance of all students reading proficiently

and identifying root causes of the historical low literacy achievement in Graham County

School District for third-grade students enrolled in schools of high poverty.

The School Improvement Project

This improvement work took place at Wholeheartedly Elementary School, a Title

I elementary school with a Poverty Index of 84.1% (*Data Files,* 2021). The improvement

project had to begin with a small-scale test, one elementary school, before the process

could be shared with additional elementary schools. One key component of improvement

science is to make sure a change idea works before you implement it on a large scale (Hinnant-Crawford, 2020). The school had a student population of 535 4K through 5th grade students and approximately 55 faculty and staff. The faculty and staff consisted of classroom teachers, instructional assistants, visual and performing art teachers, guidance counselors, media specialist, special education specialists, academic and behavior interventionists, psychologist, mental health counselor, nurse, instructional and reading coaches, assistant principal, and principal. Wholeheartedly Elementary School's vision is to wholeheartedly help everyone to succeed. To ensure this vision becomes a reality, the staff at Wholeheartedly Elementary School's mission is to educate students who are college and career ready and will positively contribute to an ever-changing world. Wholeheartedly Elementary School's vision and mission denotes the dedication and intentionality offered daily to ensure each child is successful and reaches their potential. In this study the principal, assistant principal, reading coach, instructional facilitator, District STEM Coordinator, Superintendent, and four third-grade teachers employed at the school volunteered to participate in the improvement work of understanding the problem, developing a theory of improvement, creating PDSA cycles, and implementing changes to the 3rd ELA curriculum in hopes of increasing reading achievement for all third-grade students. The third-grade classes had 88 students enrolled: 50 males and 38 females. Within the third-grade classes a variety of ethnicities were present: 42 African Americans, 4 Hispanics, 27 Whites, and 12 students of two or more races (Enrollment Summary, 2022). Due to the high poverty index of Wholeheartedly Elementary, 87% of third grade students enrolled were identified as living in poverty (Enrollment Summary,

2022). Table 1.5 provides the breakdown of third-grade students living in poverty at

Wholeheartedly Elementary (Enrollment Summary, 2022).

Table 1.5 2022 Wholeheartedly Elementary School Third-grade Enrollment Data

2022 Wholeheartedly Elementary School Third grade Students of Poverty Enrollment Data			
Race	Female	Male	Total
Biracial	6	5	11
Black	9	11	20
Hispanic	6	5	11
White	8	14	22

The 2021-2022 Wholeheartedly Elementary School Strategic Plan included goals

and action plans that supported literacy and math achievement for all students. The

literacy goal stated the school would increase the percentage of students who scored

Meets Expectations and Exceeds Expectations on SC READY two percentage points

each year. While the school did make great improvements during the 2021-2022 school

year, historically they do not meet their goal. Table 1.6 describes the Wholeheartedly

Elementary School Strategic Plan literacy goal and the annual achievement status from

2019 – 2022. Additionally, it provides evidence of why low third-grade literacy

achievement is an actionable problem of practice (Perry et al., 2020).

Table 1.6 Wholeheartedly Elementary Strategic Plan Literacy Goal and Status

PERFORMANCE GOAL ACADEMIC AREA: ☒SC READY ELA					
PERFORMANCE GOAL: In the academic area checked above, our school will increase the percentage of students who score at Meets and Exceeds by 10 percentage points over the next five years.					
INTERIM PERFORMANCE GOAL: Meet annual targets below.					
DATA SOURCE(s): ☒SC Report ☒OTHER: Annual Test Scores	**BASELINE 42.5**	**2018–19 Target**	**2019–20 Target**	**2020–21 Target**	**2021–22 Target**
SC READY ELA Meets Expectations & Exceeds Expectations	**Projected Data**	**44.5**	**46.5**	**48.5**	**50.5**
	Actual Data	**34.8**	**COVID-19**	**30.9**	**42.3**
	Hit/Miss Goal	**Miss**	**COVID-19**	**Miss**	**Miss**

The Wholeheartedly Elementary School administration and instructional team, consisting of the principal, assistant principal, instructional facilitator, and reading coach, met with all grade level teachers, weekly and quarterly. During weekly meetings, the teachers, administration team, and instructional team discussed the current English Language Arts (ELA) curriculum utilized within weekly lesson plans to ensure thorough understanding of the South Carolina English Language Arts College and Career-ready Standards. To warrant clarity of the standards and instructional strategies needed in daily lessons, the administration and instructional team utilized teacher clarity during daily lessons. According to Fisher and colleagues (2017), when utilizing teacher clarity, teachers unpack the standard to create the learning intentions of the lesson and create success criteria to measure student success or mastery of the standard. The teacher clarity strategy helps teachers understand what to teach, how to teach, and how to define student

mastery (Fisher et al., 2017). Additionally, teacher clarity supports substantial academic growth for students (Fisher et al., 2017; Terhart, 2011). Quarterly meetings called - At Promise Meetings - were conducted to review every student who was achieving below grade level expectations in reading, math, and/or behavior. During At Promise Meetings Multi-Tiered Support System plans were created, thus ensuring every student was provided supports and interventions as needed. Multi-Tiered Support System plans were created to support the whole child – academically, behaviorally, socially, and emotionally (Multi-tiered System of Supports (MTSS), 2022). The plans encompassed tiered interventions derived from a team analysis of formative and summative data and were based on the specific needs of the students to ensure student success (Multi-tiered System of Supports (MTSS), 2022).

Communicating Improvement Methods

When I began this doctoral program and understood the improvement science framework, I discussed my new knowledge and its application within the school system with the principal. Because of her commitment to all students and her appreciation for the improvement science framework she agreed to allow me to work with her and the third-grade team on this improvement work. Subsequently, I presented the improvement science framework and improvement work to the Wholeheartedly Elementary School third-grade teachers, administration team, and district office staff. During the initial overview meetings, I discussed the improvement science framework and the risk-free environment the improvement work would need to create positive changes for our problem of practice. Throughout the initial overview meetings, I stressed the importance of all stakeholders being transparent and honest when discussing our problem of practice

27

and how best to create positive changes. When this study began, I served as the Assistant

Superintendent of Instruction. Because of my role as Assistant Superintendent of

Instruction, I knew improvement team members might be leery to fully engage in this

work. To ensure complete ownership and trust, I discussed in length that as we go

through the process of identifying possible factors contributing to our problem of

practice, one of the factors might be me. I designed and coordinated all professional

development for preschool through twelfth grade teachers in all content areas. This

discussion provided transparency for them to realize that I would be willing to take

ownership of possible practices of the system that had contributed to the low literacy

achievement of third-grade students enrolled at Wholeheartedly Elementary School. This

transparency became trustworthy as the improvement team created the fishbone diagram

and the Five Whys diagrams. As the improvement team brainstormed factors and

analyzed deeper for detailed factors, we concluded that one possible factor contributing

to the problem of practice was indeed the lack of reading professional development of the

five components of reading: fluency, comprehension, vocabulary, phonemic awareness,

and phonics (Cassidy et al., 2010; *Components of Reading - Resources* 2023; National

Reading Panel, 2000; Spear-Swerling & Zibulsky, 2013). I provided and coordinated

professional development on literacy resources that could be utilized to support reading

instruction, but I did not provide specific literacy professional development for each

essential component of reading.

Wholeheartedly Improvement Team Members

Because this improvement research is problem focused and user centered,

principle one of improvement science, (Bryk et al., 2017), the principal, assistant

principal, reading coach, instructional facilitator, district STEM Coordinator, and four

third-grade teachers employed at the school volunteered to participate in the

improvement efforts to develop and run PDSA cycles and implement changes to the 3rd

ELA curriculum in hopes of increasing reading achievement for the students enrolled in

their class. Each member of the team volunteered because of their commitment to

students achieving academic success and their interests in learning how to create

conditions for identifying strategies that could lead to greater literacy achievement for all

third-grade students enrolled in Wholeheartedly Elementary School. Table 1.7 provides

specific information about each improvement team member.

Table 1.7 Description of Improvement Team Members

Wholeheartedly Elementary School Improvement Team					
Team Members	Years in Current Role	Years in Education	Gender	Race	Area Native
Superintendent	1	28	F	W	Y
Principal	6	26	F	B	N
Assistant Principal	7	31	F	W	N
Instructional Facilitator	5	19	F	W	N
Reading Coach	4	23	F	W	N
District STEM Coach	4	41	F	W	N
Third Grade Teacher	2	3	F	W	N
Third Grade Teacher	1	1	F	W	Y
Third Grade Teacher	3	3	F	W	N
Third Grade Teacher	4	20	F	W	N

My Role

Being an active educator in public education for 28 years has allowed me to witness and experience this journey of reading acquisition. Through my various roles within the district, teaching assistant, teacher, teacher specialist, assistant principal, principal, executive director, assistant superintendent, deputy superintendent, and Superintendent, I have actively participated in the initiatives to support all learners in the goal of proficient reading. As Deputy Superintendent of Instructional Services and School Improvement and former Executive Director of Early Childhood and Elementary Instructional Services, I worked closely with all administrators, PK – 12, to guide improvement plans and to create learning opportunities within schools that ensured success for all. My experiences encompassed writing curriculum for all content areas, English Language Arts (ELA), math, science, and Social Studies, developing and implementing professional development for 3K – 12th grade administrators, teachers, and teaching assistants, and evaluating teachers and principals.

Creating opportunities for third-grade students to achieve literacy is the sought outcome of this improvement research. The improvement team, consisting of the district and school level administration, reading coach, instructional facilitator, District STEM Coordinator, and four third-grade teachers, analyzed the root causes of the lower reading achievement of third-grade students enrolled in a high poverty school and created PDSA cycles (Bryk et al., 2018) to support positive changes in hopes reading achievement would increase for all third-grade students. My role in this improvement project was to facilitate the intervention team's analysis of the problem of practice, while providing research that led to reading achievement for students of poverty.

It was my hope through the utilization of the improvement science framework including using published research, the intervention team would embark on positive changes that would create a learning environment where all students became proficient readers. To provide opportunities of reading achievement for every student, Wholeheartedly Elementary School began the process of analyzing, owning, and creating positive possibilities to eliminate this problem of practice. This improvement project created opportunities for third-grade students enrolled in a high poverty elementary school to experience success in reading achievement and additionally, served as a guide to all schools seeking opportunities to improve their systems and eradicate literacy barriers for all.

Improvement Science Framework

To address the problem of practice of lower reading achievement for students enrolled in high poverty schools, the district must begin to enlist components of the cultural cognitive structure: patterns of thinking, shared understanding, common beliefs, and shared logic of action (Scott, 2014). Douglas (2009) stated "if reported shifts in beliefs and values cannot be linked plausibly to changed institutional structures, there will be skepticism and sharp criticism" (p.12). Implementing the improvement science framework supported the cultural shift of collaboratively investigating the system, the third principle of improvement science, when identifying barriers that could be contributing to the low reading achievement of third-grade students attending elementary schools with a high poverty index. As the improvement team implemented the core principles of improvement science (Bryk, 2020; Wright, 2019), described in more detail below, trust and support of the improvement science framework process were established

within the improvement team, colleagues within Wholeheartedly Elementary School and Graham County School District, thus ensuring skepticism and criticism of the improvement science framework would not prevail but rather a sense of collegiality, partnership, and commitment to the process intertwined through every discussion and action plan created.

> Improvement science is 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 (Hinnant-Crawford, 2020, p. 1).

The goal of improvement science is to identify changes or interventions that increase positive outcomes or decrease negative outcomes (Hinnant-Crawford, 2020). Improvement science provides a structured process that allows stakeholders to use common knowledge and research to build shared ownership of improvement, plan and learn from variations in practice, and create positive changes within an organization (Lewis, 2015). To further support the action to gain knowledge to design PDSA cycles, the improvement team utilized the Model for Improvement and attended to variabilities, the second principle of improvement science. This model included three fundamental questions that the improvement team considered, which drove improvement work. (Lewis, 2015; Perry et al., 2020).

1. What are we trying to accomplish?
2. What change can we make that will result in improvement?
3. How will we know that a change is an improvement?

An improvement science framework incorporates six core principles. The six core principles must be integrated and not segregated as stand-alone processes. All six principles must be engaged to bring about improvement that is deep, widespread, and enduring (Bryk et al., 2017; Bryk, 2018; Wright, 2019). Table 1.8 highlights the six core principles of improvement science and how they were utilized when collaborating with school administration, teachers, and stakeholders during my research.

Table 1.8 Six Core Principles of Improvement Science

Six Core Principles of Improvement Science	
Core Principle	**Utilization in Improvement Research**
1. Problem Focused and User Centered	An improvement team comprised of teachers, reading coach, instructional coach, school, and district administrators was created.
2. Attend to Variability	The improvement team analyzed • What works? • For whom? • Under what condition? Data, both qualitative and quantitative, were collected from a variety of assessments administered in the third-grade classrooms: teacher made assessments, curriculum assessments, and teacher anecdotal records. This provided evidence that certain student groups were not experiencing success.
3. See the System	The improvement team analyzed how our current processes were influencing our outcomes. The improvement team utilized a fishbone diagram and a driver diagram.
4. Embrace Measurement	The improvement team utilized measured outcomes, drivers, and change ideas.
5. Learn through Discipline Inquiry	The improvement team utilized PDSA Cycles.
6. Organize as Networks	Beyond the scope of this study, multiple improvement teams in high poverty elementary schools are running PDSA cycles. The schools will share findings across the school system to create positive change within a variety of contexts.

Literacy is the foundation for success in school and for success in life (Bitter et al., 2009). The process implemented during this improvement work meaningfully impacted the literacy achievement of third-grade students in the district and additionally, will be useful for any system exploring how to close literacy gaps for students enrolled in high poverty schools. This improvement science research provides insight on how to best support reading acquisition for students enrolled in high poverty schools and ensure future success. While the intervention designed and implemented in this improvement work might not initially deliver the same optimal results in a differing school, the improvement science process utilized and described will provide the framework for other elementary schools to begin exploring and studying how best to create systematic changes within the learning environments supporting reading achievement.

Empathy Interviews/Fishbone Diagram/Driver Diagram

Empathy interviews are designed to gain a better understanding of stakeholders and their perspectives of the problem of practice or area of concern (Hinnant-Crawford, 2020; Perry et al., 2020) and include the following elements: "introducing yourself, introducing the project/problem of practice, building rapport, evoking stories, exploring emotions, asking follow up questions/statements, and thanking and wrapping up" (Perry et al., 2020, p.63). To thoroughly understand the literacy achievement experiences of teachers and students at Wholeheartedly Elementary School, empathy interviews were conducted with nine improvement team members and 26 third-grade students who were identified as struggling readers. Empathy interview questions were designed to be broad and open ended to provide ease for all participants to share personal reflections and

experiences concerning literacy achievement. I asked the following questions of each improvement team member:

1. Tell me about a time when you felt successful with students and their literacy achievement.

2. Tell me about a time when helping third-grade students achieve literacy mastery was difficult.

3. What makes you frustrated about literacy achievement of third-grade students enrolled at Wholeheartedly Elementary School?

4. What do you think are the main reasons why third-grade literacy achievement at Wholeheartedly Elementary School is lower than literacy achievement at lower poverty index elementary schools in Graham County School District?

5. What makes you think that?

6. What do you wish others knew about literacy achievement of third-grade students here at Wholeheartedly Elementary School?

Empathy interviews with the improvement team members were conducted over two meetings. At the beginning of the first meeting, I discussed how the discussion surrounding the empathy interview questions would help us, the improvement team, to understand and define the problem of practice (Hinnant-Crawford, 2020). All improvement team members were present and reflective. Through the conversations, I noticed the third-grade teachers, reading coach, instructional facilitator, and administration were very frustrated and disappointed. Often improvement team members would cry when sharing their thoughts about Wholeheartedly Elementary students and reflecting on the current instructional practices. A sense of despair and hopelessness was

felt and discussed throughout the empathy interviews. The staff stated they had worked so hard to help all children and the interventions were not working. The third-grade teachers and administrators at Wholeheartedly Elementary School did not understand how to implement a continuous improvement framework to create positive literacy instructional changes.

When asking improvement team members to discuss a time when they felt successful with students and their literacy achievement, they all recounted professional development that had enhanced their understanding of reading and how to identify reading weaknesses for students. Many of the improvement team members stated the knowledge gained during Early Literacy Professional Development, Balanced Literacy, Literacy Leveled Instruction, and other specific reading professional development and the implementation of that knowledge is when they felt most successful in helping children achieve literacy achievement. Ironically, when I asked them to discuss a time when helping students was hard, they all stated when the knowledge gained during reading professional development did not help to close the literacy achievement gaps experienced by their students. From the reflections shared during the empathy interviews I gained insight of a dynamic passionate group of educators who worked diligently and used every resource available to assist all students but to no avail student literacy achievement was low. The discussions during the empathy interviews assisted the improvement team with developing the fishbone diagram and capturing possible factors that could be causing third-grade students at Wholeheartedly Elementary School to experience low reading achievement. The empathy interviews allowed the improvement team to gain a better understanding of the problem of practice, mindset of those involved, insights to change

ideas, and opportunities to collect data on processes or outcomes (Hinnant-Crawford, 2020).

The improvement team wanted to glean insight from students about their perception of reading. We brainstormed open ended questions to ask non-proficient readers in each third-grade class to further understand their feelings concerning reading and how they perceived their current achievement level of reading. The following questions were asked of each third-grade student identified as a non-proficient reader:

1. How do you feel about reading?

2. Do you feel successful when you read?

3. When do you feel like a successful reader?

4. Why do you feel successful?

5. Which part of the reading time do you like the best?

6. Why?

7. Do you read in your free time at school or home?

Each third-grade teacher completed empathy interviews with every non-proficient reader enrolled in her classroom. The students' empathy interviews were conducted orally during independent reading time by their assigned classroom teacher. The teacher captured the students' answers by collecting anecdotal records during the conversations. The anecdotal records provided insight on how students viewed reading, their self-efficacy as a reader, and their enjoyment of reading.

When the improvement team analyzed the data, the results were mixed. Some non-proficient readers enjoyed reading and felt they were successful when attempting to read independently while others said they did not enjoy reading and that it was the hardest

thing they had to do. Students enjoying reading was a surprise to the improvement team members. They thought the non-proficient readers would not enjoy reading because of their daily struggles and need of assistance from the classroom teachers when completing reading tasks. Additionally, most students, interviewed, enjoyed small group instruction more than any other component of the reading time because they received assistance from the teacher. All students stated they read at home and school. When asking students what they read while at home, they stated they read books that their teacher had sent home with them. Initially, the improvement team thought that the students did not read at home because of their low reading abilities, their lack of reading achievement in class, and the lack of reading materials at home but conducting student empathy interviews helped the team realize that some assumptions were not accurate. In Figure 1.3, the improvement team initially thought lack of literacy exposure at home might be a cause of the problem of practice. Data collected from the student empathy interviews refuted this initial thought, thus this cause was struck from the fishbone diagram. From the student interviews, the improvement team realized that these students had not lost hope, yet, but were beginning to understand that they were different from other class members because reading was not difficult for everyone. Because of the information gained through the improvement team and student empathy interviews, the improvement team had a better understanding of the problem of practice and possible causes. Providing opportunities for students and improvement team members to share their insight on personal literacy achievement helped the improvement team to identify and frame the problem of practice and rethink policies and practices (William & Bryan, 2013).

After improvement team and student empathy interviews were completed, the improvement team analyzed the responses gathered to brainstorm possible factors that could be contributing to the low literacy achievement of third-grade students attending Wholeheartedly Elementary School. The improvement team chose to create a fishbone diagram to highlight the possible causes and effects of the empirical data collected through the empathy interviews. The original fishbone diagram was created by Karou Ishikawa in 1945 and referred to as a cause-and-effect diagram (Hinnant-Crawford, 2020). When utilizing the fishbone diagram, three steps were completed (Hinnant-Crawford, 2020, p. 52).

1. Determined the quality characteristic you want to improve (the problem).

2. Identified the major factors causing the problem of practice.

3. Identified the detailed factors that may contribute to the broader factors, what she describes as "twigs".

Each of the factors listed on the fishbone diagram were identified as possibly contributing to the problem of practice. Because the improvement team wanted to understand each factor deeply, they completed a Five Whys diagram for each factor. This process allowed the improvement team to define the factors further by providing the detailed factors or "twigs" below each factor found in Figure 1.3 (Hinnant-Crawford, 2020).

One common factor that was not listed on the Fishbone diagram was the impact of COVID. Every member of the improvement team felt that while COVID might have been a contributing factor, there was nothing in their power that could alleviate the impact of COVID, therefore it was wasting valuable time analyzing it further. All

improvement team members recognized the impact COVID had on students but stated

focusing on the impacts of COVID creates a mindset of complaining rather than a

mindset of creating positive change. The improvement team did state that all factors

possibly contributing to low third grade literacy achievement listed on the fishbone

diagram could have been intensified because of COVID. Figure 1.3 is the fishbone

diagram created by the Wholeheartedly Improvement Team that provides detailed

information gathered from the empathy interviews and the completed Five Whys

diagrams.

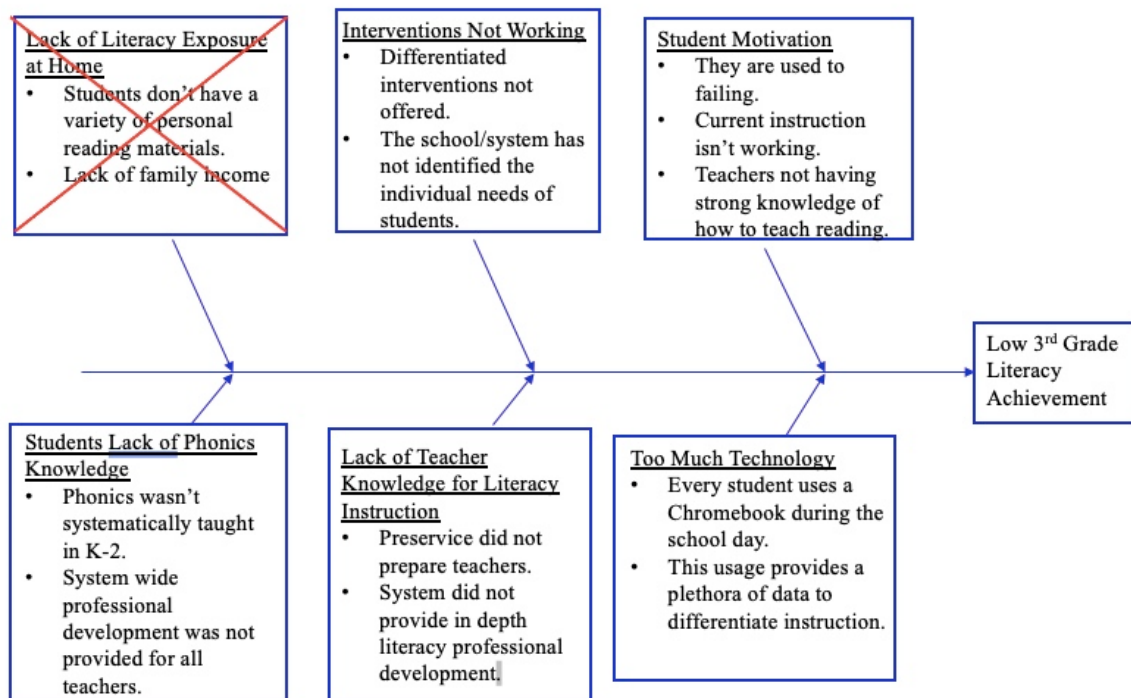**Wholeheartedly Elementary Third Grade Fishbone Diagram**

Figure 1.3 Fishbone Diagram Completed by the Improvement Team

Utilizing the fishbone diagram allowed the improvement team to analyze the

causes and effects of the problem of practice: low literacy achievements of third-grade

students enrolled in schools with high poverty indexes. Additionally, the process of

constructing a fishbone diagram was useful for discovering, organizing, and summarizing the current knowledge surrounding the various causes contributing to the problem's existence (Perry et al., 2020). This process allowed the improvement team members to collaborate and discuss literacy achievement of third-grade students in elementary schools of high poverty and begin brainstorming possible causes for the problem of practice. Because the fishbone diagram was a fluid document, it continued to expand and be refined as the improvement team collaborated throughout the research.

As the improvement team developed the fishbone diagram the following causes were discussed: structural causes (societal systems), organizational causes, capacity causes (system's ability to complete a task), historical causes, and practice/pedagogical causes (Hinnant-Crawford, 2020). Through this discussion the team highlighted the different types of causes within the fishbone diagram, using the color-coded system in Figure 1.4. These discussions provided an in-depth reflection of current practices within the system and how the practices contributed to the problem of practice. Figure 1.4 provides detailed information concerning the variety of causes of the problem of practice. Additionally, the fishbone diagram was expanded to highlight information learned through the literature review. Literature informed information is highlighted in Figure 1.5.
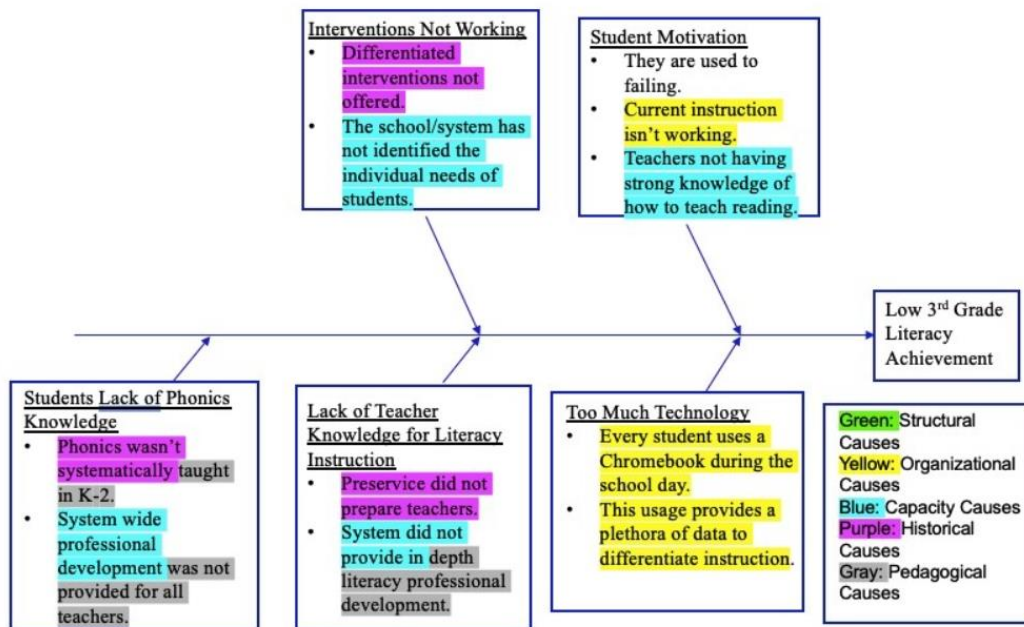
Wholeheartedly Elementary Third Grade Fishbone Diagram

Figure 1.4 Fishbone Causal Analysis Diagram

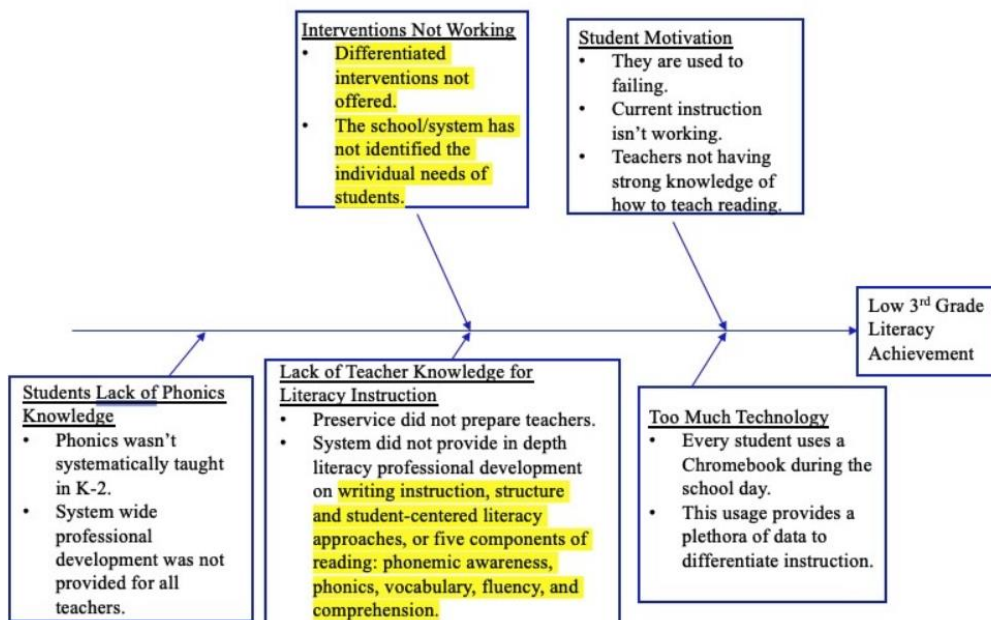**Wholeheartedly Elementary Third Grade Fishbone Diagram**

Figure 1.5 Fishbone Diagram highlighting Knowledge Gained from Literature

In the onset of the process, I predicted the improvement team would realize structures and norms put in place by the school and district, unknowingly, caused some of the barriers to reading achievement. This prediction was based on the initial empathy interviews conducted with each improvement team member. During the empathy interviews, each team member focused more on outside factors that were often out of the school's control, as reasons for students' lack of reading success and not reflecting on the school or district ELA expectations. After the thorough analysis of the fishbone diagram and the root cause analysis completed through the Five Whys protocol, the improvement team realized that the ELA structure implemented, per the expectations of Graham County School District, and based on the empathy interviews, participants believed that the school did not provide varied interventions to support each essential component of reading for non-proficient readers, thus this prediction was correct. Figure 1.6 provides an overview of the Five Whys protocol completed by the Wholeheartedly Improvement Team.

Wholeheartedly Elementary School Improvement Team
Five Whys Protocol

Define the Problem
Low third-grade literacy achievement.

Why is it happening?

1. Interventions are not working.

Why is that?

2. Variety of interventions are not offered.

Why is that?

3. Areas of reading deficiency are not identified for each student.

Why is that?

4. The formative assessments used did not identify the five essential components of reading for each student.

Identified Root Cause
Wholeheartedly Elementary School does not identify the areas of weaknesses within reading for third grade students, thus they do not provide targeted reading interventions.
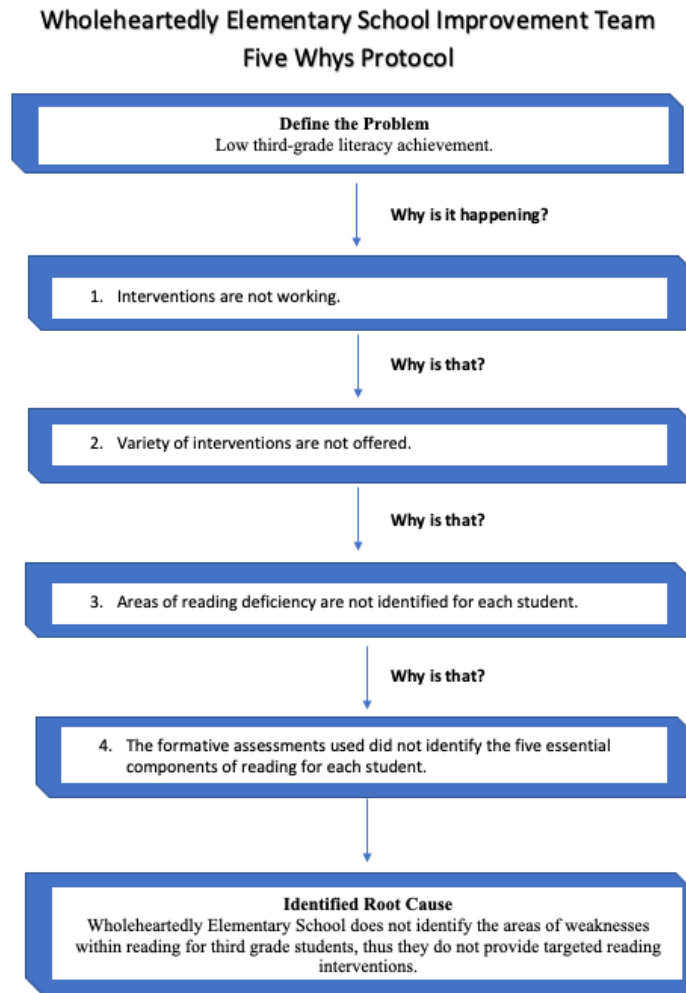
Figure 1.6 Five Whys Protocol

In summary, Chapter 1 provides an overview of the Graham County School District, the current reading achievements of third-grade students, national and local literacy support, and an outline of how the utilization of the improvement science framework supported the improvement project conducted at Wholeheartedly Elementary School. In the following chapters, I will review the literature in relation to the problem of practice and describe how the improvement team developed our theory of improvement and the development of the PDSA cycles, and the analysis of data collected.

Glossary of Terms

- **Achievement –** students mastering grade level reading South Carolina College and Career Ready Standards (*English Language Arts* 2015).

- **Benchmark Assessment System (BAS) –** The Benchmark Assessment System (BAS) is a series of leveled books and recording sheets designed to observe and quantify specific reading behaviors, and the data is used to plan meaningful instruction (Fountas & Pinnell, 2023)

- **Developmental Reading Assessment (DRA) -** The Developmental Reading Assessment (DRA) is a series of leveled books and recording sheets designed to allow teachers to determine students' reading accuracy, fluency, and comprehension levels (Meier, 2013).

- **Driver Diagram –** a tool that illustrates the theory of improvement and contains desired outcomes, key parts of the system that influence the desired outcome, and possible changes that will yield desirable results (Hinnant-Crawford, 2020, p. 119).

- **Dyad Reading** – a fluency and comprehension strategy that pairs proficient readers with less proficient readers to provide modeling of correct reading intonation, pronunciation, tone, and expression of the reading text (Onchwari & Keengwe, 2019)

- **Empathy Interviews –** a data collection strategy that seeks to understand some concept or experience from the perspective of the interviewee (Hinnant-Crawford, 2020, p. 59).

- **Explicit Instruction -** the teacher provides clear and systematic instructional cues explicitly stated in lesson plans, but the student is given opportunity for open-ended responding and receives instructional feedback (Berninger et al., 2003, p.102).

- **Graphemes -** units of written language and represent phonemes in the spellings of words (Savage, 2022).

- **Improvement Science –** a methodological framework that guides 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 (Hinnant-Crawford, 2020, p. 1).

- **Language Essentials for Teachers of Reading and Spelling (LETRS) Basis Spelling Screener** – a qualitative spelling screener tool to identify known and confused spelling conventions (Moats & Tolman, 2019).

- **Measures of Academic Progress (MAP) -** MAP Growth is an assessment for measuring achievement and growth in K–12 math, reading, language usage, and science. It provides teachers with accurate, and actionable evidence to help target instruction for each student or groups of students regardless of how far above or below they are from their grade level (Precisely measure student growth and performance with map growth 2021).

- **Network Improvement Communities –** an interconnected group of people having certain connections that work together to enable all members to gain information for professional (or organizational) advantage (Hinnant-Crawford, 2020, p. 190).

- **One Minute Tasks** – activities that involve 10 rapid-fire manipulation tasks to develop phonological awareness skills (Kilpatrick, 2022).

- **Phonemes –** smallest units constituting spoken languages (National Reading Panel, 2000, p.2-1).

- **Phonological Awareness Screening Test (PAST)** – a formal test to evaluate phonological awareness skills (Kilpatrick, 2022).

- **Poverty Index -** The South Carolina Department of Education defines poverty index by considering all students with the following data elements: Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), Foster, Medicaid, Migrant, and Homeless. Data for determination of poverty index is collected through state agencies Department of Health and Human Services (HHS), Department of Social Services (DSS) and Power School (*Poverty Definition* 2015).

- **PDSA Cycles –** The Plan, Do, Study, Act (PDSA) cycle is the signature improvement science methodology. It combines deductive and inductive forms of inquiry in iterative cycles to improve problems of practice. It has four distinct phases, from which its name is derived, planning, doing, studying, and acting (Hinnant-Crawford, 2020).

- **Running Record Accuracy** – the percentage rate a student read words correctly within a text (Fountas & Pinnell, 2001).

- **Three-block ELA Framework - an** effective tool for designing and managing the instructional program in grades 3 through 6. This will help you conceptualize

the language arts curriculum, think about students' literacy learning, plan, and organize instruction, and provide a high level of productivity and engagement (Fountas & Pinnell, 2001).

CHAPTER 2

LITERATURE REVIEW

Purpose of Review

The intentional design of this improvement work was to create a learning

environment at Wholeheartedly Elementary School that would ensure third-grade

students acquired successful reading skills. The focus of this improvement work was

designed around the improvement science methodological framework and building more

understanding of literacy achievement to support positive changes at Wholeheartedly

Elementary School that, ultimately, would increase literacy achievement for third-grade

students.

The literature reviewed highlighted research concerning educational barriers students

of poverty experience related to reading, different approaches to reading instruction,

school structures of instructional expectations, and implementation of the improvement

science framework within K-12 education.

Research on Poverty and its Effect on Academic Achievement

Almost thirteen million children in the United States live in poverty according to

the most recent estimates (Fontenot et al., 2018). Poverty often becomes an underlying

identity of a student, one in which the student does not choose, that can cause unintended

harm if not handled gingerly and intentionally. Low-income students are more likely

than students from wealthier families to have lower tests scores, fall behind in school, dropout, and fail to acquire a college degree (Miller et al., 2019; Suitts, 2013; Williams et al., 2018). Schools have the responsibility to ensure all students, including those living in poverty, have opportunities for academic success. This improvement research provided an opportunity for Wholeheartedly Elementary School and Graham County School District to attend to variability and identify structures within the systems that are working more effectively for one group of students compared to another group of students.

Poverty and its effect on student achievement are apparent in any educational setting. Poverty is defined as a chronic and debilitating condition that results from multiple adverse synergetic risk factors and affects the mind, body, and soul (Jensen, 2010, p. 6). Children living in poverty often begin school with fewer academic skills than nonpoverty peers and begin school a year behind (Miller et al., 2019). Additionally, children from low-income backgrounds have higher achievement gaps when compared to wealthier peers (Miller et al., 2019; Williams et al., 2018). Boosting academic achievement of students living in poverty is critical and schools have a responsibility to reduce the barriers to learning (Miller et al., 2019; Mazzoli Smith & Todd, 2019). To support high academic achievement for students living in poverty, schools must establish a system that provides a culture of hope, develops relationships, establishes parent-school collaborations, and understands the multifaceted effects of poverty (Blair & Raver, 2014; Crowe et al., 2009; Jensen, 2010; Mazzoli Smith & Todd, 2019; Williams et al., 2018).

Brain research documents the impact poverty has on students' abilities to navigate academic expectations successfully (Blair & Raver, 2014; Hair et al., 2015; Jenson, 2010). According to Jenson (2010), successful completion of academia work is

supported by an operating system utilized by the brain that is comprised of five key

systems: Executive system, Language system, Memory system, Spatial Cognition system,

and Visual Cognition system. Circuits in these areas of the brain influence critical

processes and skills, including reading comprehension, language usage, and associative

learning. Dysfunction in these processes may significantly affect scholastic and later

occupational success (Hair et al., 2015, p. 823). In Table 2.1, the five overarching

operating systems of the human brain and their functions are described.

Table 2.1 Overarching Operating Systems of the Human Brain (Jensen, 2010)

Overarching Operating Systems of the Brain	
Executive System (Prefrontal)	Engages the prefrontal cortex, includes our capacity to defer gratification, create plans, make decisions, and hold thoughts in mind.
Language System (Left Perisylvian)	Engages the temporal and frontal areas of the left-brain hemisphere, encompasses syntactic, and phonological aspects of language. The foundation for reading, pronunciation, spelling, and writing skills.
Memory System (Medial Temporal)	Encompasses the process of explicit learning (text, spoken words, and pictures). Includes the hippocampus (indexing structure) and the amygdala (emotional processor).
Spatial Cognition System (Parietal)	Encompasses the ability to organize, sequence, and visualize information.
Visual Cognition System (Occipitotemporal)	Encompasses the ability to recognize patterns and visual mental imagery.

Understanding the function of each area of the brain and its correspondence to

reading achievement will provide support for educators to attend to variability as they

utilize assessments to diagnose areas of limitations for students of poverty who are non-proficient readers. There is strong evidence that poverty influences language (tied to the temporal lobe) and executive functioning (related to the frontal lobe) development (Hair et al., 2015). Good language skills and executive functions are integral to successful educational performance, and delays in these cognitive parameters may lead to academic underachievement in general (Pavlakis et al., 2015). Figure 2.1 provides a model of each component of the human brain and the literacy functions supported.
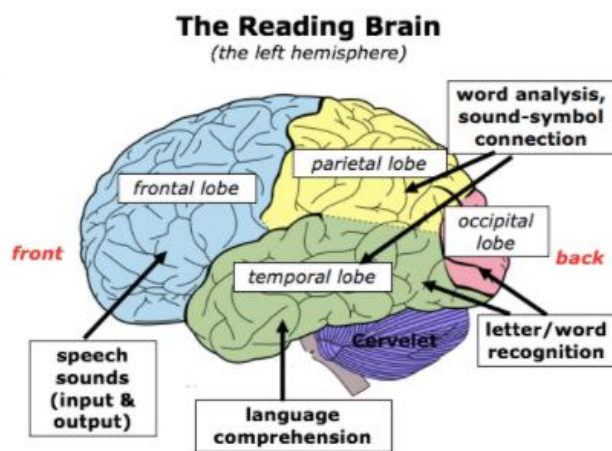

Figure 2.1 Brain Model for Various
Components of Reading (Sedita, 2020)
Permission for use granted June 1, 2023.

Students of poverty experience chronic stressors, high sustained stress over time, causing devastating effects on students' physical, psychological, emotional, and cognitive functioning – areas that affect brain development, academic success, and social competence (Jensen, 2010, p. 22). Utilizing this research with the improvement team and teachers at Wholeheartedly Elementary increased knowledge of connections between poverty and students' academic struggles. Additionally, it supported the intervention team when embracing measurement and completing the driver diagram. The driver

diagram focuses on a small set of hypotheses about key levers for improvement, specific changes that might be attempted for each, and the interconnections that may exist among them (Bryk et al., 2017). Having knowledge of chronic stressors experienced by students living in poverty broadened the opportunities for learning through discipline inquiry within PDSA cycles. While various chronic stressors are outside the sphere of control for the faculty of Wholeheartedly Elementary School, such as living in overcrowded, substandard housing or unsafe neighborhoods, experiencing physical abuse or limited resources, etc., the school can learn how to recognize the signs of chronic stressors and alter the school environment to mitigate the stress (Jenson, 2010).

　　　　While chronic stresses of poverty do affect brain development and the journey of academic success, being raised in poverty is not a sentence for a substandard life (Jensen, 2010). Students of poverty can achieve when supported by educators with growth mindsets. A growth mindset is believing that intelligence can be developed (Dweck, 2015). It might be exceedingly difficult for educators to create an ideal atmosphere for growth in their students if they themselves do not believe that all students can grow their intellectual ability or if their praise, evaluation, and reward practices focused on current ability rather than the development of ability over time (Dweck, 2015). While it is imperative that educators develop a growth mindset, students must as well. School faculty and staff must create an environment that supports growth mindset for all students. For example, in the study, *Students' growth mindset: Relation to teacher beliefs, teaching practices, and school climate,* findings revealed that students had more of a growth mindset when teachers used guided inquiry and schools used social emotional development (Yu et al., 2022). Growth mindsets benefit underperforming

students and narrow achievement gaps (Rattan et al., 2015). According to Petscher and colleagues (2017), "the finding that global growth mindset and reading mindset are significantly related to reading comprehension over and above students' word reading achievement may demonstrate the importance of the mindset construct to reading achievement" (p. 387).

Research on Literacy Instruction and Achievement

Because sixty-five percent of fourth grade students are reading at basic levels of reading across the United States much focus must be given to what reading strategies utilized in classrooms will provide reading success for all students (Cartwright et al., 2020; *NAEP report card: Reading* 2019). Research provided insights on the necessary components of reading instruction and strategies that correlated to increased literacy achievement. While reviewing the research, it was evident that some instructional strategies utilized at Graham County School District, were creating positive literacy achievement opportunities for some students but not for all students. It was essential that the system begin to analyze what instructional practices were working, for whom they were working, and under what condition were they working (Bryk et al., 2017; Bryk, 2018; Crow et al., 2019; Wright, 2019).

The district utilized the Fountas and Pinnell Leveled Literacy Intervention System (LLI) for non-proficient readers in kindergarten through fifth grade. This program provided 30 minutes of daily small group, three to four students, instruction and was designed to deepen and expand comprehension (Fountas & Pinnell, 2023). Because the LLI lessons were designed for 30 minutes of instruction encompassing reading, writing, phonics, and word study (Fountas & Pinnell, 2015), students who received LLI

interventions and struggled in specific areas of reading such as comprehension, fluency, phonemic awareness, phonics, or vocabulary needed explicit instruction within the identified area of deficiency rather than a holistic approach addressing all essential components of reading. According to data collected across elementary schools within Graham County School District implementing LLI, students struggling with comprehension and fluency were able to become proficient readers through this program, while those struggling with phonics or phonemic awareness were not due to their lack of ability to successfully read unknown words within a text.

Historically, Graham County School District provided LLI to all students identified as a non-proficient reader. The district utilized a variety of assessments, NWEA MAP scores, BAS reading levels, and anecdotal records, to determine which third grade students were non-proficient readers and should receive LLI interventions. Unfortunately, the district did not utilize a variety of assessments that would provide achievement levels for each of the essential components of reading to help identify what area of reading needed to be supported through interventions. Through this improvement research Graham County School District realized the current system did not provide non-proficient readers with explicit interventions based on identified deficient components of reading, thus reading interventions were being provided holistically instead of explicitly and systematically focusing on the deficient area.

According to numerous research reviews (Cassidy et al., 2010; *Components of Reading - Resources* 2023; National Reading Panel, 2000; Spear-Swerling & Zibulsky, 2013), there are five components of effective reading instruction: phonemic awareness, phonics instruction, fluency, vocabulary, and comprehension. The effectiveness of

reading instruction must incorporate all components of reading (Duke & Cartwright, 2021; National Reading Panel, 2000; Spear-Swerling & Zibulsky, 2013).

Phonemic awareness, component of phonological awareness (*Components of Reading - Resources* 2023), refers to the ability to hear and manipulate sounds in spoken words and is highly effective when students receive instruction on one or two phonemic awareness skills at a time (National Reading Panel, 2000; Savage, 2022). "Teaching phonemic awareness to children significantly improves their reading" (National Reading Panel, 2000, p.5). Non-proficient readers benefit greatly from explicit instructional support of learning phonemic awareness (Roberts & Meiring, 2006). To illustrate, the National Reading Panel (2000) emphasized teaching phonemic awareness included isolating, identifying, categorizing, substituting, adding, and deleting phonemes.

Phonics instruction is the acquisition of letter-sound correspondences and their usage in reading and spelling and designed for students in primary grades and for students having difficulty learning to read. (National Reading Panel, 2000). Non-proficient readers, most often, have difficulty mastering the phonological decoding skill thus have future reading problems (Berninger et al., 2003). The quantity and quality of explicit phonics instruction influences literacy acquisition (Roberts & Meiring, 2006). Explicit phonics instruction is significantly effective in improving alphabetic knowledge and word reading skills for students living in low socio-economic environments (National Reading Panel, 2000; Roberts & Meiring, 2006). For example, in the study, *Teaching Phonics in the Context of Children's Literature or Spelling: Influences on First-Grade Reading, Spelling, and Writing and Fifth-Grade Comprehension* (Roberts & Mering, 2006), researchers concluded providing explicit phonics instruction of grapheme-

phoneme correspondence, blending, and segmenting had a significantly greater positive influence on both reading and spelling.

Fluency is the ability of students to read with accuracy, speed, and proper expression (*Fluency* 2016; National Reading Panel, 2000) and contributes to comprehension and skilled reading (Kuhn & Schwanenflugel, 2019). Fluency can be taught through guided oral reading, students reading orally with guidance and feedback, or students participating in dyad reading (Downs et al., 2020). Guided oral reading, a commonly utilized instructional reading strategy supporting fluency and comprehension, had moderate impact on reading achievement. (National Reading Panel, 2000). In the study, *Determining the Academic and Affective Outcomes of Dyad Reading Among Third Graders* (Downs et al., 2020), research provided evidence that dyad reading, a shared reading oral activity, supported reading fluency but also marked notable improvement in comprehension for lower readers when implemented for 90 days. The goal of fluent reading is to improve comprehension through the ability to recognize words with automaticity (Components of Reading Resource, 2023).

Vocabulary is defined as the knowledge of words and the meaning, uses, and pronunciations within oral conversations and written text (*Components of Reading - Resources* 2023; National Reading Panel, 2000). Vocabulary development is a critical factor for the process of reading and can greatly impact students' reading comprehension (Kuhn et al., 2015; Wanzek et al., 2018). There is a gap in vocabulary knowledge between students living in poverty and students living above poverty (Carlisle et al., 2013; Cassidy et al., 2010). Because vocabulary development is essential for students to become proficient readers and research has clearly identified gaps in vocabulary

57

knowledge of students living in poverty, it is essential to provide explicit teaching of vocabulary to all students.

According to the National Reading Panel (2000), comprehension is an intentional act of thoughtful interaction between the reader and the text. Within the realm of comprehension are reading comprehension and listening comprehension. Both components of comprehension are equally important to ensure students become proficient readers (Burkins & Yates, 2021;Silverman et al., 2020) Listening comprehension encompasses understanding of vocabulary, semantics, morphology, and syntax within conversations or dialogue (Compton-Lilly et al., 2020; Silverman et al., 2020). Burkins & Yates (2021) says that reading comprehension requires the reader to translate words from a text into spoken language. Reading comprehension allows the reader to understand what is read, create memory visuals of what is understood, and utilize these understandings (Savage, 2022). Comprehension instruction is defined as the "procedures that guide students as they attempt to read and write" (National Reading Panel, 2000, p.440). Direct and explicit instruction of vocabulary and comprehension strategies leads to general improvements in comprehension (Block et al., 2009; Cassidy et al., 2010; National Reading Panel, 2000).

One additional component of literacy instruction not identified by the National Reading Panel (2000) as one of the five key components of reading but essential to the success of all students becoming proficient readers is writing. Writing supports reading attainment and solidifies the word and language connection thus increasing reading achievement (Eutsler et al., 2020; Fountas & Pinnell, 2017). To illustrate, in the study *What Works to Improve Student Literacy Achievement? An Examination of Instructional*

Practices in a Balanced Literacy Approach (Bitter, 2009) three instructional practices, observed in the San Diego Public Schools, demonstrated a consistently positive and statistically significant relationship to students' reading comprehension achievement: utilization of high-level questions within all classroom instruction, daily writing instruction, and accountable talk in classroom interactions.

To ensure all students obtain reading success, we must teach all core components of reading, as defined by the National Reading Panel (2000) and examine how to strengthen executive functions of students living in poverty. Executive functions significantly increase reading comprehension (Duke & Cartwright, 2021; Cartwright et al., 2020). Numerous research studies define executive functions as mental processes that involve three core processes: cognitive flexibility, working memory, and inhibitory control (Blair & Raver, 2014; Cartwright et al., 2020). Students living in poverty are more likely to score lower on tests of executive functions, thus the delays in executive functions may lead to lower academic achievement (Pavlakis et al., 2015). For example, in the study, *The Closing the Achievement Gap Through Modification of Neurocognitive and Neuroendocrine Function: Results from a Cluster Randomized Controlled Trial of an Innovative Approach to the Education of Children in Kindergarten study*, reiterates that students of poverty must be provided intentional interventions supporting the development of executive functions to ensure students will become proficient readers (Blair & Raver, 2014).

Because of the complexity of reading and the individual needs of students, one approach to reading will not ensure all students become proficient readers rather multiple approaches must be utilized (Allington, 2013; Berninger et al., 2003; Compton-Lilly et

al., 2020; Fisher et al., 2021; Moats, 2023; Savage, 2022). Historically, in the United States there have been various discussions of literacy instructional approaches (Allington, 2013; Compton-Lilly et al., 2020; Scarborough, 2019). Continuous conversations and debates ensue trying to define the correct, most effective, literacy approach when helping all students become proficient readers. Recent research and publications have discussed the differences between Structured Literacy (SL) approaches and student-centered (Frey et al., 2005). According to research, SL approaches are recommended for students who have reading difficulties such as dyslexia and others that are struggling with decoding words (Klages et al., 2020; Spear-Swelling, 2018). Additionally, Spear-Swerling, (2018), defines SL as an approach that

> includes (a) explicit, systematic, and sequential teaching of literacy at multiple levels— phonemes, letter–sound relationships, syllable patterns, morphemes, vocabulary, sentence structure, paragraph structure, and text structure; (b) cumulative practice and ongoing review; (c) a high level of student– teacher interaction; (d) the use of carefully chosen examples and nonexamples; (e) decodable text; and (f) prompt, corrective feedback. (p. 202)

Structure Literacy approaches provide systematic and explicit or direct instruction that helps students become efficient and accurate decoders (Collins et al., 2020; Spear-Swelling, 2018). Foci on reading instruction highlights several different approaches that fall within the realms of SL and student-centered.

The simple view of reading is recognized as a Structured Literacy approach and states that the product of decoding and language comprehension will equate to reading comprehension (Duke & Cartwright, 2021; Gough & Tunmer, 1986; Lonigan et al., 2018;

Moats, 2023; Silverman et al., 2020; Sparks, 2015). The simple view of reading is often

demonstrated by The Reading Rope model (Scarborough, 2019) and the Simple View of

Reading model (Sparks, 2015).

Both the Reading Rope (Scarborough, 2019) and the Simple View of Reading

(Sparks, 2015) emphasize the dependence, or intertwining, of decoding or word

recognition and language comprehension to ensure reading comprehension. The Reading

Rope Model (Scarborough, 2019) encompasses two intertwined strands of literacy skills

that must be mastered to ensure skilled reading. The first strand, Language

Comprehension, contains the following literacy skills: background knowledge,

vocabulary, language structures, verbal reasoning, and literacy/print knowledge. The

second strand, Printed Word Recognition, contains additional literacy skills: phonological

awareness, sight recognition, and decoding. When students utilize both strands skilled

reading is evident (Scarborough, 2019). The Simple View of Reading model outlines two

important components of learning to read: word recognition and language comprehension

(Moats & Tolman, 2019). When students can recognize printed words and understand

spoken language the product of these components is reading comprehension (Moats &

Tolman, 2019; Sparks, 2015). Various research explains how the strength of each

component, decoding or word recognition and language comprehension, determines the

achievement level of reading comprehension (Gough & Tunmer, 1986; Moats, 2023;

Scarborough, 2019). Figure 2.3 describes the Simple View of Reading model (Sparks,
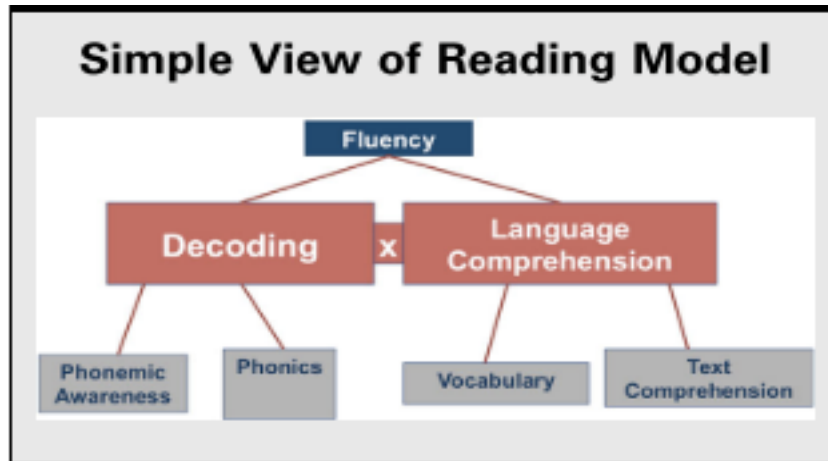
2015).

Figure 2.2 Simple View of Reading Model (Sparks, 2015).
Image reproduced with Dr. Richard Sparks's permission.

Balanced Literacy is a reading approach that is sometimes described as a Typical

Literacy Practice, (Spear-Swerling, 2018) or as an approach that combines teacher-

directed instruction and student-centered activities (Frey et al., 2005). It is intended to

blend the most effective elements of whole language and phonics (Fisher et al., 2021).

The term Balanced Literacy became popular in the mid-1990s and was implemented to

promote student achievement (Fisher et al., 2021). According to numerous research,

classroom teachers implementing Balanced Literacy utilize authentic literacy-related

experiences and explicit teaching to integrate literacy instruction during an extended

block of uninterrupted classroom time (Fisher et al., 2021; Wharton-McDonald et al.,

1997). Balanced Literacy incorporates literacy practices identified as guiding reading,

shared reading, read aloud, independent reading, and writing (Fisher et al., 2021; Fountas

& Pinnell, 2001). Table 2.2 defines each component of a Balanced Literacy framework

(Fountas & Pinnel, 2001, 2022).

Table 2.2 Balanced Literacy Framework

Balanced Literacy	
Instructional Context	**Brief Definition**
Guided Reading	Students read a teacher-selected text in a small group; the teacher provides explicit teaching and support for reading challenging texts.
Shared Reading	Students read together a shared text and notate the meaning of the text with their voices.
Read Aloud	Students discuss with one another about a text they have heard read aloud.
Independent Reading	Students read individually and silently.
Writing	Guided Writing Small fluid groups of students meet to discuss aspects of writing and learn more about the writer's craft and conventions.
	Independent Writing Students work silently and individually on their own writing.

Varied literacy instruction approaches continue to be scrutinized to ensure all students become proficient readers (Fisher et al., 2021; Robinson et al., 2016). A three-year study conducted in a Pacific Northwest rural school district compared direct instruction and balanced literacy within two high poverty elementary schools to assist the district with understanding the impact of the interventions offered during each reading approach (Robinson et al., 2016). Both schools provided intensive reading instruction in flexible groupings daily. One school used Reading Mastery and Corrective Reading, characterized as Direct Instruction, for 90 minutes daily, while the second school used

Balanced Literacy for 120 minutes daily (Robinson et al., 2016). The results of the study determined that the students' phoneme segmentation fluency was equivalent within both schools as measured by the CBM results (Robinson et al., 2016). Students in both reading instructional approaches made gains in oral reading fluency. In some cases, students provided Balanced Literacy instruction showed a greater rate of improvement (Robinson et al., 2016). The MAST, a nationally-norm-referenced reading comprehension test (Robinson et al., 2016), was utilized to measure comprehension achievement. The MAST results indicated a 49% comprehension increase in the percentage of students above the 50th percentile receiving reading instruction utilizing Reading Mastery and Corrective Reading and a 38% comprehension increase in the percentage of students below the 50th percentile (Robinson et al., 2016). This study supports and identifies the need for educators to intentionally design interventions, from numerous reading approaches, that will ensure every student has the appropriate reading instruction that provides the scaffolded support needed to become a proficient reader. According to Reinking and colleagues (2023), there is a need to fine-tune all reading instruction to meet individual student needs (Reinking et al., 2023, p.107).

Because of the reading deficit experienced by students nationwide (Cartwright et al., 2020; *NAEP report card: Reading* 2019) and the varied reading instructional approaches (Allington, 2013; Compton-Lilly et al., 2020; Scarborough, 2019), educators must begin focusing on organizational improvement that enhances reading achievement by attending to variability an analyzing what is working, when is it working, and for whom is it working when utilizing the improvement science framework (Bryk et al., 2017; Bryk, 2018; Crow et al., 2019; Wright, 2019).

Implementing Improvement Science

While limited research exists with the utilization of improvement science and PDSA cycles in the realm of K-12 education, "improvement science is a methodological framework that guides scholar practitioners to define problems, understand how the system produces the problem, identify changes to rectify the problems, and test the efficacy of those changes" (Hinnant-Crawford, 2020, p. 1). Improvement science helps to support action plans that will ensure positive change. Within improvement science educators identify the problem of practice, brainstorm possible root causes of the problem, identify possible changes to address the problem caused by the system, test the changes within PDSA cycles, analyze data to determine effectiveness of the change, and spread the change that created positive results (Hinnant-Crawford, 2020; Lewis, 2015; Perry et al., 2020). Through the utilization of improvement science and the PDSA cycles, educators gain a better understanding of the problem of practice and the root cause. The understandings gained help educators realize that schools often create problems of practice unknowingly but implementing improvement science will help systems own the errors and provide a systematic process to create positive change to the system for all students and ensure all students succeed and reach their potential.

Hannan and colleagues (2015) studied how improvement science was utilized in 10 focal schools to study the implementation of improvement science within teacher feedback PDSA cycles. The schools documented change ideas and reflections to learn about their organization's realities (Hannan et al., 2015). Through this study, schools admitted that the simplicity of the understanding of improvement science methodology was quite different from the implementation of improvement science methodology and

stressed the importance of gathering complete documentation of all steps of the PDSA cycles and owning the results (Hannan et al., 2015). While improvement science in education is at the beginning stage of implementation, early research indicates its usage as a vital link between the best ideas of research and strengthening teacher professional learning (Wright, 2019).

In summation, the literature reviewed provided evidence of positive correlation of the tested instructional strategies and insight on effects of poverty to literacy achievement, the complexity of reading and the essential components of literacy instruction, and implementation of improvement science methodologies within educational improvement research allows schools to see the systems and analyze the current practices that are contributing to the present outcomes. While the research studied did not solely focus on third-grade literacy achievement, all instructional strategies and improvement science methodologies highlighted provided further clarity and knowledge about possible change ideas discussed or designed by the improvement team when completing the PDSA cycles.

Conclusion

This research provided a strong foundation to support the improvement team as they analyzed root causes of literacy achievement gaps of third-grade students at Wholeheartedly Elementary School and created interventions that enhanced student reading achievement. According to Duke and Cartwright (2021), "unpacking the range of contributors to reading may be especially important when it draws attention to a con-struct that may otherwise be missed in identifying causes of reading difficulty or targets for instruction" (p.27). Utilizing the improvement science framework and the research

created further understanding of the necessary components of reading instruction, literacy strategies and their correlation to literacy achievement, and how K-12 schools utilize improvement science to create positive changes of the identified problem of practice.

Often reading achievement is described in a simplistic way without the consideration of the five components of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension (Cervetti & Heibert, 2015; Moats & Tolman, 2019; National Reading Panel, 2000; Suárez et al., 2018). Teaching these essential components of reading not only helps children learn to read (National Reading Panel, 2000) it is also helpful for children at risk of exhibiting learning difficulties (Suárez et al., 2018; Tunmer et al., 2013; Wanzek et al., 2018). Intensive reading interventions are imperative when helping non-proficient readers, Kindergarten through third grade, experience positive outcomes when learning to read (Wanzek et al., 2018).

The literature reviewed highlighted a variety of literacy strategies and interventions successfully employed in various classrooms within all components of reading achievement and improvement science methodology. This information was extremely helpful when working with the improvement team. The research allowed the improvement team to explore with greater depth into which area of reading an intervention might be utilized to increase reading achievement for third-grade students, increased teachers' and administrators' knowledge of reading and efficacy of identifying reading deficiencies of non-proficient readers, and increased administrators' and teachers' efficacy on designing appropriate literacy interventions. Additionally, the literature reviewed provided additional understanding of improvement science and its implementation within this improvement research.

CHAPTER 3

METHODS

As a dedicated educator of 28 years, it is of the utmost importance to me that every student read proficiently. The work outlined in this chapter will provide a deeper understanding of my position concerning this improvement project, how an improvement team was built, and how change ideas were identified through the analysis of the problem of practice. Additionally, an overview of the utilization of a theory of improvement (Hinnant-Crawford, 2020; Perry et al., 2020), the six principles of improvement science (Bryk et al., 2017; Crow et al., 2019) within the PDSA cycles, and the improvement team conducting the improvement work will be described to create further understanding of the methods used. The PDSA timeline, included, provides clarity related to each principle of improvement science within the improvement work and the impact of the work on immediate and future change ideas.

Theory of Improvement and Implementation Plans

My dissertation in practice focuses on my goal of improving the conditions, structures, practices, routines, and systems so that third-grade students experience success in literacy (as measured by achievement measures), especially students of poverty, at Wholeheartedly Elementary School. I utilized an improvement science framework

throughout this process to create positive changes in literacy achievement among third-grade students at Wholeheartedly Elementary School. According to Hinnant- Crawford (2020) and Bryk and colleagues (2015), the improvement science framework consists of six principles:

1. Make the work problem-specific and user centered.

2. Focus on variation in performance.

3. See the system that produces the current outcomes.

4. We cannot improve at scale what we cannot measure.

5. Use disciplined inquiry to drive improvement.

6. Accelerate learning through networked communities (p. 41)

Through the utilization of the six principles within the improvement science framework, a theory of improvement drove both PDSA cycles designed by the improvement team. The theory of improvement created opportunities to answer the question, "What will work to improve the problem?" (Perry et al., 2020). The theory of improvement acknowledges the system that produces a particular outcome and how a change may impact (a component of) the system to improve the outcome (Hinnant-Crawford, 2020, p. 119). Additionally, the theory of improvement is a hypothesis that the improvement team tested during the PDSA cycles in hopes of closing the literacy achievement gaps among third grade students at Wholeheartedly Elementary School (Hinnant-Crawford, 2020; Perry et al., 2020). The theory of improvement incorporates three components, the knowledge of the school system, the knowledge of research and the knowledge of the people conducting the proposed action plans (Hinnant-Crawford, 2020). To assist with the integration of the theory of improvement throughout all components of the research, a

driver diagram, as shown in figure 3.1, was created with the improvement team to provide support when designing positive changes that were tested through PDSA cycles. A driver diagram incorporates an aim, primary and secondary drivers, and change ideas.

The theory of improvement was essential to this research, as it supported my desire to improve the current problem of practice of low literacy achievement among third-grade students of poverty. When creating the first PDSA cycle the improvement team continuously utilized the theory of improvement by asking, what will work to solve the problem of low literacy achievement (i.e., change ideas connected to drivers). Figure 3.1 highlights the aim, primary and secondary drivers, and change ideas brainstormed by the improvement team for possible PDSA cycles that could lead to third-grade literacy improvement. The aim of creating a positive change within the literacy instructional routine supported the improvement team's goal of increasing reading achievement for third-grade students. After identifying the aim, the improvement team identified drivers that might be areas of improvement and change ideas that might lead to improvement of the literacy instructional routines (Perry et al., 2020). The improvement team chose to implement small group structured literacy intervention groups during both PDSA cycles.
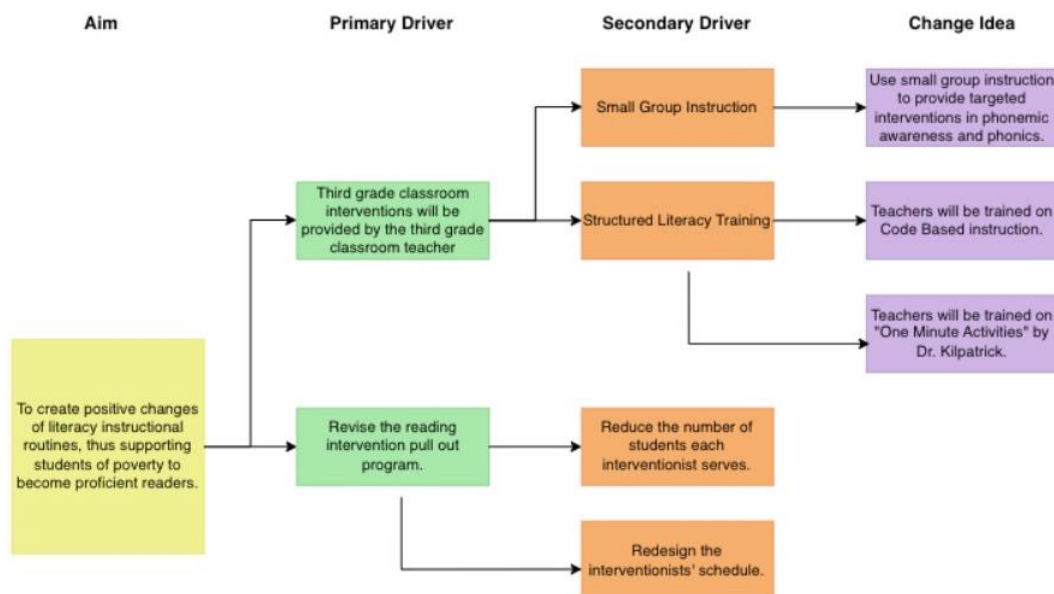
Figure 3.1 Driver Diagram Conceptualization of the Theory of Improvement

Building an Improvement Team

In my role as Superintendent, I have the opportunity to significantly impact the dynamics of the improvement team. Because I have worked in Graham County School District for 28 years and served in various roles, I have been able to build rapport with the administration and teachers at Wholeheartedly Elementary School and the district staff serving on the improvement team. My former years of service have allowed relationships to be built but I am fully aware, due to my title, some members of the improvement team might have been hesitant to be as forthcoming as needed to address the current problem of practice.

Recognizing the possibility of hesitancy existing among the improvement team members, I spoke in great length with the principal and improvement team members about the possibility of district protocols and procedures being a root cause for the low literacy achievement and the willingness to discuss and address all factors we identify as possible barriers. The discussions held with the improvement team allowed genuine

concerns to be shared and validated by everyone. These conversations created an atmosphere of trust for all stakeholders involved. During the discussions, I defined improvement science, the theory of improvement, and the PDSA cycle processes we would utilize once we began our research. We completed the first PDSA cycle with the improvement team in spring 2023 and continued with a second PDSA cycle in fall 2023. The improvement team was eager to ensure all third-grade students enrolled at Wholeheartedly Elementary School became proficient readers.

The collaborators in this improvement research, known as the improvement team, were employees of Graham County School District: Superintendent, District STEM Coach, principal, assistant principal, instructional facilitator, reading coach and four third-grade teachers. Each member of the team volunteered because of their commitment to students achieving academic success and their interests in learning how to identify strategies that could lead to greater literacy achievement for all third-grade students enrolled in Wholeheartedly Elementary School. Table 3.1 outlines the number of years participants of the improvement team served in their current role and the number of years participants worked in education. To further support the improvement team's desire to implement the Model of Improvement, I met with the improvement team in spring 2023 to discuss three essential questions (Lewis, 2015; Perry et al., 2020)

1. What are we trying to accomplish?

2. What change can we make that will result in improvement?

3. How will we know that a change is an improvement?

and implement the core principles of improvement science: being problem focused and user centered, attending to variability, seeing the system, embracing measurement,

learning through disciplined inquiry, and organizing as networks (Bryk et al., 2017; Bryk, 2018; Wright, 2019).

Table 3.1 Wholeheartedly Elementary School Improvement Team

Wholeheartedly Elementary School Improvement Team		
Team Members	**Years in Current Role**	**Years in Education**
Superintendent	1	28
Principal	6	26
Assistant Principal	7	30
Instructional Facilitator	5	19
Reading Coach	4	23
District STEM Coach	4	41
Third Grade Teacher	2	3
Third Grade Teacher	1	1
Third Grade Teacher	3	3
Third Grade Teacher	4	20

Positionality Statement

This improvement project is vital to the success of each student enrolled in Graham County School District. Because of my current role as Graham County School District Superintendent and all members of the improvement team being Graham County School District employees, my positionality within this research was an insider in collaboration with other insiders. Positionality as a researcher means considering my relations to the participants of the improvement team and the setting of the research (Herr & Anderson, 2015). Additionally, because of historical roles I held in the district, such as

developing elementary curriculum, developing and leading elementary professional development, and evaluating teachers, I intentionally reflected on my biases to this improvement project and the level of apprehension from participating stakeholders of the improvement team that might have existed at the onset of the improvement project. Through this reflection, I knew building trust with teachers, administrators, and district personnel was essential in creating an environment where risks of positive changes could be implemented and tested (Le Fevre, 2014). When initially considering the possibility of implementing this improvement work with the principal of Wholeheartedly Elementary School, I discussed the potential strength of this research and the need for transparency and trust from all participants, including me.

During this improvement project, bi-weekly meetings were conducted. This allowed me to build rapport with the improvement team members and created a supportive environment of transparent dialogue and mutual respect for all. The bi-weekly meetings were not a district mandate but rather an intentional planned time to ensure all improvement team members gained understanding of the improvement science framework, in addition to building comradery.

When the improvement team began to brainstorm external factors contributing to lower reading achievement, one of the barriers identified was a procedure that was located within the school and supported by the system. Graham County School District offered one type of literacy intervention for students who were not proficient readers. The school system did not intentionally analyze data to identify deficient areas of reading but rather holistically identified students that were reading below grade level. Through the improvement team analysis of the system and root causes of low reading achievement for

students of poverty, I believe that the lack of professional development designed and offered to teachers supporting the understanding of varied types of interventions for each essential area of reading instruction caused limited pathways of interventions for struggling readers.

Because the improvement team had an opportunity to analyze the district and school reading expectations genuinely and reflectively, excitement was apparent concerning the positive changes awaiting that could strengthen student achievement and stakeholder commitment. Additionally, it was evident, working as an insider in collaboration with other insiders allowed the improvement team to work as a collaborative community, engaged members in learning and change, influenced organizational change, and offered opportunities for personal, professional, and institutional transformation (Bryk et al., 2017;Herr & Anderson, 2015).

Ultimately, my desire to see all students achieve reading mastery is fueled by my passion to ensure all students reach their potential and experience success. Being an elementary teacher and principal for 18 years, I saw the success students experienced when reading acquisition was mastered and the daily frustrations when reading acquisition was not mastered. As a classroom teacher, I observed students work tirelessly at deciphering unknown text and become frustrated or angry. Despite their best-efforts proficient reading continued to be challenging. Additionally, I sat in hundreds of parent conferences of students identified as non-proficient readers and observed the worry and despair parents displayed because they did not know how to help their child learn to read successfully. Because I want every student to be a proficient reader, I have intentionally

pursued any literacy opportunity provided to increase my knowledge of reading and instructional strategies.

The diverse conversations surrounding the varied reading approaches often cause educators to feel confused, guilty, or defensive. I do not look at the varied reading approaches through the lens of conflict but rather opportunity. I analyze the varied approaches to determine how this information can assist me, as a leader of a public school system, to help all teachers support our students who currently are non-proficient readers. My philosophy for ensuring literacy success for every student is founded on utilizing reading research to meet the students where they are currently performing. Ensuring students have authentic experiences with literature is a priority, as well as ensuring students are provided targeted interventions needed to strengthen any deficient area of reading. In my opinion, an intentional focus on supporting authentic literacy instruction and appropriate literacy interventions for every child is essential to ensure students experience success in all areas of reading. Education is the entity that can help all students reach their potential. It is my responsibility, as Superintendent, to ensure educators working in Graham County School District are equipped with support and resources needed to ensure every student, no matter their residence zip code, have opportunities to become a proficient reader, thus supporting future success in all areas of life.

My success as a leader is founded on utilizing a Servant Leadership approach in every area of my life: family, community service, and work. When utilizing the servant leadership approach, I focus on needs of others before my own. Servant leadership's primary focus is the need to serve which creates a passion to lead (Greenleaf, 2003).

When leading continuous improvement, it is imperative that I incorporate characteristics of servant leadership such as active listening, communicating the vision, motivating others, committing to the growth of people, and taking ownership of the problem of practice (Gupta & Nambudiri, 2021; Fritz et al., 1999). Each of these characteristics support the implementation of the six principles of improvement science (Bryk et al., 2017; Bryk, 2018; Wright, 2019). During this improvement project, I have seen evidence of the utilization of servant leadership enhancing the implementation of the improvement science framework by creating an environment where an improvement team collaboratively analyzes the system to determine root causes of the problem of practice and implement disciplined inquiry with trust and commitment.

Lastly, as a leader, I recognize that every student is valuable and deserves the best education possible. My role, as a leader, is to create an environment where every adult understands that we all must have empathy for students and the hardships they might face but we can never have sympathy. Empathy allows us to try to understand the students' current situation and provide assistance that meets the needs presented. Sympathy can often be associated with feeling sorry for students because of the trauma or poverty experienced in the past or presently and unknowingly concerned adults lower the expectations. As the leader of Graham County School District it is my purpose and mission to ensure every adult has a growth mindset and believes every student has the capability of learning and experiencing success.

What Was I Trying to Accomplish?

Beginning in January 2023, I met bi-weekly with the improvement team to analyze the problem of practice of third grade teachers' limited capacity to effectively

address low third-grade literacy achievement of students enrolled in a high poverty

school through the improvement science framework. Through this framework, the

improvement team analyzed possible causes of low literacy achievement of third-grade

students enrolled at Wholeheartedly Elementary School by utilizing a fishbone diagram.

From this information provided by the fishbone diagram, the improvement team utilized

the "Five Whys" method to identify root causes, thus leading to the usage of a driver

diagram to examine how positive changes could be designed and tested. The driver

diagram made this complex process visible by displaying all the components of the

problem of practice and how they align to support the goal of the PDSA cycle (Bryk et

al., 2017). Figure 3.2 provides a visual of the improvement team's analysis of possible

causes of the problem of practice through the utilization of the fishbone diagram.

Wholeheartedly Elementary Third Grade Fishbone Diagram
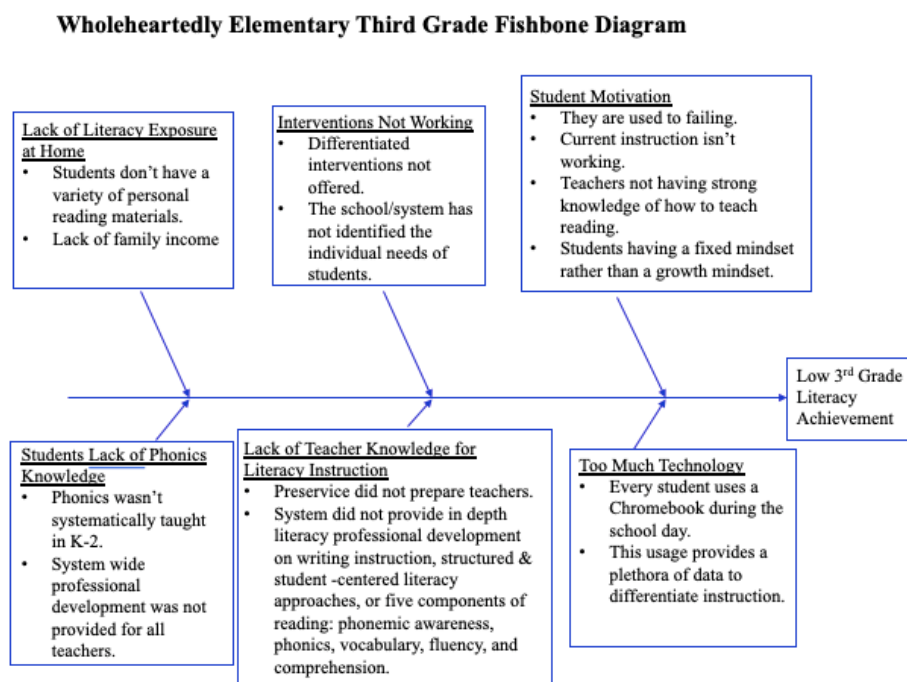
Figure 3.2 Wholeheartedly Elementary Improvement Team Fishbone
Diagram

The information on the fishbone diagram was the foundation for the development of a driver diagram. The purpose of the driver diagram was to illustrate the theory of improvement utilized in this improvement research and to assist the improvement team with creating a goal to achieve desirable results for the problem of practice, identifying what changes were needed and where changes should occur, and incorporating change ideas and concepts that caused positive changes within the Graham County School District (Hinnant-Crawford, 2020).The improvement team attended to variability by analyzing what works, for whom, and under what conditions (Hinnant-Crawford, 2020) for current third-grade students enrolled in Wholeheartedly Elementary School. This analysis of processes utilized in the system provided more information on how the current practices are influencing the third-grade literacy outcomes. During the bi-weekly meetings, the improvement team analyzed the informative data when they met, discussed possible root causes of the barriers for reading acquisition of third-grade students and completed a driver diagram outlining possible areas of positive changes. The driver diagram allowed the improvement team to list the aim, or desired outcome, provide clarity of the primary drivers, things we must change to impact the aim, and the change ideas or concepts that were tested (Hinnant-Crawford, 2020). Figure 3.1 illustrates the improvement team's theory of improvement utilizing a driver diagram.

The change ideas or concepts were organized within a Change Idea Quadrants graph that allowed the improvement team to analyze the ease of implementation and the impact of each change idea or concept (Hinnant-Crawford, 2020). The improvement team chose to create a PDSA cycle encompassing the change ideas in Quadrant A because these items were easy to implement and would cause the most impact. The second change

idea considered was assigning fewer students to each interventionist found in Quadrant B. The improvement team thought this would be more difficult to implement but would have a major impact on student achievement. Figure 3.3 provides a visual of the change ideas on a Change Idea Quadrants graph.
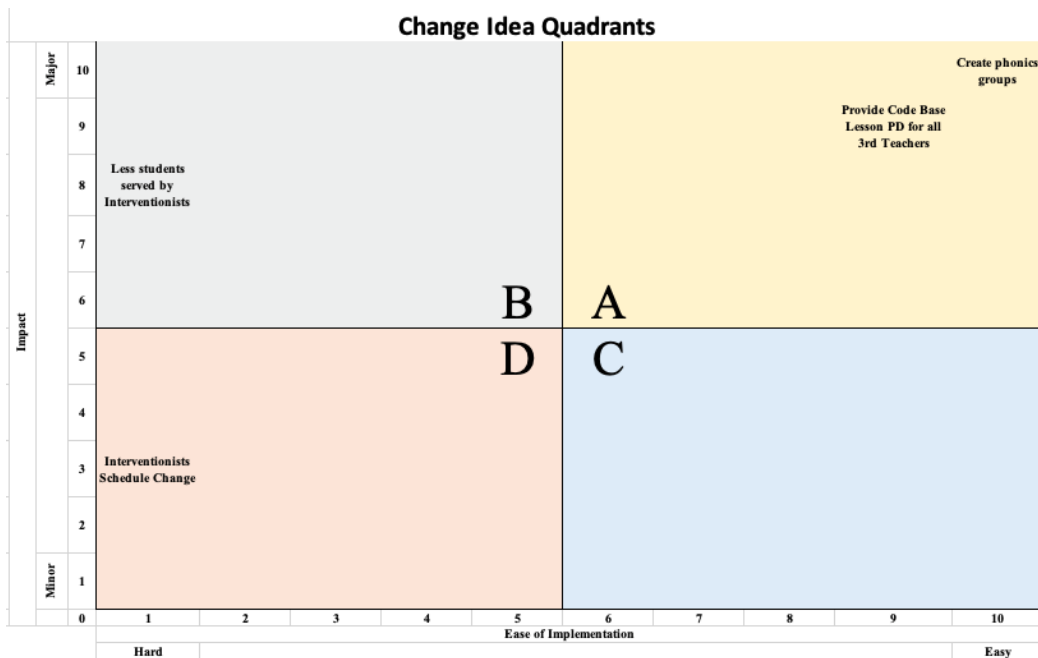

Figure 3.3 Change Idea Quadrants Graph

Once the improvement team analyzed the Change Idea Quadrants graph and chose which change idea to test, a Plan, Do, Study, Act (PDSA) cycle was created and implemented to provide opportunities for learning through disciplined inquiry, thus creating positive changes for third-grade literacy achievement within each third-grade classroom. Table 3.2 highlights the PDSA cycle template utilized to implement both PDSA cycles completed in this improvement project. The results and details of each test implemented will be shared in Chapter 4.

Table 3.2 Wholeheartedly PDSA Cycle Template

Wholeheartedly Improvement Team Third Grade PDSA Cycle	
Aim	
Change Idea Prediction	
Trial # Dates	
Plan	**What are you trying to accomplish?** **Who will make the change?** **Who will receive the change?** **What change is being tested?** **When will the change take place?** **Plan for Data Collection:**
Do	**What did you try (i.e., your change idea)?**
Study	**What happened?** **How does your prediction in the Plan phase compare?** **What data are you using?**
Act	**What are you going to do now?** __**Adapt** (This has promise, but I want to try a revision or two.) __ **Adopt** (I have evidence this idea is working as is. It's ready to share with other testers.) __ **Abandon** (This idea is not worth pursuing.)

The Plan stage of the PDSA cycle allowed the improvement team to set the aim or goal, predict what will happen, plan a cycle of who will be involved, where the change idea would take place, what would change, and how the change would be implemented, and decide what data would be collected to determine if the goal or aim was met (Hinnant-Crawford, 2020; Lewis, 2015; Perry et al., 2020). The Do stage involved

completing the test of the change idea, documenting any problems during the test, completing observations, and gathering data through practical measures (Hinnant-Crawford, 2020; Lewis, 2015; Perry et al., 2020). The Study stage required the improvement team to examine the learning, analyze the results and compare the results to the data predictions (Hinnant-Crawford, 2020; Lewis, 2015; Perry et al., 2020). The final stage of the PDSA cycle, the Act stage, supported the improvement team when deciding to adopt, adapt, or abandon the change idea tested in the PDSA cycle. The objective for the PDSA cycle is to design, test, implement a change, and decide the next steps for improving literacy instructional strategies and third-grade literacy achievement (Bryk, 2018). Table 3.3 describes action steps to be completed by the improvement team during each phase of the PDSA cycles.

Table 3.3 Action Steps Completed by the Improvement Team during PDSA Cycles

Wholeheartedly Elementary School Improvement Team PDSA Cycle Outline	
Plan	Design a change of action plan that answers the following questions: • What change is being tested? • Who will implement the change being tested? • Where will the change tested take place? • When will the change tested take place? • How will the change tested be measured? Predict the change outcome.
Do	Carry out the change. Collect data and analyze.
Study	Compare the data to our predictions.
Act	Decide what to do next. Plan for the next PDSA cycle.

When beginning to implement the PDSA cycles, the improvement team utilized a variety of assessments, NWEA MAP, BAS, PAST, and LETRS Basic Spelling Screener, to identify which areas of reading students were deficient, to identify appropriate interventions in combination with a Balanced Literacy framework in every third-grade

classroom, and to determine a data baseline for every student receiving the literacy instruction strategy tested in the PDSA cycle. Because the change idea was incorporating daily code-based intervention lessons that provided explicit instruction on phonemic awareness and phonics, the improvement team analyzed data collected from the reading assessments to determine which third grade students were reading below grade level and were deficient in the areas of phonemic awareness and phonics. PDSA Cycle 1, focused on the teachers' new instructional routine, was planned spring 2023. Wholeheartedly Elementary School had 88 third grade students enrolled and 26 students were identified as reading below grade level. Of those 26 students 13 had deficiencies in phonemic awareness and phonics. Because of the identified deficiencies in phonemic awareness and phonics, the cycle focused on learning about how the instructional routine change idea impacted those students in PDSA Cycle 1. In spring 2023, 83 students were enrolled in third grade at Wholeheartedly Elementary School and 34 were identified as reading below grade level. Out of the 34 students identified as reading below grade level, 12 were deficient in phonemic awareness and phonics. PDSA Cycle 2 focused on learning about how the instructional routine change idea impacted those 12 students. The baseline data collected allowed the improvement team to use the outcome of the change idea tested in both PDSA cycles as an indicator of improvement.

During this process, the improvement team's desire was to design and test a change idea, utilizing PDSA cycles, that strengthened the literacy interventions offered to non-proficient third-grade students, in hopes of increasing their reading achievement and mastering grade level reading expectations. During the Study phase of both PDSA cycles, the team analyzed data collected at the beginning, during, and end of each cycle. This

analysis provided evidence of student achievement growth or lack of in phonemic awareness, phonics skills, and comprehension. Additionally, the data collected during the Do phase and analyzed during the Study phase of both PDSA cycles helped when determining if the change idea would be adopted, adapted, or abandoned. The improvement team concluded during the Act phase of PDSA Cycle 1, the change idea needed to be adapted and an additional PDSA cycle was designed and completed in fall 2023. As noted in Table 4.1, the adaptation required the change idea to be tested for 12 weeks in PDSA Cycle 2, fall 2023. During the Act phase of PDSA Cycle 2, the improvement team concluded the change idea needed to be adopted.

The improvement team's goal, throughout both PDSA cycles, was to find positive instructional changes that the school could implement to ensure students of poverty became proficient readers and to strengthen the district's continuous improvement efforts by utilizing the improvement science framework systemically. "Improvement science has the possibility to accelerate teacher learning in ways that both honor teaching practice and more quickly bring promising interventions to scale" (Wright, 2019, p.6).

CHAPTER 4

START SMALL, FAIL FAST, LEARN QUICKLY

This chapter is an overview of the PDSA cycles designed and implemented by the improvement team of Wholeheartedly Elementary School. I describe the team's process and execution of each of the PDSA cycles completed April 2023 – December 2023. Additionally, I include connections to academic achievement data.

Description of Systems of Measures Evidence

The Wholeheartedly Elementary School improvement team met biweekly for 45 minutes, January 2023 – May 2023 and August 2023 – December 2023. Beginning in January 2023, the improvement team gained an understanding of the six core principles of improvement science and analyzed data to verify the problem of practice found within all Title I elementary schools in Graham County School District: third-grade students enrolled in high poverty elementary schools, historically, were not obtaining the same rate of grade level ELA academic achievement, indicating that something was not working for all students. In February 2023, empathy interviews were conducted with improvement team members and third-grade students identified as non-proficient readers. Additionally, the improvement team completed a fishbone diagram and root cause analysis for each factor. In March 2023, the team completed the Driver Diagram, the

Change Idea Quadrants graph, and created the first PDSA Cycle. Once the PDSA cycle

was created the improvement team implemented the PDSA cycle, April 2023 – May

2023. Because the results of the first PDSA cycle showed some gain but less than

expected, the improvement team decided to complete a second PDSA cycle in fall 2023,

September 2023 – December 2023. Table 4.1 provides the timeline the Wholeheartedly

Elementary School Improvement Team implemented to complete the improvement work.

Table 4.1 Wholeheartedly Elementary School Third Grade Improvement Team Timeline

Wholeheartedly Elementary School Third Grade Improvement Team Timeline January 2023 – December 2023	
January	- I provided an overview of the six principles of improvement science, theory of improvement, and PDSA cycle procedures. - The improvement team analyzed Graham County School District historical data to verify the problem of practice.
February	- I conducted empathy interviews with each improvement team member. - Third-grade teachers, serving on the improvement team, conducted empathy interviews with third-grade students identified as non-proficient readers. - The improvement team completed - a Fishbone diagram for the problem of practice. - a Five Whys diagram for each identified factor on the Fishbone diagram. - The improvement team conducted a Fishbone diagram causal analysis.
March	- The improvement team completed - a driver diagram to capture the aim, primary and secondary drivers, and possible change ideas. - a Change Idea Quadrants graph to determine which change idea to test in a PDSA cycle. - The improvement team identified a change idea to test and created the first PDSA cycle.
April – May	- Third-grade teachers implemented the PDSA cycle within their classroom ELA instructional time. - Improvement team members conducted observations of the implemented PDSA cycle. - Data were collected and analyzed.

	• The improvement team decided to adapt the first PDSA cycle and pursue a second PDSA cycle in fall 2023.
September - December	• Third-grade teachers implemented the second PDSA cycle within their classroom ELA instructional time. • Improvement team members conducted observations of the implemented PDSA cycle. • Data were collected and analyzed. • The improvement team decided to adopt the second PDSA cycle and continue to utilize the intervention strategy with additional students.

PDSA Cycle – Supporting Change at Wholeheartedly Elementary School

Utilizing PDSA cycles with the improvement team afforded an efficient and

effective process to create positive changes in the instructional systems at

Wholeheartedly Elementary School, thus increasing opportunities for positive changes of

literacy instructional strategies and supporting students of poverty to become proficient

readers. The first PDSA cycle assisted the improvement team to answer the essential

improvement science question, "How will I know my change is an improvement?"

(Hinnant-Crawford, 2020, p. 135). This PDSA cycle included four weeks of daily code-

based intervention lessons for students identified as non-proficient readers in two

essential components of reading: phonics and phonemic awareness.

The literacy instructional change idea tested was unlike any literacy intervention

offered. Historically, Graham County School District offered one literacy intervention,

Leveled Literacy Intervention (LLI) systems. LLI lessons were designed to provide a

holistic approach for all components of reading within a limited timeframe. Because

literature research, reviewed during this improvement project, stressed that successful

readers were provided explicit and systematic instruction in the five components of

reading, fluency, phonemic awareness, phonics, vocabulary, and comprehension (Cervetti

& Heibert, 2015; Moats & Tolman, 2019; National Reading Panel, 2000; Suárez et al.,

2018), the improvement team designed a change idea that would expand current literacy interventions offered by providing explicitly and systemically daily interventions for non-proficient readers who were deficient in the areas of phonemic awareness and phonics.

During the Plan stage of PDSA Cycle 1, the change idea that the improvement team decided to implement was daily code-based lessons as an intervention for students deficient in phonemic awareness and phonics. The improvement team members worked together to create code-based lessons that were derived and adapted from the general phonics lesson plan included in the state mandated LETRS professional development course and the guided reading plans from *The Next Step Forward in Guided Reading* by Jan Richardson. The improvement team members utilized resources provided during the mandated LETRS professional development course, guided reading plans from *The Next Step Forward in Guided Reading* by Jan Richardson, and Houghton Mifflin Harcourt Into Reading instructional materials purchased by the South Carolina Department of Education when designing the daily code-based lessons. Access to these materials allowed the improvement team to use this existing intervention to test its' effectiveness and support our need to offer an intervention for students who were struggling in the areas of phonemic awareness and phonics.

Code-based lessons required teachers to provide small group instruction, two to three students, daily for 15 – 20 minutes. The small group instruction was designed around lessons that included phonological awareness activities, instruction on phonics, guided writing, and students reading a decodable text. Teachers analyzed data from the PAST and LETRS Basic Spelling Screener to determine which areas of phonemic awareness and phonics skills to focus on during small group instruction. The PAST

assessment and the book *Equipped for Reading Success* by David Kilpatrick, Ph.D.

provided teachers with data to determine the level of phonological awareness one-minute

activities for each student. The LETRS Basic Spelling Screener provided data to identify

which phonic areas needed to be taught in the small groups. Teachers analyzed this data

to create small groups of students with common phonemic awareness and phonics needs.

Once the small group instruction groups were created, the teachers utilized the

code-based lesson plan to conduct the daily code-based lessons during the Do phase of

PDSA Cycle 1. Each section of the lesson plan was assigned time frames to ensure the

lesson was planned and delivered with intentionality. At the beginning of the lesson, the

teachers stated the concept focus and expectations for outcomes during the State

Goal/Purpose section. In the Phonological Awareness section, the students completed

one-minute activities involving phonological manipulation, deletion and substitution of

sounds (Kilpatrick, 2016). These activities allowed students to blend and delete syllables

of words quickly. In the Review Previous Skill or Review Focus Concept sections, the

teacher reviewed the phonics skill of focus using magnetic letters, letter cards, or

blending the letter sounds and reading the words using blending boards. During the

Introduce New Focus Concept section the teacher modeled the phonics skill using

magnetic letters, letter cards, or blending boards. During the Guided Practice section, the

students worked with the teacher to practice the phonics skill using phoneme-grapheme

mapping, letter cards, blending boards, or magnetic letters in a guided practice setting. In

the Extended Practice section, students completed extended practice with the phonics

skill using word sorts, word families, word chaining, or fluency drill – highlighting

words. During the Dictation – Guided Writing section, the students wrote phonics skill

words called out by the teacher and wrote a dictation sentence incorporating the phonics skill focus of the lesson. In the Transfer to Text -Shared Reading section the students practiced transferring the phonics skill to text by highlighting phonics skilled words in a decodable text and reading the decodable text with the whole group. In the Transfer to Text – Staggered Start section the students read a HMH Into Reading decodable book with highlighted phonics skill words and an unhighlighted copy of the decodable text. The students would read independently until the teacher signaled for the child to read aloud to the teacher. This allowed the teachers to observe if students were able to transfer the phonics skill to text. In the Dictation – Independent Writing section the students wrote phonics skill words called out by the teacher on paper and wrote a dictation sentence that encompassed additional phonics skill words of the lesson without assistance. The Transfer to Text – Running Record section provided time for teachers to complete observations of students as they read text independently and record student miscues and reading behaviors. Figure 4.1 provides a lesson plan template utilized during the code-based small group lessons. Appendix A is a copy of one week code-based lesson plans completed by a third-grade teacher at Wholeheartedly Elementary School.

Code-Based Lesson Template

Date/s:	Text Title:	Phonics Focus:

1. State Goal/Purpose (<1min)	Today, we are learning

Day 1	Day 2
2. Phonological Awareness (3 min)	**2. Phonological Awareness (3 min)**
3. Review Previous Skill (3 min) (choose 1)	**3. Review Focus Concept (3-5 min)** ("Connect to Phonics" on Yellow Foundational Skills pages)
☐ "Blend and Read" ☐ Reread familiar decodable section/page ☐ Blending Boards	I Do: ☐ Magnetic Letters ☐ Letter Cards ☐ Blending Boards
4. Introduce New Focus Concept (3-5 min) (Reteach Phonics Whole Group Lesson)	**4. Guided Practice (5 min)**
I Do: ☐ Magnetic Letters ☐ Letter Cards ☐ Blending Boards	We Do: ☐ Phoneme-Grapheme Mapping ☐ Letter Cards ☐ Blending Boards ☐ Magnetic Letters
5. Guided Practice (5 min)	**5. Dictation - Guided Writing (8 min)** (Blend and Read section)
We Do: ☐ Phoneme-Grapheme Mapping ☐ Letter Cards ☐ Blending Boards ☐ Magnetic Letters	☐ Whiteboards ☐ Pencil and Paper
6. Transfer to Text - Shared Reading (8 min) (Use Mini Book) 1.Highlight Phonics Skill Words 2. Read Highlighted Words 3. Read Mini Book with Highlighted Words	**6. Transfer to Text - Staggered Start (8 min)** (Use Start Right Reader) 1. Read Mini Book with Highlighted Words 2. Read Clean Copy in SRR

7.Text Reading With Prompting
☐ Visual scanning (check word left to right) ☐ Check the word with your finger. ☐ Does it look right and make sense? Reread the sentence. ☐ Check the end (or middle) of the word. What would you expect to see at the end (middle) of the word? ☐ Do you see a part you know? ☐ Put some words together so it sounds smooth. (fluency) ☐ Read it like the character. (expression)

1. State Goal/Purpose:	Today, we are learning

Day 3	Day 4
2. Phonological Awareness (3 min)	**2. Phonological Awareness (3 min)**
3. Review Focus Concept (3-5 min) ("Connect to Phonics" on Yellow Foundational Skills pages) • Magnetic Letters • Letter Cards • Blending Boards	**3. Review Focus Concept (3-5 min)** ("Connect to Phonics" on Yellow Foundational Skills pages) • Magnetic Letters • Letter Cards • Blending Boards
4. Extended Practice (5 min) You Do: • Word Sorts • Word Families • Word Chaining • Fluency Drill - highlighted words	**4. Extended Practice (5 min)** You Do: • Word Sorts • Word Families • Word Chaining • Fluency Drill - highlighted words
	5. Dictation - Independent Writing (8 min) (Blend and Read section) • Whiteboards • Pencil and Paper
5. Transfer to Text - Staggered Start (8 min) (Use Mini Book) 1.Highlight Phonics Skill Words 2.Read Mini Book with Highlighted Words	**6. Transfer to Text - Staggered Start (8 min)** (Use Start Right Reader) 1. Read Clean Copy in SRR

Text Reading With Prompting
☐ Visual scanning (check word left to right) ☐ Say the sounds in the word. ☐ Check the word with your finger. ☐ Does it look right and make sense? Reread the sentence. ☐ Do you see a part your know? ☐ Put some words together so it sounds smooth. (fluency) ☐ Read it like the character. (expression)

1. State Goal/Purpose:	Today, we are learning

Day 5
2. Transfer to Text - Running Record (Use Start Right Reader)

Observations or running record on one student:	Other Students in the Group: • Buddy Reading • Independent Reading

3. Teaching Points After Reading (choose 1)	
Comprehension:	☐ Discuss character's feelings
☐ Shared retelling	☐ Compare/contrast ideas, characters, setting, etc.
☐ Problem-solution	☐ Five-finger retell

Figure 4.1 Code-Based Lesson Plan Template

After deciding to test the change idea of implementing small group code-based lesson interventions for third grade students deficient in the areas of phonemic awareness and phonics, the improvement team utilized several practical measurements. Outcome measures, such as PAST, LETRS Basic Spelling Screener, or BAS, were analyzed at the beginning, during, and end of the PDSA cycles to determine if the tested change idea supported students' acquisition of phonics and phonemic awareness and to collect summative results. During the Study component of PDSA Cycle 1, the improvement team analyzed the pre, mid, and post measurements of the PAST, LETRS Basic Spelling Screener, or BAS and discussed the cumulative date for each class. BAS, LETRS Basic Spelling Screener, and PAST were conducted with each student in a one-on-one setting.

BAS is a series of leveled books and recording sheets designed to observe and quantify specific reading behaviors (Fountas & Pinnell, 2023). The student reads aloud a BAS text while the teacher records the student's reading behaviors on the BAS collection form. After the student finishes reading the text, the teacher measures the student's comprehension by conducting a conversation about the text. BAS data identifies the students' current reading level (Fountas & Pinnell, 2023). Students in PDSA Cycle 1 achieved at reading levels ranging from Level D – Level O. Level D designates a Kindergarten reading level and Level O represents a third grade reading level. At the conclusion of PDSA Cycle 1, 46% of students increased at least one BAS reading level. Students in PDSA Cycle 2 achieved at reading levels ranging from Level A – Level M. Level A designates a Kindergarten reading level and Level M designates a second grade reading level. At the conclusion of PDSA Cycle 2, 75% of students increased at least one BAS reading level.

The LETRS Basic Spelling Screener is a qualitative spelling screener tool to identify known and confused spelling conventions (Moats & Toalman, 2019). The teacher dictates words individually from the Basic Spelling Screener list. After each word is dictated, the teacher uses the word in a sentence (Moats & Toalman, 2019). The student writes the word on paper. This procedure resembles a spelling test given in elementary classrooms and provides insight on a student's instructional needs of phoneme-grapheme correspondences: initial consonant, final consonant, digraph, trigraph, blend, short vowel, long vowel VCe, vowel team, diphthong, vowel-r, and inflections (Moats & Toalman, 2019). LETRS Basic Spelling Screener data assisted the improvement team with identifying students' phoneme-grapheme correspondences ability (Moats & Tolman, 2019). During this improvement project, the LETRS Basic Spelling Screener was utilized to assess the accuracy of phonics skills. Data collected highlighted that 53% of students in PDSA Cycle 1 increased in accuracy of phonics skills and 66% of students in PDSA Cycle 2 increased in accuracy of phonics skills.

PAST is a formal test to evaluate phonological awareness skill (Kilpatrick, 2022). Detailed directions on administering PAST are provided in Chapter 11 of *Equipped for Reading Success* by Dr. Kilpatrick (2016). The assessment provides data on students' phonological awareness and what level of phonological awareness students should be instructed. The improvement team used PAST data to determine if students increased their phonological awareness by increasing levels on the PAST. During this improvement project, the PAST assessment was used to assess students' phonemic awareness growth. Student evidence from PDSA Cycle 1achieved at phonemic awareness levels ranging from Level D – Level I. Level D designates a preschool to mid kindergarten phonemic

awareness level and Level I designates an early to late first grade phonemic awareness

level. At the conclusion of both PDSA cycles, teachers saw 92 % of students increased at

least one phonemic awareness level.

Additionally, process measures were implemented to collect practical data from

each third-grade teacher concerning their reflection on the logistics of the small group

instruction activities and the progress students made. Practical data is real data that

provides timely feedback that informs the next steps (Hinnant-Crawford, 2020). Process

measures were utilized throughout both cycles by conducting observations of the daily

lessons and observing the instructional strategies used by third-grade teachers and the

behaviors of students completing the tasks. Third grade teachers collected weekly data

for each student of phonemic activity responses, phonics skill utilization in writing,

reading behaviors, and attendance. These data were captured in a Google sheet shared

with the improvement team members. This immediate feedback was discussed with the

improvement team in the biweekly meetings and helped the improvement team to

determine the effectiveness of the change idea and if the change idea was being

implemented correctly (Hinnant-Crawford, 2020). This practical data was collected in a

timely manner and assisted the improvement team to keep working towards the aim of

creating positive literacy instructional routines, thus supporting students of poverty to

become proficient readers.

The first PDSA cycle was tested April 2023 – May 2023. When creating this

PDSA cycle the improvement team wanted to test the change idea for four weeks. They

felt that the PDSA cycle needed this time to ensure teachers effectively implemented the

code-based lessons and students had time to process the phonics skill and transfer the

skill to text. Table 4.2 provides information concerning the first PDSA cycle created by

the Wholeheartedly Elementary School improvement team. This information outlines the

plan of the first PDSA cycle and how the data analysis of the first PDSA cycle supported

the planning and implementation of the second PDSA cycle as described in Table 4.3.

Table 4.2 PDSA Cycle 1 Designed by the Improvement Team

Wholeheartedly Improvement Team Third Grade PDSA Cycles	
Aim	To create positive changes of literacy instructional routines, thus supporting third-grade students of poverty to become proficient readers.
Change Idea Prediction	If third grade teachers provide daily small group instruction (15 – 20 minutes) incorporating one-minute phonological awareness activities and phonics instruction in isolation and within text, the students will increase at least one BAS reading level, at least one PAST level, and accuracy on the LETRS Basic Spelling Screener.
Trial 1 Dates	April 17, 2023 – May 12, 2023
Plan	**What are you trying to accomplish?** To create positive changes of literacy instructional routines, thus supporting third-grade students of poverty to become proficient readers. **Who will make the change?** All third-grade classroom teachers, four total. **Who will receive the change?** Third-grade teachers will implement new literacy instructional strategies daily for four weeks. **What change is being tested?** Third-grade teachers will provide small group instruction (15 – 20 minutes) incorporating one-minute phonological awareness activities and phonics instruction in isolation and within text. **When will the change take place?** The change idea will be tested daily during designated small group instruction. **Plan for Data Collection:** *Initial Data:* BAS Level, Phonological Awareness Screening Test (PAST), and Language Essentials for Teachers of Reading and Spelling (LETRS) Basic Spelling Screener.

		Pre and Post assessment data will be collected from assessments listed above. *Weekly Data:* One Minute Task (Phonological Awareness), Running Record Accuracy, and Weekly Attendance Empirical data will be collected by personal reflection and observations.			

Do	**What did you try (i.e., your change idea)?** Each third-grade teacher met daily with students identified as non-proficient readers, for 15 – 20 minutes, April 17, 2023 – May12, 2023. The teachers implemented weekly code-based lessons that included one-minute phonological awareness activities, phonics instruction, and shared reading. The lesson plan template below was utilized during the PDSA cycle.

Day 1	Phonological Awareness (3 minutes)	One-minute Activities (Equipped for Reading Success, Kilpatrick (2016)
	Review Previous Skill (3 minutes)	"Blend and Read", Reread familiar decodable sections/page, Blending Boards
	Introduce New Focus Concept (3-5 minutes)	I Do: Magnet Letters, Letter Cards, Blending Boards
	Guided Practice (5 minutes)	We Do: Phoneme-Grapheme Mapping, Letter Cards, Blending Boards, Magnetic Letters
	Transfer to Text – Shared Reading (8 minutes)	Use Decodable Text: Highlight Phonics Skill Words, Read Highlighted Words, Read Decodable Text with Highlighted Words
Day 2	Phonological Awareness (3 minutes)	One-minute Activities (Equipped for Reading Success, Kilpatrick (2016)
	Review Focus Concept (3 minutes)	I Do: Magnet Letters, Letter Cards, Blending Boards

			Guided Practice (5 minutes)	We Do: Phoneme-Grapheme Mapping, Letter Cards, Blending Boards, Magnetic Letters	
			Dictation – Guided Writing (8 minutes)	Whiteboards, Pencil and Paper	
			Transfer to Text – Shared Reading (8 minutes)	Reading Decodable Text with Highlighted Words, Read Clean Copy of Decodable Text	
		Day 3	Phonological Awareness (3 minutes)	One-minute Activities (Equipped for Reading Success, Kilpatrick (2016)	
			Review Focus Concept (3 minutes)	I Do: Magnet Letters, Letter Cards, Blending Boards	
			Extended Practice (5 minutes)	You Do: Word Sorts, Word Families, Word Chaining, Fluency Drill – highlighted words	
			Transfer to Text – Shared Reading (8 minutes)	Highlight Phonics Skill Words, Read Decodable Text with Highlighted Words	
		Day 4	Phonological Awareness (3 minutes)	One-minute Activities (Equipped for Reading Success, Kilpatrick (2016)	
			Review Focus Concept (3 minutes)	I Do: Magnet Letters, Letter Cards, Blending Boards	
			Extended Practice (5 minutes)	You Do: Word Sorts, Word Families, Word Chaining, Fluency Drill – highlighted words	
			Dictation – Guided Writing (8 minutes)	Whiteboards, Pencil and Paper	
			Transfer to Text –	Read clean copy of decodable text.	

		Shared Reading (8 minutes)	
	Day 5	Transfer to Text – Running Record	Use decodable text, complete observations or running record on each student
		Teaching Points After Reading	Comprehension: Shared retelling, problem-solution, discuss character's feelings, compare/contrast ideas, characters, setting, etc.

Study	**What happened?** The teachers implemented the change idea as planned. Qualitative feedback was sought from those implementing the change idea. The teachers stated the intervention lessons went well and students were successful with the phonological awareness activities. Collected pre and post data of the PAST assessment support this observation. The improvement team met bi-weekly during the Do section of PDSA Cycle 1. In the meetings, the third grade teachers stated the first week of phonological activities took longer than planned. Students were not acclimated to completing this type of activity. During the remainder weeks, students understood the process of the activities and completed the tasks within the allotted time. All third-grade teachers felt due to the limited time of implementation of the PDSA Cycle, four weeks, the students needed more weeks of instruction with the code-based lessons to support growth in phonics and comprehension. Because this was a new literacy intervention, third-grade teachers had to create a change in the literacy instruction routine and schedule daily small group intervention groups. Two third-grade teachers completed the small group lessons daily, for 30 minutes, beginning at 8:15 am and two third-grade teachers completed the small group lessons daily for 30 minutes, beginning at 12:15pm. While the lessons were created for 15-20 minute duration, 30 minutes were allotted in the schedule to accommodate transitions and student scaffolding. **How does your prediction in the Plan phase compare?** Our prediction was incorrect. Based on the analysis of the data, 92% of the students increased at least one PAST level, 53% increased accuracy on the LETRS Basic Spelling Screener, and 46% increased at least one BAS reading level.

	What data are you using? The improvement team analyzed the pre and post data for the PAST assessment, LETRS Basic Spelling Screener, and BAS assessment.
Act	**What are you going to do now?** _X_ **Adapt** (This has promise, but I want to try a revision or two.) The improvement team wants to complete a second PDSA Cycle in fall 2023. They want to run the second PDSA cycle for 12 weeks. The improvement team feels more students will achieve comprehension growth with more weeks of Code-based interventions. __ **Adopt** (I have evidence this idea is working as is. It's ready to share with other testers.) __ **Abandon** (This idea is not worth pursuing.)

At the conclusion of PDSA Cycle 1, the improvement team administered BAS, PAST, and the LETRS Basic Spelling Screener. When the team compared the students' pre assessment BAS, PAST, and LETERS Basic Spelling Screener data to the students' post assessment data of BAS, PAST, and LETRS Basic Spelling Screener, the improvement team realized a high percentage of students achieved great improvements in phonemic awareness skills, but less percentage of students acquired phonics skills and reading comprehension.

During the Study phase of PDSA Cycle 1, the improvement team analyzed the data. Based on the data collected the improvement team's change idea prediction of students increasing at least one BAS reading level (measuring comprehension growth), at least one PAST level (measuring phonemic awareness growth), and accuracy on the LETRS Basic Spelling Screener (measuring phonics growth) at the conclusion of PDSA Cycle 1 was incorrect. The data highlights that 92% of the students increased at least one

PAST level, 53% increased their phonics knowledge on the LETRS Basic Spelling

Screener, and only 46% increased at least one BAS reading level. Teachers felt the new

instructional routine was assisting students with obtaining more phonemic awareness and

phonics skills and increasing their confidence as readers but students were not

transferring the learned skills to shared or independent reading. Because of these results,

the improvement team decided to adapt the timeline of PDSA Cycle 1 and continue

addressing the problem of practice in fall 2023 and complete a second PDSA cycle

increasing the time frame for offering code-based interventions. Figure 4.2 outlines the

percentage of third -grade students' growth in phonemic awareness, phonics, and

comprehension during the first PDSA cycle.

Wholeheartedly Elementary School PDSA Cycle 1 Student Growth Results

- COMPREHENSION GROWTH: 46
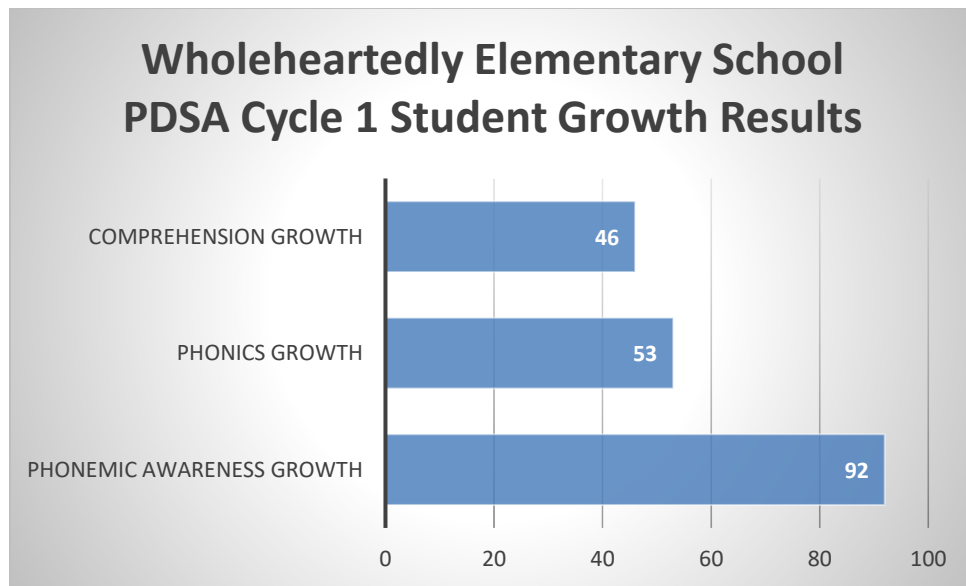- PHONICS GROWTH: 53
- PHONEMIC AWARENESS GROWTH: 92

Figure 4.2 PDSA Cycle 1 Student Growth Results

PDSA Cycle 2 began in fall 2023 with the same change idea of implementing

daily code-based intervention lessons through small group instruction but the adaptation

was to extend the second PDSA cycle timeline an additional eight weeks, thus continuing

for 12 weeks. The improvement team felt the additional time was needed to provide more

time for students to receive the explicit instruction in phonemic awareness and phonics

because during the first PDSA cycle of four weeks the students did not meet the goal of

increasing at least one PAST level, one BAS level, and phonics knowledge. Additionally,

the improvement team wanted to ensure that adequate time was allotted to ensure enough

code-based lessons were provided due to scheduled school holidays and school events.

Because of scheduled school holidays and events, code-based lessons were not delivered

on 14 school days during the second PDSA cycle. According to Spear – Swerling and

Zibulsky (2013), ideal time allocations for instruction of each essential component of

reading are not specified, but rather instructional time is determined based on the needs

of the children being served. Table 4.3 provides information concerning the second

PDSA cycle designed by the Wholeheartedly Elementary School improvement team.

Table 4.3: PDSA Cycle 2 Designed by the Improvement Team

Wholeheartedly Improvement Team Third Grade PDSA Cycles	
Aim	To create positive changes of literacy instructional routines, thus supporting third-grade students of poverty to become proficient readers.
Change Idea Prediction	If third grade teachers provide daily small group instruction (15 – 20 minutes) incorporating one-minute phonological awareness activities and phonics instruction in isolation and within text, the students will increase at least one reading and writing level.
Trial 2 Dates	September 11, 2023 – December 1, 2023
Plan	**What are you trying to accomplish?** To create positive changes of literacy instructional routines, thus supporting students of poverty to become proficient readers. **Who will make the change?** All third-grade classroom teachers, four total. **Who will receive the change?** Third grade teachers will implement new literacy instructional strategies daily for twelve weeks. **What change is being tested?**

	Third grade teachers will provide small group instruction (15 – 20 minutes) incorporating one-minute phonological awareness activities and phonics instruction in isolation and within text. **When will the change take place?** The change idea will be tested daily during designated small group instruction. **Plan for Data Collection:** _Initial Data:_ BAS Level, Phonological Awareness Screening Test (PAST), and Language Essentials for Teachers of Reading and Spelling (LETRS) Basic Spelling Screener. Pre and Post assessment data will be collected from assessments listed above. _Weekly Data:_ One Minute Task (Phonological Awareness), Running Record Accuracy, and Weekly Attendance Empirical data will be collected by personal reflection and observations.
Do	**What did you try (i.e., your change idea)?** Each third-grade teacher met daily with students identified as non-proficient readers, for 15 – 20 minutes, September 11, 2023 – December 1, 2023. The teachers implemented weekly code-based lessons plans that included one-minute phonological awareness activities, phonics instruction, and shared reading. The lesson plan template below was utilized during the PDSA cycle. <table><tr><td rowspan="4">Day 1</td><td>Phonological Awareness (3 minutes)</td><td>One-minute Activities (Equipped for Reading Success, Kilpatrick (2016)</td></tr><tr><td>Review Previous Skill (3 minutes)</td><td>"Blend and Read", Reread familiar decodable sections/page, Blending Boards</td></tr><tr><td>Introduce New Focus Concept (3-5 minutes)</td><td>I Do: Magnet Letters, Letter Cards, Blending Boards</td></tr><tr><td>Guided Practice (5 minutes)</td><td>We Do: Phoneme-Grapheme Mapping, Letter Cards, Blending Boards, Magnetic Letters</td></tr></table>

		Transfer to Text – Shared Reading (8 minutes)	Use Decodable Text: Highlight Phonics Skill Words, Read Highlighted Words, Read Decodable Text with Highlighted Words
	Day 2	Phonological Awareness (3 minutes)	One-minute Activities (Equipped for Reading Success, Kilpatrick (2016)
		Review Focus Concept (3 minutes)	I Do: Magnet Letters, Letter Cards, Blending Boards
		Guided Practice (5 minutes)	We Do: Phoneme-Grapheme Mapping, Letter Cards, Blending Boards, Magnetic Letters
		Dictation – Guided Writing (8 minutes)	Whiteboards, Pencil and Paper
		Transfer to Text – Shared Reading (8 minutes)	Reading Decodable Text with Highlighted Words, Read Clean Copy of Decodable Text
	Day 3	Phonological Awareness (3 minutes)	One-minute Activities (Equipped for Reading Success, Kilpatrick (2016)
		Review Focus Concept (3 minutes)	I Do: Magnet Letters, Letter Cards, Blending Boards
		Extended Practice (5 minutes)	You Do: Word Sorts, Word Families, Word Chaining, Fluency Drill – highlighted words
		Transfer to Text – Shared Reading (8 minutes)	Highlight Phonics Skill Words, Read Decodable Text with Highlighted Words
	Day 4	Phonological Awareness (3 minutes)	One-minute Activities (Equipped for Reading Success, Kilpatrick (2016)

		Review Focus Concept (3 minutes)	I Do: Magnet Letters, Letter Cards, Blending Boards	
		Extended Practice (5 minutes)	You Do: Word Sorts, Word Families, Word Chaining, Fluency Drill – highlighted words	
		Dictation – Guided Writing (8 minutes)	Whiteboards, Pencil and Paper	
		Transfer to Text – Shared Reading (8 minutes)	Read clean copy of decodable text.	
	Day 5	Transfer to Text – Running Record	Use decodable text, complete observations or running record on each student	
		Teaching Points After Reading	Comprehension: Shared retelling, problem-solution, discuss character's feelings, compare/contrast ideas, characters, setting, etc.	
Study	**What happened?** Mid-cycle driver measures were completed. After week six each student was given the PAST and LETRS Basic Spelling Screener. Comparing the pre-PAST and pre-LETRS Basic Spelling Screener with the mid-PAST and mid-LETRS Basic Spelling Screener assisted the improvement team in determining if the change idea was creating positive changes. Students increased in phonemic awareness and phonics knowledge but were not transferring the phonics skills to the reading of text. The improvement team decided to continue with the 12-week cycle in hopes that an additional six weeks would assist students with transferring the phonics skill into shared and independent reading. The teachers implemented the change idea as planned. The teachers stated the intervention lessons went well and students were successful with the phonological awareness activities. Collected pre, mid, and post data of the PAST assessment support this observation.			

	Students understood the process of the activities and completed the tasks within the allotted time. While BAS levels increased overall for students participating in this PDSA cycle, all third-grade teachers felt the code-based lessons needed additional comprehension strategies intertwined within the lesson plan to ensure students continued to be successful when reading independently within all components of Balanced Literacy. They discussed having the students read a new text on the fifth day of the code-based lessons that included the phonics skill taught during the code-based intervention lessons. This would provide more evidence of the students' ability to transfer the phonics skill practiced during the code-based intervention lessons when reading an unfamiliar text. The third-grade teachers scheduled daily small group intervention groups. Two third-grade teachers completed the small group lessons daily, for 30 minutes, beginning at 9:15 am and two third-grade teachers completed the small group lessons daily for 30 minutes, beginning at 9:45 am. **How does your prediction in the Plan phase compare?** Our prediction was correct. Based on the analysis of the data, 92% of the students increased at least one PAST level, 66% increased accuracy on the LETRS Basic Spelling Screener, and 75% increased at least one BAS reading level. The improvement team recognized that 100% of students did not increase one PAST level, one BAS level, or increase accuracy on the LETRS Basic Spelling Screener. The students who did not increase were students whose first language in the home is not English. These student will receive additional services through the Multilingual Learner Program from an endorsed Multilingual Learner Specialist. **What data are you using?** The improvement team analyzed the pre and post data for the PAST assessment, LETRS Basic Spelling Screener, and BAS assessment.
Act	**What are you going to do now?** __**Adapt** (This has promise, but I want to try a revision or two.) X **Adopt** (I have evidence this idea is working as is. It's ready to share with other testers.) __ **Abandon** (This idea is not worth pursuing.)

Because the improvement team wanted to provide more time for students to participate in code-based lessons and wanted to ensure the tested idea was creating positive changes, driver measures were completed mid-cycle at the end of the sixth week of the PDSA Cycle 2. Each student completed the PAST and LETRS Basic Spelling Screener and data were analyzed. During the mid-cycle progress monitoring, 83.3% of students increased at least one PAST level and 91.6% increased their phonics knowledge. Figure 4.3 highlights the percentage of students who grew in phonemic awareness and phonics when measured at mid-cycle. While the majority of students had increased in phonemic awareness and phonics growth, teacher observation data revealed students were not transferring the phonemic skills practiced during the code-based lessons into shared or independent reading of decodable texts, thus the improvement team wanted to continue the 12-week PDSA cycle. The improvement team hoped that the additional time in the PDSA Cycle 2 would help students to utilize the phonic skills during the code-based lessons and during shared and independent reading of texts.
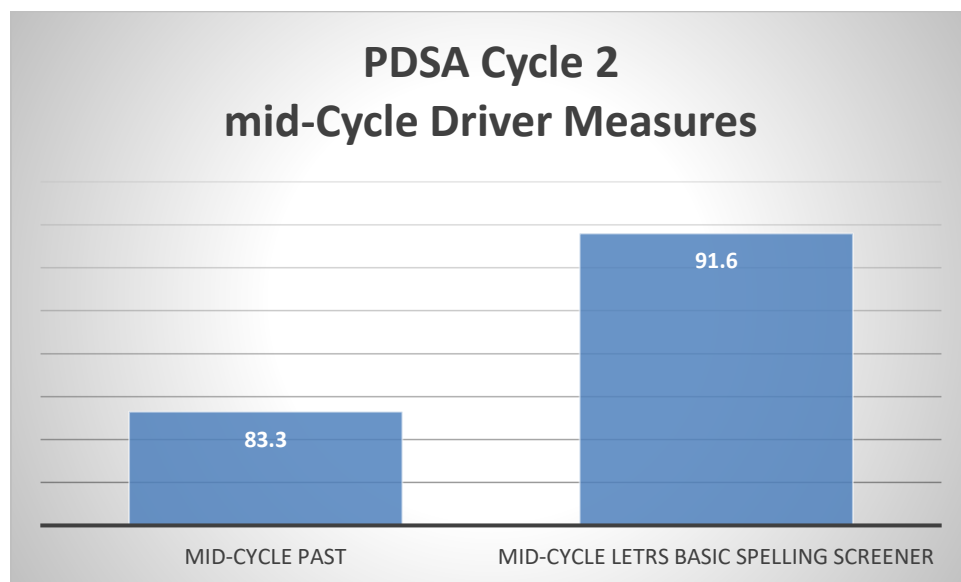

Figure 4.3 PDSA Cycle 2 mid-Cycle Driver Measures

During the Study phase of PDSA Cycle 2, the improvement team analyzed the academic achievement results. At the end of the sixth week of the PDSA Cycle 2 mid-cycle, PAST and LETRS Basic Spelling Screening were analyzed. At the conclusion of the second PDSA cycle LETRS Basic Spelling Screener, PAST assessment, and BAS assessment were analyzed. PDSA Cycle 2 results did support the improvement team's prediction that more students would increase at least one BAS reading level (measuring comprehension growth), at least one PAST level (measuring phonemic awareness growth), and accuracy on the LETRS Basic Spelling Screener (measuring phonics growth). During PDSA Cycle 2, 92% of the students increased at least one PAST level, 66% increased their phonics knowledge on the LETRS Basic Spelling Screener, and 75% increased at least one BAS reading level. The improvement team's prediction was correct. At the conclusion of the PDSA cycle 2, the improvement team observed students acquiring phonics skills, increasing phonemic awareness and utilizing the acquired phonic skills in shared, guided, and independent reading. Because the children acquired phonics skills, phonemic awareness, and transferred this knowledge to reading text, the improvement team decided to adopt the change idea. Additionally, the improvement team decided to continue to utilize this change idea for any future third-grade students identified as deficient in the areas of phonemic awareness and phonics. Figure 4.4 provides a summative view of the percentage of students participating in the literacy intervention change idea who made academic gains in comprehension growth, phonics growth, and phonemic awareness growth.
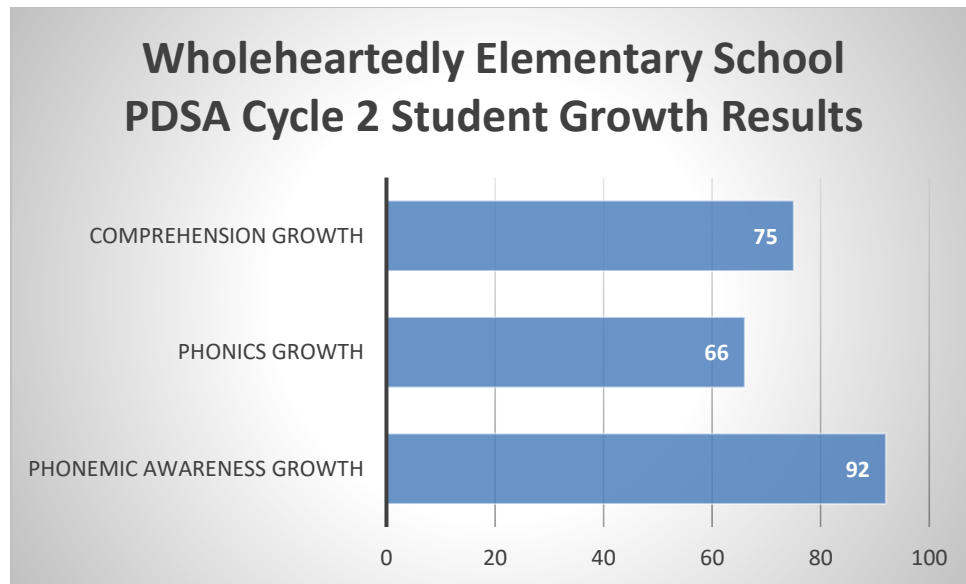
Figure 4.4 PDSA Cycle 2 Student Growth Results

When comparing data collected from both PDSA cycles, there were equal gains in phonemic awareness but greater gains in phonics, and comprehension at the conclusion of PDSA Cycle 2. These gains could be contributed to the adaptation of the PDSA Cycle 1 designed by the improvement team. The adaptation provided 12 weeks of code-based lessons rather than four weeks of code-based lessons, as designed in PDSA Cycle 1. Figure 4.5 provides a comparison of the academic growth obtained at the conclusion of PDSA Cycle 1 and PDSA Cycle 2.

Figure 4.5 PDSA Cycle 1and 2 Student Growth Results

By planning and implementing PDSA cycles concerning literacy achievement for

third-grade students attending Wholeheartedly Elementary School, the improvement team

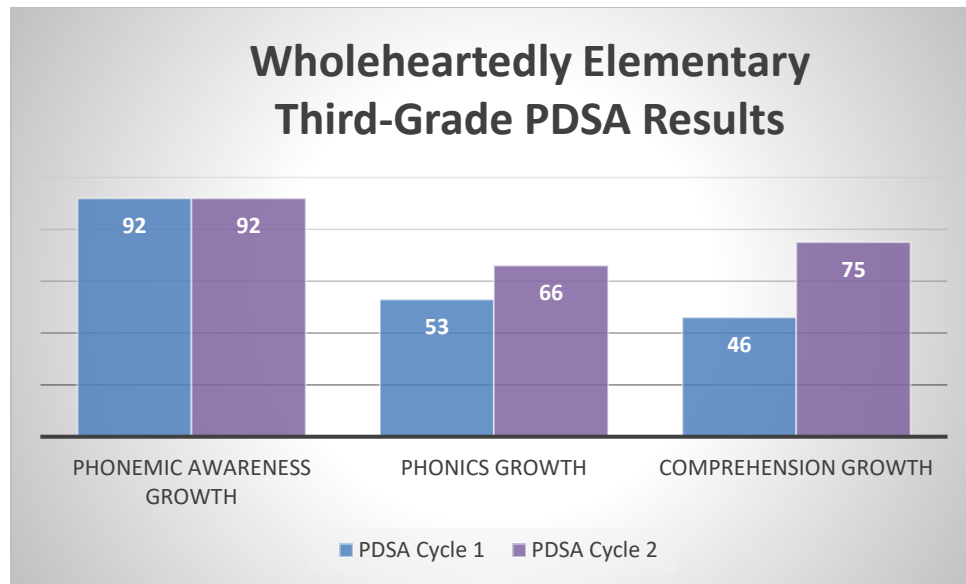continued to create positive literacy instructional changes thus supported student

academic achievement. This process allowed the improvement team to learn through

disciplined inquiry, thus created improvement. Disciplined inquiry is used to drive

improvement (Bryk et al., 2017). PDSA cycles, plan, do, study, and act, were used as our

disciplined inquiry protocol. Through the utilization of this disciplined inquiry protocol

the improvement team understood that failure was not a problem but rather an

opportunity for a deeper analysis of the system, root causes of the failure, and of possible

change ideas. Because the PDSA cycles were designed to start small, fail fast, and learn

quickly, improvement team members began to feel safe and identify failure as a part of

the process of bettering the work of the organization (Bryk et al., 2017). PDSA cycles

were created to address the limited literacy instructional intervention strategies offered to

non-proficient readers enrolled in third grade in Graham County School District. Thus,

participating in disciplined inquiry the improvement team increased the literacy

instructional intervention approaches offered for students in Wholeheartedly Elementary School, supported student literacy achievement, and increased teacher understanding and efficacy of identifying deficient areas of reading in students and designing appropriate reading interventions.

Because all members of the improvement team were employed by Graham County School District, the team met bi-weekly, immediate feedback was provided through improvement team discussions, and positive change occurred more rapidly. The improvement science framework created a context where adults from varied roles within the district worked together, brainstormed possible drivers and change ideas, and created possibilities for positive change and equity for all students.

Analysis of Data

The aim of both PDSA cycles was to create positive changes of literacy instructional routines, thus supporting students of poverty to become proficient readers. To accomplish this, the improvement team tested a change idea that identified areas of weakness within phonemic awareness and phonics reading achievement of third-grade students identified as non-proficient readers. The change idea of implementing small group instruction of targeted reading interventions designed around student's reading area of deficiency helped Wholeheartedly Elementary School to create positive changes of literacy instructional routines, thus supporting students of poverty to become proficient readers. This is evident in the recent 2023 SC READY ELA assessment results of Wholeheartedly Elementary School third-grade students and in the post assessment data collected at the conclusion of the second PDSA cycle.

According to the South Carolina Department of Education, Wholeheartedly Elementary School third-grade students increased in reading proficiency. In 2022, 44.7% of Wholeheartedly Elementary School third-grade students read on or above grade level (Data Files, 2022). In 2023, 73.4% of Wholeheartedly Elementary School third-grade students read on or above grade level (Data Files, 2023). Figure 4.6 shows the historical SC READY ELA reading achievement of students reading on or above grade level, 2019 - 2023. No data is available in 2020 due to schools being closed during the COVID 19 pandemic.

**Wholeheartedly Elementary
Third Grade SC Ready ELA Meets and Exceeds**

2019	2020	2021	2022	2023
30.8	0	32	44.7	73.4
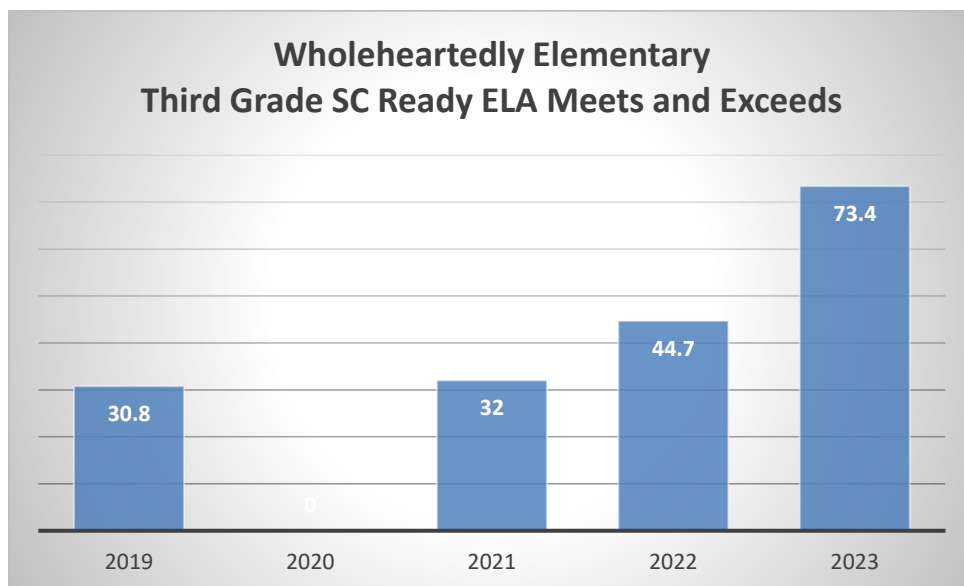
Figure 4.6 2019 – 2023 Wholeheartedly Elementary Third Grade SC READY ELA Meets and Exceeds Results

The improvement team's goal was for students of poverty to increase in literacy achievement and support third grade students to become proficient readers through the utilization of PDSA cycles and disciplined inquiry. The 2022 and 2023 SC READY ELA data were further analyzed to compare the percentage of students identified as students of poverty scoring Meets and Exceeds on the 2022 SC READY ELA assessment, prior to the implementation of the disciplined inquiry protocol, and on the 2023 SC READY ELA

assessment, after the implementation of the disciplined inquiry protocol. After reviewing the 2022 and 2023 SC READY ELA data, 81% of third-grade students scoring Meets or Exceeds in 2022 were students identified as students of poverty and 82.6% of third-grade students scoring Meets or Exceeds in 2023 were students identified as students of poverty. Through the utilization of the disciplined inquiry protocol, Wholeheartedly Elementary School created a learning environment that increased the percentage of third-grade students identified as students of poverty to acquire successful reading skills.

While all improvement team members were extremely excited about the literacy growth obtained by participating students, they acknowledged that the intentionality of utilizing the six principles of improvement science created a structure that supported their efforts of identifying and creating positive changes that ensured non-proficient readers received the individualized reading interventions needed. Third grade teachers shared how utilizing the improvement science framework changed their thought process and they now felt that no matter the problem or area of difficulty they could make a difference. Furthermore, they stated because the planning process was so detailed and presented in a manner of collaboration, they did not feel overwhelmed. They also stated that this improvement project changed the way they think about, attack, and solve problems, thus giving students a fighting chance. These powerful sentiments were shared by all improvement team members. I am pleased and excited how the comradery of the Wholeheartedly Elementary School improvement team members has strengthened and what once was a discussion of frustration is now a discussion of hope and endless problem-solving possibilities.

CHAPTER 5

THE IMPLICATIONS / CONCLUSIONS

Before this improvement science study, collective discussions concerning low literacy achievement for the students of Graham County School District living in poverty were often filled with feelings of despair or hopelessness. I and Wholeheartedly Elementary School educators felt as if our love, passion, and desire for all students to achieve wasn't enough and we found ourselves aimlessly grasping any type of literacy strategy, gadget, or program in hopes of gaining literacy achievement. Through this improvement science project, I learned the improvement science framework was a concise and effective continuous improvement method that enabled us to better achieve our goal of helping all third-grade students become proficient readers. Before implementing the improvement science framework, the growth students in the typical intervention program experienced in Wholeheartedly Elementary School was 42% growth in reading achievement. After implementing the improvement science framework, we saw in this study that students grew 75% in reading achievement. The love, passion, and desire of the improvement team was harnessed into the improvement science framework, thus creating a systematic way to approach the literacy achievement of our students and reduce the stress and cognitive overload of stakeholders associated with carrying out this complex task (Bryk et al., 2017).

Overall Learning of the Problem of Practice

The problem of practice of literacy achievement of third-grade students enrolled in high poverty elementary schools was identified in Graham County School District. When initially discussing the problem of practice with the Wholeheartedly Elementary School improvement team we thought third-grade students reading below grade levelneeded more time in interventions. Thus, additional time would ensure literacy mastery. As the improvement team attended to variability and analyzed what worked, for whom, and under what condition (Hinnant-Crawford, 2020), we began to see the system and the possible factors causing the problem of practice. Through the analysis of the Driver Diagram and the Five Whys diagram the improvement team realized the need for additional time focused on interventions was not the root cause but rather identifying the appropriate literacy interventions based on the identified area weakness within the essential reading components of phonemic awareness, phonics, vocabulary, fluency, and comprehension (Cassidy et al., 2010; *Components of Reading - Resources* 2023; National Reading Panel, 2000; Spear-Swerling & Zibulsky, 2013), for all third-grade students reading below grade level was the root cause. Through the utilization of the disciplined inquiry protocol, the improvement team realized teachers and the system's instructional teams needed more knowledge and understanding of the five essential components of reading, more knowledge and understanding on how to identify areas of weakness within the five essential components of reading of non-proficient readers, and more knowledge and understanding on how to design appropriate interventions to support literacy acquisition for all third-grade students. Because of these findings, I was able to share more knowledge of the five essential components of reading at out bi-weekly meetings

by discussing the literature reviewed and connect this research with the information being provided through the mandated LETRS training. Teachers applied the knowledge gained from the literature review discussions and LETRS training into third-grade literacy instruction.

Overall Learning from Research on the Impact of Poverty

The improvement team's understanding of educational barriers experienced by students living in poverty related to reading, the essential components of reading instruction, and the implementation of the improvement framework increased because of the research discovered and discussed. The poverty research reviewed increased the knowledge of connections between poverty and students' academic struggles and strengthened educators' growth mindset of believing intelligence can be developed in every student no matter the socio-economic status in which they live (Ratten et al., 2015; Yu et al., 2022). Brain research documented the impact of living in poverty on students' ability to successfully complete academia work. When students live in poverty the development of five overarching systems in the brain, that support the effective usage of executive functions and explicit learning of literacy, are negatively affected thus causing lower academic achievement (Blair & Raver, 2014; Hair et al., 2015; Jenson, 2010). The five overarching operating systems of the human brain, Executive System (Prefrontal), Language System (Left Perisylvian), Memory System (Medial Temporal), Spatial Cognition System (Parietal), and Visual Cognition System (Occipitotemporal), influence and support critical processes and skills, including reading comprehension, language use, and associative learning (Jensen, 2010).

Overall Learning from Research on Reading

When analyzing the reading research, the improvement team began to fully understand the five essential areas of reading and how all areas must be mastered by students to ensure literacy achievement. Prior to the improvement project, members of the improvement team concentrated on fluency, vocabulary, and comprehension more than phonics and phonemic awareness. Improvement team members felt confident providing instruction on fluency, vocabulary, and comprehension strategies but less confident on phonemic awareness and phonics instruction. Initially, members of the improvement team had limited understanding of how to assess student reading achievement within each of the essential areas of reading or how to design appropriate reading interventions to support third grade students reading below grade level. The reading research utilized in this improvement project increased teachers' and administrators' knowledge of reading and efficacy of identifying reading deficiencies of non-proficient readers and utilizing this information to design appropriate literacy interventions.

Overall Learning of Improvement Science Framework

Before the implementation of this improvement project, the improvement science framework was unknown to all improvement team members. The improvement science research provided in-depth explanations and models of utilization of the improvement science framework within various organizations. Because of the increased understanding of the improvement science framework, the improvement team was able to apply the six core principles in this improvement science project: problem focused and user centered, attend to variability, see the system, embrace measurement, learn through discipline

inquiry, and organize as networks (Bryk et al., 2017; Bryk, 2018; Wright, 2019). Thus, leading to the identification of the root cause of the problem of practice and the implementation of positive change ideas.

Wholeheartedly Elementary School worked with me for two school years to understand the improvement science framework. Initially, the improvement team awkwardly approached the problem of practice through the improvement science framework. Understanding the problem of practice was a problem of the system and not a problem of the teacher, the student, or the family was the first step to the effectiveness of the improvement team and this improvement project. After I discussed how the Graham County School District was a group of educators with the same purpose of ensuring all students achieved literacy acquisition and that there was a great possibility that the system was a key component of why the students were not achieving, all members of the improvement team appreciated and welcomed a critical analysis of the current literacy instructional practices. Several key components of the improvement science framework required utilizing a Fishbone diagram, a Five Whys diagram, and a Driver Diagram, which were unknown to all improvement team members. Through extensive collaboration and discussion, the improvement team began to see how each diagram played a significant role within the framework of improvement science (Hinnant-Crawford, 2020). Thus, fostering creativity, collaboration, data analysis, problem solving, and creation of positive change ideas.

Empathy interviews were conducted at the beginning of this improvement project to aid my ability to be user-centered and to understand the problem from the improvement team's perspective (Hinnant-Crawford, 2020). Due to my desire to utilize

117

the improvement science framework though out the district, I wanted to gain more insight from the improvement team concerning the utilization of improvement science and its effect on addressing problem of practices. The following questions were asked of each member of the improvement team at the last improvement team meeting.

1. Do you feel the improvement science framework assisted with the problem of practice of third-grade students enrolled in a high poverty school obtaining low literacy achievement?

2. What have you learned?

3. What surprised you while participating in this improvement project?

4. Do you think the improvement science framework will support you with future problems of practice?

When analyzing the reflections provided by all improvement team members several themes became apparent. Improvement team members were extremely appreciative of the structure provided through the improvement science framework. This structured allowed them to intentionally focus on a root cause of a problem of practice, have definitive processes to create PDSA cycles, and assisted with identifying the needs of third-grade students who read below grade level. Additionally, they all agreed that their self-efficacy of identifying students' reading areas of deficiency and creating appropriate interventions had increased tremendously. The improvement team noted that because of their participation in this improvement project, they now utilize the six principles of improvement science when addressing a problem of practice in any area.

After the completion of two PDSA cycles at Wholeheartedly Elementary School, the improvement team experienced the process of getting better at getting better (Bryk et

al., 2017). Because of the professional growth and positive change ideas tested in two PDSA cycles, the administration team now utilizes the improvement science framework with all problem of practices throughout the school. Currently, the improvement science framework is being utilized with the Wholeheartedly Elementary School second-grade team on understanding why students are not able to successfully complete math work problems. The employment of the improvement science framework with second-grade teachers identified the need for a PDSA cycle for teachers and students. The second-grade improvement team realized the students were having difficulty reading the text of the word problems, thus created literacy interventions to meet the needs of the students. Additionally, the second-grade teachers realized they did not have the complete understanding of the mathematical concepts being assessed in the word problems and created a PDSA cycle for themselves on how to increase their understanding of mathematical instructional knowledge.

As superintendent, I must create a continuous improvement environment where soluntionitis (Hinnant-Crawford, 2020) is no longer the norm for addressing problems of practice but rather employing the improvement science framework in a variety of areas. Graham County School District has a vision of empowering students to reach their potential. The improvement science framework provides an explicit design and process that all stakeholders can utilize to help us achieve our vision.

Implications for Systems Leadership

Because of the success experienced by the improvement team and third-grade students at Wholeheartedly Elementary School, during the PDSA cycles, organizing as a network as begun in Graham County School District. An additional Title I elementary

school, located in Graham County School District, is utilizing the change idea tested at Wholeheartedly Elementary School, during the improvement project, with third-grade students identified as non-proficient readers in hopes to increase literacy achievement. Additionally, each department in the district is utilizing the improvement science framework to identify the problem of practice, possible factors causing the problem of practice, and design a PDSA cycle to possibly create a positive change of action. I have trained Assistant Superintendents of each department in the improvement science methodology, and they are working with department improvement teams to implement this process. At our monthly District Leadership Meetings, the assistant superintendents and I are discussing and modeling how to utilize the improvement science framework with identified problems of practice. The utilization of the improvement science framework in departments outside of school building will take intentionality, time, and modeling but I believe that this initiative will provide positive outcomes for Graham County School District and create continuous improvement within all areas of the district. Ultimately, the Wholeheartedly Elementary School improvement team and Graham County School District is getting better at getting better (Bryk et al., 2017).

Implementing Code-Based Interventions

Graham County School District identified a problem of practice of low literacy achievement of third grade students enrolled in high poverty, Title I, elementary schools. Based on the six principles of improvement science completed by the Wholeheartedly Elementary School improvement team, the change idea of code-based intervention lessons were implemented. Table 5.1 provides an outline of action steps completed when

implementing this change idea and serves as a guide for future implementations and

improvements.

Table 5.1 Code-based Lesson Intervention Guide

Code-based Lesson Intervention Guide	
Step 1 Identify Students	• Identify third grade students reading below grade level, • Administer PAST and LETRS Basic Spelling Screener to third grade students reading below grade level to determine which students have deficiencies in phonemic awareness and phonics.

Step 2
Plan the
Code-based
lessons
	• Based on the data collected from PAST and LETRS Basic Spelling Screener create learning groups of students. Students should be grouped according to their skill deficits and these groups can and should change depending on updated data.
	• Create weekly lessons based on the phonics skill needs identified by PAST and LETRS Basic Spelling Screener.
	    ○ Utilize the lesson plan template, Figure 4.1, to create daily lessons.
	    ○ Lesson plans should incorporate One Minute Activities, daily, from the book *Equipped for Reading Success* by Dr. David Kilpatrick.
	    ○ Use decodable texts from Houghton Mifflin Harcourt Into Reading instructional materials.
	• Create a Google Sheet or Excel file to record daily data collected by the third grade teachers during the daily code-based lessons.

Step 3
Implement
the Code-
based
Lessons
	• Conduct the code-based intervention lessons daily
	    ○ The classroom teacher will need to record data daily/weekly for the following:
	        ▪ attendance
	        ▪ accuracy of the One Minute Activities
	        ▪ accuracy of the phonics skill during the Dictation section on Day 2 and Day 4 of the lesson plan.
	        ▪ Running record accuracy rate and student reading behaviors

Step 4 Analyze the Data	• Teachers will adjust One Minute Activities daily on the code-based lesson plan based on student performance. • Teachers will adjust learning groups based on weekly student performance. • Continue code-based lessons until students have mastered grade level phonemic awareness and phonics skills.

Leading through the Improvement Science Framework

As a servant leader, my main goal is to build a community and to help others reach their potential. Prior to learning and employing the improvement science framework I dedicated myself to listening to others and having foresight to problem solve with others to ensure a positive outcome. Through this improvement science project, I now have a systematic continuous improvement framework that helps to make the organizational structures and policies visible (Bryk et al., 2017). Thus, supporting every member of the improvement team to identify the problem of practice, identify possible causes, brainstorm possibilities of change ideas, and test the change ideas. This framework allows us to start small, fail, learn, and iterate toward success (Bryk et al., 2020, p. 3).

When implementing improvement science, one must commit time weekly or bi-weekly to explain the need for utilizing the improvement science framework and the discipline inquiry protocol. Additionally, an improvement team of stakeholders must be created so the problem of practice can be examined through a variety of lenses. Creating an improvement team is a crucial step and must be carefully planned. Designing an improvement team that mandates thorough analysis of the problem of practice will ensure the root causes are identified.

Once an improvement team is established, the leader must ensure that all improvement team members trust them, as the leader, and other improvement team members. This can be very difficult to establish and will take intentionality and time to ensure genuine collaboration and brainstorming of positive change ideas. The improvement team members must understand that failure is not bad but rather an

opportunity for future success. Because failure, in the education realm, is often accompanied with negative consequences, such as improvement plans, improvement team members will be hesitant to be transparent in the discussions. Those leading through the improvement science framework must model how failure can be utilized as a catapult for continuous improvement that is celebrated rather than viewed with shame or embarrassment. As a principal, I always told my faculty, staff, families, and students that failure is not bad unless you don't get up and try again. The mindset of persevering through failure to ensure continuous improvement must be adopted by all improvement team members. Once the improvement team members understand the transparency of the improvement science framework, improvement can be accomplished. Additionally, the leader must be able to admit when they have influenced some factors that could be contributing to the problem of practice. The improvement science framework is most efficient when all team members, including the leader, honestly analyze all factors potentially causing the problem of practice and recognize unintended errors.

Implementing the improvement science framework at Wholeheartedly Elementary School created positive changes for our teachers when designing effective reading interventions for third-grade students. The success came because of the commitment from all members of the improvement team and taking the necessary time to attend to each of the six core principles: problem focused and user centered, attend to variability, see the system, embrace measurement, learn through discipline inquiry, and organize as networks (Bryk et al., 2017; Bryk, 2018; Wright, 2019). Allotting adequate time for understanding the problem of practice and attending to variability are important components that must be completely engaged to ensure the learning through discipline

inquiry, PDSA cycle, leads to positive changes. Trust the improvement science framework and do not engage in a PDSA cycle before you commit to being user centered and attending to variability. Understanding the problem of practice and knowledge gained from research are the foundational components for any PDSA cycle implemented.

It is with great excitement and pride that I had the opportunity to lead this improvement project while working with the amazing staff of Wholeheartedly Elementary School. When beginning this improvement project, I had a two-fold aim of (1) addressing critical barriers of literacy achievement of third-grade students enrolled in a high poverty school within the school system and (2) increasing teacher and administrator capacity of continuous improvement (e.g., improvement science) when addressing local problems. Because of the knowledge and experience gained through this improvement project, I can confidently say that both aims were accomplished.

Wholeheartedly Elementary School administrators and third grade teachers gained knowledge of the five essential components of reading, understanding of how to identify reading deficiencies of non-proficient readers, and understanding on how to design appropriate literacy interventions. Because of this knowledge, the change idea of the PDSA cycles has been adopted. Third grade students who are identified as non-proficient readers are screened and the data used to identify which reading intervention would best meet the need of the student. Students who display deficiencies in comprehension, vocabulary, or fluency are provided literacy interventions through the LLI program. Students who display deficiencies in phonemic awareness or phonics are provided literacy interventions through code-based lesson. Practical measures are utilized to ensure every student's reading acquisition is improving. For students not improving in the

aforementioned interventions, a Multi-tiered Support team will complete a further analysis of the students' progress and discuss the need for individualized support, such as additional interventions, assistance from a Multilingual Learner Specialist, or identify the need of Special Education services.

Because teaching the five components of reading are imperative to reading success (Cervetti & Heibert, 2015; Moats &Tolman, 2019; National Reading Panel, 2000; Suárez et al., 2018), third-grade students will continue to receive daily instruction in all five essential areas of reading throughout the Balanced Literacy instructional time and receive intentional literacy instructional interventions. The intentionality of providing instruction for all five essential reading components throughout the Balanced Literacy framework within all third-grade classes and intentional literacy interventions will support students' reading achievement. Prior to this change idea, Wholeheartedly Elementary School only utilized one intervention to support struggling students while continuing the Balanced Literacy framework. After the implementation of the change idea, students are receiving focused interventions on specific areas of reading and the third-grade teachers have a better understanding of what the deficits are, thus can continue to support students in those areas throughout all components of the Balance Literacy framework.

Graham County School District utilizes the improvement science framework to create academic success for all students and to increase administration and teacher efficacy of identifying root causes of any problem of practice. This implementation will ensure effective and systematic continuous improvement actions are ensued. I am grateful for the knowledge gained through this improvement project and am eager to see

how the dissemination of this knowledge, to all stakeholders, will increase district wide

continuous improvement and success.

REFERENCES

Academic Achievement. Academic Achievement - SC School Report Card. (2021).

    https://screportcards.com/overview/academics/academic-

    achievement/?q=eT0yMDIxJnQ9RCZzaWQ9MDQwNTAwMA

Academic Achievement. Academic Achievement Details - SC School Report Card.

    (2019). https://screportcards.com/overview/academics/academic-

    achievement/details/?q=eT0yMDE5JnQ9RCZzaWQ9MDQwNTAwMA

Academic Achievement. Academic Achievement Details - SC School Report Card.

    (2022). https://screportcards.com/overview/academics/academic-

    achievement/details/?q=eT0yMDIyJnQ9RCZzaWQ9MDQwNTAwMA

Allington, R. L. (2013). What Really Matters When Working with Struggling Readers.

    The Reading Teacher, *66*(7), 520–530. https://doi.org/10.1002/trtr.1154

Berkowitz, R. (2021). School Climate and the Socioeconomic Literacy Achievement

    Gap: Multilevel Analysis of Compensation, Mediation, and Moderation Models.

    Children and Youth Services Review, *130*, 106238.

    https://doi.org/10.1016/j.childyouth.2021.106238

Berninger, V. W., Vermeulen, K., Abbott, R. D., McCutchen, D., Cotton, S., Cude, J.,

    Dorn, S., & Sharon, T. (2003). Comparison of three approaches to supplementary

reading instruction for low-achieving second-grade readers. *Language, Speech, and Hearing Services in Schools*, *34*(2), 101–116. https://doi.org/10.1044/0161-1461(2003/009)

Bitter, C., O'Day, J., Gubbins, P., & Socias, M. (2009). What Works to Improve Student Literacy Achievement? An Examination of Instructional Practices in a Balanced Literacy Approach. *Journal of Education for Students Placed at Risk (JESPAR)*, *14*(1), 17–44. https://doi.org/10.1080/10824660802715403

Blair, C., & Raver, C. C. (2014). Closing the Achievement Gap through Modification of Neurocognitive and Neuroendocrine Function: Results from a Cluster Randomized Controlled Rrial of an Innovative Approach to the Education of Children in Kindergarten. *PLoS ONE*, *9*(11). https://doi.org/10.1371/journal.pone.0112393

Block, C. C., Parris, S. R., Reed, K. L., Whiteley, C. S., & Cleveland, M. D. (2009). Instructional Approaches That Significantly Increase Reading Comprehension. *Journal of Educational Psychology*, *101*(2), 262–281. https://doi.org/10.1037/a0014319

Bryk, A. S. (2018, April). Advancing Quality in Continuous Improvement. Carnegie Foundation for the Advancement of Teaching. San Francisco. Retrieved March 12, 2023, from https://www.carnegiefoundation.org/resources/videos/anthony-bryk-2018-summit-keynote-video/.

Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2017). *Learning to Improve: How America's Schools Can Get Better at Getting Better*. Harvard

Education Press. Carnegie Foundation for the Advancement of Teaching. https://www.carnegiefoundation.org/.

Carlisle, J. F., Kelcey, B., & Berebitsky, D. (2013). Teachers' Support of Students' Vocabulary Learning During Literacy Instruction in High Poverty Elementary Schools. *American Educational Research Journal*, *50*(6), 1360–1391. https://doi.org/10.3102/0002831213492844

Cartwright, K. B., Marshall, T. R., & Hatfield, N. A. (2020). Concurrent and Longitudinal Contributions of a Brief Assessment of Reading-specific Executive Function to Reading Comprehension in First and Second Grade Students. *Mind, Brain, and Education*, *14*(2), 114–123. https://doi.org/10.1111/mbe.12236

Cassidy, J., Valadez, C. M., & Garrett, S. D. (2010). Literacy Trends and Issues: A Look at the Five Pillars and the Cement that Supports Them. *The Reading Teacher*, *63*(8), 644–655. https://doi.org/10.1598/rt.63.8.3

Cervetti, G. N., & Hiebert, E. H. (2015). The Sixth Pillar of Reading Instruction. *The Reading Teacher*, *68*(7), 548–551. https://doi.org/10.1002/trtr.1343

Collins, G., Wolter, J. A., Meaux, A. B., & Alonzo, C. N. (2020). Integrating morphological awareness in a multilinguistic structured literacy approach to improve literacy in adolescents with reading and/or language disorders. *Language, Speech, and Hearing Services in Schools*, *51*(3), 531–543. https://doi.org/10.1044/2020_lshss-19-00053

Components of Reading - Resources. Florida Center for Reading Research. (2023).

   Retrieved February 11, 2023, from https://fcrr.org/reading-success/components

Comprehension. Reading Rockets. (2015, March 23). Retrieved November 7, 2022, from

   https://www.readingrockets.org/helping/target/comprehension

Compton-Lilly, C. F., Mitra, A., Guay, M., & Spence, L. K. (2020). A Confluence

   of Complexity: Intersections Among Reading Theory, Neuroscience, and

   Observations of Young Readers. Reading Research Quarterly, 55(S1).

   https://doi.org/10.1002/rrq.348

Connor, C. M., Morrison, F. J., Fishman, B., Crowe, E. C., Al Otaiba, S., &

   Schatschneider, C. (2013). A Longitudinal Cluster-randomized Controlled Study

   on the Accumulating Effects of Individualized Literacy Instruction on Students'

   Reading from First through Third Grade. *Psychological Science*, *24*(8), 1408–

   1419. https://doi.org/10.1177/0956797612472204

Crow, R., Hinnant-Crawford, B. N., & Spaulding, D. T. (2019). *The Educational*

   Leader's Guide to Improvement Science: Data, Design and Cases for Reflection.

   Meyers Education Press.

Crowe, E. C., Connor, C. M., & Petscher, Y. (2009). Examining the core: Relations

   among reading curricula, poverty, and first through third grade reading

   achievement. *Journal of School Psychology*, *47*(3), 187–214.

   https://doi.org/10.1016/j.jsp.2009.02.002

Data Files. Data Files - SC School Report Card. (2019). Retrieved November 30, 2021, from https://screportcards.ed.sc.gov/files/2019//data-files/.

Data Files. Data Files - SC School Report Card. (2021). Retrieved November 30, 2021, from https://screportcards.ed.sc.gov/files/2021//data-files/.

Data Files. Data Files - SC School Report Card. (2022). Retrieved December 20, 2022, from https://screportcards.ed.sc.gov/files/2022//data-files/.

Data Files. Data Files - SC School Report Card. (2023). Retrieved October 14, 2023, from https://screportcards.ed.sc.gov/files/2022//data-files/.

Developmental Reading Assessment: Third edition. DRA3 | Developmental Reading Assessment, Third Edition. (n.d.). Retrieved December 26, 2022, from https://www.pearsonassessments.com/store/usassessments/en/Store/Professional-Assessments/Academic-Learning/Developmental-Reading-Assessment-%7C-Third-Edition/p/100001913.html

Douglas, M. (2009). *The Effects of Modernization on Religious Change Published by : The MIT Press on behalf of American Academy of Arts & Sciences Stable URL : http://www.jstor.org/stable/20024766 The Effects of Modernization on Religious Change. 111*(1), 1–19.

Dukes, T. (2021, June 1). Data; Instruction Site. ANDERSON FIVE DATA; INSTRUCTION SITE. Retrieved November 29, 2021, from sites.google.com/anderson5/a5data/district-data-site-home.

131

Duke, N. K., & Cartwright, K. B. (2021). The Science of Reading Progresses:

  Communicating Advances Beyond the Simple View of Reading. *Reading Research*

  Quarterly, *56*(S1), S25–S44. https://doi.org/10.1002/rrq.411

Dweck, C. S. (2015). Growth. *British Journal of Educational Psychology*, *85*(2), 242–

  245. https://doi.org/10.1111/bjep.12072

English Language Arts. South Carolina Department of Education. (2015, March).

  Retrieved January 14, 2023, from https://www.ed.sc.gov/instruction/standards-

  learning/english-language-arts/

Enrollment Summary. PowerSchool. (2022). Retrieved October 21, 2022, from

  https://anderson5.powerschool.com/admin/reports/ethnicitybreakdown.html.

Eutsler, L., Mitchell, C., Stamm, B., & Kogut, A. (2020). The Influence of Mobile

  Technologies on Preschool and Elementary Children's Literacy Achievement: A

  Systematic Review Spanning 2007–2019. *Educational Technology Research and*

  Development, *68*(4), 1739–1768. https://doi.org/10.1007/s11423-020-09786-1

Fisher, D., Frey, N., & Hattie, J. (2017). *Teaching Literacy in the Visible Learning*

  Classroom, Grades K-5. Corwin Literacy.

Fisher, D., Frey, N., & Lapp, D. (2021). Veteran Teachers' Understanding of "Balanced

  Literacy." Journal of Education, 203(1), 188–195.

  https://doi.org/10.1177/00220574211025980

Fluency. Reading Rockets. (2016, April 14). Retrieved November 7, 2022, from

    https://www.readingrockets.org/helping/target/fluency

Fontenot, Kayla, Semega, Jessica, & Kollar, Melissa. (2018). "Income and Poverty in the

    United States." Current Populations Reports, series P60, no. 263. Washington: U.S.

    Census Bureau.

Fountas, I. C., & Pinnell, G. S. (2001). Guiding readers and writers: Teaching

    comprehension, genre, and content literacy. Heinemann.

Fountas, I. C., & Pinnell, G. S. (2015). *Leveled Literacy Intervention (LLI) Research*

    Base, Efficacy Studies, and White Papers on Validity and Reliability. Fountas and

    Pinnell. https://www.fountasandpinnell.com/research/lli/#research

Fountas, I. C., & Pinnell, G. S. (2017). *Guided reading: Responsive teaching across the*

    grades. Heinemann.

Fountas, I. C., & Pinnell, G. S. (2022). *Fountas & Pinnell Literacy Continuum: A tool for*

    assessment, planning, teaching. Heinemann.

Fountas, I. C., & Pinnell, G. S. (2023). *What is Benchmark Assessment System (BAS) and*

    How is Bas Used?. Fountas and Pinnell. Retrieved April 22, 2023, from

    https://www.fountasandpinnell.com/bas/

Frey, B. B., Lee, S. W., Tollefson, N., Pass, L., & Massengill, D. (2005). Balanced

    Literacy in an Urban School District. *The Journal of Educational Research*, *98*(5),

    272–280. https://doi.org/10.3200/joer.98.5.272-280

Fritz, S., Brown, F. W., Lunde, J. P., & Banset, E. A. (1999). Servant Leadership. In *Interpersonal Skills for Leadership* (pp. 299–316). essay, Prentice-Hall, Inc.

Gough, P., & Tunmer, W. (1986). Decoding, Reading, and Reading Disability. Remedial and Special Education, 7(1), 6–10. https://doi.org/10.1177/074193258600700104

Gupta, S., & Nambudiri, R. (2021). How Do I Become a Servant Leader? A Practitioner's Approach to Servant Leadership Development. *Development and Learning in Organizations: An International Journal*, *36*(4), 20–22. https://doi.org/10.1108/dlo-07-2021-0126

Hair, N. L., Hanson, J. L., Wolfe, B. L., & Pollak, S. D. (2015). Association of child poverty, brain development, and academic achievement. *JAMA Pediatrics*, *169*(9), 822–829. https://doi.org/10.1001/jamapediatrics.2015.1475

Hannan, M., Russell, J. L., Takahashi, S., & Park, S. (2015). Using improvement science to better support beginning teachers. *Journal of Teacher Education*, *66*(5), 494–508. https://doi.org/10.1177/0022487115602126

Hernandez, D. J. (2012, January 1). *Double jeopardy: How third grade reading skills and poverty influence high school graduation.* The Annie E. Casey Foundation. Retrieved December 20, 2022, from https://www.aecf.org/resources/double-jeopardy/

Herr, K., & Anderson, G. L. (2015). *The Action Research Dissertation: A Guide for Students and Faculty*. SAGE Publications, Inc.

Hinnant-Crawford, B. N. (2020). *Improvement Science in Education: A Primer*. Myers

    Education Press.

Janks, H. (2019). Critical Literacy and the Importance of Reading with and Against a

    Text. *Journal of Adolescent & Adult Literacy*, *62*(5), 561–564.

    https://doi.org/10.1002/jaal.941

Jensen, E. (2010). *Teaching with poverty in mind: What being poor does to kids' brains*

    and what schools can do about it. ASCD.

Karasinski, C., & Anderson, K. (2017). Third Grade and Concurrent Predictors of

    Engagement and Achievement in Reading in Eighth Grade. *Speech, Language*

    and Hearing, *20*(4), 212–222. https://doi.org/10.1080/2050571x.2017.1290739

Kilpatrick, D. A. (2022). Equipped for Reading Success: A Comprehensive, Step-by-Step

    Program for Developing Phoneme Awareness and fluent word recognition. Casey

    & Kirsch Publishers.

Klages, C., Scholtens, M.-M., Fowler, K., & Frierson, C. (2020). Linking Science-Based

    Research with a Structured Literacy Program to Teach Students with Dyslexia to

    Read: Connections: Og in 3-D®. *Reading Improvement*, *57*(2), 47–57.

Kuhn, K. E., Rausch, C. M., McCarty, T. G., Montgomery, S. E., & Rule, A. C. (2015).

    Utilizing Nonfiction Texts to Enhance Reading Comprehension and Vocabulary in

    Primary Grades. *Early Childhood Education Journal*, *45*(2), 285–296.

    https://doi.org/10.1007/s10643-015-0763-9

Kuhn, M. R., & Schwanenflugel, P. J. (2019). Prosody, Pacing, and Situational Fluency
(or Why Fluency Matters for Older Readers). *Journal of Adolescent and Adult
Literacy*, *62*(4), 363–368. https://doi.org/10.1002/jaal.867

Langley, G. J., Moen, R. D., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P.
(2014). *The Improvement Guide: A Practical Approach to Enhancing
Organizational Performance* (2nd ed.). Jossey-Bass.

Lesnick, J., Goerge, R., Smithgall, C., & Gwynne, J. (2010). Reading on Grade Level in
Third Grade: How is it Related to High School Performance and College
Enrollment? *Chicago: Chapin Hall at the University of Chicago*, 1–36.

Lewis, C. (2015). What is Improvement Science? Do We Need it in Education?
Educational Researcher, *44*(1), 54–61. https://doi.org/10.3102/0013189x15570388

Le Fevre, D. M. (2014). Barriers to Implementing Pedagogical Change: The Role of
Teachers' Perceptions of Risk. *Teaching and Teacher Education*, *38*, 56–64.
https://doi.org/10.1016/j.tate.2013.11.007

Lonigan, C. J., Burgess, S. R., & Schatschneider, C. (2018). Examining the Simple View
of Reading with Elementary School Children: Still simple after all these years.
Remedial and Special Education, *39*(5), 260–273.
https://doi.org/10.1177/0741932518764833

MAP Growth. NWEA. (2022, December 5). Retrieved December 26, 2022, from
https://www.nwea.org/map-

growth/?gclid=EAIaIQobChMI8prw35OY_AIVfAytBh0LCwVsEAAYASAAEgI KMfD_BwE

Mazzoli Smith, L., & Todd, L. (2019). Conceptualising poverty as a barrier to learning through 'poverty proofing the school day': The Genesis and impacts of stigmatisation. *British Educational Research Journal*, *45*(2), 356–371. https://doi.org/10.1002/berj.3506

Meier, J. (2013, November 7). How to 'read' your child's reading scores. Reading Rockets. Retrieved November 27, 2021, from https://www.readingrockets.org/article/how-read-your-childs-reading-scores.

Miller, P., Votruba-Drzal, E., & Coley, R. (2019). Poverty and Academic Achievement Across the Urban to Rural Landscape: Associations with Community Resources and Stressors. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *5*(2), 106. https://doi.org/10.7758/rsf.2019.5.2.06

Moats, L. (2023, March). Science of Reading. The Reading League, South Carolina.

Moats, L. C. & Tolman, C. A. (2019). LETRS: Language Essentials for Teachers of Reading and Spelling. Sopris West Educational Services.

Multi-tiered System of Supports (MTSS). South Carolina Department of Education. (2022, September). Retrieved January 9, 2023, from https://ed.sc.gov/instruction/early-learning-and-literacy/multi-tiered-system-of-supports-mtss/

NAEP reading 2019 highlights. The Nation's Report Card. (n.d.). Retrieved May 30,

    2022, from https://www.nationsreportcard.gov/highlights/reading/2019/

National Reading Panel (2000). Teaching Children to Read: An Evidence-Based

    Assessment of the Scientific Research Literature on Reading and Its Implications

    for Reading Instruction: Reports of the Subgroups. Bethesda, MD: National

    Institute ofChild Health and Human Development. Available online at: https://

    www.nichd.nih.gov/about/org/der/branches/cdbb/nationalreadingpanelpubs

Onchwari, G., & Keengwe, J. (2019). *Handbook of Research on Engaging Immigrant*

    Families and Promoting Academic Success for English Language Learners.

    Information Science Reference.

Ortlieb, E., & Schatz, S. (2020). *Student ' s Self-Efficacy in Reading – Connecting Theory*

    to Practice. *41*(7), 735–751.

Pavlakis, A. E., Noble, K., Pavlakis, S. G., Ali, N., & Frank, Y. (2015). Brain imaging

    and electrophysiology biomarkers: Is there a role in poverty and education outcome

    research? *Pediatric Neurology*, *52*(4), 383–388.

    https://doi.org/10.1016/j.pediatrneurol.2014.11.005

Perry, J. A., Zambo, D., & Crow, R. (2020). *The improvement science dissertation in*

    Practice: A guide for faculty, committee members, and their students. Myers

    Education Press.

Petscher, Y., Al Otaiba, S., Wanzek, J., Rivas, B., & Jones, F. (2017). The Relation
Between Global and Specific Mindset with Reading Outcomes for Elementary
School Students. *Scientific Studies of Reading*, *21*(5), 376–391.
https://doi.org/10.1080/10888438.2017.1313846

Plan Do Study Act Cycle (PDSA). ICAMH AOD Workforce Development. (2023).
Retrieved April 23, 2023, from https://wharaurau.org.nz/quality-improvement/pdsa

Poverty Definition. State of South Carolina Department of Education. (2015, October
15). Retrieved January 14, 2023, from https://ed.sc.gov/newsroom/school-district-
memoranda-archive/poverty-definition/poverty-definition/

Rattan, A., Savani, K., Chugh, D., & Dweck, C. S. (2015). Leveraging Mindsets to
Promote Academic Achievement. *Perspectives on Psychological Science*, *10*(6),
721–726. https://doi.org/10.1177/1745691615599383

Reinking, D., Hruby, G. G., & Risko, V. J. (2023). Legislating phonics: Settled science or
political polemics? *Teachers College Record: The Voice of Scholarship in
Education*, *125*(1), 104–131. https://doi.org/10.1177/01614681231155688

Richardson, J. (2016). *The Next Step Forward in Guided Reading*. Scholastic Inc.

Roberts, T. A., & Meiring, A. (2006). Teaching Phonics in the Context of Children's
Literature or Spelling: Influences on First Grade Reading, Spelling, and Writing and

Fifth-grade Comprehension. *Journal of Educational Psychology*, *98*(4), 690–713.

https://doi.org/10.1037/0022-0663.98.4.690

Robinson, L., Lambert, M.C., Towner, J., & Caros, J. (2016). A comparison of direct

instruction and balanced literacy: an evaluative comparison for a Pacific Northwest

rural school district. *Reading Improvement,* 53(4), 147+.

https://link.gale.com/apps/doc/A476727922/PPNU?u=colu68650&sid=bookmark-

PPNU&xid=71ee7184

Savage, R. (2022). Teaching Children to Read. The Science of Reading, 209–233.

https://doi.org/10.1002/9781119705116.ch10

Scarborough, H. (2019). 2019 AIM Institute Research to Practice Symposium. In *AIM*

Institute for Learning and Research. Retrieved March 11, 2023, from

https://institute.aimpa.org/resources/readingropevideo.

Scott, W. R. (2014). *Institutions and Organizations: Ideas, Interests, and Identities*.

SAGE Publications, Inc.

Sedita, J., N. (2020, April 8). *How the brain learns to read*. Keys to Literacy. Retrieved

May 30, 2022, from https://keystoliteracy.com/blog/how-the-brain-learns-to-read/

Silverman, R. D., Johnson, E., Keane, K., & Khanna, S. (2020). Beyond Decoding:

A Meta-analysis of the Effects of Language Comprehension Interventions on K–5

Students' Language and Literacy Outcomes. Reading Research Quarterly, 55(S1).

https://doi.org/10.1002/rrq.346

South Carolina Department of Education. South Carolina Department of Education .

    (2021). Retrieved September 20, 2021, from http://www.ed.sc.gov/.

South Carolina Department of Education. South Carolina Department of Education .

    (2022). Retrieved April 18, 2023, from http://www.ed.sc.gov/.

South Carolina Department of Education. South Carolina Department of Education .

    (2023). Retrieved October 14, 2023, from http://www.ed.sc.gov/.

South Carolina College-and Career-Ready Assessments (SC READY). (2024).

    https://ed.sc.gov/tests/middle/sc-ready/

South Carolina Read to Succeed Act of 2014, S.C. Stat. § 516 (2014).

    https://www.scstatehouse.gov/code/t59c155.php

Sparks, R. L. (2015). Language Deficits in Poor L2 Comprehenders: The Simple View.

    Foreign Language Annals, 48(4), 635–658. https://doi.org/10.1111/flan.12163

Spear-Swerling, L., & Zibulsky, J. (2013). Making Time for Literacy: Teacher

    Knowledge and Time Allocation in Instructional Planning. *Reading and Writing*,

    27(8), 1353–1378. https://doi.org/10.1007/s11145-013-9491-y

Spear-Swerling, L. (2018). Structured Literacy and Typical Literacy Practices:

    Understanding Differences to Create Instructional Opportunities. *TEACHING*

    Exceptional Children, *51*(3), 201–211.

    https://doi.org/10.1177/0040059917750160

State Scores by Grade Level. South Carolina Department of Education. (2022).

    https://ed.sc.gov/data/test-scores/state-assessments/sc-ready/2022/state-scores-by-

    grade-

    level/?districtCode=9999&districtName=Statewide&schoolCode=999

Suárez, N., Sánchez, C. R., Jiménez, J. E., & Anguera, M. T. (2018). Is reading

    instruction evidence-based? Analyzing teaching practices using T-patterns.

    Frontiers in Psychology, *9*. https://doi.org/10.3389/fpsyg.2018.00007

Suitts, S. (2013). A New Foundation. *A New Majority Update: Low Income Students in*

    the South and Nation.

Terhart, E. (2011). Has John Hattie Really Found the Holy Grail of Research on

    Teaching? an extended review of *visible learning*. *Journal of Curriculum Studies*,

    43(3), 425–438. https://doi.org/10.1080/00220272.2011.576774

The nation's report card: NAEP. The Nation's Report Card | NAEP. (2023, September

    28). https://nces.ed.gov/nationsreportcard/

Tools of the Mind. (2022, May 23). Retrieved May 30, 2022, from

    https://toolsofthemind.org/

Tunmer, W. E., Chapman, J. W., Greaney, K. T., Prochnow, J. E., & Arrow, A. W.

    (2013). Why the New Zealand National Literacy Strategy has failed and what can

    be done about it: Evidence from the progress in International Reading Literacy

    Study (PIRLS) 2011 and Reading Recovery Monitoring Reports. *Australian*

Journal of Learning Difficulties, *18*(2), 139–180.

https://doi.org/10.1080/19404158.2013.842134

Wanzek, J., Stevens, E. A., Williams, K. J., Scammacca, N., Vaughn, S., & Sargent, K. (2018). Current Evidence on the Effects of Intensive Early Reading Interventions. *Journal of Learning Disabilities*, *51*(6), 612–624. https://doi.org/10.1177/0022219418775110

Wharton-McDonald, R., Rankin, J., Mistretta, J., & Ettenberger, S. (1997). Effective Primary-Grades Literacy Instruction = Balanced Literacy Instruction. *The Reading Teacher*, *50*(6), 518–521.

Williams, J. M., & Bryan, J. (2013). Overcoming Adversity: High-achieving African American Youth's perspectives on Educational Resilience. *Journal of Counseling and Development*, *91*(3), 291–300. https://doi.org/10.1002/j.1556-6676.2013.00097.x

Williams, J. M., Greenleaf, A. T., Barnes, E. F., & Scott, T. R. (2018). High-achieving, low-income students' perspectives of how schools can promote the academic achievement of students living in poverty. *Improving Schools*, *22*(3), 224–236. https://doi.org/10.1177/1365480218821501

Wright, K. B. (2019). Improvement Science as a Promising Alternative to Barriers in Improving STEM Teacher Quality through Professional Development. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *92*(1–2), 1–8. https://doi.org/10.1080/00098655.2018.1532953

Yu, J., Kreijkes, P., & Salmela-Aro, K. (2022). Students' Growth Mindset: Relation to

    Teacher Beliefs, Teaching Practices, and School Climate. *Learning and*

    Instruction, *80*(January). https://doi.org/10.31234/osf.io/xdrty

CODE-BASED LESSON PLAN

Code-Based Lesson Template

Date/s:	Text Title:	Phonics Focus:
4-17 / 4-21	Sad King Ben	Short Vowel

1. State Goal/Purpose (<1min) — Today, we are learning

Day 1	Day 2

2. Phonological Awareness (3 min)

An – D1	Chris – E3	

2. Phonological Awareness (3 min

An – D1		Chris-E3

3. Review Previous Skill (3 min) (choose 1)

- ☐ "Blend and Read"
- ☐ Reread familiar decodable section/page
- ☑ Blending Boards

3. Review Focus Concept (3-5 min) ("Connect to Phonics" on Yellow Foundational Skills pages)

I Do:
- ☑ Magnetic Letters
- ☐ Letter Cards
- ☐ Blending Boards

4. Introduce New Focus Concept (3-5 min) (Reteach Phonics Whole Group Lesson)

I Do:
- ☑ Magnetic Letters
- ☐ Letter Cards
- ☐ Blending Boards

4. Guided Practice (5 min)

We Do:
- ☑ Phoneme-Grapheme Mapping
- ☐ Letter Cards
- ☐ Blending Boards
- ☐ Magnetic Letters

cap	hit	step	slap	jet	hill
dog	cramp	pup	off	mud	cab

5. Guided Practice (5 min)

We Do:
- ☑ Phoneme-Grapheme Mapping
- ☐ Letter Cards
- ☐ Blending Boards
- ☐ Magnetic Letters

5. Dictation - Guided Writing (8 min) (Blend and Read section)

- ☑ Whiteboards
- ☐ Pencil and Paper

sat	lip	map	man	bid	cop
kept	hog	hug	The cop is a man.		

6. Transfer to Text - Shared Reading (8 min) (Use Mini Book)

1. Highlight Phonics Skill Words
2. Read Highlighted Words
3. Read Mini Book with Highlighted Words

6. Transfer to Text - Staggered Start (8 min) (Use Start Right Reader)

1. Read Mini Book with Highlighted Words
2. Read Clean Copy in SRR

7. Text Reading With Prompting

- ☐ Visual scanning (check word left to right)
- ☐ Check the word with your finger.
- ☐ Does it look right and make sense? Reread the sentence.
- ☐ Check the end (or middle) of the word. What would you expect to see at the end (middle) of the word?
- ☐ Do you see a part your know?
- ☐ Put some words together so it sounds smooth. (fluency)
- ☐ Read it like the character. (expression)

1. State Goal/Purpose:	Today, we are learning

Day 3	Day 4
2. Phonological Awareness (3 min)	**2. Phonological Awareness (3 min)**

An - D1	Chris - E5	An - D2	Chris - E5

3. Review Focus Concept (3-5 min) ("Connect to Phonics" on Yellow Foundational Skills pages)	**3. Review Focus Concept (3-5 min)** ("Connect to Phonics" on Yellow Foundational Skills pages)
☑ Magnetic Letters ☐ Letter Cards ☐ Blending Boards	☑ Magnetic Letters ☐ Letter Cards ☐ Blending Boards

4. Extended Practice (5 min)	**4. Extended Practice (5 min)**
You Do: ☐ Word Sorts ☐ Word Families ☑ Word Chaining ☐ Fluency Drill - highlighted words lab → gab → gill → will bed → bog → bug	You Do: ☐ Word Sorts ☐ Word Families lid → led ☑ Word Chaining ☐ Fluency Drill - highlighted words cup → cap → cop

	5. Dictation - Independent Writing (8 min) (Blend and Read section)
	☑ Whiteboards ☐ Pencil and Paper

cub | sled | tan
I saw the tan cub.

5. Transfer to Text - Staggered Start (8 min) (Use Mini Book)	**6. Transfer to Text - Staggered Start (8 min)** (Use Start Right Reader)
1.Highlight Phonics Skill Words 2.Read Mini Book with Highlighted Words	1. Read Clean Copy in SRR

Text Reading With Prompting
☐ Visual scanning (check word left to right) ☐ Say the sounds in the word. ☐ Check the word with your finger. ☐ Does it look right and make sense? Reread the sentence. ☐ Do you see a part your know? ☐ Put some words together so it sounds smooth. (fluency) ☐ Read it like the character. (expression)

1. State Goal/Purpose:	Today, we are learning

Day 5
2. Transfer to Text - Running Record (Use Start Right Reader)

Observations or running record on one student: An-D2 Chris -E5	Other Students in the Group: ☐ Buddy Reading ☑ Independent Reading

3. Teaching Points After Reading (choose 1)

Comprehension: ☐ Shared retelling ☐ Problem-solution	☐ Discuss character's feelings ☐ Compare/contrast ideas, characters, setting, etc. ☐ Five-finger retell