SCAFFOLDING IN PRACTICE: HOW K-3 TEACHERS ADAPT INSTRUCTION TO MEET THE NEEDS OF STUDENTS AT HIGH RISK OF READING DIFFICULTIES

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Doctor of Education

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by

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Scaffolding in Practice: How K-3 Teachers Adapt Instruction to Meet the Needs of Students at High Risk of Reading Difficulties

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Abstract

Effective classroom reading instruction leads to better outcomes for all students (Preston et al., 2016). Well-implemented classroom reading instruction should result in at least 80% of the students meeting grade level reading expectations without additional intervention (Al Otaiba et al., 2011; Harlacher et al., 2015). Although research has shown that effective classroom instruction paired with early reading intervention can prevent reading difficulties (Scanlon et al., 2005; Torgesen et al., 2007; Wanzek et al., 2016), many schools struggle to produce the desired results (Balu et al., 2015; Berkeley et al., 2020; Porter et al., 2022). When classroom instruction fails to meet the needs of 80% of students, schools may not be able to provide intervention to support all students who need it due to limited resources (Harlacher et al., 2015; Lane et al., 2018; Maki & Adams, 2020). Effective classroom reading instruction is the "foundation" that is necessary to allow a school to prevent reading difficulties effectively for nearly all students (Al Otaiba et al., 2011, p. 3).

At a rural Title 1 elementary school in Virginia, over 40% of K-2 students and 30% of third-grade students were identified as having a high risk of future reading difficulties by the state early reading screener. This indicates a potential problem with the classroom reading instruction because effective reading instruction should result in fewer than 20% of students needing additional support (Harlacher et al., 2015; Vaughn & Fletcher, 2012).

This capstone study investigated how K-3 classroom teachers support students who are identified as having a high risk of reading difficulties with word recognition skills. Additionally, the study identified factors that facilitate or hinder efforts of classroom teachers to provide word recognition instruction for high-risk students. Findings from the study informed recommendations for administrators to help support teachers' efforts to meet the needs of students identified as having a high risk of reading difficulties.

Keywords: reading, literacy, word recognition, reading difficulties, scaffolding, Tier 1, instruction

Dedication

This capstone is dedicated to my sons, Sammy and Joshua. I love you!

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Throughout my capstone experience, I have been fortunate to learn from and work with many amazing people.

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Chapter 1: Introduction

Literacy is a human right because it "empowers individuals [and] improves the quality of their lives" (Secretary-General, 2024, p. 2). Literacy proficiency impacts long-term success and well-being (Jordan et al., 2014). Proficient literacy skills increase future academic achievement, employment opportunities, and financial earnings (Hernandez, 2012; McLaughlin et al., 2014; Sparks et al., 2014). Long-term mental health, motivation, and well-being are also correlated with reading achievement (Livingston et al., 2018; Toste et al., 2020; Vieira et al., 2024).

Reading Achievement Trends

In the United States, national tests show that reading achievement has remained stagnant since national assessments began over thirty years ago (Irwin et al., 2023). Assessment data both nationally and in Virginia show a need to improve literacy instruction.

National Reading Achievement Trends

The largest national assessment of reading performance is the National Assessment for Educational Progress (NAEP), which assesses reading in Grades 4 and 8 every two years (Chatzoglou et al., 2023). In 2024, the NAEP reading assessment showed that forty percent of fourth graders were reading below the reading achievement level described as "basic" (U.S. Department of Education, 2024). Moreover, the 2024 NAEP fourth-grade reading national average score showed a statistically significant decline that was lower than every average fourth-grade reading score since 2002 (U.S. Department of Education, 2024b). Since 1992, when the NAEP reading assessment began, only the 2000 fourth-grade reading assessment had an average score that showed a statistically significant improvement when compared to the 1992 fourth-grade reading scores (U.S. Department of Education, 2024b). When the percentage of fourth-grade students who scored below basic in 2024 is compared to previous years, it is statistically higher than all years since 2002 and not statistically different from the percentage of fourth-grade students who scored below basic in 1992 (U.S. Department of Education, 2024b).

Virginia Reading Achievement Trends

Virginia's third-grade reading scores are similar to the national trends. The most recent reading scores in 2024 show that 34% of third graders failed the Commonwealth's reading assessment (Virginia Department of Education, 2024). Reading problems that lead to poor performance on third- and fourth-grade assessments began long before third grade. The results from Virginia's early literacy screener demonstrate that gaps in literacy skills are present before students begin school and persist despite receiving reading intervention (Virginia Literacy Partnerships, 2024d). For example, students identified as high risk for reading difficulties on Virginia's early literacy screener in the fall receive 2.5 hours of weekly reading intervention. But in the spring of 2024, 52% of kindergartners, 68% of first graders, and 71% of second graders who received intervention were still identified as being high risk for reading difficulties on the original Virginia early literacy screener, the Phonological Awareness Literacy Screening (PALS) assessment (Virginia Literacy Partnerships, 2024d). High-risk students are the most likely to have ongoing reading difficulties and are "significantly behind in basic literacy development" (Virginia Literacy Partnerships, 2023a, p. 9).

Reading Trends for Sub-Groups

Unfortunately, NAEP data indicates that there have been persistent reading achievement gaps between different student groups for at least twenty years (Irwin et al., 2023). NAEP fourth-grade reading data show significant achievement gaps between these groups: Asian and White students and students of other racial groups, English learners (EL) and non-EL students, students with disabilities and students without disabilities, and students in low-poverty schools and students in high-poverty schools (Irwin et al., 2023).

National achievement gaps between student groups are also evident in Virginia. Black students in Virginia had an average score that was 23 points lower than the average score of white students on the fourth grade 2024 NAEP reading test (U.S. Department of Education, 2024a). Hispanic students

scored 24 points lower than white students (U.S. Department of Education, 2024a). Both achievement gaps indicate a persistent trend, as neither differed significantly from the gaps in 1998 (U.S. Department of Education, 2024a). Virginia students eligible for the National School Lunch Program scored 24 points lower than students who were not eligible, which was also not significantly different from the gap in 1998 (U.S. Department of Education, 2024a).

Importance of Early Reading Instruction

Although much of existing reading data comes from upper elementary grades and above, improving word recognition instruction in grades K-3 has the potential to shift achievement in all grade levels (Paige et al., 2019). Word recognition is the ability to recognize words without conscious effort (Hoover & Tunmer, 2020). While the term "reading" is often used to describe recognizing words and understanding the meaning of the text, word recognition is focused solely on recognizing the words (Hoover & Tunmer, 2019). Although word recognition is not sufficient for skilled reading, it is necessary because if readers cannot decode the words, they will not understand the meaning of the text (Castles & Nation, 2022; Gough & Tunmer, 1986). There are several reasons why effective word recognition instruction in the early elementary grades is crucial for later reading proficiency.

First, students who do not develop word recognition proficiency in early grades often do not have the instructional opportunities to close the gap in later grades because the instructional focus shifts to reading for understanding rather than decoding (Toste et al., 2017). The early elementary grades are the time when most students develop foundational reading skills that support efficient word recognition (Clemens et al., 2023). Many students who do not develop proficient word recognition in early grades have persistent reading difficulties through upper elementary school and even into high school (Cunningham & Stanovich, 1997; Juel, 1988; Partanen & Siegel, 2014; Spira et al., 2005).

Second, without efficient word recognition, students cannot decode words, which makes understanding the meaning of the text impossible (Castles & Nation, 2022; Gough & Tunmer, 1986). In

the early elementary grades, reading comprehension is primarily constrained by the student's ability to read the words in texts (Castles et al., 2018). Students who have strong word recognition skills are seven times more likely to be proficient on third-grade state reading assessments, which are often measures of comprehension (Paige et al., 2019).

Third, failure to develop efficient word recognition in early grades can cause cascading detrimental effects (Castles et al., 2018; Stanovich, 1986). While some students who have word reading difficulties in early grades also have language processing difficulties that impact reading comprehension (Adlof & Hogan, 2018), deficient word recognition skills can impact long-term reading comprehension for students with average language skills as well (Mol & Bus, 2011; van Bergen et al., 2021). This impact begins when word recognition difficulties negatively impact the text exposure students have during this critical period of education. Students who are having difficulty with word recognition are often taught with easier text than their on-grade level peers (Stanovich, 1986). Even when students are given opportunities to access grade level text, they may misread words or spend more cognitive energy decoding words than their proficient peers. This can negatively impact their comprehension while also making their reading slower, compromising the amount of text exposure (Hoover & Tunmer, 2018; LaBerge & Samuels, 1974; Perfetti, 1985). This limited text exposure at school is compounded by lower reading motivation, often leading to less reading outside of school (Soriano-Ferrer & Morte-Soriano, 2017). Overall, limited text exposure compared to peers is correlated with reading difficulties (Mol & Bus, 2011; van Bergen et al., 2021; Wanzek et al., 2014) and limited general knowledge (Sparks et al., 2014). Students with relatively less text exposure may not have the opportunity to learn the same amount of vocabulary, complex sentence structure, and advanced content as their on-grade level peers. This broader view of limited opportunities combine to impact reading comprehension negatively (Cain & Oakhill, 2011). Therefore, it is crucial that instruction supports all students' proficient word recognition development, which in turn supports reading comprehension.

Importance of Matching Instruction to Student Needs

Effective classroom reading instruction not only includes explicitly and systematically teaching word recognition skills but also requires that teachers adjust instruction based on student needs (Kehoe & McGinty, 2024). Effectively responding to individual needs of students is commonly identified as an important characteristic of high-quality classroom reading instruction (Harlacher et al., 2015; Leonard et al., 2019; Preston et al., 2016). The Institute of Education Science (IES) practice guide titled *Assisting Students Struggling with Reading* notes that classroom reading instruction should be matched to students' abilities and should include "varying…degree[s] of support and scaffolding—based on students assessed skills" (Gersten et al., 2008, p. 9). If teachers are not able to match instruction to the needs of learners in classroom reading instruction, "a substantial proportion of the children in their classrooms will not meet their full reading potential" (Connor & Morrison, 2016, p. 2).

Although the importance of matching instruction to the needs of students is widely recognized, in practice, it is a complex skill that can be difficult to implement (van Geel et al., 2022). One reason for this is that classrooms are becoming increasingly diverse, so teachers are likely to have students with a wide variety of reading abilities, as well as students identified with learning disabilities (Irwin et al., 2024). Student needs are constantly changing, which requires teachers need to "analyze core instruction and make adjustments frequently" (Harlacher et al., 2015, p. 211).

Teachers who target instruction so that it matches student needs have a greater impact on reading achievement than teachers providing the same instruction to all students (Connor et al., 2009; Connor, Morrison, & Underwood, 2007). Connor and colleagues conducted several randomized controlled trials where they compared the reading growth of students for whom teachers closely followed recommendations for instruction that was based on a child's individual skills and students who were instructed with methods that did not respond to the child's individual skills (Al Otaiba et al., 2011; Connor et al., 2009; Connor, Morrison, & Underwood, 2007; Sanabria et al., 2024). Students in

classrooms where instruction was tailored to their needs made more growth than students who did not (Connor et al., 2011; Connor, Morrison, & Underwood, 2007). Additionally, this research shows that the efficacy of instruction varies based on student needs even in the same classrooms (Connor et al., 2009, 2011). Students who had weak decoding skills in the fall benefitted more from teacher led explicit phonics instruction than students who had stronger decoding skills (Connor et al., 2009). Since students benefit differently from the same instruction, matching instruction to needs is especially important for high-risk students and students with reading difficulties (Leonard et al., 2019). Students who are at a high risk of reading difficulties "show the highest need for targeted intervention in specific skills" (Virginia Literacy Partnerships, 2024c, p. 2). If teachers can provide explicit instruction that meets students' needs, they are likely to make more reading progress (Hwang & Connor, 2020).

Teacher efficacy for meeting student needs through instruction varies (Kardoust, 2024). To match instruction to student needs successfully, teachers must have a variety of knowledge about skills necessary for reading, how to teach those skills, how to manage a classroom to provide opportunities for individualized instruction, and how to interpret student assessments to identify what students need (van Geel et al., 2019). Exploring teacher knowledge can provide important insight into why some teachers can successfully adjust instruction to meet student needs (van Geel et al., 2019). Another way to investigate how teachers match instruction to student needs is to examine the scaffolding they provide (Dominguez & Svihla, 2023). Scaffolding refers to the teacher's specific actions that support a student in completing tasks they could not complete without assistance (Dominguez & Svihla, 2023).

Statement of the Problem

Effective classroom reading instruction leads to better outcomes for all students (Preston et al., 2016). Well-implemented classroom reading instruction should result in at least 80% of the students meeting grade level reading expectations without additional intervention (Al Otaiba et al., 2011; Harlacher et al., 2015). This response to classroom teaching is used to evaluate the efficacy of

instruction: if fewer than 80% of students meet grade level expectations, it indicates there is a problem with classroom reading instruction (Al Otaiba et al., 2011; Harlacher et al., 2015; Maki & Adams, 2020).

Despite receiving evidence-based classroom instruction, approximately 20% of students may need intervention to become proficient readers (Fletcher & Vaughn, 2009). When students receive a combination of early intervention and effective classroom instruction, some estimate that over 95% of students can learn to read (Mathes et al., 2005; Scanlon et al., 2005). Effective classroom reading instruction is the "foundation" that allows a school to effectively prevent reading difficulties for nearly all students (Al Otaiba et al., 2011, p. 3). However, when fewer than 80% of students learn to read through classroom instruction alone, schools may not be able to provide intervention to support all students who need it due to limited resources (Harlacher et al., 2015; Lane et al., 2018; Maki & Adams, 2020).

Although research has shown that effective classroom instruction paired with early reading intervention can prevent reading difficulties (Scanlon et al., 2005; Torgesen et al., 2007; Wanzek et al., 2016), many schools struggle to produce the desired results (Balu et al., 2015; Berkeley et al., 2020; Porter et al., 2022). In Virginia, data show that fewer than 80% of students in kindergarten through third grade are meeting end of grade level expectations, demonstrating a widespread need for improved classroom reading instruction combined with effective reading intervention (Virginia Department of Education, 2024; Virginia Literacy Partnerships, 2024d). Most Virginia public schools use the state-sponsored early literacy screener to assess reading in grades K-2. In 2024, the state piloted a new early literacy screener, the Virginia Language and Literacy Screening System (VALLS) in 17 school divisions. Data from the pilot showed that over 22% of K-3 students were identified as at high risk of reading difficulties in the spring of 2024 (Virginia Literacy Partnerships, 2024e). For students in divisions not in the pilot who were assessed with the previous version of the early reading screener, the Phonological Awareness Literacy Screener (PALS), identified 24% or more of first and second graders as at a high risk

for reading difficulties in Spring 2024 (Virginia Literacy Partnerships, 2024d). In 2021-2023, over 20% of first and second graders were identified as being at high risk for reading difficulties on PALS in the spring (Virginia Literacy Partnerships, 2024d). More than 20% of kindergartners were identified by PALS as having a high risk of reading difficulties in the spring of 2021 and 2022 (Virginia Literacy Partnerships, 2024d). The third-grade standardized state reading assessment scores (i.e., Virginia Standards of Learning–Reading) also demonstrate a need for improved classroom instruction, given that over 30% of students did not pass each year from 2021 to 2024 (Virginia Department of Education, 2024).

Local Setting

The context of this study is Rural County Elementary School (RCES)[1], a public, rural, Title 1 school in Virginia. RCES has fourteen classroom teachers who provide reading instruction to the 385 students in kindergarten through third grade. The teachers have a wide range of experience levels with teaching reading. Some teachers have taught reading for over twenty years and are very familiar with the school's reading curriculum, which they have used for three years. Other teachers are new, provisionally licensed teachers who have completed no education coursework or training on the reading curriculum. All K-3 teachers follow the school's adopted reading curriculum and teach reading in a combination of small groups and large groups.

Problem of Practice

The difficulties in implementing effective reading instruction through evidence-based teaching and effective early intervention are also clear at Rural County Elementary School. Despite early reading intervention, at the end of the 2023-2024 school year, K-3 students are identified as reading below grade level across the grades with percentages up to 34% in second grade. This indicates a problem with classroom reading instruction because more than 20% of students require additional reading

[1] A pseudonym

intervention (Harlacher et al., 2015; Vaughn & Fletcher, 2012; Virginia Department of Education, 2024; Virginia Literacy Partnerships, 2024d).

Furthermore, these scores highlight a specific instructional need in word recognition because scores for first and second grades were based solely on reading a word list and spelling (Virginia Literacy Partnerships, 2024a). Kindergarten scores were based on other foundational skills, such as letter knowledge and phonemic awareness (Virginia Literacy Partnerships, 2024b).

Problems in these pre-reading skills can lead to problems with word recognition (Hoover & Tunmer, 2020). Reading proficiency, as measured by the state reading assessment in third grade, has consistently been below 80%. Students who fail standardized reading assessments often have poor foundational reading skills (Paige et al., 2019; White et al., 2021).

Purpose of the Study

This capstone study focused on the instructional decisions of K-3 classroom teachers for students who are identified as at a high risk of future reading difficulties. These decisions are important because high-quality classroom instruction can prevent student failure and reduce the need for additional intervention (Morrison et al., 2021). The study findings (detailed in Chapter 4) led to recommendations for the administrators at Rural County Elementary School (outlined in Chapter 5) to help them better support effective classroom reading instruction.

To summarize, exploring how classroom teachers instruct students at high risk of reading difficulties is important because proficient reading is crucial for all students (Sanfilippo et al., 2020). To develop proficient reading, teachers need to provide instruction that promotes effective word recognition (Fuchs et al., 2012). Effective early intervention and high-quality instruction in word recognition have the potential to prevent reading difficulties (Scanlon et al., 2005). Since high-quality classroom instruction is necessary for schools to improve reading achievement with intervention, this study will focus on classroom instruction. Teachers vary in how well they can provide instruction that

meets student needs (Connor & Morrison, 2016; Kardoust, 2024). Therefore, this study will focus on high-quality classroom instruction to develop proficient word recognition for students at high risk of reading difficulties in kindergarten to third grade. The research questions guiding this capstone are:

- Q1: In what ways, if any, do K-3 classroom teachers at Rural County Elementary change instruction to support students identified as having a high risk of reading difficulties with word recognition skills?
- Q2: What factors facilitate or hinder efforts of K-3 classroom teachers at Rural County Elementary to provide literacy instruction for students identified as having a high risk of reading difficulties?

Theoretical Framework

The theoretical framework that guides this study is the Zone of Proximal Development (ZPD). The ZPD describes the gap between what a child can achieve alone and what they can achieve with support (Vygotsky, 1978). One part of Vygotsky's sociocultural theory of learning, the ZPD, emphasizes the importance of the social and cultural influences on learning (Vygotsky, 1978). Vygotsky is known as a "groundbreaking theorist" (Saracho & Evans, 2021, p. 995) because his theories changed the way teachers think about instruction. This theory is important because it emphasizes the importance of interaction between the teacher and the student.

Zone of Proximal Development

The ZPD is considered Vygotsky's "greatest contribution" (Saracho & Evans, 2021, p. 995), one that has "profoundly influenced education" (Sharkins et al., 2017, p. 15). The ZPD shifted the way teachers think about instruction. Instead of waiting for students to be "ready" for instruction, the ZPD emphasizes that "learning leads development" (Hatch, 2019, p. 55).

Many classroom teachers are likely to be familiar with the ZPD because Vygotsky's work is "widely used in teacher education and other education-related literature" (Newman & Latifi, 2021, p. 2).

Although Vygotsky's written work became popular in the United States in the 1980s, his theories are widely referenced today (Miller, 2022). Many teacher education programs throughout the world include the ZPD in teacher education programs (Sharkins et al., 2017). Vygotsky is commonly referenced in works ranging from recent publications summarizing important learning theories (Saracho, 2023), teacher focused lists that describe "10 learning theorists every…teacher must know" (SAGE Publishing, n.d.), education blog entries ("Vygotsky's Play Theory," 2024), and even social media posts (Teacher Paul, 2024).

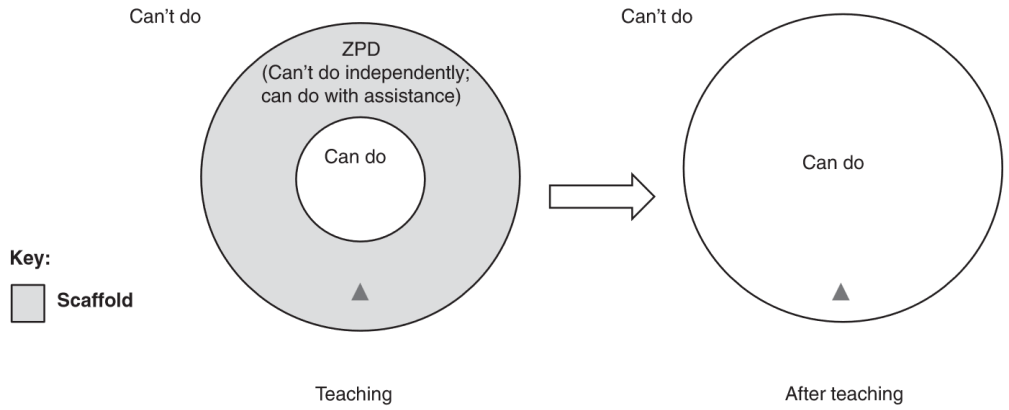
Since the ZPD's original conceptualization, other researchers have discussed the implication of the theory in public education. Wass and Golding (2014) explored the ZPD through a conceptual analysis and summarized how ZPD should inform teaching. They concluded teachers should assign tasks within the ZPD, provide assistance so students can complete those tasks, and scaffold instruction so learners can eventually complete the tasks independently (Wass & Golding, 2014). Wass and Golding (2014) created a visual representation of the ZPD, depicted in Figure 1.1. This visualization shows how ZPD interacts with scaffolds, which are how the teacher supports the learner to do the task.

Rationale for ZPD for the Proposed Capstone

The Zone of Proximal Development fits this study well because it focuses on the role of the teacher and the interaction between the teacher and student in the learning process. Using the ZPD to conceptualize the teaching process aligns with my research questions, which seek to understand teacher actions to support literacy achievement for students at a high risk of reading difficulties.

Figure 1.1

The Zone of Proximal Development



Note. Reprinted from "Sharpening a tool for teaching: The zone of proximal development," by R. Wass & C. Golding, 2014, *Teaching in Higher Education, 19*(6), p. 671–684 (https://doi.org/10.1080/13562517.2014.901958). Copyright 2014 by The Author(s).

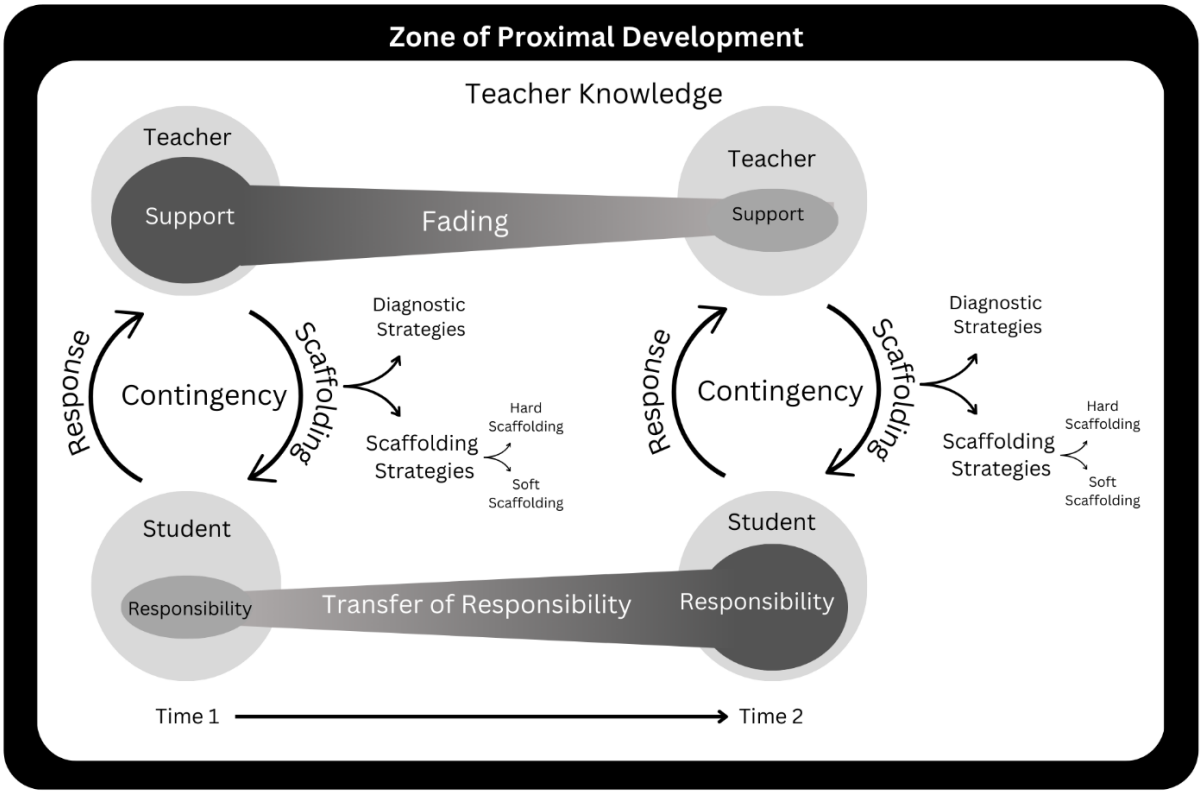
Conceptual Framework

Although the ZPD provides a framework for understanding how instruction relates to a student's current abilities, it does not explain how teachers should support students with skills they cannot do independently. Therefore, my conceptual framework (Figure 1.2) fills this gap by illustrating how teachers build upon their knowledge to design scaffolded instruction that supports student learning in the ZPD.

ZPD's theoretical concept provides the reason a teacher would want to teach students to do something they cannot yet do independently. It serves as the foundation for my conceptual framework that encompasses all other ideas. My conceptual framework shows how the underlying ZPD theory and the teacher's knowledge both contribute to specific actions that teachers take to scaffold instruction to support students.

Figure 1.2

Conceptual Framework



Teacher Knowledge

The next layer that forms the foundation of my conceptual framework is teacher knowledge. Teacher knowledge informs every part of the scaffolding process; in my conceptual framework, it surrounds all teacher actions that encompass scaffolding. There are many ways to categorize teacher knowledge (Guerriero, 2017). In my conceptual framework, three categories prevalent in research were considered: content knowledge, pedagogical content knowledge, and general pedagogical knowledge. These three categories were, among others, conceptualized by Shulman (1986) and continue to be used today in various combinations (Guerriero, 2017; König et al., 2022; Voss et al., 2011).

Teacher Content Knowledge

Teacher content knowledge is the teacher's understanding of the subject matter they are teaching (Shulman, 1986). Content knowledge is general knowledge of a subject matter that is also used in areas outside of teaching (Ball et al., 2008).

Teacher Pedagogical Content Knowledge

Pedagogical content knowledge is understanding the content in a way that allows you to teach it, meaning knowledge of "representing and formulating the subject to make it comprehensible to others" (Shulman, 1986, p. 9). This also includes understanding what makes topics easy or difficult, common student misconceptions, topic organization, and adaption of those topics to the learners' abilities (Shulman, 1987; 1986).

Teacher General Pedagogical Knowledge

General pedagogical knowledge is the "knowledge needed to create and optimize learning," and includes both teaching knowledge and psychological knowledge (Voss et al., 2011, p. 953). General pedagogical knowledge includes knowledge of classroom management, general teaching methods, classroom assessment, and knowledge of learning processes and student characteristics (Voss et al., 2011). Some researchers group general pedagogical knowledge with pedagogical content knowledge (e.g., Ball et al., 2008). However, this study is focused on ways teachers support learning, so it is important to recognize it as a separate construct.

Model of Scaffolding

My conceptual framework builds on the ZPD and teacher knowledge to highlight specific teacher actions to scaffold instruction. Teachers provide scaffolding when they support students to complete tasks that students are not able to do independently (Dominguez & Svihla, 2023). Scaffolding is "teacher support…within the zone of proximal development" (van De Pol et al., 2019, p. 208). The depiction of

scaffolding includes and expands on ideas from the conceptual model of scaffolding by van de Pol et al. (2010), which illustrates how teachers scaffold instruction to target a student's ZPD.

The van de Pol et al. model contrasts the interaction between the teacher and the student at a point in time at the beginning of instruction (Time 1) and a point in time at the end of instruction (Time 2). The scaffolding model focuses on the three main characteristics of scaffolding: contingency, fading, and transfer of responsibility, and how these characteristics change between the beginning and end of instruction (van de Pol et al., 2010).

Contingency

In the conceptual model of scaffolding, contingency is represented as a cycle between the student's response and the teacher's scaffolding. Contingency describes how the teacher adapts support in response to the student's current abilities. Researchers use numerous synonyms for the term contingency, including "responsiveness, tailored, adjusted, differentiated, titrated, or calibrated support" (van de Pol et al., 2010, p. 274). Two big ideas define contingent instruction: teachers provide more support if students are struggling, and teachers withdraw support as students gain competence (Wood & Wood, 2009).

Fading

Fading is the "decrease of teacher support for a task" (Dominguez & Svihla, 2023, p. 9). van de Pol et al.'s conceptual model of scaffolding shows fading as the process of change between more support in Time 1 and less or no support in Time 2. Fading is a gradual process contingent on the student's response to instruction (van de Pol et al., 2010).

Transfer of Responsibility

The third characteristic of scaffolding, transfer of responsibility, is the change that occurs in the student's level of responsibility for completing the task between the beginning of instruction and the end of instruction. Van de Pol's model of scaffolding illustrates how the student's responsibility for the

task increases as time goes on (and teacher support fades) until the student ultimately has all the responsibility to complete the task. Although the model still shows support in the teacher student interaction of Time 2, effective scaffolding will completely fade support so that students can not only complete the task independently but also apply what they have learned to new situations (Stone, 1998; Wood et al., 1976). Indeed, some researchers conclude that if students are unsuccessful when they have full responsibility for the task, then scaffolding has not occurred (van de Pol et al., 2010).

Scaffolding

Scaffolding is represented in the model as part of the contingency cycle. The model depicts two concepts that inform scaffolding: diagnostic strategies and scaffolding strategies. Diagnostic strategies are a tool that informs contingent teaching because teachers need to determine students' current level of understanding to respond to it (van de Pol et al., 2010). Diagnostic strategies may also be known as dynamic assessment, formative assessment, online diagnosis, monitoring understanding, and checking understanding (van de Pol et al., 2010).

The second concept that informs scaffolding in the model is scaffolding strategies. Scaffolding strategies are defined as scaffolding intention (what the teacher is trying to support) combined with scaffolding means (how the teacher is providing support) (van de Pol et al., 2010). Scaffolding intentions describe the goals of providing scaffolding, which can be grouped into three main areas: "perceptual components (e.g., highlighting task features); cognitive components (e.g., reducing the degrees of freedom); and affective components (e.g., controlling frustration; Stone, 1998, p. 345). Scaffolding means are the actions that teachers take to provide assistance to the student (Tharp & Gallimore, 1989). Because my research focuses on how teachers support students, I expanded the van de Pol (2010) model to include specific scaffolding means. Scaffolding means include both hard scaffolds and soft scaffolds. Hard scaffolds are pre-planned scaffolds, such as graphic organizers that break down planning for students, while soft scaffolds are decisions made during the lesson, such as the teacher adding

further examples when students do not understand a concept (Saye & Brush, 2002; Tharp & Gallimore, 1989; Wood et al., 1976).

Chapter Summary

In this chapter, I provided context for why my study is necessary by discussing current reading trends and the importance of word recognition instruction in the early elementary grades. I explained that my problem of practice is that fewer than 80% of students at Rural County Elementary School are learning to read with classroom instruction alone. To focus my study, I created a conceptual framework that incorporates a model of scaffolding with the learning theory of the ZPD. In the next chapter, I will summarize the research literature pertinent to my study.

Key Terms and Definitions

This section contains a list of key terms used throughout this capstone.

- **Alphabetic Coding Skill:** Alphabetic coding skill is the ability to decode words by mapping individual sounds to letters (Hoover & Tunmer, 2020).
- **Alphabetic Principle:** The alphabetic principle is the conscious understanding that letter(s) can represent individual sounds in words(s) (Hoover & Tunmer, 2020).
- **Blending:** The skill of putting individual sounds in words together to create a single word, which is necessary for reading words using letter-sound correspondences (Erbeli et al., 2024).
- **Classroom reading teacher:** This term describes the teacher who provides reading instruction to all students in the classroom as part of the core instruction.
- **Concepts About Print:** Concepts about print describes the understanding of how print works, including that print represents spoken words, words have spaces between them, people read words left to right and top to bottom, and people read pages left to right (Hoover & Tunmer, 2020).

- **Content Knowledge:** Content knowledge is the teacher's understanding of the content area they are teaching (Shulman, 1986).
- **Contingency**: Contingency describes how the teacher responds to the needs of the students by providing more help when students are having difficulty and less help as they acquire competence; this is called the "contingent shift principle" (Wood et al., 1976).
- **Core instruction:** The reading instruction provided to all students by the classroom reading teacher.
- **Diagnostic strategies:** Diagnostic strategies describe the process of teachers evaluating students' current understanding and then checking that their understanding is correct by asking the student questions (Tharp & Gallimore, 1989; van de Pol et al., 2012).
- **Fading**: Fading is the "decrease of teacher support for a task" (Dominguez & Svihla, 2023).
- **Foundational skills**: Foundational skills are the skills required for reading words, such as concepts about print, letter knowledge, phonemic awareness, knowledge of the alphabetic principle, and the ability to recognize words accurately and quickly (Hoover & Tunmer, 2020).
- **General Pedagogical Knowledge**: General pedagogical knowledge is the "knowledge needed to create and optimize learning," and includes both teaching knowledge and psychological knowledge (Voss et al., 2011, p. 953).
- **Graphemes**: Graphemes are the letters that represent individual sounds in words.
- **Hard Scaffolding:** Supports that teachers plan before the lesson to support students in completing tasks they cannot complete independently (Saye & Brush, 2002).
- **High Risk of Reading Difficulties**: In this paper, this term refers to students who are the most likely to have ongoing reading difficulties and are "significantly behind in basic literacy development" (Virginia Literacy Partnerships, 2023a, p. 9). They are identified through the Virginia Language and Literacy Screening System.

- **Intersubjectivity**: Intersubjectivity means that both the student and the teacher share an understanding of the goal (Puntambekar & Hubscher, 2005; Rogoff, 1990; Stone, 1998).
- **Language Comprehension:** Language comprehension describes the "linguistic knowledge and skills required for a listener to comprehend a text if it was read aloud, including vocabulary and semantic processing, syntax, inferencing, and discourse" (Adlof & Hogan, 2018, p. 763).
- **Letter Knowledge:** Letter knowledge includes knowing the name of the letter and the sound of the letter, as well as being able to recognize the shape of the letter (Hoover & Tunmer, 2020).
- **Pedagogical Content Knowledge:** Pedagogical content knowledge is understanding the subject and how to teach it to others (Shulman, 1986).
- **Phonemes**: Phonemes are the individual sounds in words.
- **Phonemic Awareness**: Phonemic awareness is the ability to perceive and manipulate the individual sounds in words (Ehri, 2005).
- **Phonics**: Phonics is teaching students to decode words by mapping phonemes to graphemes (Hoover & Tunmer, 2020).
- **Reading difficulties:** Reading difficulties is an umbrella term for any problems with reading. The problems could be due to a learning disability or due to other causes, such as inadequate instruction.
- **Reading frameworks:** Reading frameworks simplify theories of reading development into a structure with components that impact reading, which can inform classroom instruction and assessment (Perfetti & Stafura, 2014; Tunmer & Hoover, 2019).
- **Scaffolding:** Scaffolding describes the teacher's specific actions that respond to the needs of specific learners and enables them to do a task they could not complete without help (Dominguez & Svihla, 2023; Wass & Golding, 2014).

- **Scaffolding Intentions:** Scaffolding intentions describe the goals of providing scaffolding, which can be grouped into three main areas: “perceptual components (e.g. highlighting task features); cognitive components (e.g. reducing the degrees of freedom); and affective components (e.g. controlling frustration) (Stone, 1998, p. 345).
- **Scaffolding Means:** Scaffolding means are the actions that teachers take to provide assistance to the student (Tharp & Gallimore, 1989).
- **Scaffolding Strategies:** Scaffolding strategies are defined as scaffolding intention (what the teacher is trying to support) combined with scaffolding means (how the teacher is providing support) (van de Pol et al., 2010).
- **Segmenting:** Segmenting is the skill of separating the individual sounds in words, which is necessary for students to spell words (Erbeli et al., 2024).
- **Soft Scaffolding:** Supports which are not pre-planned that teachers add in during the lesson to respond to student difficulty in the moment (Saye & Brush, 2002).
- **Specialization or Specialized Instruction:** Specialization or specialized instruction is when teachers teach specific subjects all day and students switch between the teachers, rather than staying in a single classroom with a “generalist” teacher who teaches all subjects (Bastian & Fortner, 2020).
- **Transfer of Responsibility:** The change that occurs in the student’s level of responsibility for completing the task between the beginning of instruction and the end of instruction.
- **Word Recognition:** Word recognition is the ability to recognize words without conscious effort (Hoover & Tunmer, 2020).
- **Zone of Proximal Development:** The Zone of Proximal Development describes the gap between what a child can achieve alone and what they can achieve with support (Vygotsky, 1978).

Chapter 2: Literature Review

Ensuring all students become proficient readers is crucial because proficient reading contributes to employment success, higher average incomes, higher levels of education, and lower rates of disease (Sanfilippo et al., 2020). Conversely, reading difficulties increase the chances students will experience additional academic difficulties (Livingston et al., 2018), have behavioral problems in school (Zuppardo et al., 2023), not graduate high school (Hernandez, 2012), and experience anxiety and depression (Arnold et al., 2005; Vieira et al., 2024).

Reading researchers have reached a consensus on many of the main issues about how students learn to read and what systems are necessary to prevent future reading difficulties (Castles et al., 2018; Petscher et al., 2020). Research continues to add to the knowledge base on how to best support students who are having word reading difficulties; however, many researchers agree on core instructional practices for word recognition and related sub-skills (e.g., phonemic awareness, phonics, decoding) (Castles et al., 2018).

Chapter 1 identified a problem of practice at Rural County Elementary School: fewer than 80% of K-3 students are meeting reading expectations (Virginia Department of Education, 2024). This indicates a problem with the classroom reading instruction because effective reading instruction should result in fewer than 20% of students needing additional support (Harlacher et al., 2015; Vaughn & Fletcher, 2012). This study aims to investigate the problem of practice by addressing two research questions:

- Q1: In what ways, if any, do K-3 classroom teachers at Rural County Elementary change instruction to support students identified as having a high risk of reading difficulties with word recognition skills?

- Q2: What factors facilitate or hinder efforts of K-3 classroom teachers at Rural County Elementary to provide literacy instruction for students identified as having a high risk of reading difficulties?

Chapter 1 detailed the study's conceptual framework (see Figure 1.2), which highlights key constructs important to instructional scaffolding. This literature review will synthesize key research on effective reading instruction and scaffolding to develop constructs included in the conceptual framework that will shape how I examine this problem. The first section of this literature review emphasizes the importance of reading instruction and summarizes how word recognition relates to overall reading development. I also discuss reading frameworks that explain reading development, identify the skills necessary for proficient reading, and describe how word recognition contributes to reading comprehension. In the second section, I shift my focus to the classroom and discuss the characteristics of effective classroom instruction for word recognition, the need to match instruction to student needs within diverse classrooms, and the impact of teachers on reading achievement. Finally, I explore how teachers use scaffolding to meet student needs and identify the factors that support or hinder a teacher's implementation of scaffolding and effective reading instruction.

Importance of Reading Instruction

It is important to recognize reading is not a process that will develop in time without instruction for most children; reviews of research conclude that most students need explicit and systematic instruction to become proficient readers (Castles et al., 2018; Petscher et al., 2020). Reading is an "unnatural act" (Gough & Hillinger, 1980, p. 194). Unlike other skills, such as speaking or walking, which children develop through interacting with other people who are performing those skills, surrounding children with books and reading to them does not teach children to read (Dehaene, 2009). Most children will need explicit instruction even for basic understandings such as letters in words represent sounds in spoken language (Byrne & Fielding-Barnsley, 1990). To provide high quality evidence-based

reading instruction, teachers and administrators need to understand how reading develops and then use empirically based instructional methods to teach it.

Reading Frameworks

One way to support teachers' understanding of reading is by introducing reading frameworks. Reading frameworks simplify theories of reading development into a structure with components that impact reading, which can inform classroom instruction and assessment (Perfetti & Stafura, 2014; Tunmer & Hoover, 2019). To summarize the components that impact reading, I will discuss two important reading frameworks: the Simple View of Reading (SVR; Gough & Tunmer, 1986; Hoover & Gough, 1990) and the Cognitive Foundations Framework (CFF; Hoover & Tunmer, 2020; Tunmer & Hoover, 2019).

Simple View of Reading

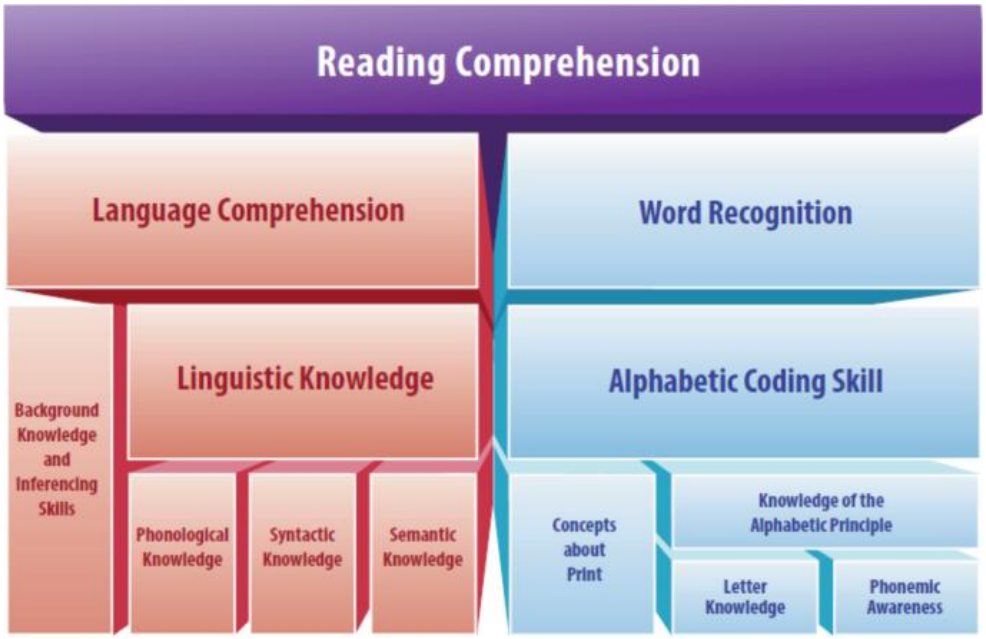
The framework most commonly used by teachers is the Simple View of Reading (SVR; Duke & Cartwright, 2021). Decades of research support the SVR (Catts et al., 2006; Chiu, 2018; Juel, 1988; Lervåg et al., 2018). The SVR states that reading comprehension is the product of word recognition and language comprehension (Gough & Tunmer, 1986; Hoover & Gough, 1990). Word recognition is the ability to recognize the words without conscious effort (Hoover & Tunmer, 2020). Language comprehension is the "linguistic knowledge and skills required for a listener to comprehend a text if it was read aloud, including vocabulary and semantic processing, syntax, inferencing, and discourse" (Adlof & Hogan, 2018, p. 763). Essentially, this model shows that, for proficient reading comprehension, a reader needs both strong word recognition and strong language comprehension. Nearly every other reading framework also incorporates the ideas that readers need strong language comprehension and strong word recognition to attain reading comprehension, including the Cognitive Foundations Framework.

Cognitive Foundations Framework

The Cognitive Foundations Framework (CFF), as illustrated in Figure 2.1, extends the SVR by describing important cognitive capacities that contribute to learning to read and the relationships between them (Tunmer & Hoover, 2019). The CFF is appealing for three reasons: the simplicity of the framework, the hierarchical relationship between components, and the focus on empirically validated cognitive capacities impacting language comprehension and word recognition.

Figure 2.1

The Cognitive Foundations Framework



Note. From "The Cognitive Foundations of Learning to Read: A Framework for Preventing and Remediating Reading Difficulties," by W.E. Tunmer and W.A. Hoover, 2019, *Australia Journal of Learning Difficulties*, 24(1), p. 76. (https://doi.org/10.1080/19404158.2019.1614081). Copyright 2019 by Informa UK Limited.

Figure 2.1 illustrates how the CFF employs a hierarchical structure which identifies components necessary for reading comprehension. Tunmer and Hoover do not intend to imply that the higher components cannot occur until the students master lower components completely, but that "some level

of mastery is needed" in the lower components and that many components develop in a "reciprocally facilitating manner" (Hoover & Tunmer, 2020, p. 87).

The CFF illustrates that letter knowledge and phonemic awareness (the conscious ability to perceive and manipulate individual sounds in words) are the skills underpinning the alphabetic principle, or the conscious understanding that letters represent individual sounds in words. Concepts about print, or the understanding of how print works, and the alphabetic principle both contribute to alphabetic coding skill. Alphabetic coding skill is the ability to decode words by mapping individual sounds to letters. The framework shows that students eventually move to word recognition, which is the ability to recognize words automatically, without conscious effort. On the language comprehension side, students develop linguistic knowledge by incorporating knowledge about the sounds in words (phonological knowledge), the meaning of words and phrases (semantic knowledge), and how words work in sentences (syntactic knowledge). Linguistic knowledge, background knowledge, and inferencing skills work together to support language comprehension. Together, language comprehension and word recognition support successful reading comprehension.

Reading frameworks are useful to support practitioners in thinking about reading difficulties and the assessments and interventions that would best address them (Perfetti & Stafura, 2014; Tunmer & Hoover, 2019). The CFF's hierarchical structure facilitates identifying the lower-order components that need to be assessed to determine the instructional needs of a student. For example, if a student has word recognition difficulties, the teacher could consider issues with concepts of print and the alphabetic principle. The hierarchical structure of the CFF also contributes to understanding of how early literacy skills, such as phonemic awareness, can hinder word recognition and consequently impact reading comprehension. Additionally, the CFF also shows how reading comprehension is not possible without strong word recognition.

Importance of Word Recognition Skills

Both the SVR and the CFF highlight that all students need accurate and automatic word recognition to become proficient readers (Castles et al., 2018). Word recognition refers to recognizing words without conscious effort, while the term word reading refers to using letter-sound correspondences to decode words (Hoover & Tunmer, 2020). Since recognizing words without conscious effort is the goal, this paper will use the term word recognition. Although word recognition is not sufficient for skilled reading, it is necessary because if readers cannot decode the words, they will not comprehend the text (Castles & Nation, 2022; Gough & Tunmer, 1986). The CFF identifies the components that are necessary for proficient word recognition, which can inform classroom instruction.

Importance of Classroom Reading Instruction

Empirically supported reading frameworks, such as the CFF, are useful to guide the instructional focus for both the classroom instruction and intervention. Research has shown that schools could mitigate most reading difficulties by providing both evidence-based classroom instruction and effective early intervention (Partanen & Siegel, 2014; Scanlon et al., 2005; Vellutino & Scanlon, 2002). Researchers recognize evidence-based classroom reading instruction as the key to prevent reading difficulties (Morrison et al., 2021). Without effective classroom reading instruction, the number of students who require intervention is likely to exceed the students a school can remediate (Harlacher et al., 2015; Lane et al., 2018). Effective classroom instruction “leads to better student outcomes and possibly…fewer referrals for special education” (Preston et al., 2016, p. 178). Ensuring classroom instruction meets students’ instructional needs is crucial.

Effective Instruction for Word Recognition

In K-3 reading classrooms, a large portion of reading instruction should focus on developing word recognition skills because word recognition is so important for students who are learning to read (Castles & Nation, 2022; Paige et al., 2019). The CFF is a helpful guide for the instructional components

that should be present to develop effective word recognition skills. Although it is crucial that teachers also develop language comprehension skills in early elementary school (Kim, 2023), this review will focus on components most closely related to word recognition in the CFF: concepts about print, the alphabetic principle, phonemic awareness, letter knowledge, and alphabetic coding skill. Since phonics is the method used to teach alphabetic coding skill, the implications for instructions will focus on phonics.

Concepts About Print

Concepts about print describes the understanding of how print works, including that print represents spoken words, words have spaces between them, people read words left to right and top to bottom, and people read pages left to right (Hoover & Tunmer, 2020). Teachers can support concepts about print through shared reading by modeling where sentences begin and how to move across a line of text as well as by pointing to words as they are reading (Gehsmann & Mesmer, 2023).

Alphabetic Principle

The alphabetic principle is the conscious awareness that a letter or letters (graphemes) represent individual sounds (phonemes) in words (Hoover & Tunmer, 2020). Most children will not make this connection without instruction (Byrne & Fielding-Barnsley, 1989). To attain the alphabetic principle, students first need to acquire phonemic awareness and letter knowledge (Hoover & Tunmer, 2020).

Phonemic Awareness. Phonemic awareness (PA), the ability to perceive and manipulate the individual sounds in words (Ehri, 2005), is necessary to attain the alphabetic principle. The impact of phonemic awareness is “indisputable” (Rice et al., 2022, p. 1261) because it is strongly associated with learning to read (Erbeli et al., 2024; Melby-Lervåg et al., 2012; Stalega et al., 2024). PA is also predictive of later reading success (Scanlon et al., 2005; Torgesen et al., 1999; Wagner & Lonigan, 2023), and effectively teaching phonemic awareness skills can prevent future reading difficulties (D. Fuchs et al., 2012; Partanen & Siegel, 2014; Vellutino et al., 1996). Teachers should focus instruction on the phonemes in words because PA affects reading and spelling (Rice et al., 2022).

Phonemic awareness instruction should follow the progression of phonemic awareness development: students first perceive phonemes at the beginning of words, then the end of words, then the middle of words, then phonemes within consonant blends (two consonants next to each other that each retain their individual sound) (Brady, 2020). Teachers should assess which phonemes students can perceive and provide instruction that supports phonemic awareness at the next level (Brady, 2020). While it is possible to teach PA orally, students improve their PA, spelling, and word reading ability when teachers provide instruction that emphasizes phoneme-grapheme correspondences (Rice et al., 2022). Although phonemic awareness instruction could involve practice with various skills, the skills of segmenting and blending are most closely related to reading (NICHD, 2000). Segmenting is the skill of separating the individual sounds in words, which is necessary for students to spell words (Erbeli et al., 2024). Blending is the skill of putting individual sounds in words together to create a single word, which is necessary for reading words using letter-sound correspondences (Erbeli et al., 2024). Blending and segmenting are both "critical for reading development" (Rice et al., 2022, p. 1262), so teachers should prioritize their practice for students who are learning to read and spell words (Mesmer & Kambach, 2022).

Letter Knowledge. The second skill students need to attain the alphabetic principle is letter knowledge. Letter knowledge includes knowing the name of the letter, the sound of the letter, and being able to recognize the shape of the letter (Hoover & Tunmer, 2020). Alphabet instruction should teach the name of the letter and the sound at the same time (Piasta & Wagner, 2010), explicitly show students the isolated letter and teach the letter name or sound (Piasta, 2023; Roberts et al., 2020), introduce two to three letters a week (Jones & Reutzel, 2012; Vadasy & Sanders, 2021), and emphasize repeated practice with paired-associate learning (Roberts et al., 2020). Teaching letters with embedded mnemonics, which link the letter shape and sound to familiar objects, such as a picture of a snake in the shape of an "s" and hisses /s/, can also support letter knowledge acquisition (Roberts & Sadler, 2019;

Shmidman & Ehri, 2010). Teachers should focus on letters students do not know and should spend additional time on letters that are more difficult to learn (Piasta et al., 2022).

Phonics

Phonics is teaching students to decode words by mapping phonemes to graphemes (Hoover & Tunmer, 2020). There is a strong consensus that phonics instruction is important (Ehri, 2020; Petscher et al., 2020), and empirical evidence has shown that phonics instruction is more effective than other instructional methods to promote word recognition (Henbest & Apel, 2021). It is important for teachers to teach phonics explicitly (Dilgard et al., 2022; Foorman, 2023); to use systematic instruction (Foorman, 2023; NICHD, 2000); to provide opportunities for students to apply knowledge in reading, spelling, and writing (Graham et al., 2018); and to possess knowledge of phonics concepts (Porter et al., 2024). Opportunities to apply phonics knowledge to reading should vary. These varied practice opportunities could include reading with words in isolation (Castles & Nation, 2022), reading decodable text aligned with features students can read (Castles et al., 2018; Kim, 2023), and reading uncontrolled or "authentic" texts (Foorman et al., 2016; Kim, 2023).

Explicit and systematic instruction in phonics, including many practice opportunities for students to apply their phonics skills to reading and spelling words, is especially important for students who are at a high risk of developing reading difficulties (Cao and Kim, 2024). Students with word reading difficulties often need explicit instruction in more phonics features than typically developing students (Vaughn & Fletcher, 2021). They also need many more exposures to a word before they can read it automatically (Steacy et al., 2020), and they benefit when teachers include spelling in interventions (Hall et al., 2023). Effective instruction on phonics, decoding, and spelling "can change the course of achievement for students, including those most at risk for academic failure" (Connor, Morrison, & Underwood, 2007, p. 200). Overall, teaching word recognition skills is a complex endeavor that requires a knowledgeable teacher who can provide explicit and systematic instruction tailored to individual students' needs.

Teachers' Impact on Reading Achievement

Individual teachers impact literacy learning and achievement more than any other school related variable (Clark, 2020) and are "the most important factor in determining student outcomes" (Johansson et al., 2024. p. 717). A study by Konstantopoulous and Chung found that having a highly effective teacher in kindergarten impacted students' reading scores through the sixth grade (2011). Their study indicated that when students have highly effective elementary teachers for consecutive years, the cumulative impact could be as much as one half of a standard deviation in achievement scores (Konstantopoulos & Chung, 2011). Even within the same grade in the same school, variations in teacher effectiveness that can influence students' literacy growth (Nye et al., 2004; Shen & Konstantopoulos, 2022). More teacher efficacy variability exists in low socio-economic status schools than in higher socioeconomic status schools (Nye et al., 2004).

Classroom and Student Diversity

Identifying how teachers can match their instruction to student needs is important because classrooms are becoming increasingly diverse (Irwin et al., 2024). The number of students who speak a language other than English is increasing (Irwin et al., 2024). Students with disabilities are another subgroup that is increasing. Because 67% of students with disabilities spend 80% of their time or more in general education classrooms, teachers are teaching more students with disabilities (Irwin et al., 2024). Additionally, 90% of public schools report a need to increase social and emotional supports for students since the Covid-19 pandemic (Irwin et al., 2024).

Each classroom can include students with a wide range of literacy skills and abilities. Even at the start of kindergarten, student needs in the classroom vary because of diverse experiences at home, different opportunities for literacy and language learning, and range of background knowledge (Connor et al., 2014; Pelatti et al., 2014). One way that researchers identify the different reading needs of students is by examining early literacy data to identify groups of students with the same general

strengths and weaknesses, which they call reading profiles. Reading profiles highlight variations in individual reading skills that might be missed when looking at average or composite reading scores (Connor et al., 2014). When researchers grouped students by relative abilities in specific reading subskills, they found as many as six different reading profiles in kindergarten (Foorman et al., 2017; Ozernov-Palchik et al., 2017), five in first grade (Ecalle et al., 2020; Foorman et al., 2017; Grimm et al., 2018), six in second grade (Foorman et al., 2017), and five in third grade (Jones et al., 2016).

However, student skills vary even within each reading profile (Connor et al., 2014). Two students may both have an overall strength in vocabulary and weakness in decoding, but they may need support with different phonics features to build decoding skills, or one student may need instruction focused on phonics features while another needs support with blending the sounds to decode the words. To put these reading profiles into context, in a single third grade class, variations in reading comprehension can be as large as five grade levels, and the words that students read per minute can range from three to 212 words (Firmender et al., 2013). The presence of multiple reading profiles shows that even in the early elementary grades, students have varied strengths and weaknesses in literacy and pre-literacy skills.

Aligning Instruction with Student Needs

Teachers who identify what skills students need and match their instruction to teach those skills promote stronger literacy growth than teachers who do not (Connor, Morrison, & Underwood, 2007; Connor et al., 2009). Students with different learning profiles differ in strengths and weaknesses; consequently, they benefit differently from the same instruction. A student who has difficulty reading words at the beginning of second grade will benefit more from explicit phonics instruction than a student who can proficiently read words but needs vocabulary support. Even students who need to learn the same skills may need instruction that offers different levels of support to be successful. While

all students learn to read in the same way, the pace of instruction and the amount of support they need might vary (Dehaene, 2010).

Meeting the needs of diverse learners by providing instruction aligned with their needs is an essential part of effective classroom instruction (Puntambekar, 2022). Indeed, researchers found that expert teachers adapt their instruction to support individual students (Ankrum et al., 2020). Various teacher quality standards reflect this finding and often include individualization, differentiation, or adaptation as a characteristic high-quality teachers possess (Danielson, 2007; National Board for Professional Teaching Standards, 2024; Virginia Board of Education, 2021). Effective teachers are expected to respond to the different needs of students effectively to promote achievement.

Scaffolding Instruction to Meet Student Needs

While aligning instruction to student needs is important, supporting students to complete tasks that are too hard to do on their own also leads to learning gains. One term that describes the teacher's specific actions that respond to the needs of specific learners and enables them to do a task they could not complete without help is scaffolding (Dominguez & Svihla, 2023; Wass & Golding, 2014). Scaffolding as an instructional term comes from the temporary construction equipment that is used to support buildings (van de Pol et al., 2010). Just as scaffolding supports a building before it can stand on its own, instructional scaffolding supports a student before they can complete a task (e.g., blend phonemes to decode, segment phonemes to spell) on their own.

Other terms used to describe teachers changing instruction and support to meet the needs of different students are adaptive teaching (Parsons, 2012), differentiating instruction (Tomlinson, 1999), calibrated assistance (Stone, 1998), mediated instruction (Rupley et al., 2009), individualizing instruction (Connor, Morrison, & Underwood, 2007), apprenticeship (Rogoff, 1990), graduated intervention (Greenfield, 1984), assisted performance (Tharp & Gallimore, 1989), reciprocal teaching (Palinscar & Brown, 1984), and contingent instruction (Wood et al., 1976). While the exact definition of these

synonymous terms varies, they all focus on learning through social interactions until the learners can do the task independently (Puntambekar, 2022).

The term scaffolding differs from some of the other commonly used terms that describe responsive teaching, such as differentiation, because scaffolding does not change the expectations for a task (Tharp & Gallimore, 1989). While the difficulty remains the same, the support provided by the teacher changes based on the student's needs. Importantly, after the scaffolding occurs, learners should be able to complete the task successfully and independently and be able to generalize their knowledge to new situations (Puntambekar, 2022; Stone, 1998).

Crucial Components

Although some authors argue that the term scaffolding is overused and overgeneralized (Puntambekar & Hubscher, 2005; Stone, 1998; van de Pol et al., 2010), multiple definitions of scaffolding include several crucial components that differentiate scaffolding from other forms of help (Dominguez & Svihla, 2023; van de Pol et al., 2010). The three key components crucial to scaffolding are contingency, fading, and the transfer of responsibility (Dominguez & Svihla, 2023; van de Pol et al., 2010).

Contingency

Contingency describes how the teacher responds to the needs of the students by providing more help when students are having difficulty and less help as they gain competence; this is called the "contingent shift principle" (Wood et al., 1976). This principle is important because contingent instruction separates scaffolding from simply helping the student (van de Pol, 2010). In other words, teachers use what they know about students' needs to make decisions about the amount of scaffolding needed, making intentional adjustments as necessary.

Fading

The second characteristic that defines scaffolding is fading (van de Pol, 2011). Fading is "the removal of support in a gradual manner, based on the ongoing diagnosis of what the student needs to

be successful" (Dominguez & Svihla, 2023, p. 2). There are many ways to fade support for students. Teachers might adjust the prompts they give the student from verbal prompts to visual-only prompts (Donegan & Fluhler, 2024), decrease number of prompts provided (Wood & Wood, 2009), remove supportive structures like modeling (Martin et al., 2019), remove tools providing support (Puntambekar, 2022), shift from teacher-monitored strategies to student-monitored strategies (Dominguez & Svihla, 2023), or encourage students to take more responsibility (Dominguez & Svihla, 2023).

Deciding when to fade support is challenging for teachers (Dominguez & Svihla, 2023; Martin et al., 2019), but it is important because when the teacher fades the scaffolding can impact student learning (McNeill et al., 2006). Teachers may fade support too quickly, which can hurt the students' overall academic performance of the task (Martin et al., 2019). Fading support too quickly negatively affects the degree to which students apply the support they already received (Martin et al., 2019; van De Pol et al., 2019). Teachers may also fail to fade scaffolds, which would prevent students from learning to do the task independently (Belland, 2017). McNeill et al. (2006) show the importance of fading scaffolding in their study that compared the scientific explanations of students who received continuous scaffolding to support the writing process with students who used the same writing scaffolds that were faded over time. When teachers removed scaffolding for both groups, the students whose teacher had faded the scaffolding wrote stronger explanations than the students whose scaffolding was not faded (McNeill et al., 2006).

Fading should respond to the student and should be based on the teacher's diagnosis of the students' readiness to complete the task successfully without the support (Puntambekar, 2022; van de Pol et al., 2010). Teachers should plan the sequence of fading instruction but decide when to fade based on the student's response rather than following a set timeline (Dominguez & Svihla, 2023). In this way, fading is a function of contingency.

Transfer of Responsibility

As teachers fade the support they provide, they increase the student's control over the task (van de Pol et al., 2010). The transfer of responsibility is the third characteristic that defines scaffolding (Dominguez & Svihla, 2023; Stone, 1998; van de Pol et al., 2010). Similar to fading, the transfer of responsibility happens gradually in response to the learner's readiness to do the task (Belland, 2017; van De Pol et al., 2019). The responsibility transferred depends on the goal of the initial scaffolding. Teachers could transfer responsibility for completing a task, or the responsibility for monitoring metacognitive activities, monitoring attention, or increasing motivation (van de Pol et al., 2010). If a teacher provides support for a task but never transfers responsibility to the student, then scaffolding has not occurred (Wood & Wood, 2009). The transfer of responsibility is successful when the learner can not only do the task but also generalize their understanding to similar tasks (Puntambekar & Hubscher, 2005).

Additional Components of Scaffolding

While contingency, fading, and the transfer of responsibility are the components that are most often used to define scaffolding, additional components describe the teacher-student interactions during scaffolding. Diagnostic strategies, the reciprocal nature of scaffolding, and intersubjectivity all demonstrate the interactive nature of effective scaffolding between teachers and students.

Diagnostic strategies describe the process of teachers evaluating students' current understanding and then checking that their understanding is correct by asking the student questions (Tharp & Gallimore, 1989; van de Pol et al., 2012). Diagnostic strategies are embedded in the three crucial components of scaffolding: contingency, fading, and transfer of responsibility. Teachers may discover they have an incomplete understanding of the student and decide to gather additional diagnostic information (Kardoust, 2024). Teachers need to assess student understanding accurately to decide how much support to provide, when to diminish support, and when to transfer responsibility. When teachers fail to apply diagnostic strategies to assess students' needs, teachers cannot provide

contingent instruction, which renders scaffolding ineffective (Kardoust, 2024). While research has found that evaluating students' understanding before providing support affected the success of the scaffolding, many teachers do not apply diagnostic strategies before implementing scaffolding (Kardoust, 2024). Teachers may not think there is sufficient time for diagnostic strategies, or they may depend on their "intuitive understanding" of student knowledge (Kardoust, 2024). Without diagnostic strategies, teachers may make assumptions about student abilities that lead them to over scaffold tasks, which can limit student progress (Daniel et al., 2016; Wass & Golding, 2014).

The reciprocal nature of scaffolding is a characteristic often emphasized by researchers (Puntambekar & Hubscher, 2005; van de Pol et al., 2012). The student is an active participant in the scaffolding, and the interactions between the teacher and the student should be "dialogic and reciprocal" (Puntambekar, 2022, p. 455). Teachers providing scaffolding are making "continual adjustment[s]" in response to the student (Tharp & Gallimore, 1989a, p. 40).

Another scaffolding characteristic commonly mentioned is intersubjectivity. Intersubjectivity means that both the student and the teacher share an understanding of the goal (Puntambekar & Hubscher, 2005; Rogoff, 1990; Stone, 1998). Stone writes that "helping a child to appreciate the adult's goal for a particular activity is the major purpose of scaffolding" (Stone, 1998, p. 352). Without a shared understanding of the goal, students cannot apply the solution to similar problems or know when they have successfully completed the task (Belland, 2017).

Types of Scaffolding

Various terms have been used to describe the scaffolding teachers provide. Many researchers differentiate between scaffolds that teachers plan before the lesson and scaffolds that happen during the lesson. Hard scaffolds are "static supports that can be anticipated and planned in advance" (Saye & Brush, 2002, p. 81). These scaffolds are also called macro-level (de Oliveira et al., 2023; Hammond & Gibbons, 2005) or pre-planned (McLeskey et al., 2017). The planning that a teacher does refers to not

just the materials provided to students, but also the choices the teacher makes about activating prior knowledge, choosing the task and sequencing instruction, and structuring the task (de Oliveira et al., 2023). Hard scaffolding also encompasses adapted materials, including written or visual supports that teachers plan before the lesson (Dominguez & Svihla, 2023).

Scaffolds that are not planned but occur during the lesson in response to students are called soft scaffolds (Dominguez & Svihla, 2023; Saye & Brush, 2002). Soft scaffolds are "dynamic and situational" (Saye & Brush, 2002, p. 82) responses that depend on a teacher's assessment of student understanding. Soft scaffolds are also called micro-level scaffolds (de Oliveira et al., 2023; Hammond & Gibbons, 2005), micro-adaptive (Gibson & Ross, 2016), or moment-to-moment verbal scaffolding (Clark & Graves, 2005). Examples of soft scaffolds that teachers might provide during a lesson include providing extra examples, elaborating on student responses, and purposefully repeating important information (Hammond & Gibbons, 2005; de Oliveira et al., 2023). Even teachers who follow a scripted curriculum provide soft scaffolds throughout lessons (Vaughn & Fletcher, 2021).

Teacher Skills Necessary for Scaffolding

Meeting students' instructional needs through scaffolding promotes student achievement and is necessary because of the diverse reading needs of K-3 students. In the section that follows, I describe the skills and knowledge that teachers need to scaffold reading instruction effectively.

Teacher Knowledge

All components that contribute to effective scaffolding instruction depend upon teacher knowledge. Teacher knowledge is multidimensional; in fact, effective teaching depends on the integration of knowledge and skills as opposed to isolated knowledge in one area. One way to conceptualize the complexity of teacher knowledge is to group it into the categories of content knowledge, pedagogical content knowledge, and general content knowledge (König et al., 2022; Shulman, 1986; Voss et al., 2011).

Content Knowledge

Content knowledge is the teacher's understanding of the content area they are teaching (Shulman, 1986). It is general knowledge that is also used outside of teaching about the topic (Ball et al., 2008). Content knowledge is important for scaffolding because teachers must understand the subject to teach it. For example, if a teacher does not understand why some one-syllable words spell the ending /k/ sound with the letter "k" while others spell it with the letters "ck," they cannot teach students about that concept (Cohen et al., 2017).

The low levels of teacher knowledge for word recognition skills have been documented for over thirty years. Moats (1994) brought attention to the issue when she found that less than 45% of teachers in her survey could answer questions related to reading or spelling words. In Moats' original survey, only 30% of teachers in her sample could explain when -ck is used and less than half could count phonemes in words (Moats, 1994). In 2001, Bos et al. conducted a knowledge survey with pre-service and in-service educators and found that educators answered less than two-thirds of the questions correctly. Piasta et al. assessed similar knowledge in 2009 and found that teachers answered 52% of questions correctly on average. More recently, Hall et al. (2023) conducted a survey with 313 teachers across 46 states. In the portion of the survey that focused on identification or application of skills related to reading or spelling words, educators answered questions correctly about 50% of the time on average (Hall, 2023).

Some studies have found that higher levels of content knowledge are associated with greater student gains, especially when focusing on gains in word reading (Kehoe & McGinty, 2024; Peltier et al., 2020), but there is still no definitive answer about what content knowledge teachers need to teach reading successfully. Research has consistently shown that teachers do not have strong content knowledge when assessed on topics that are commonly associated with teaching word recognition, such

as counting phonemes; identifying blends, digraphs, syllable types; and applying spelling rules (Al Otaiba et al., 2019; Cohen et al., 2017; Porter et al., 2022).

Pedagogical Content Knowledge

While understanding the content is important, teachers also need to understand how to teach others the content, which is called pedagogical content knowledge. Pedagogical content knowledge involves "representing and formulating the subject to make it comprehensible to others" (Shulman, 1986, p. 9). This also includes understanding what makes topics easy or difficult, common student misconceptions, how topics are organized, and how to adapt those topics to learner abilities (Shulman, 1987; Shulman, 1986).

Pedagogical content knowledge affects all aspects of scaffolding. For example, if a student cannot spell a word, the teacher depends on pedagogical content knowledge to assess the student, identify an appropriate instruction goal, and to plan effective instruction that will help the student improve (Jordan et al., 2018; Piasta et al., 2020). First, the teacher uses pedagogical content knowledge to determine appropriate assessments and interpret the assessments (Moats, 2009). Next, it is important that the teacher understand spelling development so that they can decide what to teach the student (Moats, 2014; Puliatte & Ehri, 2018). After identifying a goal for instruction, the teacher must understand the subskills needed to reach the goal to choose which skills to target during instruction (Puliatte & Ehri, 2018). Continuing with spelling as an example, teachers with strong pedagogical knowledge will know that students need phonemic awareness to identify the individual sounds (phonemes) in words (Moats, 2009). Students need to know the letter or letters (graphemes) that spell those sounds, they need to know how to choose between graphemes if there is more than one way to represent the sound, and they need to know how to write the letter (Adoniou, 2014). They also need to hold all that information in their short-term memory while they complete the task (Berninger et al.,

2010). To provide contingent responses, the teacher must understand what makes a task easier or more difficult so that they can adjust instruction accordingly (Moats, 2009).

General Pedagogical Knowledge

Another type of teacher knowledge is general pedagogical knowledge, which is the "knowledge needed to create and optimize learning," and includes both teaching knowledge and psychological knowledge (Voss et al., 2011, p. 953). General pedagogical knowledge includes knowledge of classroom management, general teaching methods, classroom assessment, knowledge of learning processes, and knowledge of student characteristics (Voss et al., 2011).

Deficits in general pedagogical knowledge have the potential to derail even the most knowledgeable teacher's instruction. General pedagogical knowledge is associated with instructional quality (König & and Pflanzl, 2016). To provide scaffolded instruction, teachers need to manage the classroom effectively so they can spend time on instruction rather than redirecting misbehavior (Voss, 2022). Because some scaffolded instruction occurs in small groups or in one-to-one settings, teachers need to facilitate an environment allowing them to target specific students or groups while the remainder of the class stays on task (Blatchford & Russell, 2019).

General pedagogical knowledge also encompasses a teacher's psychological knowledge, which includes how to encourage attention, engagement, and motivation, all of which are important to the scaffolding process (Voss, 2022). These skills fall under general pedagogical knowledge because they are not skills most people outside of education have or need, but they are not pedagogical content knowledge because they are content agnostic (Leijen et al., 2022).

Barriers to Effective Reading Instruction

Although teachers are widely expected to meet the needs of students in their classroom through scaffolding, in practice, this can be very difficult, even when teachers have the knowledge necessary to manage a classroom and teach most students effectively (Letzel et al., 2020). Barriers that

impact the efficacy of instruction are likely to affect scaffolding implementation as well (Reynolds, 2017).

Because teacher knowledge is so important, the lack of knowledge is often identified as a barrier to effective instruction (Hall et al., 2023). As discussed previously, surveys of teacher knowledge demonstrate that many teachers do not have the knowledge and skills needed to teach word recognition (Cohen et al., 2017; Moats, 1994; Porter et al., 2022).

Teachers consistently identify limits on instructional time as a barrier to effective curriculum implementation and instruction (Panda et al., 2023). Many barriers that affect instructional time include things outside of the teachers' control, such as interruptions to instruction like field trips, fire drills, and assemblies; administrator expectations that instructional time be used for assessment and test preparation; and student absenteeism (LaRusso et al., 2016).

Curriculum issues also impact the efficacy of instruction (LaRusso et al., 2016). Many curricula include so many components that teachers cannot implement them as designed within the classroom schedule (Leonard et al., 2019), while other teachers may not have the curriculum materials they need for effective instruction (Opoku et al., 2021).

Barriers to Effective Scaffolding

Although effective scaffolding is supported by strong teacher knowledge, even knowledgeable teachers may find that implementing scaffolding is challenging (van de Pol et al., 2012). Two potential barriers emerged in the literature. First, teachers may find it challenging to identify, administer, and use diagnostic assessments, both informal and formal, to inform scaffolding choices. Second, the nuance of using this assessment data to navigate contingency within scaffolding can be difficult.

Diagnostic Strategies

Teacher knowledge also affects diagnostic strategies, which are "of critical importance" to effective scaffolding (van de Pol et al., 2012, p. 195). Diagnostic strategies are the processes teachers

use to evaluate the students' current understanding and then to check that their understanding is correct (Tharp & Gallimore, 1989; van de Pol et al., 2012). They are important because they support teachers' abilities to recognize the need for scaffolding, plan effective scaffolding, provide contingent responses during scaffolding, and determine if the student can complete the task successfully without scaffolding. Contingent teaching, which is the heart of scaffolding, depends so heavily on diagnostic strategies that when van de Pol et al. created the model of contingent teaching, assessing students was the focus of two of the four steps (van De Pol et al., 2019). van de Pol et al. (2019) found that without diagnostic assessment and monitoring, teachers provided support that the students did not apply.

While evaluating student understanding is a key factor necessary for teachers to provide successful support (van de Pol et al., 2012), some teachers may not assess student's understanding before beginning instruction (Dominguez & Svihla, 2023). Teachers may depend on "preconceived conceptions of learners' performance abilities" (Kardoust, 2024, p. 4) or "intuition" (Gelderblom et al., 2016, p. 2) rather than assessments when planning instruction. Novice teachers are less likely to assess students before instruction and are less likely to check in with students during instruction (Kardoust, 2024).

Teachers may not use diagnostic strategies to inform instruction for a variety of reasons. They may not have access to valid and reliable assessments that can inform instruction (Connor & Morrison, 2016) or they may not understand how to interpret the data they do have to adjust instruction (Al Otaiba et al., 2019). Teachers sometimes have difficulty interpreting the data they do have about students (McMaster et al., 2022; Oslund et al., 2021) and connecting it to instructional decisions (Evans et al., 2019; van den Bosch et al., 2017).

Contingency

Another important barrier to scaffolding is failing to respond contingently to students. A teacher responding contingently to a student who is having difficulty would increase the level of support she is

providing, while a teacher contingently responding to a student who is learning to do a skill independently would decrease the level of support (van De Pol et al., 2019). Teachers who respond non-contingently may tell students the answer rather than increasing support, provide high levels of support immediately instead of increasing gradually, or fail to decrease support by continuing to provide scaffolds after students no longer need them (Bosanquet & Radford, 2019; Khatib & Kardoust, 2022).

Even researchers focused on responding contingently cannot maintain contingency all the time (Wood et al., 1976). For example, in the seminal work on scaffolding, Wood, Bruner, and Ross created a situation in which Ross supported 3, 4, and 5-year-olds as they attempted to recreate a structure out of wooden blocks (1976). Despite the study's focus on contingent responses according to preset rules, even Ross, the researcher, was only able to follow the rules of contingency 86% of the time (Wood et al., 1976). This difficulty has been echoed in research conducted in the classroom. Van de Pol et al. (2014) analyzed classroom interactions and found that before training on scaffolding, teachers responded contingently about 43% of the time. Experienced teachers respond contingently more often than novice teachers (Khatib & Kardoust, 2022) and teachers respond more contingently than paraprofessionals (Bosanquet & Radford, 2019).

Chapter Summary

To summarize, reading proficiency has far-reaching, lifelong impacts (Hernandez, 2012; Livingston et al., 2018; McLaughlin et al., 2014; Sparks et al., 2014; Toste et al., 2020). Research on how students learn to read and what instructional practices support this development is conclusive (Castles et al., 2018; Petscher et al., 2020). Efficient word recognition is a critical component of reading that is primarily developed in early elementary school and classroom teachers impact the degree to which students develop effective word recognition skills (Ehri, 2020; Hwang & Connor, 2020). Student achievement increases when teachers match instruction to student needs, but diverse classrooms can make this difficult (Connor et al., 2009). Scaffolding instruction is an effective way that teachers can help

all students become successful readers (van De Pol et al., 2015). By examining the current reading instruction and scaffolding practices at Rural County Elementary school, I will gather data that will illustrate how teachers respond to students who are at high risk of reading difficulties.

Chapter 3: Methods

In this chapter, I will review the purpose and questions that guided my research. I will discuss why the explanatory case study design was appropriate for my study and provide background information about its context. I will then summarize my research methods, including how I developed my data collection tools, how I gathered data, and how I analyzed the results of my study. Finally, I will discuss additional factors that shaped the study and how I employed methods to ensure the trustworthiness of the results.

Purpose and Research Questions

As noted previously, research shows that early intervention combined with effective classroom instruction has the potential to prevent many later reading difficulties. However, data shows that fewer than 80% of K-3 students at Rural County Elementary School (RCES) are meeting grade level expectations, which indicates a need to improve the classroom reading instruction. This study was designed to explore how K-3 teachers respond to students at a high risk of experiencing future reading difficulties. The study was focused on the following research questions:

- Q1: In what ways, if any, do K-3 classroom teachers at Rural County Elementary School change instruction to support students identified as having a high risk of reading difficulties with word recognition skills?
- Q2: What factors facilitate or hinder efforts of K-3 classroom teachers at Rural County Elementary to provide literacy instruction for students identified as having a high risk of reading difficulties?

Methodology

The current capstone study leverages qualitative research methods. Qualitative research focuses on gathering data that answer how people “view, approach, and make meaning of their experiences, contexts, and the world” (Ravitch & Carl, 2019, p. 4). I chose a case study design given my

goal of exploring a complex issue to gain in-depth, detailed information about the ways in which RCES teachers scaffold word recognition instruction for high-risk students.

Qualitative Case Study Research Design

I used a qualitative explanatory case study design to investigate my research questions. A case study is a description and analysis of a bounded system which investigates problems within real life context (Merriam & Tisdell, 2015). The purpose of explanatory case studies is to determine "how events occur and which one may influence particular outcomes" (Hancock & Algozzine, 2017, p. 39). The current study investigated a "bounded system…over time, through detailed, in-depth collection involving multiple sources of information" (Creswell, 2013, p. 97). A qualitative case study aligned well with my research questions because I examined a local problem in a specific context. There was not a single easy answer to my research questions. By using a case study approach, I collected data from multiple methods and viewpoints that helped me develop a deep understanding of the problem from "the emic, or insider's, perspective" (Hancock & Algozzine, 2017, p. 8).

Capstone Case

This study examined how K-3 classroom teachers teach word recognition skills to students identified as having a high risk of reading difficulties. It also examined what factors facilitate or hinder their instruction. The study was conducted at RCES, a Title 1 school in rural Virginia.

Multiple sources of data indicated that the classroom reading instruction was not meeting the needs of 80% of students. Data from the Virginia reading screening assessments, commercial reading assessments, and Virginia reading standardized tests for third grade all showed that over 20% of students in grade K-3 are at a high risk of reading difficulties. The exact percentages vary because of the different methods used by each assessment to determine student proficiency.

Virginia Reading Screener: VALLSS

At RCES, in each grade level K-2, between 43% and 50% of students were identified as at high risk of reading difficulties by the Virginia early literacy screening assessment, VALLSS, in the fall of 2024, as shown in Table 3.1.

Table 3.1

Risk of Reading Difficulties as Identified by VALLSS Fall 2024

Grade Level	Total Student Enrollment	Identified as High Risk	Identified as Moderate Risk	Identified as Low Risk
K	105	52 (49.5%)	30 (28.6%)	23 (21.9%)
1	78	35 (44.9%)	24 (30.8%)	10 (24.4%)
2	106	46 (43.4%)	45 (42.5%)	15 (14.2%)

Note: Third-grade students are not included because VALLSS was not used to screen all third-grade students.

This table does not include third graders because a combination of the fall 2024 VALLSS assessment and the previous version of the screener, PALS, administered in spring 2024 were used to identify third-grade students at a high risk of reading difficulties. Out of 105 students in third grade, 21 students were identified as having a high risk of reading difficulties through VALLSS, and ten were identified through PALS, which represented 30% of the grade level. Since VALLSS was not used to screen all third-grade students, the number of students at moderate or low risk is not available.

Commercial Reading Assessment: AimswebPlus

The second source of data that indicated a problem was AimswebPlus, a commercial reading assessment that includes nationally normed benchmark reading assessments. Table 3.2 shows the percentage of each grade level identified at high, moderate, and low risk of reading difficulties by the AimswebPlus benchmark reading assessment in the fall of 2024.

Table 3.2

Risk of Reading Difficulties as Identified by the AimswebPlus Benchmark Assessments Fall 2024

Grade Level	Total Student Enrollment	Identified as High Risk	Identified as Moderate Risk	Identified as Low Risk
K	105	21 (20%)	21 (20%)	63 (60%)
1	78	50 (63%)	10 (13%)	19 (24%)
2	106	46 (44%)	22 (21%)	36 (35%)
3	105	36 (34%)	14 (13%)	55 (53%)

Note: Kindergarten students were assessed in October after being in school for 9 weeks, so this data likely underestimates the number of students at high risk of reading difficulties.

Virginia Standardized Assessment: Standards of Learning Reading

The scores on the Virginia Standards of Learning Reading Assessment also reflected problems with reading proficiency (Table 3.3). While the scores in 2024 showed improvement over previous years, 26% of students in third grade did not pass the test.

Table 3.3

Scores on the Third Grade Virginia Reading Standards of Learning Assessment

Year	Percent of Students who Passed
2024	74
2023	58
2022	71

There were around 375 students in grades K-3, with an average class size of 20 students. English language learners are 8.7% of the school population, and 13.9% of students have a disability. In 2023-2024, 12.6% of students were chronically absent, or missed over 10% of the school year. Seventy-five percent of students were eligible for free or reduced lunch (National Center for Education Statistics,

2024). In 2024-2025, the federal government identified RCES for targeted support and improvement (TSI) for students with disabilities due to a lack of achievement growth in that subgroup of students (Virginia Department of Education, 2024).

As a rural school in a small school division, Rural County Elementary School faced staffing challenges related to its location. RCES mainly recruited teachers who grew up in the area. In the past five years, RCES has hired eight new teachers for grades K-3. Of those eight teachers, four of them had provisional teaching licenses and had not completed student teaching. Similar staffing problems impacted the special education and reading specialist positions at the school. RCES adopted a new literacy curriculum, Bookworms, during the 2021-2022 school year for all grade levels. However, because of staffing challenges and limited professional development days, not all classroom teachers have completed training in the curriculum they use for reading instruction.

Researcher Access

As a literacy coach at RCES, I routinely worked with both the teachers and the students at the school. I had access to all the student data and teacher lesson plans. The students were used to seeing me in the classroom because I occasionally modeled lessons and taught small groups. I worked with many of the teachers for several years and was very familiar with the reading curriculum and other instructional resources at the school.

Methods

I designed the case study to collect data over three phases. In Phase 1, I administered an online survey. In Phase 2, I observed a day of reading instruction for five teachers. After the observations, I interviewed the teachers to collect data in Phase 3. In this section, I will provide details about how I gathered data during each phase.

Participants and Sampling

The participants in this study were the K-3 classroom teachers who provide reading instruction to students. The population size is fourteen. At RCES, some classroom teachers only taught math, science, and social studies because they were specialized. They switched classes with a partner teacher halfway through the day. Kindergarten teachers, as well as one teacher in second grade and one teacher in third grade, kept their class the entire day and taught all subjects. Table 3.4 summarizes the participants for the study.

Table 3.4

Participant Population: Current Classroom Reading Teachers

Grade Level	Number of Classrooms Reading Teachers	Number traditionally certified	Number provisionally certified	Relevant Background Information
K	6	4	2	• Both provisionally certified teachers are new to the school • One provisionally certified teacher previously taught Pre-K • One provisionally certified teacher is new to teaching • Two of the teachers also have Reading Specialist degrees • One traditionally certified teacher taught first grade until fall 2024
1	2	1	1	• The traditionally certified teacher is new to the school • Teachers are specialized and only teach reading.
2	3	3	0	• All teachers have been at the school for two years or longer • Two teachers are specialized and only teach reading, one teaches all subjects
3	3	3	0	• All teachers have been at the school for two years or longer • Two teachers are specialized and only teach reading, one teaches all subjects

This study used two-tier sampling. The first-tier sampling for the survey in Phase 1 used census sampling. Census sampling is used to include all persons in the population in the study (Berndt, 2020). I asked the entire population of fourteen K-3 classroom reading teachers to take the survey.

The second-tier sampling for Phases 2 and 3 focused on a smaller subset of teachers from the first sample. After inviting teachers to participate in additional data collection, I selected a sample of teachers to observe and interview. Since I had more volunteers than I needed for the study, I chose the teachers to observe and interview using maximum variation sampling from among those who expressed interest. To choose these teachers, I created a participant matrix that identified the volunteers and the characteristics that differ between them, such as years of experience, grade level, years at this school, and certification type. Using this matrix, I selected teachers who had different characteristics. This matrix was also useful after I completed data collection because it showed that the participants had characteristics that represented the population of teachers at the school (Galletta & Cross, 2013).

Due to the small sample size, to maintain confidentiality, additional demographic information linked to the teachers' pseudonyms is not provided. Rather, pertinent participant information will be offered through a broad lens. In the final sample of five teachers who participated in phases 2 and 3, there was at least one teacher from each of the four grade levels kindergarten through third grade. The teachers had a range of teaching experience. One teacher was a beginning teacher with 0-4 years of experience, two teachers were experienced teachers with 5-14 years of experience, and two veteran teachers had been teaching for fifteen years or more. The teachers also had a range of teacher certification types, including provisional licenses, collegiate licenses, and postgraduate professional licenses. Twelve teachers indicated they had completed the required online reading-focused professional development modules that are part of the Virginia Literacy Act (VLA).

Data Collection

I employed three stages of data collection: a survey, an observation, and a semi-structured interview following the observation. Table 3.5 illustrates the alignment of the data collection with the research questions. For each of these data collection stages, I will describe how I created the data instrument and how I used it in the study. Ensuring that I used effective data collection instruments was important because the instruments influence the quality of data and ultimately the credibility of the study (Ravitch & Carl, 2019).

Table 3.5

Data Sources Used to Address Research Questions

Research Question	Survey	Observation	Interview
Q1: In what ways, if any, do K-3 classroom teachers at Rural County Elementary change instruction to support students identified as having a high risk of reading difficulties with word recognition skills?	X	X	X
Q2: What factors facilitate or hinder efforts of K-3 classroom teachers at Rural County Elementary to provide literacy instruction for students identified as having a high risk of reading difficulties?	X	X	X

Phase 1: Survey

I began data collection with a survey, included in Appendix A, that gathered data on the constructs of teacher knowledge, teacher scaffolding, and factors that hinder or facilitate instruction. A survey was an important part of my data collection plan because a survey allows me to gather a wide variety of data from the full population of K-3 reading teachers.

Teachers' knowledge of word recognition skills is important because teachers cannot teach skills that they do not understand themselves. To explore teacher knowledge, the survey included questions

from the Teacher Understanding of Literacy Constructs and Evidence-Based Instructional Practices (TULIP) survey (Hall et al., 2023). The 27 multiple-choice questions covered teacher knowledge and skills for teaching word recognition. Previous researchers established the reliability and validity of this survey (Hall et al., 2023).

I also included a question that asks teachers to rate how often they use seven specific scaffolding strategies during reading instruction. These questions enhanced my data collection by providing information on the use of scaffolding throughout the school year. These questions came from the Survey of Teacher-Implemented Scaffolding (Dominguez & Svihla, 2024). The last construct the survey addressed was factors that hinder or facilitate instruction. Teachers rated the extent to which they agree or disagree with eleven statements which contain different factors which could impact instruction. Previous researchers identified these factors as facilitating or hindering instruction (e.g. Connor & Morrison, 2016; LaRusso et al., 2016; Panda et al., 2023). At the end of the survey, teachers provided any additional information they felt was relevant to teaching students at high risk of reading difficulties in the classroom in two open answer questions.

To improve the quality of my survey questions, I vetted my questions with a methods expert who provided feedback on the wording and content of the survey. After receiving IRB approval, I piloted my survey with two expert reviewers. The first reviewer has strong literacy content knowledge and practical experience with designing and administering surveys. The second reviewer was a current classroom teacher in a different school district. I asked the survey reviewers to take the survey and provide feedback about the content of the survey, the format, the length, the completion time, and anything else they felt was relevant. After reviewing their feedback, I updated the time estimate for the survey. I also changed the order of some questions so that the teachers provided responses about how they support students before they saw the question that contained a list of different ways to scaffold instruction.

Finally, in early spring 2025, I invited all fourteen K-3 classroom reading teachers to complete the survey. To encourage survey completion, I put a letter, found in Appendix B, in the school mailboxes of the eligible teachers, and I sent the same letter to their school email. This was Day 1 of the survey data collection. The letter reviewed the objective of the survey, the importance of participation, information about how I stored the data, and a link and a QR code that linked to the survey. I also attached a copy of the electronic study information form to the letters and emails at the request of the IRB committee. When teachers completed the survey, they were told that the reading specialist at the school had gift cards for them as a token of appreciation for their time.

On Day 4 of the survey week, I sent emails (Appendix C) to thank teachers for their participation and reminded those who had not completed the survey to do so. This email also asked teachers to respond to the email if they were willing to participate in the observation and interview portion of the data collection. This protected confidentiality by separating the names of the teachers who volunteered from their survey responses. Finally, I sent one final additional follow-up email to encourage survey completion to all teachers on Day 8.

Phase 2: Observations

In Phase 2 of the data collection, I conducted observations of the teacher's reading instruction in the classroom. Observations "allow researchers to see and record firsthand the activities in which research participants are engaged in the context(s) in which these activities happen" (Ravitch & Carl, 2019, p. 141). In the context of scaffolding instruction, observations are important because previous researchers found discrepancies between a teacher's ability to discuss scaffolding and a teacher's ability to implement scaffolding (van de Pol et al., 2012).

Observation Protocol Development. I created an observation protocol to record descriptive and analytical information during the observation (see Appendix E). I wrote both descriptive information about what I saw during the observation and analytical notes, which included my own thoughts during

the observation (Gaudet & Robert, 2018). I also included information about the setup of the room and other relevant information.

To pilot the observation protocol, I observed a fourth-grade teacher at RCES. This teacher was not eligible for the study, but she taught using the same curriculum as the teachers in the study, which allowed me to test the observation protocol in a setting very similar to the study participants. I used the observation protocol as if I were collecting data for the study. This allowed me to see if I needed to change the observation protocol before I collected the actual data. Piloting the observation protocol was helpful because I realized I need to allow more time to record observations of the classroom. Overall, the protocol worked well, but I realized that trying to mark scaffolding as I observed was challenging. I decided I would review the notes immediately after the observation to mark places where the teacher scaffolded instruction rather than trying to note it during the observation.

Observation Procedures. After I chose the teachers who I observed and interviewed in Phase 2, I sent them information about the observations by email (Appendix D). For each teacher who participated, I observed a day of reading instruction during the regular reading block and during the half of the intervention block, which ranged from 133 to 154 minutes, depending on the grade level. This time is the full duration of the reading instruction one class of students would receive in the regular classroom on a single day. I observed both the whole group and the small group instruction. This was important because the scaffolding provided in a whole group setting was likely to differ from scaffolding provided in a small group setting. Before the observation, I obtained consent from the teacher and notified the parents of students in the class that I would collect data on the teacher's instruction while their child was in the classroom (Appendix F). After each observation, I wrote a memo to capture my initial thoughts and reactions.

Phase 3: Semi-Structured Interviews

In Phase 3 of the data collection, I conducted an individual semi-structured interview with each of the teachers I observed. Semi-structured interviews are useful because they provide "deep, rich, individualized, and contextualized data" (Ravitch & Carl, 2019, p. 126), which illustrate the perspective of the interviewee, their lived experience, and how they make sense of the topic (Hancock & Algozzine, 2017; Ravitch & Carl, 2019). Semi-structured interviews include questions that are pre-planned to provide information useful to the researcher (Hancock & Algozzine, 2017). The questions are flexibly worded, and the researcher has the option to ask follow-up questions which can help to clarify, encourage elaboration, or facilitate reflection on the topic (Galletta & Cross, 2013). Semi-structured interviews provided data that allowed me to explore constructs at both an individual and group level to identify similarities and differences (Ravitch & Carl, 2019).

Interview Protocol Development. I used an interview protocol, included in Appendix G, to organize and guide the interview (Ravitch & Carl, 2019). The interview protocol included questions asked of all participants and potential follow-up questions (Ravitch & Carl, 2019). To design the interview protocol, I reflected on what information would help me gather additional data to answer my research questions and to triangulate my findings. I considered what information I hoped each question would provide and created tables with follow-up questions I could use to ensure participants addressed key constructs I hoped to explore.

To increase the quality of the interview protocol, I asked experts to vet the content. A methods expert and a content expert vetted the interview protocol to ensure that the questions were high quality and would provide insight into my problem of practice. After receiving technical feedback on the wording of questions and critical feedback on the content, I revised the interview protocol.

The second step in ensuring the quality of my interview protocol was to pilot the protocol. After obtaining IRB approval for my research, I piloted the interview protocol questions that related to the

observation with the fourth-grade teacher I observed at RCES. I piloted the interview protocol questions that asked teachers about scaffolding instruction with a third-grade classroom reading teacher from another district. I split the interview protocol piloting so both teachers could complete the interview questions and have time to give me feedback about the questions. This process allowed me to identify additional issues with the phrasing of questions, the order of the questions, and how useful the questions are to answering my research questions (Galletta & Cross, 2013). Piloting the interview also helped me estimate how long the interview would take so that I could provide an accurate time estimate to the teachers. After piloting the interview protocol, I made a few minor changes to the questions, combining some questions that seemed redundant and adding prompts for follow up.

Interview Procedures. I conducted a semi-structured interview after each observation. This interview served two main purposes: (1) to follow up on the observation and encourage teacher reflection about the lesson and (2) to gather additional information about how the teacher had responded to the reading needs of students identified as having a high risk of reading difficulties in her classroom. I tried to schedule the interview for the same day as the observation if possible and within two days at the most, so that the teacher was likely to remember the lesson (Appendix H).

After completing the observation, I read through the observation protocol notes to identify at least one time in the whole group instruction and at least one time in the small group instruction where the teacher appeared to have scaffolded instruction in the lesson. I also identified instances where teachers showed general pedagogical knowledge through classroom management strategies, directing attention or promoting engagement. I noted the instances I wished to discuss in the interview protocol for that teacher. Previous researchers have found that scaffolding occurred in classrooms once in about 25 minutes (Ankrum et al., 2020), so I knew it was likely that the teacher would scaffold instruction during the reading blocks, which were at least two hours long. Although I planned questions to substitute for this portion of the interview if I was not able to find instances where the teacher appeared

to scaffold the lesson, since all teachers made changes during the observations, I did not have to use them.

I asked teachers if they would prefer to do the interview during their planning time or after school. I audio recorded each interview using the Zoom online platform. I used the interview protocol to ask the teacher questions about the instruction I observed and about how she supported high-risk students in her classroom throughout the year.

At the beginning of each of the two main parts of the interview, participants answered an open-ended question, which gave them the opportunity to convey their experiences by focusing on the information they felt was the most important (Galletta & Cross, 2013). After the participant responded to the broad open-ended question, I used the interview protocol to guide the follow-up questions to ensure that the participant shared their thoughts about other important ideas that would help answer my research question.

In Part 1 of the interview, I asked the participants open-ended questions that gave them an opportunity to share thoughts and reflect on the specific instances where they scaffolded students during whole group instruction and small group instruction. I also shared the instance where the teacher appeared to apply pedagogical knowledge, and I asked them to discuss it. This was important to ask because the survey did not contain questions on general pedagogical knowledge, so by asking teachers to discuss decisions that demonstrate general pedagogical knowledge, I could gather more information that would help me to understand if general pedagogical knowledge impacted the teacher's ability to provide effective instruction for students at a high risk of reading difficulties.

Part 2 of the interview focused on discussing how teachers generally support students in their classroom identified as at high risk of reading difficulties by VALLSS. These questions provided information about ways that teachers scaffolded instruction that I did not see in the observation. Finally, I ended the interview by asking the teacher to discuss the factors that they felt impact their ability to

support high-risk students. After the interview, I used the Zoom transcription to produce a transcript of the audio recording, and I checked it for accuracy. To ensure that I transcribed the interview accurately, I sent the transcript to the teacher to review.

Summary of Data Sources

Table 3.6

Data Collection Dates at RCES

Teacher Pseudonym	Observation Date (Duration)	Interview Date (Duration)
Kathleen Fielding	2/4/2025 (154 minutes)	2/5/2025 (43 minutes)
Danielle Baker	2/5/2025 (146 minutes)	2/5/2025 (53 minutes)
Tamika Smith	2/25/2025 (150 minutes)	2/27/2025 (38 minutes)
Anne Camp	2/26/2025 (133 minutes)	2/26/2025 (41 minutes)
Carmen Waldrop	3/3/2025 (145 minutes)	3/4/2025 (57 minutes)

Data Analysis

In qualitative research, data analysis is formative and summative (Ravitch & Carl, 2019). Formative data analysis starts as soon as data are collected and the results can influence the data collection that has not yet occurred (Ravitch & Carl, 2019). Summative data analysis happens after all the data are collected and will summarize the findings of the research (Ravitch & Carl, 2019).

Survey Analysis

All fourteen teachers in the population responded to the survey. I analyzed the data from the survey with a combination of descriptive statistics and qualitative coding. I created a survey codebook (Appendix H) to document the survey data collection. The survey codebook contained all relevant information for each question and helped me organize the survey results.

Descriptive statistics are used to summarize data and to highlight patterns in the data (Breslin, 2020). For the categorical demographic data, I calculated the percentage and frequency of participants to which each descriptor applied (Table K1). For example, in my participants, no teachers chose that they had a provisional teaching license, but 21% (3 of 14) responded, "I prefer not to answer." For questions that used a Likert scale, I converted the ordinal choices into numbers so I could calculate the average score, median, mode, range, and the standard deviation (Table K2 and Table K3). I also analyzed Likert data by grouping similar responses, such as the number of teachers who chose agree and strongly agree together. This allowed me to calculate the overall percentage of teachers who agreed with specific questions.

For the knowledge questions, I calculated the overall percentage teachers got correct (Table K4). I also calculated how many teachers were accurate on questions that focused on the same reading instruction construct, such as using student errors to inform spelling instruction or identifying syllable types. This helped me to identify patterns of accuracy for the different constructs assessed with the knowledge questions.

I used qualitative coding, which I will describe below, to analyze the open response answers on the survey. In qualitative research, data collection processes are "recursive, iterative, and inductive—with processes that build on and influence each other" (Ravitch & Carl, 2019, p. 106). While my data collection was sequential, each part informed the future phases and influenced the questions and focus of the data collection. For example, I planned that if teachers mention a theme or issue in the survey

that I did not expect, I would take notes pertaining to that issue during observations and alter the interview protocol so teachers can share thoughts about that theme during the interview. While the open-ended questions did not include any unexpected topics, after analyzing the survey data, I identified four factors that had the largest standard deviation on the survey: range of student needs, time to plan, time to teach, and student absences. Standard deviation shows how far away scores are from the mean to provide information about how much variation is in the data (Fink, 2017). These factors all had standard deviations that were greater than 1.1, while nearly half of the other factors had standard deviations less than 0.52. This indicated that the teacher response about the impact of the range of student needs, time to plan, time to teach, and student absences had more variety than responses to other questions. I wanted to understand why teachers had various opinions on these factors, so I added a note to my interview protocol to remind myself to listen for these items. If teachers did not mention them, I tried to ask follow-up questions about these factors so I could gather additional data that would help me understand why the responses varied.

Observation Analysis

I analyzed the observation data in two stages. First, I reviewed observation data to identify examples to use in the interview protocol, as outlined in the description of data collection procedures. Later, I used qualitative coding to complete a full analysis.

Qualitative coding is a strategy for analyzing data by organizing it into smaller pieces, which are labeled with codes that identify the important topic represented by that data (Ravitch & Carl, 2019). This coding process allows the researcher to group similar data to discover important patterns and themes related to the study's questions (Ravitch & Carl, 2019). Throughout this study, I used a coding process that included both deductive and inductive coding (Bingham, 2023). I began the process of deductive coding by uploading the data to Dedoose, a research program, and assigning attribute codes that

identified the type and source of data. Then, I coded the data with a priori codes from research literature (Ankrum et al., 2020; Martin et al., 2019).

After applying the deductive coding, I used an inductive approach by engaging in open coding where I analyzed the data again and developed emergent codes to capture common ideas that were not in the a priori codes (Bingham, 2023). After open coding, I used the reports in Dedoose to identify codes I used least frequently. I also considered all the codes I had applied to determine if their differences were significant enough to warrant separate codes or if they could be combined into a single code. I grouped codes that were similar if they did not have a significant amount of data or if the code could be broader while still providing information. For example, during the open coding, I added emergent codes that described the scaffolding strategies more specifically than my a priori codes. I added emergent codes for *hints* and *narrowing choices*. After reflecting on the data, I realized these codes could be combined into the soft scaffolding code *guidance or hints*, which also aligns with the language in the prompts teachers responded to on the survey.

Some of my original a priori codes applied to very few data, so I combined or eliminated those codes. For example, my initial a priori codes included *fading* and *transfer of responsibility* as separate codes, but I found after the deductive coding that I applied both of them to the same data every time. Although they are separate constructs, when teachers fade support, they simultaneously transfer responsibility for the task to the student (Dominguez & Svihla, 2023). I combined those codes into a single code *fading* that encompassed both the fading process and transferring responsibility. I eliminated the a priori code *monitoring understanding* because that scaffolding strategy was captured by the soft scaffolding code *questions or prompts*.

Throughout the process, I wrote memos to track my thinking and the creation of, consolidation of, or division of the themes from the data. This increased credibility because it provided a record of how I analyzed the data (Bingham, 2023; Mertens & Wilson, 2019). Table 3.7 lists the final codes: the a

priori codes that came from the conceptual framework, a priori codes based on research literature, and the emergent codes I added after the first round of coding. Appendix I contains a full description of the codes with examples from the data.

Table 3.7

Qualitative Codes

A Priori Codes from Conceptual Framework	A Priori Codes Derived from Literature	Emergent Codes
Hard Scaffolds	Soft Scaffolding: Models a Skill	Curriculum
Fading	Soft Scaffolding: Feedback	Support
Contingent	Soft Scaffolding: Questions or Prompts	Change from Lesson Plan
Non-contingent	Soft Scaffolding: Rewording or Explaining	
Assessment	Soft Scaffolding: Break into Smaller Steps	
Demonstrates PCK (Pedagogical Content Knowledge)	Soft Scaffolding: Guidance or Hints	
Gaps in PCK (Pedagogical Content Knowledge)	Class size	
Demonstrates GCK (General Content Knowledge)	Range of Needs	
Gaps in GCK (General Content Knowledge)	Materials and Assessment	
Demonstrates GPK (General Pedagogical Knowledge)	Time	
	Collaboration	
	Absenteeism	
	Behavior	

After adding emergent codes, regrouping codes, and eliminating codes, I analyzed the data again and identified any data that I thought could be interpreted differently or instances where I was not confident in the code I assigned. I created excerpts of this data which I shared with a peer feedback partner who has expertise in reading instruction for feedback. After I explained the code definitions using my codebook, we went through each piece of data and discussed how she would code it and why.

This feedback helped me to clarify the differences between codes and ensure that codes were consistently applied throughout my data. It also increases the trustworthiness of my research because the peer feedback partner helped me to ensure the coding process was as neutral as possible.

Finally, I identified patterns and themes in the data to develop findings that answered my research questions (Bingham, 2023). First, I tried to identify patterns in the data that were consistent across all of my data sources. I used reports that are built into Dedoose to analyze the pattern of occurrences of different codes. This was helpful because when I analyzed the pattern of occurrences, I could identify when codes were distributed relatively equally between teachers and when they had notable variation.

To answer my research questions, I looked for patterns in the data that I could group under overarching themes. A theme "identifies what a unit of data is about and/or what it means" (Saldaña, 2021, p. 155). After creating a draft of potential themes, I added examples from the data to illustrate each theme. I shared this with my peer feedback partner, and we discussed the alignment between the themes and the data patterns they were based on. My feedback partner helped me to further simplify the themes I identified. Throughout this process, I thought about how the codes and themes related to the research literature and to my conceptual framework (Bingham, 2023). I identified where my findings align with the literature and the conceptual framework and places where they do not. Then, I summarized how the findings inform the research questions. I then shared my findings with a reading expert who provided additional feedback and helped me to refine them further. Last, I developed recommendations for the school administrators that apply the findings to specific steps that can help to improve classroom reading instruction.

Interview Analysis

After I completed the interviews, I transcribed them using the transcription software within Zoom. I sent the transcribed interview to each teacher so they could ensure accuracy and provide

feedback. All teachers confirmed the transcript was accurate, and no teacher requested any changes to the transcript. After the teachers checked the accuracy of the data, I used the qualitative coding process previously described to code the interviews.

Trustworthiness

Trustworthiness describes the degree of confidence readers have in my research findings due to the quality and rigor of the study (Ravitch & Carl, 2019; Stahl & King, 2020). Lincoln and Guba (1985) identified four criteria to evaluate the trustworthiness of a study: credibility, dependability, transferability, and confirmability.

Credibility

Credibility describes how well the "research findings match reality" (Merriam & Tisdell, 2015). The research methods of triangulation and member checks help to establish credibility of the findings (Stahl & King, 2020).

Triangulation. Triangulation is a way to increase credibility by using multiple sources or types of data to identify evidence for themes across the data (Creswell & Creswell, 2017). I used method triangulation to collect different types of data about my problem of practice (Patton, 1999). I designed the research to ensure that I gathered data from at least two methods for each major construct in my conceptual framework. By collecting data on the same topics in multiple ways, I built credibility for my findings because I ensured I had the "depth and detail" of information to support the findings (Patton, 1999, p. 1197). During the data analysis process, I looked for data patterns that were present across the different sources of data and among different teachers. When I identified the data themes, I ensured that the theme I identified was evident in multiple types of data and multiple sources of data.

Member Checks. Member checks are the process of sharing data and interpretations with participants (Marshall & Rossman, 2014). Member checks increase credibility because participants can "share how they think and feel about various aspects of the research process and the parts of the data

set that pertain to them," which helped ensure that my understanding and interpretation of the data was accurate (Ravitch & Carl, 2019, p. 177). I conducted member checks after each interview to ensure that the data I transcribed accurately represented the interview and planned to fix the transcript if the participant identified any discrepancies. All participants confirmed that the transcripts were accurate. After I developed preliminary findings from the data, I sent the findings to all K-3 classroom reading teachers. I asked teachers to respond to the findings and offered the opportunity to provide additional feedback if they wished. Teachers confirmed that the findings were accurate. One teacher shared, "I strongly agree with your findings," while another wrote, "I definitely agree with it all." Overall, eight teachers responded to the preliminary findings, and they all said they agreed with the findings. No teachers expressed concern or a desire to change any findings.

Dependability

Dependability refers to how well my data answered my research questions (Ravitch & Carl, 2019). Choosing appropriate methods, matching methods to the research questions, and carefully designing the study all support dependability of the results because those methods ensure that the "results are consistent with the data collected" (Merriam & Tisdell, 2015, p. 251). I designed the study carefully to ensure that the data collected would provide answers to my study questions. The methods that I previously discussed which improve credibility also support dependability because they ensure the results are consistent with the data.

Transferability

Transferability is how qualitative research "can be applicable…to broader contexts while still maintaining their context-specific richness" (Ravitch & Carl, 2019, p. 168). Case study research is not designed to be replicable or generalizable because case studies are so specific to a particular context in which they occur (Serlin, 2011). Instead, researchers think about how to provide "rich, thick description" of the context and study so that readers can make judgements about if the findings might apply in their

own context (Merriam & Tisdell, 2015, p. 256). Throughout the description of this study, I have included many details to enhance transferability.

Confirmability

Confirmability is an element that contributes to trustworthiness that describes the "objectivity or neutrality of data and interpretations" (Polit & Beck, 2018, p. 542). I used reflexivity, positionality reflection, and peer debriefing to enhance the confirmability of my research.

Reflexivity. Reflexivity is the process of "reflecting back on one's thought process, assumptions, decision making, and action taken" while collecting and analyzing research (Galletta & Cross, 2013, p. 56). Throughout the research process, I created an audit trail to document my thinking and decisions throughout the project and recorded how I analyzed and interpreted data (Merriam & Tisdell, 2015) so that I could recognize when my bias may have influenced data collection or analysis. I created memos throughout the process to document my emerging thinking and decisions. After each observation and interview, I wrote a memo to capture my initial thoughts and reactions.

Through the reflective memos, I was able to identify an instance where my own values impacted my data analysis. I initially wanted to code the hard scaffolding materials to show if the materials were created in collaboration with teachers' grade level team or if it was something the teacher added independently. After a few observations, there seemed to be a difference in the quality of the materials based on the source. While writing about this in a reflexive memo, I realized that the source of the materials teachers added did not help to answer my research questions, and I should maintain my focus on the scaffolding strategies teachers used. Since I value collaboration as a literacy coach and sometimes help to create instructional materials, my bias towards materials created with the grade level team had sidetracked my analysis from my research questions. I eliminated those codes and instead coded for the scaffolding strategies teachers employed.

Reflexivity is especially important during interviews because the interviewer has the potential to shape the data by choosing what topics merit follow-up questions, when to interrupt a participant to clarify information, and how the interviewer engages the participant in "generating meaning from… [their] experience" (Galletta & Cross, 2013, p. 88). After I transcribed the interviews, I read through the interview to identify instances where my own opinions or bias may have shaped the way I responded to the interviewee or impacted the information I focused on. It is important to identify my perspective, biases, and assumptions because it helps the reader to understand how my position as the researcher may have influenced the results of the study (Merriam & Tisdell, 2015).

Positionality Reflection. My job as a literacy coach at RCES might have impacted data collection. Although I did not supervise teachers, some teachers may have viewed my RCES role as a position of authority because I often made instructional recommendations. It is important that participants knew that participation in the research was optional and would not influence our working relationship.

As a literacy coach, I have provided professional development on reading instruction in the past for the participants in this study. Teachers may have changed their typical instruction to use instructional strategies that they perceived I would want to see during the observation. While all the teachers confirmed in the interviews that the observation represented a typical day of instruction, the observation data may differ from typical instruction. Additionally, many teachers continued reading instruction past the ending time of the reading block on the school schedule. Teachers may have lengthened their instruction because they were being observed.

As an RCES employee for the past eight years, I was familiar with both the current and past approaches to reading instruction. I knew what materials were available to teachers and what professional development they had received through the school. This knowledge helped me interpret comments from teachers and to make recommendations to RCES after I completed the study.

Peer debriefing. I worked with a peer literacy expert outside of my case with whom I discussed the study. The expert was knowledgeable about reading instruction and had experience with case study research; they provided feedback on the way I analyzed data and helped me consider other alternative findings that might have applied to my research questions.

Ethical Considerations

Ethical considerations are the actions that I took to ensure that participants were protected throughout my study (Sieber & Tolich, 2013). Throughout this study, I followed the procedures that were approved by the University of Virginia Institutional Review Board for Social and Behavioral Sciences.

One way I protected the participants in the study was to get informed consent before collecting any data from participants. Informed consent involves understanding that participation is voluntary, what the study is about, and what the participant will be asked to do (Sieber & Tolich, 2013). It was important that all participants in the study understood that they could choose not to participate and that they would not experience any negative repercussions if they chose not to take part. All the participants read electronic study information before they complete the survey. Participants who participated in phases two and three of the research also signed an informed consent form that contains information specific to those portions of the study. Before the observations, I sent home letters to guardians of students in the classrooms I was planning to observe (Appendix F). These letters explained to parents that I was going to collect data on classroom instruction in their children's classrooms and clarified that no data would be collected on the students in the classroom.

Another way to protect participants was to protect their privacy by ensuring the confidentiality of the data so that others did not learn their identity (Sieber & Tolich, 2013). The school's name and the teachers' names in the study are pseudonyms. The survey did not request the participants' names. I sent a separate email asking for volunteers for the observation and interview three days after I sent the

survey so that teachers who volunteered for the observation and interview would respond at a separate time from when they completed the survey to ensure the survey confidentiality. I protected the confidentiality of the participants when I wrote my findings by reporting demographic information without linking it to the teachers' pseudonyms. Since some grade levels had as few as two classroom reading teachers, the combination of certain demographic information would be enough to identify the participant to people familiar with the school.

I also ensured confidentiality by protecting the data I collected. All the data stored electronically was password protected with multi-factor authentication. I stored the survey data and notes on a password-protected UVA server. I used Zoom to audio record the interviews. The UVA Zoom platform was also password protected with two factor authentication. I will retain the data for five years and then delete the data from the UVA servers.

Delimitations and Limitations

To further enhance the study's credibility, I have identified delimitations and limitations. This practice also helps provide further context for interpreting my findings. Specifically, delimitations help to define the scope of the study, and limitations help to consider study constraints.

Delimitations

The delimitations of the study describe the parameters of the study. Case studies are characterized by the unit of analysis in a bounded context (Merriam & Tisdell, 2015). This study was focused on reading instruction provided to K-3 students at a high risk of reading difficulties in one specific school. I focused on these grade levels because research shows that reading intervention in the primary grades is more cost effective and produces larger gains than intervention in upper grades (Panda et al., 2023). I focused on classroom teachers rather than specialists such as reading specialists, special education teachers, or teachers who support students learning English because effective classroom instruction that meets the needs of at least 80% of students is necessary to ensure that

schools can effectively provide additional intervention to students who need it without overwhelming school resources (Harlacher et al., 2015; Lane et al., 2018).

Limitations

The sampling procedures are a limitation of this study. Since I chose five teachers to observe and interview, the data collected through observing and interviewing five teachers may not represent all the ways RCES classroom teachers support students at a high risk of reading difficulties. Another limitation is that I observed each teacher on a single day of instruction. It is possible that the day I observed is not representative of a regular day. Since this study is based on a small sample in a specific school, the findings from this data cannot be generalized to other contexts.

A second limitation was because of time constraints. Trying to keep the interview within a specified timeframe, I did not ask all teachers I interviewed the same questions. Sometimes, this meant that I had comments from some teachers on specific issues that had mixed responses in the survey, but not all of them. This limited data could have impacted my findings.

Another limitation that could have impacted my findings was the wording of items in the survey. Language that is used by researchers does not always align with language used by practicing teachers. I kept the exact language of the questions that came from previously validated surveys. When I reviewed the survey results, I wondered if the term “vowel digraph” on the survey may have confused the teachers at RCES who use the term “vowel team.” Similarly, teachers may not have understood what was different between the different methods of scaffolding in the survey. If I had provided teachers with an example of each type of scaffolding, it may have impacted the frequency they answered represented their use of that strategy.

Choosing to take notes instead of video recording instruction is a limitation that could have impacted my findings. I took notes rather than video recording the lesson so that the teachers would feel more comfortable and be more likely to teach typically. Since I took notes instead of video

recording, I was not able to capture every interaction between the teachers and the students. Missed interactions may have impacted the number of different scaffolding strategies in my data.

Chapter Summary

In this chapter, I discussed the three stages of data collection procedures. I summarized the procedures I used to ensure the quality of the data collection instruments and how I analyzed the data. I also highlighted how my research plan built trustworthiness, I explained my role as a researcher, and I considered ethical considerations and limitations. In the next chapter, I will explain the major themes and findings from the data.

Chapter 4: Findings

This capstone project investigated how K-3 classroom reading teachers support students who have a high risk of experiencing reading difficulties. Responding to the different needs of students in the regular classroom is a characteristic of high-quality classroom reading instruction (Harlacher et al., 2015; Leonard et al., 2019; Preston et al., 2016), but teacher efficacy for meeting students' instructional needs varies (Kardoust, 2024). Scaffolding instruction is an effective way teachers can help students who need additional support to become successful readers (Gersten et al., 2008). Understanding how teachers instruct students who are at a high risk of reading difficulties is important because high-quality classroom instruction, combined with early intervention, has the potential to prevent reading difficulties (Scanlon et al., 2005).

The study was focused on the following research questions:

- Q1: In what ways, if any, do K-3 classroom teachers at Rural County Elementary School change instruction to support students identified as having a high risk of reading difficulties with word recognition skills?
- Q2: What factors facilitate or hinder efforts of K-3 classroom teachers at Rural County Elementary to provide literacy instruction for students identified as having a high risk of reading difficulties?

To explore the research questions, I conducted a three-part qualitative case study focused on how K-3 classroom teachers at Rural County Elementary School (RCES) teach word recognition skills to students identified as having a high risk of reading difficulties. In the first part of the case study, all fourteen teachers in the target population completed an online survey that provided data about how often they used specific scaffolding strategies to support students, factors that support or hinder their ability to meet the needs of students who have a high risk of reading difficulty, and their knowledge and skills for teaching word recognition. The second and third parts of the study focused on a sample of five

teachers. In the second part of the case study, I observed one day of classroom reading instruction for each of the five teachers. The third part of the case study was an interview with the teachers I had observed to discuss their instructional choices and to gather additional information on factors that impacted their ability to meet the needs of students who have a high risk of reading difficulties. Table 4.1 summarizes these data sources.

Table 4.1

Data Collection Process at RCES

Data Source	Date Collected	Data Obtained
Survey	1/27/25-2/7/2025	• Teachers' use of scaffolding strategies • Teachers' perception of factors that support or hinder their efforts to meet student needs • Information on teachers' knowledge and skills to teach word recognition
Lesson Observation	2/4/2025-3/3/2025	• Teachers' use of scaffolding strategies on a single day • Information on factors that appear to support or hinder meeting student needs • Teachers' application of knowledge and skills to support instruction
Teacher Interview	2/5/25-3/4/2025	• Teachers' use of scaffolding strategies throughout the year • Teachers' perceptions of factors that support or hinder meeting student needs

The RCES school literacy curriculum, Bookworms, provided an important context for my data collection because it allowed me to identify when teachers made instructional changes instead of following the Bookworms lesson plan. The Bookworms curriculum includes instructional elements, routines, and structures. Instructional elements are areas of instructional focus that do not have a routine with multiple steps to teach, such as setting a purpose for reading. Routines are specific steps that teachers to follow to teach specific skills in the Bookworms curriculum, such as steps to introduce spelling words or ways to read the text during whole group instruction. Structures describe the format

and sequencing of routines and instructional elements. At RCES, all teachers are expected to use two main structures from the curriculum each day: shared reading and differentiated small group instruction. These structures include predictable routines. Bookworms lesson plans provide extensive support for teacher talk, so it was easy to identify when teachers choose to change the curriculum. The curriculum authors write that "teachers may be surprised by the level of detail in the lesson plans…we wrote the plans that way so teachers would have strong implementation support every day. We refer to Shared Reading…as highly structured, and to [the small group instruction] as initially scripted. We have provided extensive modeling talk in the lessons…" (Walpole, n.d.).

After collecting data, I used descriptive statistics and qualitative coding to analyze the data. I triangulated data to identify themes prevalent across data types, and I grouped the themes to answer my research questions. The data yielded the following findings:

- Finding 1: All teachers made instructional changes to support students who have a high risk of reading difficulties, but the changes they made varied.
    - Theme 1.1: Teachers intentionally scaffolded students' needs by utilizing the curriculum routines and by adding additional scaffolding support when needed.
    - Theme 1.2: Teachers made intentional changes to the curriculum by adding or omitting elements to meet student needs.
    - Theme 1.3: Teachers made changes to the curriculum that were not identified as intentional.
- Finding 2: Teachers used soft scaffolding strategies more frequently than hard scaffolding strategies.
    - Theme 2.1: Teachers most frequently used prompts and questions to scaffold students.
    - Theme 2.2: Teachers' inclusion of modeling and explicit instruction varied with curriculum fidelity.

    - Theme 2.3: The frequency of contingent responses varied.
    - Theme 2.4 The most frequent application of hard scaffolding was providing students who had a high risk of reading difficulties with different texts or different spelling words.
- Finding 3: Teachers reported they know how to meet the needs of high-risk students and have the resources to teach them.
    - Theme 3.1: Teachers had the physical materials and assessments they needed for instruction.
    - Theme 3.2: Teachers agreed they know how to teach students at a high risk of reading difficulties, and they have support if they need help.
    - Theme 3.3: Teachers agreed they can manage student behavior to maximize instructional time.
- Finding 4: The teachers' knowledge, extent of collaboration, and the impact of student absenteeism had notable differences.
    - Theme 4.1: Teachers' content knowledge and pedagogical content knowledge varied.
    - Theme 4.2: Teacher collaboration differed between grade levels.
    - Theme 4.3 Student absenteeism impacted teachers to varying degrees.
- Finding 5: Teachers reported that their ability to support students at high risk of reading difficulties was impacted by time, class grouping, and the support provided by paraprofessionals.
    - Theme 5.1: Classroom grouping practices created classrooms that are largely homogenous.
    - Theme 5.2: Teachers agreed they do not have enough time to plan instruction, and many felt that instructional time was not sufficient.

- Theme 5.3: Teachers recognized the important role of paraprofessionals in the classroom, and many wished that they had additional support.

Finding 1: All teachers made instructional changes to support students who have a high-risk of reading difficulties, but the changes they made varied.

This finding addresses Research Question 1: how teachers change classroom reading instruction to support students identified as having a high risk of reading difficulties with word recognition skills. Data from the survey, the observations, and the interviews showed all teachers changed the lesson plans provided by the curriculum to meet the needs of students who have a high risk of reading difficulties. Teachers made three main types of changes to meet student needs: intentional scaffolding, intentional changes, and unintentional changes. Intentional scaffolding describes when teachers added additional scaffolding to support students when needed and ensured they included scaffolding built into the curriculum routines. Teachers also made intentional changes to curriculum by adding or omitting instructional activities. Finally, teachers made changes to the curriculum that they did not identify as intentional.

Theme 1.1: Teachers intentionally scaffolded students' needs by utilizing the curriculum routines and by adding additional scaffolding support when needed.

Teachers provided intentional scaffolding in two main ways: by utilizing the scaffolding built into the curriculum routines and by adding additional scaffolding to increase student support. The structures that are part of the Bookworms curriculum include scaffolding through modeling and routines that systematically decrease teacher support while increasing student responsibility for the task. The teachers noted the importance of several constructs included in my conceptual framework, including the crucial elements of fading support while transferring responsibility to the students. In her interview, Ms. Camp highlighted how the curriculum structures for beginning readers transfer responsibility for reading to students over the course of a week while fading support from the teacher. She noted the

curriculum begins the week by having teachers read a page of the book and then asks students to read the same page (echo reading); eventually, the students read the book at the same time as the teacher (choral reading); and finally, they read the book with a partner (partner reading).

Due to the built-in scaffolds of Bookworms, the observation data showed that teachers following the small group structures had three times more instances of modeling in one small group lesson than teachers who did not use these structures. In the survey, teachers described how they might support a student who they expect to have difficulty reading words in the shared reading text. Eight out of fourteen teachers responded to this question by highlighting scaffolding and instructional routines included daily in the Bookworms curriculum, such as choral reading (four teachers), previewing vocabulary words (three teachers), segmenting words by phonemes (one teacher), partner reading (four teachers), and working with the student during small group instruction (two teachers).

Teachers frequently added scaffolding to the curriculum lesson structures. While most scaffolding included questions and prompts (see Finding 4), another way teachers scaffolded instruction was by increasing the level of support students receive. This relates to my conceptual framework because teachers are thinking about contingently responding to students by using different scaffolding strategies to increase support. When asked on the survey how they would support students who have difficulty reading the shared text, six teachers mentioned strategies that increase student support during regular instruction such as echo reading (four teachers) and providing extra support to decode during whole group (one teacher). One teacher also mentioned working with a student one on one in her survey response.

The lesson observations and interviews provided additional examples of teachers increasing student support. During the lesson observation, I noted that Ms. Baker added time for group discussions before asking her students to work independently as peer support. In the interview, she noted how

cooperative group work increases support for students and supports students at a high risk of reading difficulties. She explained her reasoning during the interview:

> Every year that I've taught, I've always let them work in those cooperative learning groups. I've sat them so that there's, you know, high, middle and a low at each section. So, they have somebody there that can help them. I never want them to flounder, because it's a wasted assignment at that point.

Other teachers also increased student support by switching instructional activities from whole group to small group or moving an independent activity to a small group. For example, Ms. Camp noted she increased student support because the written responses are "difficult for the high-risk kids" so she has them complete the responses in a small group because "they can't really do it independently." Both Ms. Camp's and Ms. Baker's comments show that they are sensitive to their high-risk students' zone of proximal development because they changed instructional methods to prevent students from attempting to do an assignment that they perceived students could not complete successfully.

Theme 1.2: Teachers made intentional changes to the curriculum by adding or omitting elements to meet student needs.

Another way that teachers tried to support students was by making intentional changes to the curriculum by adding or taking out specific instruction. Teachers added instructional activities that were not included in the curriculum for two reasons, including adjusting instruction for perceived student ability and adding instruction teachers believed was important but was not included in the curriculum.

All five teachers changed the curriculum to support students during reading and spelling. Teachers often changed materials because they believed the curriculum materials would be outside the student's zone of proximal development. During the interviews, teachers shared they added activities because the curriculum was "too hard" for some students. Ms. Baker and Ms. Waldrop both provided "easier" spelling lists for some students. In the surveys and interviews, teachers also mentioned

changing the texts students read. Teachers likely believed students would not make as much progress if the materials were too hard for them. These changes were prompted by teachers trying to respond contingently after their previous diagnostic strategies revealed that students were having difficulty reading and spelling words at grade level. Finding 2 provides more detail about these changes, specifically related to hard scaffolding.

Teachers also made intentional changes to fill perceived gaps in the curriculum. In the interviews, the explanations teachers offered about intentional changes indicated these changes were often driven by their content and pedagogical content knowledge of what instruction they believed students who have a high risk of reading difficulties need to be successful. Ms. Baker described her decision to add passages with multiple-choice questions to the lesson by noting the curriculum lacks "assessments that align with Virginia's assessments." She said, "You have to teach…high-risk kids [test-taking] strategies…Ultimately, I want to make them better readers…but you also want them to do well on this test…test-taking strategies really do help with that."

Ms. Smith also added activities to the curriculum to fill perceived gaps. In the interview, she mentioned she did not think the Bookworms curriculum sufficiently covered some of the reading comprehension strategies named in Virginia's Standards of Learning. During her lesson observation, she added activities to teach making predictions, including slides she went over with the whole class and a worksheet that most students completed independently. In her interview, she discussed using instructional materials from the school's previous curriculum several times. She mentioned that she uses the previous curriculum to "teach predictions and inferences, main idea…that's also needed…so I still try to hit on that at least like 15 or 20 minutes."

Although several teachers skipped parts of the Bookworms lesson plan, most of them did not note that they had intentionally omitted them during the interviews. Ms. Waldrop was the only teacher who discussed a choice to omit parts of the lesson. In her interview, Ms. Waldrop stated, "I don't usually

follow…scripted to the book." During the observation, she used the text from the curriculum but skipped portions of the Bookworms lesson plan. While she did not provide a specific reason she omitted parts of the lesson plan in the interview, she provided several examples of things she had done during instruction to support students. She explained, "[students] didn't comprehend what [a word] meant…when we read that page, I explained to them more in depth…It's surprising sometimes what these kids don't know…so I'll pull up stuff and show them on the smart board a picture." While she did not explain exactly why she changed the lesson, the examples she provided of instruction she added point to the possibility that Ms. Waldrop may believe her explanations are more supportive of the students in her class who have a high risk of reading difficulties than the suggested teacher language and instructional elements in the lesson plan.

Theme 1.3: Teachers made changes to the curriculum that were not identified as intentional.

The last type of changes that teachers made to the curriculum appeared to be unintentional. The most common change was omitting elements from the plan, but the number of omitted elements varied by the teacher. For example, one teacher omitted ten of the eleven elements in the lesson, while another omitted only three. Although these changes did not appear to be intentional decisions, they are still important because they might impact the efficacy of instruction for students at a high risk of reading difficulties. Table 4.2 provides details about how many teachers taught each element of the shared reading lesson plan structure.

Summary of Finding 1

While some changes to the lesson may have been unintentional, it is notable that every observed teacher changed the curriculum. Many changes appeared to be made intending to support students who have a high risk of reading difficulties, such as adding easier spelling words or increasing the level of support for a task by changing the instruction from whole group to small group. Teachers also changed supplement the curriculum when they believed an important instructional component was

not addressed. The changes teachers made appeared to be informed by their content and pedagogical content knowledge. Changes were also informed by the teachers' desire to respond contingently to perceived student needs by ensuring that instruction was within students' zone of proximal development. The next section will discuss how teachers scaffolded both the instruction that was directly from the curriculum and the instruction that was added.

Table 4.2

Unintentional Curriculum Changes

Lesson Plan Element	Teachers Who Followed Lesson Plan	Details on Teacher Changes
Spelling	2 of 4	1 teacher omitted 1 teacher did not follow lesson steps
Vocabulary Introduction	1 of 4	1 teacher omitted 2 teachers did not follow lesson steps
Set first focus (purpose for reading)	1 of 4	3 of 4 teachers omitted
Choral read	4 of 4	No changes
Comprehension Think Aloud	1 of 4	2 teachers skipped 1 teacher did not follow lesson steps
Discuss first focus	1 of 4	3 teachers omitted
Set partner reading focus (purpose for reading)	1 of 4	3 teachers omitted
Partner read	3 of 4	1 teacher did not have all the students partner read
Discuss Partner focus	1 of 4	3 teachers omitted
Class discussion	3 of 4	1 teacher omitted
Anchor Chart	1 of 4	2 teachers omitted 1 teacher did not use anchor chart in the lesson plan

Note: This table reflects instruction from the four teachers who were in grades that followed the same shared reading structure.

Finding 2: Teachers used soft scaffolding strategies more frequently than hard scaffolding.

The second finding also answers Research Question 1 about how teachers change classroom reading instruction by providing information about the types of scaffolding they used to support students at a high risk of reading difficulty. Data across surveys, interviews, and observations provided insight into these scaffolding strategies. As discussed in Chapter 1, scaffolding strategies can be characterized by whether the teacher planned to provide scaffolding or whether they decided to scaffold during the lesson (Saye & Brush, 2002). Soft scaffolding are strategies that teachers decide to provide during the lesson to respond to students' understanding. An example of soft scaffolding would be a teacher providing prompts to a student who misreads a word to help the student decode the word successfully. Hard scaffolding describes scaffolding that teachers plan before the lesson. An example of hard scaffolding would be a teacher choosing to have students read an easier text than the text from the curriculum.

Theme 2.1: Teachers most frequently used prompts and questions to scaffold students.

All observed teachers scaffolded instruction most frequently by using *prompts or questions*, at least twice as frequently as any other type of soft scaffolding. The teachers' responses I coded as *prompts or questions* capture both ideas that comprise the concept of scaffolding: diagnostic strategies and scaffolding strategies (van de Pol et al., 2010). Diagnostic strategies provide information about student understanding so teachers can respond contingently (van de Pol et al., 2010). Scaffolding strategies are defined by the combination of the scaffolding means, or how the teacher is providing support, and the scaffolding intention, or what the teacher is trying to support (Tharp & Gallimore, 1989; van de Pol et al., 2010). The scaffolding intention, or what the teacher was trying to support students to do, helped to guide the coding of these responses and differentiate them from other scaffolding codes, such as *guidance and hints*. The code of *prompts and questions* include responses where the teacher tried to assess student knowledge, which is a diagnostic strategy, as well as

responses where the teacher responded in a way they believed would help the student be successful with the task. Examples of interactions from the data that I would code as *prompt or question*, as well as non-examples, are provided in Table 4.3.

Table 4.3

Examples of Coding for Prompts or Questions

Scaffolding Intention	Example Prompt	Example Question	Non-Examples
To check student understanding	"Put your finger on the answer."	"What is this word?"	A question unrelated to instruction: "Do you need to go to the nurse?" A question that is part of the lesson plan: "Why are they eating so many leaves?"
To encourage students to self-evaluate work	"Check yours and make sure it looks like mine."	"Does your sentence match mine?"	A prompt that is related to behavior: "Make sure you are listening."
To encourage students to take the next step in the task	After the student said the sounds of the letters in a word: "Sound it out."	After the student said the first sound in a word: "What will the vowel say?"	A prompt that gives initial directions for an activity: "Can you write the word of?"
To encourage students to find and correct a mistake	"Look at that word again."	"What are you missing?"	A question related to behavior: "Why are you up?"

The interviews and survey responses also indicated that teachers frequently scaffold using *prompts or questions*. For example, in the interview, Ms. Fielding explained how she might respond to a student who is stuck on a word. She said she would ask the student, “Why don’t you look at that word again?” On the survey, 11 teachers chose “always” or “very often” to describe the frequency of using prompts or questions to scaffold students, while three teachers chose “sometimes.”

Theme 2.2: Teachers’ inclusion of modeling and explicit instruction varied with curriculum fidelity.

Modeling describes instances where teachers demonstrated the steps needed to perform a task and explain what is being done before asking students to perform the same task independently (Archer & Hughes, 2010; Donegan & Fluhler, 2024). In this study, I examined modeling in the context of scaffolding. To be considered scaffolding, the teachers’ response must have supported the students to complete the task successfully (van de Pol et al., 2010). For example, teachers sometimes did not ask students to do a task after the teacher did it, and other times, the teacher asked students to complete a task without doing it first. Neither of these instances were coded as modeling. Table 4.4 provides an example and non-example of coding for modeling.

Teachers’ reported use of modeling on the survey differed from the frequency of modeling observed in classrooms. In the surveys, all teachers chose “often” or “always” to describe how frequently they use modeling to support students at a high risk of reading difficulties. Despite the teachers’ widespread agreement in the survey responses, teachers’ use of modeling varied in the observations. While two teachers modeled over 25 times during the observation, two others modeled fewer than five times. Teachers who had fewer instances of modeling tended to either skip the modeling in the Bookworms lesson or provide an example without asking students to complete the task independently. Constructs identified in my conceptual framework likely influenced a teacher’s decision to provide or omit modeling. The teacher’s pedagogical content knowledge, in this case, would provide a context for when the teacher believes modeling is helpful. The diagnostic strategies the teacher uses

would help her determine if students need additional help. If the teacher determines that the task is within the students' zone of proximal development without additional modeling, that could prompt the decision to omit modeling.

Table 4.4

Examples of Coding for Modeling

Example of *Modeling*	Non-Example of *Modeling*
The teacher was writing the cursive "v" projected by the document camera while she talked. "Watch me do it. All eyes up here. I'm going to make a hill, then I'm going to come down and swoop. Right now, it looks like 'x' did yesterday, but now we take it to a middle line and hook it. Watch me again. Make a hill, come down and swoop. Take it to the middle line and hook it." The teacher told the students, "Your turn to write a 'v'. Make a hill, come down and swoop. Take it to the middle line and hook it." Students practiced writing the cursive "v" on their worksheet. *Note: this excerpt was coded as modeling because the teacher demonstrated before having the students wrote.*	Students wrote the dictated sentence "Sam did not tag me" on their whiteboards. The teacher was writing on the smartboard. Teacher: "How do I write the word 'Sam'?" Students: "S-a-m." Teacher: "What is special about the word Sam?" Students: "It needs a capital!" The teacher wrote the word 'Sam' on the board. *Note: this excerpt is not coded as modeling in this study because the students wrote the sentence before the teacher demonstrated it.*

Teachers who followed the Bookworms lesson plans incorporated more modeling. The Bookworms lesson plans include extensive modeling in both whole group and small group lessons. Figure 4.1 provides an example of a portion of a lesson plan for the whole group spelling routine for short vowel words. This routine includes modeling because the teacher demonstrates saying the sounds and blending to read the word, and the students then say the sounds and blend to read the same word. Later in the lesson, the students reread the same words independently, without the teacher modeling first.

Figure 4.1

Bookworms Lesson Routine: Sound and Blend (common routine in grades K-2)

Sound and Blend:

> Now we are going to sound and blend each word. Look at each letter, make each sound, and then say the sounds fast to make a word. I will sound and blend each one, and then you will do it.

Point to each letter as you say each sound out loud.

> Listen and watch me.
>
> **/s/ /t/ /o/ /p/, stop.**
>
> Now it is your turn.

Point to each letter as the students say the sounds.

Repeat the procedure for all remaining word cards.

Note. From *Bookworms Shared Reading Grade 1* by S. Walpole, 2022, Open Up Resources. Copyright 2022 by Open Up Resources.

Teachers also use the Sound and Blend routine in small group lessons for students working on reading short vowel words. In both the whole group and small group lessons, the routine has an additional part before the Sound and Blend portion, where the teacher models orally segmenting the sounds in the words with tokens before students segment the sounds in the same word with tokens. Teachers usually model segmenting and blending for about a dozen words in whole group lessons, for 24 modeling instances. In small group lessons, teachers model segmenting 15 times and blending 15 times for a total of 30 unique instances of modeling in a 15-minute small group lesson. During her interview, Ms. Camp noted the modeling included in Bookworms helped her high-risk kids: “I think the sounding out the words and [segmenting] the words, instead of just reading them, helps with all the students, especially the ones that are higher risk.”

Teachers with fewer instances of modeling often skipped lesson plan components that included modeling. These teachers provided examples to show students what to do, but they did not ask students to complete the task independently. Although the requirement for students to complete the task independently to be coded as modeling may seem minor, when teachers skip this step, it can drastically reduce the amount of practice opportunities offered to students to practice applying new skills. For example, during the observation, Ms. Waldrop introduced spelling words to a small group of students and limited the modeling when she did not follow the curriculum routine steps:

Ms. Waldrop: (Pointed to the word) “New word, is it long or short?”

Student: “Silent e!”

Ms. Waldrop said the sounds of the letters: “/d/ /oo/ /d/, dude.”

Student: “What’s it mean?”

Ms. Waldrop: “Like hey dude.”

I did not code this interaction as modeling because the students did not say the sounds or blend to read the word independently. During this lesson, students received limited practice reading or spelling the words. Students took turns identifying the vowel sound, so most students identified the sound in about two words. For some words, Ms. Waldrop encouraged the students to sound out the word chorally with her, but the students did not read the words independently.

Although more modeling is included in Bookworms lessons in grades kindergarten through second, the third-grade teacher had numerous instances of modeling both in the Bookworms lessons and in the additional activity she added where students answered multiple-choice questions about a passage. While teaching test-taking strategies, Ms. Baker modeled identifying key words in the question, rereading to find the answer, and evaluating each answer choice. Students watched her model answering a question, the class worked with her to answer the next questions, and finally students

answered questions independently. In the interview, Ms. Baker demonstrated her general pedagogical knowledge on how to support learning when she discussed modeling:

> I feel like…If you want them to do it correctly, you have to [model]…I feel like some teachers will say, Well, this is what we're gonna do, and then give it to them, and then [students] bring [the work back] to them. And it's wrong. And then you have to…. correct that, and you have to reteach that, and you have to correct misconceptions…Why not model it strongly to them so they know what's expected? Then they know. It's my time to show them how to answer questions like that, because I can't help them when the [state grade level standardized test] comes.

Theme 2.3: The frequency of contingent responses varied.

Another soft scaffolding strategy that had a wide variation between teachers was the frequency of contingent responses. As depicted in the conceptual framework, contingency is the construct that scaffolding revolves around: it is the crucial component that differentiated scaffolding from assistance (van de Pol et al., 2010). I coded interactions as contingent when the teacher increased or decreased the level of support provided based on the student's response and the student could answer the question or complete the task at the end. Previous researchers coded interactions in a sequence of three turns (van De Pol et al., 2019), but since I took notes during observations instead of recording, I was not able to capture every word of each interaction. Instead, I coded an interaction as contingent when the teacher responded to a student who had a high risk of reading difficulties by adjusting support without telling the answer so that the student was successful at the end of the interaction. I coded responses or interactions as non-contingent when the teacher told students the answer. Examples of interactions that were coded as a contingent response and a non-contingent response are provided in Table 4.5.

Table 4.5

Examples of Contingent and Non-Contingent Responses

Contingent Response	Non-Contingent Response
The student was stuck on the word "chunk." The teacher pointed to the word. "What does 'u-n-k' make?" The student did not answer and looked at the teacher. The teacher covered up the letters "c-h" and prompted the student: "Sound out this." The student did not respond. Teacher: "What does 'u-n' make? Sound it out." The student said the wrong sound for short "u": Student "yuh" The teacher said the correct sound for short "u" and then prompted: "And what does "n" make?" Student: "/n/" Teacher: "What does 'u-n' make?" The student blended the sounds: "/un/" Teacher: "Now add a 'k'." Student: "/unk/" Teacher: "Good, now put it all together." Student: "Ch….unk….chunk."	The teacher was reviewing high-frequency words on flashcards with a small group of students who had a high risk of reading difficulties. Students were chorally reading the words as she showed the cards. The teacher showed students the word *could*. No students answered. She said, "That one is a little harder." The teacher skipped the card and went on to the next word without reading the word *could*.

The frequency of contingent and non-contingent responses varied during observations. While all teachers included both contingent and non-contingent responses, two teachers responded contingently most of the time, two teachers had response patterns that were split between contingent responses and non-contingent responses, and one teacher responded non-contingently most of the time. Interestingly, in the interviews, all teachers gave examples of responding contingently when they were asked about supporting students who have a high risk of reading difficulties with unknown words. For example, the teacher who had the fewest contingent responses during the observation described her process to help high-risk students read unknown words:

> If they're stuck on the word…I will have them start reading the sentence back to me, and when they get to the word, I usually tell them to look for the parts that they know and start sounding it out. If it's something they can't really sound out, then I will help them with it…I don't actually tell them what the word is, because I want them to use the strategies we use when we are trying to read something, instead of relying on me, because it's very easy for them to rely on me or someone else, just to tell them what the word is.

In contrast, Ms. Fielding showed that her observed frequent use of contingent responses was intentional by mentioning during the interview that she tries not to tell students the answer. She said:

> I think about it like if I just give them the answer, then they're not really learning anything they're just gonna be like 'Oh, Ms. [Fielding]'s gonna tell me, instead of let's try to figure out on your own…. let's try to learn yourself…. instead of being dependent on someone else.'

Theme 2.4 The most frequent application of hard scaffolding was providing students who had a high risk of reading difficulties with different texts or different spelling words.

During the observations, all teachers included hard scaffolding that changed the texts or words that students who had a high risk of reading difficulties worked with to include texts or spelling words which were not part of the curriculum. As discussed in Theme 1.2, three teachers changed the spelling lists for groups of students. During observations, four of the five teachers changed or added texts specifically to support students at high risk of reading difficulties, and all teachers discussed using different texts in the interviews.

In the survey open-answer questions which asked teachers to describe strategies they used to support students, seven of the fourteen teachers included answers indicating hard scaffolding strategies such as, "differentiate materials," "include scaffolding," and "modify assignments." Two surveys specifically mentioned adding different text, but most surveys did not provide specific examples of how to modify or differentiate assignments. No surveys or interviews specifically mentioned other types of

hard scaffolding, such as additional visual support prepared before the lesson, or additional pre-teaching or review planned before the lesson.

In the interviews, three of the four teachers in grade levels where partner reading was an expected part of the curriculum structure mentioned giving students easier texts during partner reading. In her interview, Ms. Smith noted that she changed books for partner reading to support students: "[Some students] cannot read usually most of the books assigned to Bookworms…so usually, I have to pull different books for them to read, to still get fluency practice." Ms. Fielding discussed how she used different materials to support students who could not apply their letter sound knowledge to read words after completing lessons from the curriculum. She said, "I feel like [the different materials] helped them a little bit…there's less words…I think visually, it's not as intimidating, and then only having, like one vowel [in the group of words]…they could be more successful." She also noted that after those lessons, students returned to the small group lessons from the curriculum and could read the words.

Notably, Ms. Baker, who shared that 75% of her class were identified as having a high risk of reading difficulties, including six students who receive special education support, added text to teach test-taking strategies but did not provide easier text for her students. She stated:

> Yeah, they're all doing the same thing…I think a lot of the younger grade levels sometimes [think] well, this is too hard, or…they're gonna get frustrated. And I think we we've always had the mentality…we've got to expose them, because it's not fair to not, you know. They have to be exposed to what they're gonna be expected [to read on the test]…we just have very high expectations from day one.

She noted she supported students to access the grade-level shared reading text by carefully choosing a partner who could provide support and that the special education teacher would sometimes provide additional scaffolding by reading with students during partner reading. While Ms. Baker did not change the text she knew might be difficult for students, she still adjusted the support students had while

reading the text so that students would be in their zone of proximal development and not become frustrated.

Ms. Baker also shared that although 75% of students in her class have a high risk of reading difficulties, only two students who were two years behind grade level in her class used an easier spelling list. When discussing how she supports most of her class to access the grade-level spelling list, she shared that she adapted the lesson to include more repetition of the spelling rule the students were learning. She explained:

> If they're a year behind, I'm pushing them…and exposing them [to the grade level spelling]. They probably were really sick of me saying, 'Drop the -e and add -ed, drop the -e and add -ing.' But they need to hear it…and then they were able to come up with examples…for the most part they do really well.

Summary of Finding 2

Overall, all teachers observed in the study used soft scaffolding strategies, such as prompting and questioning, more frequently than hard scaffolding strategies that are planned before the lesson. There was wide variation in the extent to which teachers used modeling and responded contingently to students. Part of that variation appears to be related to the extent to which teachers followed the curriculum lesson plans.

Finding 3: Teachers reported they know how to meet the needs of high-risk students and have the resources to teach them.

This finding helps answer Research Question 2 by providing information about factors that support teachers' efforts to meet the needs of students at a high risk of reading difficulties. Encouragingly, teachers reported high levels of confidence in their ability to meet the needs of students who have a high risk of reading difficulty and agreed that they have the necessary resources. Teachers spoke about materials and assessments as helping them to meet the needs of students at high risk of

reading difficulties in the survey and across interviews. Observations demonstrated how these resources were used to support students.

Theme 3.1: Teachers had the physical materials and assessments they need.

On the survey, every teacher agreed or strongly agreed that they had materials to teach reading. This question had the highest average among questions that asked about factors that could impact instruction, which shows the strongest agreement among the teachers. Additionally, this question had one of the lowest standard deviations, which shows that no teachers had an opinion about materials extremely different from the others.

Interviews and observations also confirm this finding. During the observations, every student had a copy of the book the class was reading, and all had workbooks. Teachers appeared to have all the materials they might need for instruction. In the interviews, three teachers agreed they had enough materials. Ms. Fielding specifically linked the availability of materials to supporting students at a high risk of reading difficulties by ensuring all students had practice opportunities during the lesson. She commented, “I like how each kid gets their own [white] boards. And I feel like that’s supportive for them.”

Teachers also agreed that they had the assessments they need. On the survey, all teachers responded that they either agreed or strongly agreed that they had sufficient assessments. No teacher expressed in surveys, interviews, or observations that she needed materials or assessments she did not have.

Theme 3.2: Teachers agreed they know how to teach students at high risk of reading difficulties, and they have support if they need help.

All teachers expressed confidence in teaching students at a high risk of reading difficulties and with the support available if they need help. On the survey, all teachers agreed or strongly agreed that

they know how to teach students who have a high risk of reading difficulties. Teachers also all agreed with the survey statement, “If I need help with reading instruction, I have people to support me.”

In the interviews, no teachers expressed concern about teaching students who have a high risk of reading difficulties. When I asked teachers how they feel about supporting students with a high risk of reading difficulties, they discussed what made them confident, rather than mentioning any concern about their ability to meet the needs of students. For example, Ms. Fielding and Ms. Baker both stated that their teacher preparation program at college prepared them well, and Ms. Camp linked the curriculum to building her confidence:

> I know I feel really confident about teaching shared reading with Bookworms. I feel like that’s very structured and routine. So, the students are so used to it that they are able to like know what’s happening next, and they know what they’re supposed to do. And I think that’s something that has changed since I first started [teaching], because I realize how to manage this class better without a huge disruptions all the time, and how a routine and doing basically almost the same thing every day helps so much. And I’ve seen so much progress in the kids.

Theme 3.3: Teachers agreed they can manage student behavior to maximize instructional time.

Thirteen of the fourteen teachers agreed or strongly agreed that they could manage student behavior to maximize instructional time on the survey. One teacher, who was both newer to the school and newer to teaching, chose “disagree” for this question. In the interviews, no teacher mentioned that student behavior impacted their ability to support students at a high risk of reading difficulties.

During observations, I saw teachers employ routines and classroom management skills that prevented student behavior from interfering with instructional time. All teachers had routines for transitioning between activities and getting new materials out. Routines I observed included specific procedures for getting trays with magnetic letters so students would not bump into one another (Ms. Fielding), assigned spots on the rug (all teachers who had a rug in their classroom), colored folders and

clear organization of student materials (Ms. Baker), and routines for passing out books quickly (Ms. Waldrop). During the observation in Ms. Camp's class, I documented the multistep routines that students were completing with the following note: "Kids seem to know what to do. They are putting computers back on the cart, putting headphones away, putting packets into their file bins, and kids who are finished have their pencil bin and water on the rug." All five teachers demonstrated classroom management skills by proactively setting expectations for behavior, praising students who were meeting expectations, and supporting students who needed redirection with proximity, saying their name, or providing specific directions about what they should be doing. During observations across all five classrooms, I only saw three students who demonstrated negative behavior that required more than redirection or proximity to get back on track. Two of the three students had paraprofessionals supporting them specifically, and the third student was supported by another adult in the classroom, so the teacher's instructional time was not negatively impacted by their behavior.

Summary of Finding 3

Teachers identified several factors that support their ability to meet the needs of students who have a high risk of reading difficulties. Teachers agree they know how to meet the needs of students at high risk. They agreed that they have materials, assessments, and support if they need help. Most teachers agreed that they know how to manage student behavior and during observations instructional time did not appear to be impacted negatively by student behavior.

Finding 4: The teachers' knowledge, extent of collaboration, and the impact of student absenteeism had notable differences.

Finding four also answers Research Question 2 by highlighting factors that some teachers felt were supportive and other teachers felt hindered their efforts to meet student needs. Unlike the previous finding, data on teacher knowledge, collaboration, and the impact of student absenteeism showed that different teachers had very different experiences.

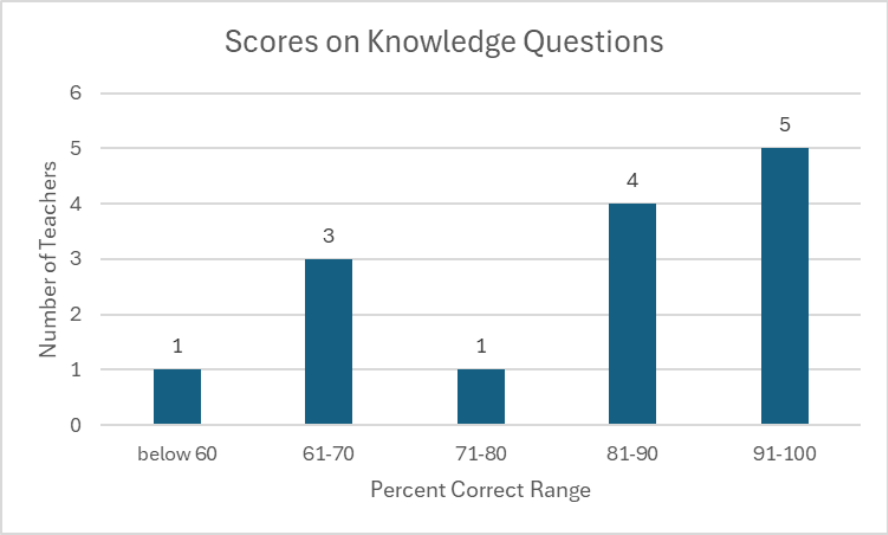
Theme 4.1: Teachers' content knowledge and pedagogical content knowledge varied.

The survey assessed teachers' content knowledge and pedagogical content knowledge. Content knowledge describes the teacher's understanding of the content they are teaching, and this study focused on content knowledge related to word recognition. For example, teachers answered questions that assessed knowledge of common phonics terms used in instruction, such as the terms "r-controlled vowel" and "consonant digraph." The survey also assessed pedagogical content knowledge, the understandings needed to teach information to others, including why topics may be easy or difficult, and common student misconceptions (Shulman, 1987). For example, the survey included a set of questions that presented students' spelling mistakes and asked the teachers to choose the best explanation for the spelling error.

RCES teachers had a range of scores on the knowledge portion of the survey. Scores ranged from 56% accurate overall to 100% accurate. Nine teachers scored above 80% overall, while five teachers had an accuracy of 79% or below. Figure 4.2 displays the distribution of teachers' total accuracy on the survey knowledge questions.

Figure 4.2

Teacher Scores on Survey Knowledge Questions



Since the survey was anonymous, I did not know the survey knowledge scores for teachers I observed, but variations in content and pedagogical content knowledge were also evident during the observations. While one teacher consistently presented accurate information throughout her lesson, the four other teachers had moments where they were unsure of information or provided incorrect information to students. This demonstrated that they lacked knowledge in that specific area. For example, Ms. Waldrop added an instructional activity with spelling words that had a hard or soft "g" sound for one of her small groups. When she introduced them, she said, "I need to make sure I'm right on this one for the hard and soft." She then referenced the teacher's book from which she pulled the spelling words to double check which sound was hard "g" and which sound was soft "g." Other teachers demonstrated deficits in content and pedagogical content knowledge when they provided inaccurate information during observations. For example, one teacher told students the short "a" sound was a stop sound, another made generalizations that are not always true, such as the letters "ea" always spell one sound, and a third teacher segmented the sounds in the word *spell* into three sounds rather than four.

Teachers also missed opportunities to clarify information for students, which could indicate deficits in content knowledge. For example, when introducing the hard and soft "g" spelling words, Ms. Waldrop told students to read the word and listen to the sound to determine if the "g" was hard or soft, rather than explicitly teaching that the vowel following "g" determines the consonant's sound. Another example is when Ms. Smith's students consistently omitted the final "e" in the word *leaves*, but she did not explain that the final "e" was there to prevent the word from ending in a "v". Instead, she told students, "there is a tricky silent letter in that word."

The knowledge portion of the survey also provided information about knowledge of specific topics. Information about how well teachers understand specific topics is important because all topics assessed on the knowledge portion of the survey are included in of the Virginia Standards of Learning and are part of the Bookworms curriculum. For example, the survey asked teachers to identify the

number of phonemes (individual sounds) in five different words. While many teachers could correctly identify phonemes in some words, only 50% of teachers correctly counted phonemes in all five words. Segmenting phonemes is a Virginia Standard of Learning in kindergarten, first grade, and second grade. While third grade Standards of Learning do not list segmenting phonemes specifically, third-grade students are expected to know standards covered in previous grade levels. Teachers also use this skill in the Bookworms curriculum daily in kindergarten, first grade, and second grade. Knowing how to segment words is important because the curriculum does not include a key for how to segment the words. If the teacher does not understand how to segment phonemes in words, she may teach students to segment the sounds incorrectly.

The link between teacher content knowledge and classroom instruction was evident during my observation in Ms. Camp's room. Her class was working on spelling words with blends and digraphs. Words with blends have two or more consonants together that each maintain a separate sound, while digraphs are two or more consonants together that represent a sound that differs from the sound of their individual letters (Moats, 2020). While Ms. Camp correctly modeled segmenting phonemes in words with digraphs, she incorrectly segmented words with blends. The letters in a blend both maintain their individual sound, so when segmenting, the sounds should be separated. Ms. Camp segmented words such as *spin* and *spell* by keeping the letters "s" and "p" together and pushing a single token to represent the two sounds. This incorrect modeling may have impacted the students' ability to complete an independent assignment later in the week, where they had to segment the spelling words into sound boxes. Additionally, perceiving the individual sounds in blends (e.g., the "sp*"* in *spin* and *spell*) can be challenging for many beginning readers (Brady, 2020). By omitting the opportunity to emphasize the two sounds in each blend, the teacher did not provide as much support as the curriculum intended for students to receive during this lesson.

Another area where RCES teachers were less accurate was on questions that asked teachers to review student spelling errors and choose the most likely explanation for the error. Only four teachers, or 29%, answered all three questions correctly. These questions focus on pedagogical knowledge because explaining the error will inform teachers' responses to students for feedback on errors. Moreover, understanding the source of student spelling errors is helpful because teachers can then focus instruction on the skills students need to spell the words correctly (Daffern & Fleet, 2021).

An example of how pedagogical knowledge could impact student learning was observed in Ms. Smith's room. Ms. Smith was teaching students to spell words with the vowel patterns spelling long "e" as "ee" or "ea" and short "e" as "e" or "ea." She omitted the spelling instruction routines in the whole group instruction and worked with the words in small groups. Ms. Smith asked students to write the words in sound boxes, which required students to segment the phonemes in the word and write the letter or letters that represent each phoneme in a box on their whiteboards. This activity focused students' attention on segmenting sounds, rather than learning which vowel pattern spelled the long or short e sound in each word. As students practiced spelling words, Ms. Smith orally segmented each word for them before they wrote it. While they did not make errors representing each sound in the boxes, they often made errors choosing the correct vowel pattern to represent the vowel sound (e.g., writing *steap* for *steep*). To prompt students who chose the wrong vowel pattern, Ms. Smith told students, "think about your header for that word" even though more than one header for the spelling sort had the same vowel sound like "ee" and "ea" for long "e." Pedagogical knowledge about negotiating long vowel patterns would have shifted Ms. Smith's decision to focus on segmenting sounds to the specific spelling patterns.

The last type of teacher knowledge included in my conceptual framework was general pedagogical knowledge. General pedagogical knowledge is the teacher's knowledge of general teaching methods, classroom management, student characteristics, and learning processes (Voss et al., 2011).

While the survey did not assess teachers' general pedagogical knowledge, observations indicated that general pedagogical knowledge was a strength of the teachers in the sample. For example, Ms. Fielding showed general pedagogical knowledge of her students' attention spans and their ability to sit still by including frequent movement breaks in her lessons. Teachers demonstrated general pedagogical knowledge when they redirected students' attention or removed items that were distracting to students. For example, after passing out whiteboards, Ms. Camp realized a boy was picking at the fraying edges of his whiteboard rather than attending to her small group instruction. She swapped his board for a different one without pausing the instruction she was providing. Teachers frequently directed students' attention during lessons with phrases such as "All eyes up here," "Look down here," "I'm going to wait for my friends to have their eyes on me," or "Ready, look up here." Teachers also checked that everyone was ready by asking students to point to the first word they would read before they began. As discussed in Theme 3.3, teachers were proactive in setting clear expectations, teaching routines, and redirecting behavior quickly. During observations, I did not note any instances where instruction was negatively impacted by classroom management. The classroom management strategies I observed, the teachers' focus on directing students' attention, to include appropriate movement breaks, and the routines for transitions and materials I observed led to my conclusion that general pedagogical knowledge appeared to be a factor that supported literacy instruction.

Theme 4.2: Teacher collaboration differed between grade levels.

Another area that differed between teachers was collaboration. On the survey, there was a range of responses when teachers rated the extent to which they agree they collaborate with colleagues. Two teachers chose "disagree" while twelve teachers chose "agree" or "strongly agree." In the interviews, three teachers discussed collaborating with their team while two others shared they did not. Ms. Baker emphasized the value of collaboration in her interview:

> I feel like you have to be on the same page…. if you don't have a good team and you don't work together, I would imagine it would be very isolating, very lonely, so I can't imagine feeling like I was carrying that all myself, you know, so I feel like I've always been blessed with a strong team.

Ms. Waldrop said she communicates with the special education teacher to ensure that topics for instruction were aligned, but she did not mention collaborating to plan or support instruction.

Theme 4.3 Student absenteeism impacted teachers to varying degrees.

The last topic that had a range of responses was student absenteeism. In the survey, twelve teachers agreed or strongly agreed that student absenteeism impacted reaching achievement of students in their class. One teacher chose "strongly disagree" and one teacher chose "disagree." This range of responses was also clear in the interviews. Of the five teachers interviewed, three teachers said that in their current class, they had at least one student who had a high number of absences. Ms. Baker shared "…at least five or six [students] in the class that have missed over fifteen days this year, and we're only in February." Both Ms. Smith and Ms. Camp noted they each had one student with a high number of absences.

Ms. Camp discussed the impact of absences by saying, "I have one student that has missed a lot of school that has very much affected his reading, because I've noticed that when he's consistently here, I can notice that he's starting to grow, and but the moment he misses one day out of however many, it starts all over." Ms. Camp estimated that this student has missed "probably up to twenty days" this year by early February.

Summary of Finding 4

Substantial variations exist between teachers' content and pedagogical knowledge, level of collaboration, and the degree to which student absenteeism impacts their class. This finding provides additional information on factors that support or hinder teachers' efforts to teach students at a high risk of reading difficulties.

Finding 5: Teachers report that their ability to support students at high risk of reading difficulties is impacted by time, class grouping, and the support provided by paraprofessionals.

Another finding factoring into Research Question 2 speaks to additional obstacles to supporting high-risk students. Most teachers mentioned time impacting their ability to meet student needs; although some focused on instruction time, while others expressed concerns about planning time. Current methods for grouping students to create classes may impact the extent to which teachers could meet the needs of high-risk students. Additionally, some teachers recognized the crucial role that paraprofessionals play in their classrooms, while others wished they had additional support.

Theme 5.1: Current classroom grouping practices created classrooms that are largely homogenous.

On the survey, only 57% of teachers chose agree or strongly agree when asked if the range of needs in their classroom was reasonable, the second lowest level of agreement for all factors addressed in the survey. When asked in the interviews about the range of student needs, teacher responses focused on the number of students who needed support and the current practices used to create classes, rather than the range of student needs.

Two teachers specifically commented that when classes were created, students who needed support with reading were grouped with students already identified for special education. These teachers went on to conclude that this practice resulted in classes where either most students were stronger readers or the majority needed support. Ms. Baker described how she believes students were grouped in her interview:

> It happens here a lot, [when grouping kids into different classes, teachers and administrators]…say, “Oh, well, that’s the inclusion class. This child’s low. Let’s put them in there in case they’re identified [as needing special education].” And so, what tends to happen, and has happened this year, is we have 15 needy children in one class, and then I have my other class

> that only has like three or four. And so the discrepancy between that…I feel like that can't happen.

Ms. Waldrop also expressed concern about grouping practices and the resulting levels of students with high support needs in a single class. After mentioning that "over half" of her students in one class are at a high risk for reading difficulties she remarked, "I understand that they put a lot of needs in my room because if they qualify for [special education] they're already in here."

Other teachers acknowledged that the grouping practices also created classes that were largely homogenous. Ms. Smith said, "I have a higher class than other teachers in second grade," while Ms. Fielding described her class as having "a good group of kids…on level."

The teachers who had classes where the majority students were at a high risk of reading difficulties both emphasized the need to create more heterogenous classrooms. Ms. Baker emphasized that classes benefit from students at a range of levels:

> I feel like in an ideal inclusion class you would have 20 kids, and you would have five or six that were identified [for special education]. And then you would have seven or so that we're mid range, and then seven or so that we're on the higher range… You can't have fifteen kids [with high support needs]…. you have to have at least half that can model and can show this is what a good reader does, or this is what a good reader sounds like or looks like.

Ms. Waldrop also proposed that students at a high risk of reading difficulties be spread out among classrooms:

> We need to mix them up some…You need to break [the kids who need more support] out among all of us, I mean, even if they qualify for special ed, the way it's set up [students will not be identified and receive services]…till springtime, anyway.

Related to the current grouping practices, teachers also endorsed planning time and instructional time as impacting their ability to support students at risk.

Theme 5.2: Most teachers agreed they do not have enough time to plan instruction and some feel that instructional time was not sufficient.

The survey responses, interviews, and observations all indicated that most teachers agreed they do not have enough time to plan instruction, and some teachers felt that instructional time is not sufficient. Planning time is affected by the class grouping and the teacher's experience with teaching the curriculum. Instructional time is influenced by the school schedule, how often teachers add additional activities to the curriculum, and how teachers choose to use instructional time.

On the survey, more teachers identified time to plan reading instruction as a barrier to their ability to meet the needs of students at a high risk of reading difficulties than any other factor. Only six teachers of fourteen choose "agree" or "strongly agree." Two teachers chose "strongly disagree," while three chose "disagree," and one chose "undecided." On the survey open response question where teachers could share additional thoughts, one teacher wrote, "Time plays a big factor." Another teacher commented, "It's very difficult to find 'extra time' to add more instruction to meet required needs for child study."

Teachers mentioned in the interviews that planning time was impacted by the largely homogeneous classes as well as their level of experience teaching the curriculum. When students who may need special education support in the future are grouped with students who already receive special education support, the same classroom teacher must attend all annual Individualized Education Plan (IEP) meetings as well as the child study meetings for students who are not yet identified. Both meeting types are scheduled during the teacher's planning time. Ms. Baker stated, "This week I've had three meetings already…during planning. And so that can get a little hard."

Ms. Smith said that she has enough time to plan reading currently but contrasted that with when she began teaching. "My first couple of years, I was here late all the time because I just had to get

things ready, and…. I wasn't very quick at it …I was really looking at the books and the curriculum, and the 40 min planning was not enough."

More teachers agreed that they had sufficient instructional time than agreed that they had sufficient planning time. On the survey, nine teachers agreed or strongly agreed that they had enough instructional time for reading. In the interviews, two of the three teachers who taught reading to two groups of students instead of keeping a homeroom class all day mentioned that the school schedule allocated different lengths of instructional blocks for the students they taught in the morning versus the students they taught in the afternoon. Although teachers switched which group they taught first after winter break to try to balance out the instructional minutes, Ms. Waldrop noted that the different lengths of time for the different groups made her feel rushed in the afternoon. Ms. Camp noted that the discrepancies in instructional time appeared to impact student progress. She said, "That shows…that they aren't getting as much time."

The observation data showed that teachers also differed in how efficiently they used time during instruction, which could impact how they feel about the time scheduled for instruction. Several teachers maximized time by providing directions to early finishers and ensuring that students were always focused on reading tasks. For example, as the class was finishing writing dictated sentences at their desks, Ms. Camp prompted students who were finished to sit on the carpet and read the shared reading book while they waited. Ms. Fielding maximized her small group time because she had a quick and organized routine to pass out and collect the different materials used by each group.

The extent to which teachers added activities to the curriculum may also impact how teachers perceive the instructional time they have. Teachers who added or adapted more instructional activities reported that instructional time was a problem. Ms. Smith described completing the activities in the instructional time as "impossible." However, Ms. Smith also changed the instruction for all her small groups from the structure recommended by the curriculum and added activities to teach the

comprehension strategy of making predictions to whole group instruction. The making predictions activities took approximately 25 minutes, or about 20% of her instructional time that day. Ms. Waldrop, who also added and adapted large portions of the curriculum, said during the observation, “I run out of time a lot.”

Theme 5.3: Teachers recognized the important role of paraprofessionals in the classroom, and some expressed a desire for additional support.

Teacher interviews all emphasized the important role that paraprofessionals and other adults play in supporting instruction in the classroom. Teachers who had support in the classroom highlighted how important it was to have an additional adult in the classroom. Several teachers highlighted that additional support would be helpful to allow them to better meet the needs of students at a high risk of reading difficulties. While no questions in the survey directly asked teachers about paraprofessionals in the classroom, one teacher wrote, “It would be beneficial to have additional support of a paraprofessional to help with instruction.”

In the interview, Ms. Fielding answered a question about what factors most support teachers to meet the needs of students at high risk of reading difficulties by emphasizing how paraprofessionals provide crucial support:

> We need [paraprofessionals] in our classroom, even if it is a small class…. and then also just having more support for our like reading and math specialists, like getting more people in…So then we can focus on those high-risk kids…I think support is the biggest thing.

Although students identified for special education services have classroom support from the special education paraprofessional for approximately 35 minutes a day, the high level of student needs in relation to available classroom support impacts Ms. Waldrop’s instructional choices. She explained:

> So, in order to work with some of my other kids, I have to give [the students who need more support] something that they can kind of do on their own, so I will make copies of the word

study where they have to listen for the sounds and like color the word study. So a lot of that. What I give them depends on if there's anybody in the room with me."

In the interview, Ms. Waldrop described what would help her better meet the needs of students at a high risk for reading difficulties: "I feel like more help in the room…that would be…the first thing I would say I need." Although Ms. Smith did not say her own classroom needed support, she recognized the need for additional support in other classrooms by saying "I don't really feel like we have the support we need, especially for the kids that we have [in the classroom with special education students], where there's a lot of high need kids."

Summary of Finding 5

Finding 5 identifies factors that hinder teachers' ability to meet the needs of students at a high risk of reading difficulties. This finding answers research question two by identifying time, class grouping, and the need for additional paraprofessional support as factors the negatively impact teachers' efforts to instruct students at a high risk of future reading difficulties.

Chapter Summary

In this chapter, I presented the key findings and themes that resulted from my data analysis across the survey, observations, and interviews. The key findings and themes build upon the conceptual framework that guided the study and answer the research questions by identifying how teachers change instruction to meet the needs of students who have a high risk of future reading difficulties and recognizing factors that hinder or support teachers' efforts to teach high-risk students. All observed teachers changed instruction in some way to support students at a high risk of reading difficulties, including intentional scaffolding, intentional changes, and unintentional changes (Finding 1). Teachers also used soft scaffolding strategies to support students, especially prompts and questions, more frequently than hard scaffolding strategies (Finding 2).

Several factors support teachers' efforts to teach students at high risk of reading difficulties, including knowing how to meet their needs, having materials and assessment, and effective classroom management (Finding 3). Variation was present in the extent to which other factors, including content knowledge, pedagogical knowledge, collaboration, and student absenteeism impacted teachers' instruction (Finding 4). Teachers mentioned specific factors that negatively impact their ability to meet the needs of students at a high risk of reading difficulties, including classroom grouping practice, time for planning and instruction, and a need for additional paraprofessional support (Finding 5). In the next chapter, I will recommend specific actions to support teachers' instruction of students who are at a high risk of reading difficulties.

Chapter 5: Recommendations

At a rural elementary school in Virginia, reading assessments identified over 20% of K-3 students as having a high risk of future reading difficulties. This indicates a problem with classroom instruction because effective classroom instruction should meet the needs of at least 80% of students (Al Otaiba et al., 2011; Harlacher et al., 2015).

To investigate this problem, I designed a qualitative case study to investigate how K-3 classroom reading teachers provided instruction to students at a high risk of reading difficulties and to identify factors that hindered or facilitated that instruction. I conducted the case study in three parts. In part one, all K-3 classroom reading teachers at the school completed an online survey. In part two, I observed a day of reading instruction for five of those teachers. In part three, I interviewed the observed teachers to learn more about their decisions and how they support students who have a high risk of reading difficulties throughout the year.

The study focused on two research questions:

Q1: In what ways, if any, do K-3 classroom teachers at Rural County Elementary School change instruction to support students identified as having a high risk of reading difficulties with word recognition skills?

Q2: What factors facilitate or hinder efforts of K-3 classroom teachers at Rural County Elementary to provide literacy instruction for students identified as having a high risk of reading difficulties?

This chapter provides recommendations to school administrators to help them support teachers in meeting the needs of students at a high risk of experiencing reading difficulties. I based these recommendations on the study findings (see Chapter 4), as well as measures that research has found effective. This chapter will provide details about the following recommendations:

- Recommendation 1: Build teacher capacity to support students at a high risk of reading difficulties through professional development.
- Recommendation 2: Consider school-level changes to support teachers to meet the needs of students at a high risk of reading difficulty.

Recommendation 1: Build teacher capacity to support students at a high risk of reading difficulties through professional development.

I recommend that RCES administrators address the issues identified in this capstone by providing literacy professional development (PD) to the K-3 teachers. To ensure the time and effort put into the PD leads to instructional and student outcomes, six evidence-aligned PD characteristics should be considered. Following is a brief summary of the research supporting these characteristics.

- Content specific focus: Specific content for PD has been identified based on a teacher survey, classroom observations, and teacher interviews.
- Active learning: Based on teacher feedback and corroborated by research, PD should include opportunities for teachers to see modeling, conduct observations, and give and receive feedback.
- Coherence: PD should work to build teacher knowledge and capacity as well as relate directly to the core program—Bookworms.
- Collaboration: Both teacher feedback and research support time for teachers to collaborate.
- Duration: PD should be long enough to allow teachers to develop a comprehensive understanding of the content and include follow-up PD sessions throughout the year.
- Coaching: Literacy coaching is supported by teacher feedback, has a strong research base, and facilitates the characteristics above to ensure new knowledge is applied to instruction.

Provide Professional Development

Teachers completing the survey agreed they knew how to support students at a high risk of reading difficulties. However, the teacher knowledge scores on the survey, as well as data from the observations and interviews, indicated teachers would benefit from professional development that deepens their understanding of how students acquire word recognition skills and how to implement the Bookworms curriculum. Teachers' perceptions of their own knowledge do not always match what they know (Arrow et al., 2019; Cohen et al., 2017; Kehoe & McGinty, 2024). When teachers do not realize they have a gap in knowledge, they are unlikely to seek professional learning on their own (Cunningham et al., 2023; Kehoe & McGinty, 2024).

Observations showed teachers were not implementing the Bookworms curriculum as designed. Teachers left out important steps of instructional routines, but did not indicate that the omission was an intentional change. Teachers also applied Bookworms routines to instructional situations for which they were not designed. For example, Mrs. Waldrop used the Sound and Blend routine intended for students learning to read words with short vowels with a group of students learning to read words with long vowels. This mismatch resulted in instruction that was not explicit and did not provide sufficient practice opportunities for students.

Study observation data showed that teachers most often used the scaffolding strategy of prompts and questions but that teachers varied the extent to which they offered students contingent support. These findings correlate with previous research, which found that teachers most often use low-support scaffolding strategies, such as prompts and questions (Pentimonti et al., 2017).

Professional Development Topics

I recommend that RCES teachers receive professional development in three areas: word recognition skills, curriculum implementation, and scaffolding strategies. Teachers' implementation of the curriculum is unlikely to produce the desired instructional changes without ensuring all teachers

have the content and pedagogical content knowledge needed to support that implementation (Vaughn & Fletcher, 2021; Yoon, 2007).

Word Recognition Skills. Professional development should include topics essential to teach word recognition, such as the alphabetic principle, phonemic awareness, letter knowledge, and phonics (Hoover & Tunmer, 2020). Teachers need to understand not just the definitions of terms important to word recognition, but also "how all of these components work together to contribute to reading proficiency and how to teach them in an integrated fashion" (Lyon & Weiser, 2009, p. 476). The survey and observation findings indicated a need for RCES K-3 teachers to receive professional development centered on understanding phonemic awareness, providing explicit instruction in spelling, and understanding students' spelling errors. This training would help teachers utilize students' spelling errors to guide instruction and implement research-based strategies for teaching spelling.

Curriculum Implementation. Professional development should promote a detailed understanding of the Bookworms curriculum. Teachers' understanding of curriculum structures, routines, and core elements for reading success allows them to scaffold student learning effectively without compromising the curriculum (Penuel et al., 2015; Quinn & Kim, 2017). Scaffolding included in the curriculum is "often based on guidelines and frameworks informed by the difficulties that students have, the support students might need, and the kinds of challenges students can successfully tackle" (Martin et al., 2019, p. 90). Scaffolds provided by the teacher can be specific to the student's current knowledge, contingent on the student's responses, and faded appropriately to ensure student success (Martin et al., 2019). When teachers implement the curriculum scaffolding and add additional scaffolding when necessary, they increase support beyond what is possible with built-in scaffolds (Martin et al., 2019).

Curriculum professional development should also specifically address teachers' misconceptions and identify instructional practices not supported by research (Spear-Swerling, 2019). If teachers'

misconceptions about reading are not addressed, teachers may implement new practices in addition to previous ineffective practices (Kehoe & McGinty, 2024). Implementing ineffective practices is likely to impact student reading achievement negatively, especially for students who are at a high risk of reading difficulties and need high-quality instruction (Spear-Swerling, 2019). Identifying current practices to de-implement in crucial. This would help teachers to focus instructional time on evidence-based practices that support students who have a high risk of reading difficulties (Wilcox et al., 2023).

Scaffolding Strategies. Professional development on scaffolding has been shown to improve the quality and the frequency of scaffolding (Reynolds & Daniel, 2018; van De Pol et al., 2014). When teachers possess comprehensive content and pedagogical content knowledge, they are better able to scaffold instruction to address the needs of individual students (Lyon & Weiser, 2009). Professional development should include instruction on different scaffolding strategies and focus on contingent instruction, fading, and transferring responsibility (Reynolds & Daniel, 2018). Professional development focused on scaffolding can be effective in increasing teachers' use of scaffolds (van De Pol et al., 2014). This is important because teachers who can contingently scaffold instruction and include fading and transfer of responsibility are likely to impact student learning positively (van De Pol et al., 2019).

Professional Development Can Impact Student Achievement

I recommend that RCES administrators address the issues identified in this capstone by providing literacy professional development to the K-3 teachers. Professional development on the content teachers need to teach, the pedagogical content skills they need to help students learn the material, and the structures of the curriculum all have the potential to improve the teachers' instruction and increase student achievement (Cunningham et al., 2023). Pedagogical content knowledge is important because being able to read and understanding how to teach reading are different skills (Moats, 1994). Researchers have found positive correlations with teachers' content knowledge and pedagogical knowledge and the instruction they provide students (McMahan et al., 2019; Piasta et al.,

2020; Porter et al., 2024). When teachers increase their knowledge through high quality professional development and apply what they know in the classroom, it improves student reading outcomes (Filderman et al., 2022). Students who are at a high risk of reading difficulties especially benefit from teachers who have strong content and pedagogical content knowledge. Teachers with strong content and pedagogical knowledge can provide explicit and systematic instruction and are more likely to know how to scaffold instruction effectively (Cunningham et al., 2023; Kehoe & McGinty, 2024).

Implementing a curriculum that is highly structured or scripted does not compensate for teachers who do not have the knowledge necessary to scaffold instruction by responding appropriately to errors or misconceptions (Yoon, 2007). Professional development will increase teachers' capacity to support students who are at a high risk of reading difficulties because when teachers know how students learn word recognitions skills, they are better able to teach those skills, provide relevant examples, and respond appropriately to student errors (Cunningham et al., 2023). Knowledgeable teachers are also more likely to spend classroom time on activities that will help to develop those skills (Spear-Swerling & Zibulsky, 2014). It is important that RCES administrators understand the importance of professional development and the relation to student achievement so they will prioritize time to ensure teachers receive the training they need.

Although some researchers have found that teachers with higher knowledge have stronger reading instruction (Parrila et al., 2024), others have found that teachers do not automatically apply their knowledge to instruction (Arrow et al., 2019). Well-designed professional development and teacher coaching will help teachers to better support students at a high risk of reading difficulties (McMahan et al., 2019; Piasta et al., 2020; Porter et al., 2023).

Characteristics of Effective Professional Development

I recommend that administrators choose professional development with the characteristics shown by research to facilitate teachers applying their new knowledge and skills to classroom

instruction. Researchers have identified characteristics that help to ensure professional development will impact teachers' instruction and students' achievement (Carlisle & Berebitsky, 2011; Cohen et al., 2017; Darling-Hammond et al., 2017; Desimone, 2009; Desimone & Pak, 2017; Firestone et al., 2020; van Geel et al., 2016). These characteristics include a content specific focus, utilizes active learning, promotes coherence, facilitates collaboration, is of a sufficient duration, and employs literacy coaching to promote transfer and deep understanding.

It is important to recognize that even professional development that covers necessary topics may still not impact instruction without adequate support for deep understanding and application of that knowledge (Arrow et al., 2019). This problem was evident in the RCES teachers' experience with the mandatory online training in evidence-based literacy instruction modules that are part of the VLA. All RCES teachers who completed the capstone survey indicated they had completed the training. The VLA training is intended to provide in-depth professional development on literacy instruction. The Virginia Department of Education estimates that these nine modules should take teachers approximately 2-3 hours each (Virginia Department of Education, 2025). The modules specifically cover many of the topics the teachers missed on the knowledge survey, including phonemic awareness, effective spelling instruction, and understanding students' spelling errors. However, even after completing the training, many teachers clearly still had gaps in their understanding. This experience demonstrates that, when professional development is provided without including characteristics that researchers have found to promote effective professional learning, teachers may not learn the information or apply it to their instruction.

Content Specific Focus. RCES administrators should focus professional development on the specific content and pedagogical knowledge teachers need to teach all students word recognition skills, to scaffold word recognition skills effectively, and to implement the Bookworms curriculum. When

professional development is clearly linked to teachers' daily instruction, it is more likely to support improvements in practice that can increase student achievement (Desimone, 2009).

Active Learning. RCES administrators should consider including active learning activities such as opportunities to observe expert teachers or to watch literacy coaches modeling specific strategies, testing a new strategy while being observed, giving or receiving feedback, reviewing student work, and participating in discussions (Desimone & Pak, 2017). Opportunities for active learning supports teachers in applying new knowledge to their instructional practices (Desimone & Pak, 2017).

Coherence. RCES administrators should reinforce coherence in any implemented professional development program. Coherence describes how new knowledge aligns with a teacher's previous knowledge and beliefs, a teacher's current goals, and how well the new knowledge supports the Virginia standards of learning, the Bookworms curriculum, and other school initiatives (Desimone, 2009; Desimone & Pak, 2017; Firestone et al., 2020). The extent to which teachers perceive that professional development has coherence impacts their implementation of practices (Firestone et al., 2020). Teachers are more likely to benefit from professional development when they are aware of gaps in their knowledge and when the professional development responds to teachers' existing knowledge, interests, and goals because alignment with these aspects increases coherence (Cunningham et al., 2023). RCES administrators can facilitate coherence by asking teachers to complete a pre-assessment before learning new material, by surveying teachers to ask what topics they are most interested in learning, and by ensuring any professional development clearly links the topics to the Bookworms curriculum and the Virginia Standards of Learning.

Collaboration. RCES administrators should provide K-3 teachers the opportunity to discuss, process, and practice new learning with colleagues (van Geel et al., 2016). This should be a routine, continuing practice with adequate time allotted for its execution. Collaboration is important to both professional learning and curriculum implementation (Carlisle & Berebitsky, 2011; Desimone, 2009). In a

systematic review of 82 studies on collaboration, Vangrieken et al. (2015) found that collaboration benefits teacher motivation, morale, and job performance, as well as improving student achievement.

Duration. RCES administrators should sustain professional development over time, implementing follow-up activities after teachers complete training to support teachers in applying new principles to instruction (Darling-Hammond et al., 2017; Desimone & Pak, 2017). Ongoing training that provides opportunities for teachers to practice and apply new learning and then return to professional development sessions with colleagues helps teachers to reinforce and clarify their learning (Cohen et al., 2017; Darling-Hammond et al., 2017; van Geel et al., 2016). Professional development and instructional coaching with over fourteen contact hours are associated with increased student achievement (Desimone & Pak, 2017; Yoon, 2007).

Literacy Coaching. To increase the impact on instruction and student achievement, RCES administrators should pair literacy coaching with professional development (Carlisle & Berebitsky, 2011; Cohen et al., 2024; Kraft et al., 2018). In their seminal coaching study, Carlisle and Berebitsky (2011) compared professional development that included literacy coaching with professional development that did not include literacy coaching for 43 first grade teachers in Michigan. They found that teachers who had both professional development and literacy coaching provided more instruction aligned with the professional development (Carlisle & Berebitsky, 2011). They also found that the students of teachers who received literacy coaching had greater gains in word recognition skills (Carlisle & Berebitsky, 2011).

Pairing literacy coaching with professional development is a crucial step for RCES administrators because literacy coaching contains the elements that help teachers apply professional learning: content specific focus, active learning, coherence, extended duration, and collaboration (Desimone, 2009; Desimone & Pak, 2017). Instructional coaches who incorporate a content specific focus increase transfer of the teacher's knowledge to the teacher's instructional practices by modeling new strategies and providing an example of high-quality instruction (Darling-Hammond et al., 2017). Including literacy

coaching along with professional development is one way to ensure that teachers engage in active learning by practicing instructional strategies they learned in professional development and receiving feedback (Desimone & Pak, 2017). Literacy coaching also supports coherence because coaches can help the teachers apply the new knowledge within their specific classroom contexts (Desimone & Pak, 2017). Coaching also ensures that teachers are learning and apply new strategies over an extended duration of time, as coaching often occurs over a semester or a school year (Kraft et al., 2018). Coaches can also improve collaboration within teams and within schools by facilitating collaborative discussions and planning sessions (Desimone & Pak, 2017).

Recommendation 2: Consider school-level changes to support teachers to meet the needs of students at a high risk of reading difficulty.

Teachers in the study also identified school-level practices that negatively impacted their efforts to support students with a high risk of reading difficulties. Data sources across the study identified three school-level factors impacting teachers: class grouping practices, time, and paraprofessional classroom support.

Create Heterogenous Class Groupings

Creating heterogenous class groupings will prevent all students who need extra support from being grouped together. Teachers shared in the interviews that students already identified for special education services and students who may need special education services in the future are often grouped in the same classroom. This grouping method creates classrooms where over half of the students are at a high risk of having future reading difficulties.

Sometimes teachers or administrators may believe that a class where most students need a similar level of support may be easier to teach. However, researchers have consistently found that ability grouping between classes negatively impacts achievement for students of all levels (Hattie, 2023; Steenbergen-Hu et al., 2016). It also can prevent students who need additional support from having the

opportunity to learn grade level content, which in turn exacerbates existing gaps between groups of students (Hattie, 2023; Steenbergen-Hu et al., 2016). Steenbergen-Hu et al. (2016) conducted two meta-analyses of previous meta-analyses on student grouping practices. They found that, regardless of the students' academic needs, there was no benefit to grouping students of similar abilities by classes. However, students did benefit from small groups within a classroom focused on supporting specific student needs, such as the skills-based grouping that is included in the Bookworms curriculum (Steenbergen-Hu et al., 2016). There are multiple reasons students may have difficulty developing word recognition skills, so even within a classroom where most students need support, instructional needs may vary (Catts et al., 2003; Grimm et al., 2018).

Consider Ending Specialization

Specialization is when teachers teach specific subjects all day and students switch between the teachers, rather than staying in a single classroom with a "generalist" teacher who teaches all subjects (Bastian & Fortner, 2020). RCES administrators should consider ending specialization for future school years, which would both positively impact instructional time and potentially increase student achievement. Teachers who only taught reading and switched classes with a partner teacher consistently identified the uneven allocation of time between the two groups as a challenge. Specialization in one or two subjects seems "conceptually alluring" (Hwang & Kisida, 2022, p. 604) because it appears to save teachers time and potentially produce student higher achievement because the strongest teacher in a subject teaches more students. However, researchers have found that elementary school specialization has a negative impact on student achievement (Bastian & Fortner, 2020; Fryer, 2018; Hattie, 2023). Bastian and Fortner (2020) examined specialization in North Carolina schools with a sample of over 55,000 teachers. They determined the efficacy of teacher specialization by comparing state test scores for teachers who specialized and teachers who taught all subjects while

controlling for the previous years' scores. Bastian and Fortner found that teachers who taught only one or two subjects were less effective than teachers who taught all subjects (Bastian & Fortner, 2020).

In another research study, teachers who specialized reported that they were less likely to scaffold instruction for students (Fryer, 2018). Researchers hypothesize that when teachers spend less time with students, they are less likely to know the students well enough to scaffold instruction effectively (Hwang & Kisida, 2022). This disproportionately impacts students at a high risk of reading difficulties because they are more likely to need scaffolding (Hwang & Kisida, 2022). According to Bastian and Fortner (2020), the number of students a teacher taught affected their teaching effectiveness. They found that generalists taught an average of 27 students, while specialists taught 45-58 students, depending on if they taught only one subject or two (Bastian & Fortner, 2020). When the number of students teachers taught increased by about 15 students, teacher effectiveness decreased (Bastian & Fortner, 2020).

Prioritize Time for Planning and Instruction

Data from the surveys showed that only 43% of the K-3 teachers felt they had enough time to plan instruction and only 64% agreed that they had enough instructional time. Planning time was the factor that most teachers identified as hindering their instruction for students with a high risk of reading difficulties.

Planning Time. When teachers follow a curriculum, they need less time for planning and preparation (Siuty et al., 2018). However, the Bookworms author still emphasizes the need for teachers' planning. The curriculum author writes "[Comprehensive lesson plans do] not mean that a great Bookworms teacher does not have to plan. It means that a great Bookworms teacher plans in a new way" (Walpole, n.d.). The author suggests teachers read the plans, the module and unit overview, practice the introduction for word study, read the text, plan for student engagement, plan to scaffold students who need support during shared reading, and plan for small groups. One study that examined

the reading instruction of teachers who had structured curriculum and compared them to teachers who did not have curriculum noted that teachers with curriculum spent less time finding materials and deciding what to teach during planning time (Siuty et al., 2018). This resulted in an increased ability to individualize instruction because teachers were focused on how to "make the curriculum work best in their contexts" (Siuty et al., 2018, p. 52). Vaughn and Fletcher also emphasize the need for teacher planning to provide support for students who are at high risk of having reading difficulties (2021). They write:

> Even a highly scripted approach requires teacher judgment, especially in terms of scaffolding and practice. The intent of scaffolding is to provide students with challenging tasks that require attention and effort while providing the necessary supports and feedback so that the students can complete the task successfully. (Vaughn & Fletcher, 2021, p. 6)

I recommend administrators try to protect teachers' planning time to ensure teachers have time for individual planning and collaborative planning with specialists and their grade level team. Administrators can protect teacher planning time by avoiding scheduling meetings during the teachers' planning block. Adopting heterogenous classes would decrease the need to have teachers miss planning often because of having several days of child study or Individualized Education Program (IEP) meetings. Teachers who have classes where most students are identified as having a high risk of reading difficulties said that they often lose planning time because they are attending IEP meetings or other meetings to discuss support and interventions. If the students who needed extra support were spread among the classes, the meetings related to those students would also be redistributed so that no single teacher attends the majority of the meetings.

Administrators should consider ways that other schools have increased teacher planning time through a variety of other creative scheduling methods. These methods include scheduling early release or late opening days where teachers can use the time students are not in school to plan, embedding

teacher workdays in the school schedule, and providing an extended planning block once a week by using other school staff to lead enrichment activities (Merritt, 2016).

Instructional time. Only slightly over half of teachers in my study agreed that they had sufficient instructional time. Effective use of instructional time is crucial to support students at high risk of having reading difficulties because they may need additional opportunities to respond, receive feedback, and practice to be successful with reading skills (MacSuga-Gage & Gage, 2015; Stevenson & Reed, 2017). Administrators can support this by offering teachers professional development on maximizing instructional time and ensuring that all allocated time is used for teaching.

The use of instructional time varied widely between teachers in the study, which may have contributed to how teachers perceived the instructional time they had. For example, during the observations, one teacher's students spent approximately 15 minutes actively reading connected text with support during the lesson, while in other classrooms students read for only half that time. Since reading practice supports student reading achievement (van Bergen et al., 2021), the teacher of the students who read more may see reading growth that leads her to believe that the instructional time is sufficient, while the teacher whose students did not practice may see gaps widening and conclude that she does not have sufficient time.

Administrators may be able to improve how teachers perceive the instructional time they have by providing professional development that will help teachers to use the instructional time efficiently. Changing how teachers use instructional time has the potential to impact student achievement more than simply increasing time might (Burgess et al., 2023). Students who are at a high risk of reading difficulties are likely to need more practice opportunities, instruction that is more systematic, scaffolding that is tailored to their needs, and more feedback (Donegan & Fluhler, 2024). Teachers who have higher levels of content knowledge are more likely to allocate instructional time to the topics that students need to become successful readers (Spear-Swerling & Zibulsky, 2014).

Administrators can also support teachers by ensuring that they can use the full instructional time. They could prioritize instructional time by scheduling special events outside of the reading block and minimizing classroom interruptions from the front office (Kraft & Monti-Nussbaum, 2021).

Ending specialization also supports instructional time. When teachers are specialized, students gather all of their materials and switch to a different classroom for part of the day. Due to the uneven allocation of instructional time between the morning and afternoon groups, in February, students at RCES switched classes after morning meeting and again after lunch. If the time to switch classes is conservatively estimated at five minutes, each time students switch, students are spending ten minutes a day in transitions, which would not be necessary if their homeroom teacher taught all subjects. If teachers taught the same students all day, it would add 30 hours of instructional time over the course of a school year by eliminating the transitions between classrooms.

Increase Paraprofessional Support

Many teachers in the study expressed appreciation for the support they receive from other adults in the classroom, such as paraprofessional and high school students participating in a teaching practicum program. This external support allowed teachers to meet the needs of students who have a high risk of reading difficulties better. Paraprofessionals, who are also called paraeducators or teachers' assistants, are staff members who work with students but do not have a teaching license (Gottfried & Ozuna, 2024).

Data from study interviews and observations demonstrated how having paraprofessionals or other adults in the classroom facilitated the teacher's ability to teach students who have a high risk of reading difficulties. In her interview, Mrs. Camp expressed how a high schooler who participates in the "Train our Teachers" program and spends time in her classroom every day was crucial to supporting a student with high behavior support needs in the classroom. She noted how the high schooler helping in the classroom allowed her to focus on teaching other students. She shared, "[The high schooler] is able

to work with [the student who needs support with behavior] one on one…to help with…focusing and getting his work done…if someone was not in here to direct him what to do…there's sometimes yelling." During my observation in a different classroom, the impact of additional adults in the room was clear when a student had difficulties with self-regulation and turned over a chair in frustration. Because of the additional adults in the room, the student received help quickly, and the outburst did not impact the instruction of most other students.

As noted earlier, teachers also expressed a need for additional support. In the interviews, teachers emphasized the need for paraprofessional support, saying "support is the biggest thing" and "more help in the room…would be…the first thing I would say I need."

Paraprofessionals Directly and Indirectly Support Teachers and Students

Paraprofessionals impact the achievement of students at a high risk of reading difficulties, both indirectly and directly. Their roles can include providing academic and behavioral support for students with disabilities, supporting academic and behavior management for all students, preparing instructional materials, and providing targeted academic interventions (Gottfried & Ozuna, 2024; Wiggs et al., 2021). The number of paraprofessionals in public schools has more than doubled in the last thirty years (Bisht et al., 2021), which is often linked to the increase of students with disabilities spending more time in general education classrooms (Gottfried, 2018; Wiggs et al., 2021).

At RCES, some paraprofessionals directly support student achievement by providing support to students with disabilities; others provide general support to all students in the classroom; and others provide academic interventions. Paraprofessionals directly support students at a high risk of reading difficulties through providing academic instruction and intervention lessons (Gottfried & Ozuna, 2024; Martin et al., 2025). When paraprofessionals are trained in the intervention, they can have positive impacts on students' reading skills that are comparable to the impacts of a classroom teacher (Jones et al., 2021; Martin et al., 2025).

Paraprofessionals also indirectly support the achievement of students at a high risk of reading difficulty by helping to support students who need frequent redirection and behavioral support so that the classroom teacher does not lose instructional time with other students. Gottfried et al. (2018) write that "the presence of teachers' aides may also allow teachers themselves to more efficiently instruct students" (p. 621) because it provides time for the teacher to focus on the needs of other students in the class. The support provided by paraprofessionals has the potential to decrease teacher stress while "extend[ing] the instructional reach" of the classroom teacher (Jones et al., 2021, p. 725). Paraprofessionals are especially crucial in kindergarten to support students' transition into school (Gottfried, 2018; Gottfried & Ozuna, 2024). Gottfried (2018) studied kindergarten students with disabilities and found that when they had paraprofessional support in the classroom, they had higher achievement than students with disabilities who were not supported by a paraprofessional.

Prioritize Paraprofessionals in Classrooms

Data from this capstone reflected the important role paraprofessionals currently play at RCES and illustrated the need for additional paraprofessional support. I recommend administrators prioritize staffing classrooms that include students who have high support needs with paraprofessionals. Additionally, all paraprofessionals should receive professional development specifically aligned with the support they will provide (Morin et al., 2022). Most paraprofessionals do not receive the training they need to support students in the most effective way (Gottfried & Ozuna, 2024). Professional development for paraprofessionals should include the characteristics previously mentioned, especially ongoing training with feedback, to increase the skill transfer to classroom settings (Brock & Anderson, 2021). Paraprofessionals who provide academic support should also attend the professional development offered to teachers and have ongoing opportunities to collaborate with the teachers they support (Brock and Anderson, 2021). Teachers who work with paraprofessionals should also receive training on how to supervise paraprofessionals and how to collaborate with them (Martin et al., 2025).

By providing paraprofessional support, administrators ensure students with very high support needs get help so the teacher can teach all students in the class.

Chapter Summary

The recommendations outlined in this chapter will support teachers as they improve their ability to meet the needs of students who have a high risk of experiencing future reading difficulties. These recommendations are based on themes identified in the data and are supported by existing literature. Overall, I recommend providing professional development to support teachers' knowledge and making school-level changes that will increase teachers' ability to meet the needs of students at a high risk of reading difficulty. Professional development will equip teachers to use the Bookworms curriculum to its full potential while increasing teachers' ability to scaffold instruction for students at a high risk of reading difficulties. School-level changes will prioritize teachers' time for planning and instruction, while also providing the paraprofessional support they need. These recommendations support teachers in meeting the needs of students at a high risk of reading difficulties in the primary grades to develop the reading skills they need to prevent reading difficulties in the future.

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Appendix A

Teacher Survey

Directions: The purpose of this survey is to learn about how classroom teachers support students identified as at high risk for reading difficulties on the Virginia Language and Literacy Screening System (VALLSS). Part 1 will ask about your professional background. Part 2 will ask questions about knowledge and skills related to word recognition instruction. Part 3 will ask about supporting students at a high risk for reading difficulties in the classroom. Please note that answering these questions is optional. If you prefer not to answer a question, you can choose "I prefer not to answer" or skip the question. Thank you for taking the time to answer these questions!

Part 1: Professional Background

These questions are about your professional history related to education.

1. How many years have you been teaching in a K-12 setting?
    a. 0-4 years
    b. 5-9 years
    c. 10-14 years
    d. 15-19 years
    e. 20 years or more
    f. I prefer not to answer

2. How many years have you been teaching at RCES (including this year)?
    a. 1-2 years
    b. 3-4 years
    c. 5-6 years
    d. 7 years or more
    e. I prefer not to answer

3. Please choose the type of Virginia teaching license you currently hold.
    a. Collegiate or Postgraduate Professional License
    b. Provisional License or Local Eligibility License
    c. I have a teaching license from a state other than Virginia
    d. I am not sure
    e. I prefer not to answer

4. What types of training have you had for reading instruction? Please choose all that apply.
   a. Undergraduate college classes
   b. Graduate college classes
   c. Professional development
   d. Canvas course on Bookworms
   e. Video PD on UFLI
   f. I prefer not to answer

5. How many Virginia Literacy Act Canvas modules for classroom teachers have you completed?
   a. 0 (I have not yet completed any VLA training modules)
   b. 1-3
   c. 4-6
   d. 7-8
   e. 9 (I have completed all modules)

Part 2: Word Recognition Instruction

Identify the phonological level to which the following set of words is segmented. Is it segmented into syllables, onsets and rimes, or phonemes?

	syllables	onset-rime	phonemes
6. com-pu-ter; wal-rus; pump-kin			
7. b-e-s-t; sh-o-ck; b-ee			

Identify the following phoneme awareness task.

	identification	blending	segmentation	manipulation
8. "I'm going to say two words. I want you to listen for the ending sound in both words: cat…sit. What is the ending sound?"				
9. "If I change the /ă/ in "mat" to /ĭ/, what word do I have?"				
10. "What word do these sounds make? /b/ /ĕ/ /s/ /t/?"				

How many phonemes are in the following words?

	1	2	3	4	5	6	7
11. spray							
12. rice							
13. slipped							
14. short							
15. though							

16. A “soft c” is in the word:
    a. chef
    b. cent
    c. car
    d. chain

17. Identify the pair of words that begins with the same sound.
    a. quick-giraffe
    b. jump-gum
    c. charade-ship
    d. cheap-chorus

18. Choose the word that includes an r-controlled vowel.
    a. scratch
    b. cream
    c. cry
    d. corn

19. Choose the word that includes a vowel digraph.
    a. snake
    b. cream
    c. problem
    d. purple

20. Select all of the words that include consonant digraphs.
    a. wheel
    b. scrub
    c. beach
    d. scowl

21. Select all the words that are phonetically irregular (i.e., in which at least one of the letters or letter sequences does not make a typical or expected sound).

a. said
b. past
c. of
d. smile
e. one
f. chain

Match the syllable to the syllable type.

	Open	Closed	Vowel digraph	r-controlled vowel	Long vowel with silent e (vCe)
22. First syllable of "carpet"					
23. First syllable of "basket"					
24. First syllable of "music"					

25. A combination of two or three consonants pronounced so that each letter keeps its own identity is called a:

a. silent consonant
b. consonant digraph
c. diphthong
d. consonant blend

26. What rule informs the use of "ck" in the final position to spell /k/?

a. Use "ck" after any vowel; use "k" after any consonant.
b. Use "ck" after a short vowel; use a "k" after everything else.
c. Use of "ck" to spell /k/ in the final position must be memorized.
d. None of the above.

27. Why is there a double n in the word "stunning?"

a. Because the final consonant of a base word is always doubled before adding -ing.
b. Because "stun" ends in a single consonant letter preceded by a single vowel letter, and the -ing begins with a vowel.
c. Because the letter "u" has many different pronunciations.
d. Because the consonant "n" is not well articulated and needs to be strengthened.

Each of the following items represents a common student spelling error. Choose the best explanation for each spelling error (in CAPS).

28. COOKT for cooked, WISHIS for wishes, VACASHUN for vacation

a. The student has incomplete knowledge of the graphemes used to represent single consonant and short vowel sounds.
b. The student has not fully developed phonemic segmentation skills.
c. The student has incomplete knowledge of digraphs and the phonemes they represent.
d. The student is not applying morphological knowledge.

29. GAB for grab, FN for fan, HUT for hunt
    a. The student has not fully developed phonemic segmentation skills.
    b. The student has incomplete knowledge of digraphs and the phonemes they represent.
    c. The student has incomplete knowledge of graphemes used to represent short vowel sounds.
    d. The student is not applying morphological knowledge

30. BLOK for block, SOP for shop, MUTH for much
    a. The student has incomplete knowledge of the graphemes used to represent single consonant sounds.
    b. The student has not fully developed phonemic segmentation skills.
    c. The student has incomplete knowledge of digraphs and the phonemes they represent.
    d. The student is not applying morphological knowledge.

Review the following common student spelling errors. Choose the best activity to address the underlying difficulty that led to the student's particular spelling errors (in CAPS).

31. SOP for stop, TASH for trash, CAP for clap
    a. Have the student trace and copy the words five times.
    b. Have the student identify words that start with the same beginning sound.
    c. Have the student segment the sounds in words with blends and then associate each sound with a grapheme.
    d. Show the student the word and have them close their eyes to make a visual image of the word.

32. BOTE for boat, SNOE for snow, COWCH for coach
    a. Have the student trace and copy the words five times.
    b. Have the student segment the sounds in the words and then associate each sound with a grapheme.
    c. Teach the student how the placement of the long o sound in words often determines the spelling of the sound.
    d. Prepare flashcards with spelling patterns and have student practice saying the sounds associated with various spelling patterns.

Part 3: Teaching Students Identified as at a High Risk of Reading Difficulties

These questions ask about teaching students who are identified as at a high risk of reading difficulties. In the following questions, "high risk students" means students who were identified by the Virginia Literacy and Language Screening System (VALLSS) as at a high risk for reading difficulties.

33. If you know a student at a high risk of reading difficulties will probably have difficulty reading words in the shared reading text, what are some things you might do to support that student? (Open response)

34. If you notice a student at a high risk of reading difficulty having trouble completing an assignment during a whole group lesson or small group time, what are some things you might do at that moment to support the student?

During whole group and small group reading instruction, how often do you use the following supports to help students learn?

	Never (almost no lessons)	Rarely (less than half of lessons)	Sometimes (about half of lessons)	Very Often (more than half of lessons)	Always (almost all lessons)
35. Modeling or demonstrating					
36. Rewording, explaining in a different way					
37. Multiple repetitions or examples					
38. Prompts, questioning					
39. Guidance, hints					
40. Feedback					
41. Break down tasks into smaller steps					

Please rate the extent to which you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
42. My class size is appropriate.					
43. The range of student reading needs in my class(es) is reasonable.					
44. I have useful assessments to determine the literacy needs of students at a high risk of reading difficulty.					
45. I know how to teach students identified as at a high risk of reading difficulties the skills they need to read.					
46. I have enough time to plan reading instruction.					

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
47. I have enough time to teach reading.					
48. I have the materials I need to teach reading to students identified as at a high risk of reading difficulties.					
49. If I need help with reading instruction, I have people to support me.					
50. I collaborate with colleagues to brainstorm ways to support students with reading.					
51. Student absenteeism is impacting reading progress of students in my class.					
52. I can manage student behavior to maximize instructional time.					

53. Is there anything else that you feel is important to share about teaching reading to high risk students in your classroom?

Mrs. (School Reading Specialist) has the $5 Target gift cards. Please see her to get one as a token of appreciation for your time!

Thank you for taking the time to complete this survey. Your response has been recorded.

Appendix B

Survey Letter

January 27, 2025

Dear First Name,

I am writing to ask for your participation in a survey on literacy instruction. You will find a link to the survey and a QR code to access the survey below. If you participate in the survey, you will receive a $5 Target gift card as a token of appreciation for your time.

The purpose of this survey is to explore how K-3 classroom teachers instruct students who are identified as being at a high risk of reading difficulties on VALLS and what things support or hinder the teacher's reading instruction. Information from this survey will help to inform recommendations to support teachers to help every child become proficient readers. As a classroom teacher at RCES, your input is critical!

The study is being conducted as part of my doctoral program. Dr. Davis has approved the distribution of this survey. Your participation is optional, and your decision to participate will be confidential and will have no effect on your job. Likewise, your survey responses are completely confidential. Survey responses will only be reported in aggregate as part of the larger group. If any of your open-ended responses are included in the final report, they will be anonymous – any information that could identify you will be removed.

For your information, I have attached the electronic study information sheet to this letter. If you have questions or comments about this survey, please feel free to contact me by phone or email. My contact information, as well as the contact information for my advisor, is below my signature.

If you have questions about your rights as a research participant, you can contact the Institutional Review Board listed below.

Tonya R. Moon, Ph.D.
Chair, Institutional Review Board for the Social and Behavioral Sciences
[Contact Information Here]

Thank you very much for your time and consideration. It not only assists me in my doctoral work, but it has the potential to improve the academic outcomes for our students!

Please click here to begin the survey or scan the QR link below.

Sincerely,
Erin Beard
School of Education and Human Development
[Contact Information Here]

Dr. Tisha Hayes
School of Education and Human Development
[Contact Information Here]

IRB protocol # 7265

Appendix C

Survey Follow Up Email

Dear First Name,

Thank you to those of you who have completed the survey on literacy instruction. I appreciate your response. Please consider completing the survey (link here) if you haven't already! Every response is important and helps me to get a more accurate picture of the reading instruction at our school.

I am also looking for teachers who are willing to participate in the second part of my research. For this part, I observe one day of reading instruction in your classroom. I will take notes, but I will not video or audio record or take any data on students. Then, you would participate in a follow up interview, either in person or on Zoom, where you share your thoughts about teaching students who have been identified as at a high risk of reading difficulties by VALLSS. The interview will be audio recorded. If you are interested in participating in this part of my study, please respond to this email.

Your participation in the study is optional, and your decision to participate will be confidential and will have no effect on your job. Likewise, your survey responses and data from the observation and interview are completely confidential. Survey responses will only be reported in aggregate as part of the larger group. If any of your open-ended responses are included in the final report, they will be anonymous. No information that could identify you will be attached to any individual responses or quotes in the final report.

If more teachers volunteer to participate in the study than I need, I will choose teachers from the volunteers to participate. I will try to choose volunteers who represent a variety of teaching experiences. If you participate in the second part of the study, you will receive a $15 Amazon gift card as a token of appreciation for your time.

If you have questions about your rights as a research participant, you can contact the Institutional Review Board listed below.

Tonya R. Moon, Ph.D.
Chair, Institutional Review Board for the Social and Behavioral Sciences
[Contact Information Here]

For your information, I am attaching the consent form for the observation and interview to this email. If you have any questions or comments about this survey, please feel free to contact me by phone or email. My contact information, as well as the contact information for my advisor, is below my signature.

Thank you!

Sincerely,
Erin Beard
School of Education and Human Development
[Contact Information Here]

Dr. Tisha Hayes
School of Education and Human Development
[Contact Information Here]

IRB protocol # 7265

Appendix D

Information for Teachers about the Classroom Observation

Dear First Name,

Thank you for being willing to work with me so I can learn more about how classroom teachers instruct high risk students in reading. Below is some information about the observation.

I would like to observe your reading block, including both whole group and small group instruction. Please choose a day and time that you expect will be an "average" day, without any special events (such as assemblies or field trips) or planned interruptions (such as planned fire drills or benchmark assessments). Please send me 2-3 options of days and times that would work for you.

Before the observation, I will put parent notification letters in your school mailbox. Please send these letters home with the students who will be in the classroom during the observation. I will meet with you briefly to explain the consent form and give you an opportunity to consent to participate. For your information, the consent form is attached to this email. During the observation, I will type notes on your instruction, but I will not record your instruction with audio or video methods.

After we choose a day for the observation, I will follow up with you to find a good time to conduct the follow up interview. I estimate that this interview will take between 45 and 60 minutes. We could do the interview in two parts during your planning time, or in one part after school or on the weekend.

If you have questions about your rights as a research participant, you can contact the Institutional Review Board listed below.

Tonya R. Moon, Ph.D.
Chair, Institutional Review Board for the Social and Behavioral Sciences
[Contact Information Here]

For your information, I am attaching the consent form you have already signed to this email. If you have any questions or comments about this survey, please feel free to contact me by phone or email. My contact information, as well as the contact information for my advisor, is below my signature.

Observing how teachers instruct students at a high risk for reading difficulties provides crucial data for my study. Thank you for being willing to work with me. I appreciate it!

Sincerely,
Erin Beard

Dr. Tisha Hayes
School of Education and Human Development
[Contact Information Here]

IRB protocol # 7265

Appendix E

Lesson Observation Protocol

Participant Pseudonym:
Date:
Time and Duration of Observation:
Grade Level:
Observer: Erin Beard

Prior to Instruction:

- Draw a diagram of the classroom
- Description of the classroom
- What lesson number is the teacher teaching?
- Are there visual tools or scaffolds present in the classroom?
- How do students transition into the reading block?
- Review the plans for this lesson in the teacher's manual

During instruction:

- How does the teacher respond if students are having difficulty with the material?
- How are student responses elicited?
- How frequently are student responses elicited?
- How does the teacher deviate from the plans in the teacher manual?
- How are the students grouped for instruction?

Time	Teacher's Instruction	Facts and Details	Reflections or Personal Observations

Appendix F

Parent Notification Letter

Dear Parent(s) or Guardian(s),

My name is Erin Beard, and I am conducting a research study in your child's class. I am interested in studying how K-3 classroom teachers scaffold reading instruction for students who have been identified as being at a high risk of reading difficulties by the Virginia Language & Literacy Screening System (VALLSS).

I will be in your child's reading class one day during reading instruction for about 120 minutes. While I'm in the classroom, I will observe the teacher's instruction methods and take notes. I will not be taking any video or audio recordings. I will not record your child's name or any other materials that will identify your child. Your child will not do anything outside of the normal classroom activities and there is no risk to your child.

Please contact the researchers on the study team listed below to obtain more information or ask a question about the study.

Erin Beard
School of Education and Human Development
[Contact Information Here]

Dr. Tisha Hayes
School of Education and Human Development
[Contact Information Here]

You may also report a concern about a study or ask questions about your rights as a research subject by contacting the Institutional Review Board listed below.

Tonya R. Moon, Ph.D.
Chair, Institutional Review Board for the Social and Behavioral Sciences
[Contact Information Here]

UVA IRB-SBS # 7265

Sincerely,

Erin Beard

Appendix G

Interview Protocol

Participant Pseudonym:
Date:
Time and Duration of Interview:
Grade Level:
Observer: Erin Beard

Prior to Interview:

- Sound/audio check
- Send information to the teacher about choosing two high-risk students to discuss
- Record date and time, participant pseudonym, interview location

During Interview:

- Ask follow up questions
  - Can you tell me more about…
  - A few minutes ago, you mentioned [topic]. Can you say more about that?
- Member check
  - So, what I heard you say is….Is that correct?

After Interview:

- Write field notes
- Send transcribed interview to participant to review

Introduction

As you know, I'm Erin Beard. I'm pursuing my EdD from UVA and I'm completing my capstone research project. I'm studying how teachers teach reading to students who are identified as being high risk of reading difficulties on VALLS. Thank you for taking the time to meet with me today. (Give them letter) This is a letter that explains that I'm talking to teachers to learn more about teaching high risk students in the classroom. It is up to you if you would like to talk more with me about this. Your answers will not be shared with your principal or anyone at your school. In my research, I will use a pseudonym for both your name and the school's name to protect your identity. You are free to say no, and saying no will not affect your job in any way. Do you have any questions before we begin?

1. Can you tell me about your teaching background?
   (Listen for: years teaching, schools, grade level, what college, how long they have been at the school)

   First, I'll ask you some questions about the lesson I observed. Then, I'll ask you to discuss two specific students in your class.

Part 1: Observation Follow Up

Whole Group

2. *Scaffolding Example from Whole Group* (previously identified from the observation):
   In the whole group lesson, I noticed you….[explain instance]. Can you tell me more about the decision to do that?

Listen for information in the answer:	**If not provided by the teacher, ask this question:**
Was the action planned before the lesson?	When did you decide to [teacher's action]?
What information prompted the teacher to take action?	What helped you decide to [teacher's action]?

3. If fading or transfer was observed: How did you decide to [provide example of fading or transfer]?

   If fading or transfer was NOT observed: How do you decide when to [link to example and mention how teacher may fade or transfer instruction—ex: ask the students to spell the words without help?]

Small Group

4. *Scaffolding Example from Small Group* (previously identified from the observation)
   In the small group lesson, I noticed you….[explain instance]. Can you talk about that?

Listen for information in the answer:	**If not provided by the teacher, ask this question:**
Was the action planned before the lesson?	When did you decide to [teacher's action]?
What information prompted the teacher to take action?	What helped you decide to [teacher's action]?

5. If fading or transfer was observed: How did you decide to [provide example of fading or transfer]?

   If fading or transfer was NOT observed: How do you decide when to [link to example and mention how teacher may fade or transfer instruction—ex: ask the students to spell the words without help?)

6. Before you taught the lesson, how did you decide if you would change anything from the lesson description in the teacher's manual? (If not discussed: Did you plan to change anything for this day's lesson?)

General Pedagogical Knowledge

7. Can you tell me about [example of general pedagogical knowledge: decisions around classroom management, directing attention, maintaining student engagement]?

Part 2: Focus on Students at a High Risk for Reading Difficulties

Thank you for telling me about your lesson. Now I'm going to switch gears and ask you to talk about how you meet the needs of students in your class who are identified as at high risk for reading difficulties on VALLSS. Please do not share students' names, data, or other identifying information during this part of the interview.

8. What strengths or stronger skills do you notice in some of your students with high risk?

9. What are some weaknesses or skill deficits do you notice in some of your students with high risk?
10. What assessments do you find the most helpful when thinking about the kids at high risk for reading difficulties?

11. How do you support students with high risk with spelling?

12. How do you support students with high risk with reading?

13. Are there any topics that you know a lot about or feel confident teaching that you think help you support students with high risk?

14. Is there anything you wish you knew more about that might help you to support students with high risk?

15. Do you use any specific classroom management or attention strategies to support students with high risk of reading difficulties?

High Risk Student Discussion Wrap-up:

16. Overall, what are the most challenging parts of supporting your students with high risk?

    Listen for items that had a wide range of answers on survey: range of needs, time to plan & teach, absentee students

17. Overall, what do you think helps you to be able to support your students with high risk?

Closing:

Thank you so much for sharing your thoughts and experiences.

18. Is there anything else you'd like to add before we conclude?

    If you think of anything else, please don't hesitate to reach out.

    Your answers will be very helpful to my research. I will send you a transcript of this interview so that you can check that I captured what you said accurately. I really appreciate your time. If you have any questions or concerns, please don't hesitate to contact me.

Appendix H

Information for Teachers about the Interview

Note: The information below will be sent by email

Dear First Name,

Thank you for allowing me to observe your reading instruction. It was so fun to see your class! [add detail here that is personalized to the teacher]

We have planned to do the follow up interview at [interview time and place, zoom link if needed.] If you need to change this time, please let me know.

Before the interview, I would like you to think about how you meet the instructional needs of students who are identified as at high risk for reading difficulties according to VALLSS. During the interview, I will ask you to reflect on the instruction I saw during the observation and to discuss the ways that you adjust reading instruction for students at high risk on VALLSS. During this interview, please do not use student's names, share any data, or provide other identifying information. You can provide general examples of ways you have adjusted instruction for the many students you have taught this year.

If you have any questions or comments about this interview, please feel free to contact me by phone or email. My contact information, as well as the contact information for my advisor, is below my signature.

Your thoughts and experiences as a classroom teacher are very important! Thank you for being willing to share them with me.

Thank you!

Sincerely,
Erin Beard

IRB protocol # 7265

Appendix I

Survey Codebook

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
0	agreement	This is the response to the question if the respondent agrees to participate in the survey.	1	1: I agree. 0: I do not agree.	-99	If participant does not agree, they will be taken to the end of the survey.
1	years_total	How many years have you been teaching in a K-12 setting?	n/a	1: 0-4 years 2: 5-9 years 3: 10-14 years 4: 15-19 years 5: 20 years or more 6: I prefer not to answer	-99	
2	years_school	How many years have you been teaching at RCES (including this year)?	n/a	1: 1-2 years 2: 3-4 years 3: 5-6 years 4: 7 years or more 5: I prefer not to answer	-99	
3	license	Please choose the type of Virginia teaching license you currently hold.	n/a	1: Collegiate or Postgraduate Professional License 2: Provisional License or Local Eligibility License 3: I have a teaching license from a state other than Virginia 4: I am not sure 5: I prefer not to answer	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
4	Training_1	What types of training have you had for reading instruction? Please choose all that apply. Undergraduate college classes	n/a	Checkbox 0: unchecked 1: checked	-99	
4	Training_2	What types of training have you had for reading instruction? Please choose all that apply. Graduate college classes	n/a	Checkbox 0: unchecked 1: checked	-99	
4	Training_3	What types of training have you had for reading instruction? Please choose all that apply. Professional development	n/a	Checkbox 0: unchecked 1: checked	-99	
4	Training_4	What types of training have you had for reading instruction? Please choose all that apply. Canvas course on Bookworms	n/a	Checkbox 0: unchecked 1: checked	-99	
4	Training_5	What types of training have you had for reading instruction? Please choose all that apply. Video PD on UFLI	n/a	Checkbox 0: unchecked 1: checked	-99	
4	Training_6	What types of training have you had for reading instruction? Please choose all that apply. I prefer not to answer	n/a	Checkbox 0: unchecked 1: checked	-99	
5	VLA_modules	How many Virginia Literacy Act Canvas training modules for classroom teachers have you completed?	n/a	1: 0 (I have not yet completed any VLA training modules) 2: 1-3 3: 4-6 4: 7-8 5: 9 (I have completed all modules)	-99	
6	PA_Level_1	Identify the phonological level to which the following set of words is segmented. Is it segmented into syllables, onsets and rimes, or phonemes? com-pu-ter; wal-rus; pump-kin	1	Radio matrix 1: Syllables 2: Onset-Rime 3: Phonemes	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
7	PA_Level_2	Identify the phonological level to which the following set of words is segmented. Is it segmented into syllables, onsets and rimes, or phonemes? b-e-s-t; sh-o-ck; b-ee	3	Radio matrix 1: Syllables 2: Onset-Rime 3: Phonemes	-99	
8	PA_Task_1	Identify the following phoneme awareness task. “I’m going to say two words. I want you to listen for the ending sound in both words: cat…sit. What is the ending sound?”	1	Radio matrix 1: Identification 2: Blending 3: Segmentation 4: Manipulation	-99	
9	PA_Task_2	Identify the following phoneme awareness task. “If I change the /ă/ in “mat” to /ĭ/, what word do I have?”	4	Radio matrix 1: Identification 2: Blending 3: Segmentation 4: Manipulation	-99	
10	PA_Task_3	Identify the following phoneme awareness task. “What word do these sounds make? /b/ /ĕ/ /s/ /t/?”	2	Radio matrix 1: Identification 2: Blending 3: Segmentation 4: Manipulation	-99	
11	PA_Count_1	How many phonemes are in the following words? spray	4	Radio matrix 1: 1 2: 2 3: 3 4: 4 5: 5 6:6 7:7	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
12	PA_Count_2	How many phonemes are in the following words? rice	3	Radio matrix 1: 1 2: 2 3: 3 4: 4 5: 5 6:6 7:7	-99	
13	PA_Count_3	How many phonemes are in the following words? slipped	5	Radio matrix 1: 1 2: 2 3: 3 4: 4 5: 5 6:6 7:7	-99	
14	PA_Count_4	How many phonemes are in the following words? short	3	Radio matrix 1: 1 2: 2 3: 3 4: 4 5: 5 6:6 7:7	-99	
15	PA_Count_5	How many phonemes are in the following words? though	2	Radio matrix 1: 1 2: 2 3: 3 4: 4 5: 5 6:6 7:7	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
16	SoftC	A “soft c” is in the word:	2	Multiple choice 1: chef 2: cent 3: car 4: chain	-99	
17	same_sound	Identify the pair of words that begin with the same sound.	3	Multiple choice 1: quick-giraffe 2: jump -gum 3: charade-ship 4: cheap-chorus	-99	
18	r_controlled	Choose the word that includes an r-controlled vowel.	4	Multiple choice 1: scratch 2: cream 3: cry 4: corn	-99	
19	Vowel_Digraph	Choose the word that includes a vowel digraph.	2	Multiple choice 1: snake 2: cream 3: problem 4: purple	-99	
20	Con_Dig_1	Select all the words that include consonant digraphs. wheel	1	Checkbox 0: unchecked 1: checked	-99	
20	Con_Dig_2	Select all the words that include consonant digraphs. scrub	0	Checkbox 0: unchecked 1: checked	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
20	Con_Dig_3	Select all the words that include consonant digraphs. beach	1	Checkbox 0: unchecked 1: checked	-99	
20	Con_Dig_4	Select all the words that include consonant digraphs. scowl	0	Checkbox 0: unchecked 1: checked	-99	
21	Irregular_1	Select all of the words that are phonetically irregular (i.e., in which at least one of the letters or letter sequences does not make a typical or expected sound). said	1	Checkbox 0: unchecked 1: checked	-99	
21	Irregular_2	Select all of the words that are phonetically irregular (i.e., in which at least one of the letters or letter sequences does not make a typical or expected sound). past	0	Checkbox 0: unchecked 1: checked	-99	
21	Irregular_3	Select all of the words that are phonetically irregular (i.e., in which at least one of the letters or letter sequences does not make a typical or expected sound). of	1	Checkbox 0: unchecked 1: checked	-99	
21	Irregular_4	Select all of the words that are phonetically irregular (i.e., in which at least one of the letters or letter sequences does not make a typical or expected sound). smile	0	Checkbox 0: unchecked 1: checked	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
21	Irregular_5	Select all of the words that are phonetically irregular (i.e., in which at least one of the letters or letter sequences does not make a typical or expected sound). one	1	Checkbox 0: unchecked 1: checked	-99	
21	Irregular_6	Select all of the words that are phonetically irregular (i.e., in which at least one of the letters or letter sequences does not make a typical or expected sound). chain	0	Checkbox 0: unchecked 1: checked	-99	
22	syl_type_1	Match the syllable to the syllable type. First syllable of “carpet”	4	Radio matrix 1: Open 2: Closed 3: Vowel Digraph 4: R-controlled vowel 5: Long vowel with silent e (vCe)	-99	
23	syl_type_2	Match the syllable to the syllable type. First syllable of “basket”	2	Radio matrix 1: Open 2: Closed 3: Vowel Digraph 4: R-controlled vowel 5: Long vowel with silent e (vCe)	-99	
24	syl_type_3	Match the syllable to the syllable type. First syllable of “music”	1	Radio matrix 1: Open 2: Closed 3: Vowel Digraph 4: R-controlled vowel 5: Long vowel with silent e (vCe)	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
25	blend	A combination of two or three consonants pronounced so that each letter keeps its own identity is called a:	4	Multiple choice 1: silent consonant 2: consonant digraph 3: diphthong 4: consonant blend	-99	
26	ck_rule	What rule informs the use of “ck” in the final position to spell /k/?	2	Multiple Choice 1: Use “ck” after any vowel; use “k” after any consonant. 2: Use “ck” immediately after a short vowel; use a “k” after everything else. 3: Use of “ck” to spell /k/ in the final position must be memorized. 4: None of the above.	-99	
27	doubling	Why is there a double n in the word “stunning?”	2	Multiple Choice 1: Because the final consonant of a base word is always doubled before adding -ing. 2: Because “stun” ends in a single consonant letter preceded by a single vowel letter, and the -ing begins with a vowel. 3: Because the letter “u” has many different pronunciations. 4: Because the consonant “n” is not well articulated and needs to be strengthened.	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
28	Morph_Know	COOKT for cooked, WISHIS for wishes, VACASHUN for vacation	4	Multiple Choice 1. The student has incomplete knowledge of the graphemes used to represent single consonant and short vowel sounds. 2. The student has not fully developed phonemic segmentation skills. 3. The student has incomplete knowledge of digraphs and the phonemes they represent. 4. The student is not applying morphological knowledge.	-99	
29	PA_Spelling	GAB for grab, FN for fan, HUT for hunt	1	Multiple Choice 1. The student has not fully developed phonemic segmentation skills. 2. The student has incomplete knowledge of digraphs and the phonemes they represent. 3. The student has incomplete knowledge of graphemes used to represent short vowel sounds. 4. The student is not applying morphological knowledge	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
30	Digraph_Spelling	BLOK for block, SOP for shop, MUTH for much	3	Multiple Choice 1. The student has incomplete knowledge of the graphemes used to represent single consonant sounds. 2. The student has not fully developed phonemic segmentation skills. 3. The student has incomplete knowledge of digraphs and the phonemes they represent. 4. The student is not applying morphological knowledge.	-99	
31	PA_Activity	SOP for stop, TASH for trash, CAP for clap	3	Multiple Choice 1. Have the student trace and copy the words five times. 2. Have the student identify words that start with the same beginning sound. 3. Have the student segment the sounds in words with blends and then associate each sound with a grapheme. 4. Show the student the word and have them close their eyes to make a visual image of the word.	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
32	placement	BOTE for boat, SNOE for snow, COWCH for coach	3	Multiple choice 1. Have the student trace and copy the words five times. 2. Have the student segment the sounds in the words and then associate each sound with a grapheme. 3. Teach the student how the placement of the long o sound in words often determines the spelling of the sound. 4. Prepare flashcards with spelling patterns and have student practice saying the sounds associated with various spelling patterns.	-99	
33	read_words	If you know a student at a high risk of reading difficulties will probably have difficulty reading words in the shared reading text, what are some things you might do to support that student?	n/a	Open response	-99	Will use qualitative coding with this answer
34	read_task	If you notice a student at a high risk of reading difficulty having trouble completing an assignment during a whole group lesson or small group time, what are some things you might do at that moment to support the student?	n/a	Open response	-99	Will use qualitative coding with this answer

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
35	model	Modeling or demonstrating	n/a	Radio matrix 1: Never (almost no lessons) 2: Rarely (less than half of lessons) 3: Sometimes (about half of lessons) 4: Very Often (more than half of lessons) 5: Always (almost all lessons)	-99	
36	reword	Rewording, explaining in a different way	n/a	Radio matrix 1: Never (almost no lessons) 2: Rarely (less than half of lessons) 3: Sometimes (about half of lessons) 4: Very Often (more than half of lessons) 5: Always (almost all lessons)	-99	
37	examples	Multiple repetitions or examples	n/a	Radio matrix 1: Never (almost no lessons) 2: Rarely (less than half of lessons) 3: Sometimes (about half of lessons) 4: Very Often (more than half of lessons) 5: Always (almost all lessons)	-99	
38	questioning	Prompts, questioning	n/a	Radio matrix 1: Never (almost no lessons) 2: Rarely (less than half of lessons) 3: Sometimes (about half of lessons) 4: Very Often (more than half of lessons) 5: Always (almost all lessons)	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
39	hints	Guidance, hints	n/a	Radio matrix 1: Never (almost no lessons) 2: Rarely (less than half of lessons) 3: Sometimes (about half of lessons) 4: Very Often (more than half of lessons) 5: Always (almost all lessons)	-99	
40	feedback	Feedback	n/a	Radio matrix 1: Never (almost no lessons) 2: Rarely (less than half of lessons) 3: Sometimes (about half of lessons) 4: Very Often (more than half of lessons) 5: Always (almost all lessons)	-99	
41	steps	Break down task into smaller steps	n/a	Radio matrix 1: Never (almost no lessons) 2: Rarely (less than half of lessons) 3: Sometimes (about half of lessons) 4: Very Often (more than half of lessons) 5: Always (almost all lessons)	-99	
42	class_size	My class size is appropriate.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	
43	range_needs	The range of student reading needs in my class(es) is reasonable.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
44	assessments	I have useful assessments to determine the literacy needs of students at a high risk of reading difficulty.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	
45	teach	I know how to teach students identified as at a high risk of reading difficulties the skills they need to read.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	
46	time_plan	I have enough time to plan reading instruction.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	
47	time_teach	I have enough time to teach reading.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	
48	materials	I have the materials I need to teach reading to students identified as at a high risk of reading difficulties.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	

Question Number	Variable Name	Variable Label	Correct Answer	Variable Values and Labels	Missing Data	Notes
49	support	If I need help with reading instruction, I have people to support me.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	
50	collab	I collaborate with colleagues to brainstorm ways to support students with reading.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	
51	absent	Student absenteeism is impacting reading progress of students in my class.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	
52	behavior	I can manage student behavior to maximize instructional time.	n/a	Radio matrix 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree	-99	
53	other_imp	Is there anything else that you feel is important to share about teaching reading to high risk students in your classroom?	n/a	Open response	-99	Will use qualitative coding with this answer

Appendix J

Codebook for Qualitative Analysis

Code Name	Definition	Inclusionary Criteria	Exclusionary Criteria	Example From Data
Scaffolding				
Change from lesson plan	The teacher makes a change to the curriculum.	The teacher adds, omits, or changes instruction from the Bookworms lesson plan.	The teacher does not change the lesson plan.	"We are going to highlight two letters that make one sound." (*Adding an activity that was not in the lesson plan*)
Hard scaffolding	Instructional changes that the teacher plans before the lesson begins.	The teacher plans to use different materials or plans different instructional activities before she teaches the lesson.	The teacher changes instruction during the lesson.	"Some of the special education kids do have an easier list."
Assessment	The teacher asks an individual student a question or to do a task demonstrating understanding	The teacher asks one specific student a question or to do something that demonstrates understanding	The teacher asks the whole class to do something to demonstrate understanding	"Let me take a look at your boards. How do we spell sad?"
Soft Scaffolding: Models a Skill	The teacher demonstrates a specific skill with the intent of teaching the process so that students can learn to do that skill.	The teacher shows students how to complete a task. Students are watching while the teacher explains the steps or process.	Students are participating or collaborating in the task	"I'm going to sound it out and then you are going to sound it out, ready?"
Soft Scaffolding: Feedback	The teacher scaffolds students during a lesson by providing feedback.	The teacher provides feedback during the lesson	The teacher provides feedback to the student on	"Good job [Student Name]! She is tapping on the words following along."

Code Name	Definition	Inclusionary Criteria	Exclusionary Criteria	Example From Data
		that is related to the lesson content or activities.	something that happened outside of class.	
Soft Scaffolding: Questions or Prompts	The teacher scaffolds students during a lesson by asking questions or prompting students.	The teacher asks students a question or gives a prompt without providing additional information about the answer.	The teacher gives a question or prompt that narrows the choices for the student by telling them where to look or what part of the error to fix.	"What is this word?"
Soft Scaffolding: Rewording or Explaining	The teacher scaffolds students during a lesson by rewording or explaining a concept.	The teacher explains something by giving by relating it to previous learning, explaining again in different words, or providing an example.	The teacher explains something using the terminology included in the lesson plan.	"Does anyone know what this type of knead means? If you are making bread and you are doing this with the dough (teacher is pantomiming kneading), you are mixing it up."
Soft Scaffolding: Break into Smaller Steps	The teacher scaffolds students during a lesson by breaking an activity into smaller steps.	The teacher breaks the task into smaller steps to support the student completing the task.	The teacher breaks the task down but then tells the student the answer.	"Break down the task. Break it into smaller, more manageable steps."
Soft Scaffolding: Guidance or Hints	The teacher scaffolds students during a lesson by providing guidance or hints.	The teacher explains something by giving hints, narrowing down the choices, or otherwise providing information to help the student get the answer.	The teacher gives hints or narrows the choices but then tells the students the answer.	"What word did you tell me had the /j/ sound? What word did you tell me that you like to go to on Thursdays?"

Code Name	Definition	Inclusionary Criteria	Exclusionary Criteria	Example From Data
Contingent	The teacher responds to a student in a way that adjusts the level of support based on the student's understanding.	If the student has an incorrect response, the teacher increases support. If the student has a correct response, the teacher decreases support.	The teacher's response does not increase or decrease support in response to the student.	Student (S): I can't do it. Teacher (T): Do you need help? S: yes T: What sounds? The student says the sounds of the letters in the word, but doesn't blend to read the word. T: What word? The student shrugs and does not answer. T: Biiiiiiiiig (extending sounds to support blending) S: big (the student blends the sounds to read the word)
Non-contingent	The teacher's response does not adjust support in response to the student.	The teacher's response does not increase or decrease support in response to the student.	If the student has an incorrect response, the teacher increases support. If the student has a correct response, the teacher decreases support.	"That's a sight word, I know you know that one, 'make.'"

Code Name	Definition	Inclusionary Criteria	Exclusionary Criteria	Example From Data
Fading	The teacher removes support that the student previously received and transfers responsibility for the task to the student.	The teacher purposefully decreases the level of support the student receives during a task in order to increase independence or discusses doing so in an interview.	Support is decreased or mentioned being decreased in a non-purposeful way, such as materials not being ready, or a partner being absent.	"[The Bookworms curriculum] starts with echo reading, and I'll read first, and then they will read, and then it slowly turns into choral reading. And then partner reading starts [getting] adding in…"
Teacher Knowledge				
Demonstrates PCK (Pedagogical Content Knowledge)	The teacher understands what makes a particular topic easy or hard, or what common misconceptions students may have.	The teacher's instruction or interview demonstrates an understanding of what makes a particular topic easy or hard for students or what common misconceptions students may have.	The teacher does not show understanding of what makes a particular topic easy or hard. The teacher may miss an opportunity to apply pedagogical content knowledge to support students.	Ms. Fielding discussed why she often asks students to pause and identify if a letter is a b or do before sounding out the word: "It's a hard thing [the letters b and d] look so similar… instead of like going right into sounding it out. I just asked them [to identify if it was a b or do first]….And so then now they know, Oh, that's a letter B, and I know that the sound it makes."

Code Name	Definition	Inclusionary Criteria	Exclusionary Criteria	Example From Data
Gaps in PCK (Pedagogical Content Knowledge)	The teacher demonstrates a gap in understanding of what makes a particular topic easy or hard, or misses a chance to apply pedagogical content knowledge to support students.	The teacher does not show understanding of what makes a particular topic easy or hard. The teacher may miss an opportunity to apply pedagogical content knowledge to support students.	The teacher's instruction or interview demonstrates an understanding of what makes a particular topic easy or hard for students or what common misconceptions students may have.	The teacher was asked why a student might be substituting a v for f in spelling words. The teacher did not recognize the student was mixing up voiced and unvoiced sounds. The teacher said, "I don't know if she has a little bit of an accent…when she sounds it out herself it sounds like a v to her instead of an f."
Demonstrates GCK (General Content Knowledge)	The teacher understands the skills that she is teaching the students.	The teacher demonstrates or discusses content knowledge that relates to word recognition skills.	The teacher is demonstrating knowledge that she is reading from the teachers' manual.	Ms. Baker told students, "I noticed when I was grading, we had the word dropped. Dropped sounds like it has a t, but does it? No, it's -ed, just like walked. When you put a past tense suffix it will always be -ed it won't be t."
Gaps in GCK (General Content Knowledge)	The teacher has gaps in the knowledge that she is teaching the students.	The teacher says or does something to show content knowledge or that shows she has a gap in the content knowledge she is teaching students.	The teacher demonstrates or discusses a gap in knowledge that does not relate to content students need to learn.	"So if you hear /j/…sometimes this confuses me…" The teacher has to look back at the teacher manual for the additional instruction she added to see if a /j/ sound is a hard or soft g.

Code Name	Definition	Inclusionary Criteria	Exclusionary Criteria	Example From Data
Demonstrates GPK (General Pedagogical Knowledge) *Note: no gaps in general pedagogical knowledge were identified in the data so that code was eliminated*	The teacher demonstrates or discusses understanding of classroom management, general teaching methods, classroom assessment, and knowledge of learning processes and student characteristics	The teacher takes action or discusses actions that show she understands classroom management, general teaching methods, knowledge of learning processes, and student characteristics.	The teacher misses opportunities to take action to demonstrate understanding or her actions show a gap in understanding of classroom management, general teaching methods, knowledge of learning processes, and student characteristics.	Ms. Smith tells students who are finished with work early, "If you are on the carpet you should be sitting quietly and reading the first couple pages while you are waiting."
Factors that Facilitate or Hinder Teachers' Ability to Support Students at a High Risk of Reading Difficulties				
Class Size	The number of students a teacher has in each class.	The teacher mentions the class size or number of students.	The teacher mentions factors other than class size.	"My class size is 17 and I think that is a really good class size."
Range of Needs	The range of students' academic and behavioral needs in a single class.	The teacher mentions balancing the needs of students who require different levels of support.	The teacher mentions factors other than the range of needs.	"It is hard when I have a higher class to try to focus on the needs of the high risk students."
Materials and Assessments	The curriculum and classroom materials or assessments that support teachers' instruction.	The teacher mentions materials or assessments used for literacy instruction.	The teacher mentions materials or assessments for other subjects or factors other than materials or assessments.	"I think that pretty much I got what I need."
Time	Teachers' planning time, instructional time, or the schedule.	The teacher mentions planning time, instructional time, or the schedule.	The teacher mentions factors other than time.	"Time plays a big factor in having various levels of learning ability."

Code Name	Definition	Inclusionary Criteria	Exclusionary Criteria	Example From Data
Collaboration	Working with other teachers to or discussing students or instruction with other teachers for the purpose of planning, improving, or aligning reading instruction.	The teacher mentions collaboration, working with other teachers to plan, improve, or align discussion. Or, the teacher mentions discussing students or instruction with other teachers.	The teacher mentions factors other than collaboration.	"We meet once a week to plan."
Absenteeism	Teachers mention the impact of chronic absences on student reading achievement.	The teacher mentions students being absent or missing class.	The teacher mentions factors other than absenteeism.	"I have one student that has missed a lot of school that has very much affected his reading."
Behavior	Students' behavioral needs impact the teacher's instruction.	The teacher mentions behavior as a factor that impacts instruction.	The teacher mentions factors other than behavior.	"It is difficult to manage a whole group of 22/23 students when you have high risk, sped, ESL that require more instruction…as well as the needs of all students."
Curriculum	Bookworms, the specific curriculum the school uses, impacts reading instruction.	The teacher mentions Bookworms or other specific curriculum the grade level uses.	The teacher mentions factors other than curriculum, or the teacher mentions instructional materials that are not adopted school wide.	"The good thing with Bookworms is…after each section, they have a little note that says do a movement break…I typically try to [do] those."
Support	Paraprofessionals or other adults impact reading instruction.	The teacher mentions the impact of paraprofessionals or other adults on instruction.	The teacher mentions factors other than support from paraprofessionals or other adults.	"I don't really feel we have the support we need."

Appendix K

Tables with Survey Data

Table K1

Survey Data: Demographic Questions

Characteristic	Category	Frequency	Percentage
Teaching Experience	0-4 years	3	21%
	5-9 years	2	14%
	10-14 years	2	14%
	15-19 years	4	29%
	20 years or more	3	21%
	I prefer not to answer	0	0%
Years at RCES	1-2 years	4	29%
	3-4 years	2	14%
	5-6 years	3	21%
	7 years or more	5	36%
	I prefer not to answer	0	0%
Type of VA Teaching License	Collegiate or Postgraduate Professional	10	71%
	Provisional License or Local Eligibility	0	0%
	I have a teaching license from a state other than Virginia	1	7%
	I am not sure	0	0%
	I prefer not to answer	3	21%

Characteristic	Category	Frequency	Percentage
Types of Training for Reading Instruction (can choose more than one)	Undergraduate college classes	14	100%
	Graduate college classes	7	50%
	Professional development	13	93%
	Canvas course on Bookworms	13	93%
	Video PD on UFLI	7	50%
	I prefer not to answer	0	0%
Virginia Literacy Act PD Modules Completed	0	0	0%
	1-3	2	14%
	4-6	0	0%
	7-8	0	0%
	9 (I have completed all modules)	12	86%

Table K2

Survey Data: Factors That Impact Instruction

Survey Statement	Average	Standard Deviation	*Strongly Agree* and *Agree* (Frequency, Percent)	*Undecided* (Frequency, Percent)	*Disagree* and *Strongly Disagree* (Frequency, Percent)
My class size is appropriate.	3.6	1.09	11 (79%)	0 (0%)	3 (21%)
The range of student reading needs in my class(es) is reasonable.	3.2	1.19	8 (57%)	1 (7%)	5 (36%)
I have useful assessments to determine the literacy needs of students at a high risk of reading difficulty.	4.3	0.47	14 (100%)	0 (0%)	0 (0%)
I know how to teach students identified as at a high risk of reading difficulties the skills they need to read.	4.3	0.47	14 (100%)	0 (0%)	0 (0%)
I have enough time to plan reading instruction.	3.1	1.33	6 (43%)	0 (0%)	5 (36%)
I have enough time to teach reading.	3.5	1.29	9 (64%)	1 (7%)	4 (29%)
I have the materials I need to teach reading to students identified as at a high risk of reading difficulties.	4.5	0.52	14 (100%)	0 (0%)	0 (0%)

Survey Statement	Average	Standard Deviation	*Strongly Agree* and *Agree* (Frequency, Percent)	*Undecided* (Frequency, Percent)	*Disagree* and *Strongly Disagree* (Frequency, Percent)
If I need help with reading instruction, I have people to support me.	4.5	0.52	14 (100%)	0 (0%)	0 (0%)
I collaborate with colleagues to brainstorm ways to support students with reading.	4.2	1.05	12 (86%)	0 (0%)	2 (14%)
Student absenteeism is impacting reading progress of students in my class.	3.7	1.38	10 (71%)	0 (0%)	4 (29%)
I can manage student behavior to maximize instructional time.	4.0	0.68	13 (93%)	0 (0%)	1 (7%)

Table K3

Survey Data: Frequency of Scaffolding Strategies

Scaffolding Strategy	Average	Standard Deviation	*Always* and *Almost Always* Responses (Frequency, Percent)	*Sometimes* Responses (Frequency, Percent)	*Rarely* and *Never* Responses (Frequency, Percent)
Modeling or demonstrating	4.7	0.47	14 (100%)	0 (0%)	0 (0%)
Rewording, explaining in a different way	3.9	0.77	9 (64%)	5 (36%)	0 (0%)
Multiple repetitions or examples	4.3	0.61	13 (93%)	1 (7%)	0 (0%)
Prompts, questioning	4.1	0.73	11 (79%)	3 (21%)	0 (0%)
Guidance, hints	3.4	0.76	6 (43%)	7 (50%)	1 (7%)
Feedback	3.9	0.83	11 (79%)	2 (14%)	1 (7%)
Break down tasks into smaller steps	3.7	0.73	8 (57%)	6 (43%)	0 (0%)

Table K4

Survey Data: Knowledge Questions

Item Number	Correct Responses (Frequency, Percent)
Phonological and Phonemic Awareness	
6	14 (100%)
7	14 (100%)
8	11 (79%)
9	12 (86%)
10	12 (86%)
Count Phonemes in Words	
11	13 (93%)
12	12 (86%)
13	9 (64%)
14	10 (71%)
15	9 (64%)
Identify Words with Phonics Features	
16	13 (93%)
17	11 (79%)
18	13 (93%)
19	12 (86%)
20	13 (83%)
25	11 (79%)
Identify Phonetically Irregular Words	
21	8 (57%)
Match the Syllable to the Syllable Type	
22	13 (93%)
23	11 (79%)
24	9 (64%)
Identify Spelling Rules	
25	11 (79%)
26	13 (93%)
27	13 (93%)
Choose the Best Explanation for the Spelling Error	
28	7 (50%)
29	11 (79%)
30	12 (86%)

Item Number	Correct Responses (Frequency, Percent)
Choose the best activity to address the underlying difficulty that led to the spelling error.	
31	14 (100%)
32	10 (71%)