

A MULTIPLE CASE STUDY OF PRIMARY GRADE SCHOOL TEACHERS'
EXPERIENCES WITH USING COLORS TO TEACH WRITING

by

Rhonda Lynn Holcomb

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

In this case study, I focused on understanding how primary grade school teachers in public schools in the United States use colors during writing instruction. During literacy instruction, the teacher communicates how to perform the writing process for students to become effective writers. Primary grade school teachers described how and why they use colors during writing instruction and how they learned to use colors for writing instruction and to assess their students' writing. The theory guiding this study is Jerome Bruner's instructional theory, supported by Cambourne's conditions for literacy learning and the sociocultural writing theory. Data were collected through individual interviews, examining teacher-created documents developed during writing instruction, and observations of teachers using colors to provide writing instruction. To create a comprehensive description of each case, the data were first analyzed using a within-case analysis followed by a cross-case analysis. Similarities and differences between the teachers' experiences regarding using colors during writing instruction were identified during the cross-case analysis. Twelve primary grade school teachers who work at public schools in the United States participated in this study. They provided more than 50 documents that they had created during writing instruction, even though they expressed having limited training. While participants had not received any training on how to use colors, they used colors during writing instruction in numerous ways to help students to discriminate between things, which makes writing easier for the students.

Keywords: instruction, writing process, colors, visual attention, cognitive processing

Copyright Page (Optional)

Dedication

I could not have completed this dissertation without the support of my husband, Dr. David Holcomb, who is my number one fan and has always believed in my ability. Throughout our marriage, he encouraged me to complete my bachelor's degree and pursue a master's degree. Then, on a long car trip from Illinois to Texas, David convinced me that I should and could complete a doctoral journey in a topic that greatly interested me. Throughout this journey, he has allowed me to ask questions and share ideas about the doctoral process.

I would also like to dedicate this dissertation to my three talented children, Joshua, Alex, and Rebecca. You each have found your passion, and I could not be prouder of who each of you have become as an adult; my mother, Marilyn Woodall, served as my role model by being the first person in my family to receive a college degree and worked as an elementary school teacher for many years. Finally, to my four beautiful grandchildren, Felicity, Ambrosia, Elia, and Asher, I hope that you will have wonderful school teachers who will inspire you to pursue your dreams.

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Many friends and co-workers have been supportive throughout this process. Melissa Davis, Cassie Starnes, Karen Brezeale, Jodi Rotenberry, and Misti Lehman offered me support and new ideas that helped me continue. Erin Hollowell continually motivated me whenever I saw her by asking how my dissertation was progressing. Debbie Thibodeaux, Jill Hickey, Dr. Elise Kail, Dr. Janice Terrell, and Dr. Linda Spetter were kind enough to share their time and knowledge with me as I completed the prerequisite coursework during my doctoral journey.

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List of Abbreviations

Attention-deficit/hyperactive disorder (ADHD)

Common Core State Standards (CCSS)

Early Childhood to Sixth Grade (EC-6)

English as a Second Language (ESL)

English Language Arts and Reading (ELAR)

Gifted and Talented (GT)

Houston Independent School District (HISD)

Institutional Review Board (IRB)

Professional development (PD)

Research Question (RQ)

Standards of Learning (SOL)

State of Texas Assessments of Academic Readiness (STAAR)

Texas Essential Knowledge and Skills (TEKS)

Zone of Proximal Development (ZPD)

CHAPTER ONE: INTRODUCTION

Overview

More than 80% of the workforce in the United States is required to perform writing tasks at their job; however, many adults do not possess the skills to produce proficient writing (Harris & Graham, 2016). In the United States, billions of dollars are spent by colleges and businesses each year to provide writing training for students and employees who lack the writing skills necessary for them to be successful (Harris & Graham, 2016). Rather than waiting until later school years, educators should present strategic writing instruction to elementary school students to ensure they learn the habits that will help them to write well (Bifuh-Ambe, 2013). Furthermore, the attitudes students develop toward writing form early in their school career and probably remain the same in the future and can impact students' academic writing achievement (Göçen, 2019). Since students receive limited writing instruction after third grade, students need to learn the basic writing conventions in first grade (Harris & Graham, 2016). Furthermore, Bryars (Pletcher et al., 2018) revealed that from experience, second-grade students are more eager to engage in writing activities than fourth-grade students. Researchers reported as K-12 students advance through the grade levels they become less motivated about writing (Anderson et al., 2023). However, learning to write is a complex process that requires years for a person to become proficient (Graham et al., 2019). Therefore, educators must use strategies that motivate students to learn in an educational setting. One strategy that teachers use to emphasize material during writing instruction is to present it in color. Using color during writing instruction helps teachers gain their students' attention and motivates them to focus on tasks.

This chapter provides a foundation for a qualitative case study focusing on primary grade school teachers' experiences regarding using colors during writing instruction. Historical, social,

and theoretical backgrounds provide information about how teachers communicate information to their students when using color during writing instruction and how students apply that knowledge and skill. In this chapter, I also explain how I became interested in teachers using colors to teach writing and why I believe it is crucial. I describe the problem that was analyzed and explain the study's purpose and significance to the field of education. For the audience to better understand the study's topic, definitions related to the study are provided.

Background

To help the reader understand why teachers need to know why using colors during writing instruction can help motivate students to write and improve those students' writing abilities, historical, social, and theoretical background information are provided. The historical background explains how using colors in the visual world has impacted individuals' abilities by motivating, stimulating, and improving cognitive skills. The social aspect of writing requires teachers to interact with their students when teaching them to write. Finally, by understanding the theories related to the writing process and writing instruction, teachers understand how students learn to write; therefore, they can design the writing instruction required to meet their students' needs.

Historical

Since this study focuses on how primary school grade teachers use colors to provide writing instruction to their students, an examination of the history of studies concerning the impact of colors on visual attention, cognitive ability, and educational settings was conducted. During the 19th century, scientists and philosophers argued about how the human eye perceived colors. Scientists like Thomas Young and Hermann von Helmholtz conducted experiments to explain how the human eye perceives colors. In contrast, philosophers such as

Johann Goethe believed that the perception of color was intuitive (Margo & Harman, 2019). Other theorists built upon Goethe's theory to suggest that colors produce cognitive orientation and physical action (Elliot, 2015). Researchers studied children's ability to remember material using colors with shapes and pictures during the 1970s (Park & James, 1983). Frank Farley and Alfred Grant conducted some of the earliest research that suggested colors significantly affect attention more than just black, white, and grey (Dzulkifli & Mustafar, 2013). Initially, the research that evaluated color and psychological functioning focused on arousal, physical strength, preference, time perception, and attention (Elliot, 2019). During the early 2000s, several researchers performed studies that indicated the use of colors increased attention memory performance (Dutta & Baruah, 2018; Dzulkifli & Mustafar, 2013). At the same time, researchers determined that using instructional aids in the classroom proved to be an effective instructional strategy for improving learners' understanding of concepts and skills (Amarin & Al-Saleh, 2020). Moreover, colors must be used correctly for instructional materials to impact young students (Dutta & Baruah, 2018).

Finally, a brief examination of the history of how teachers provide writing instruction in the classroom was conducted. As researchers analyzed children's memory when colors were applied to materials, teachers began to move from emphasizing the final product during writing instruction to teaching the writing process (Jasmine & Weiner, 2007). In 1983, Graves developed the process writing approach teachers incorporated into their writing instruction (Beschoner & Hall; 2021; Helsel et al., 2022; Jasmine & Weiner, 2007). Calkins developed the Writing Workshop based on Graves' methods (Beschoner & Hall, 2021; Helsel et al., 2022; Jasmine & Weiner, 2007). When students engage in a writer's workshop, they are developing the knowledge and skills needed to become independent writers (Helsel et al., 2022).

Social

Through writing, individuals can communicate their thoughts and knowledge about a specific topic to others (Sumarno et al., 2022). Implementing the writing process is necessary for students to successfully express what they have learned (Harris & Graham, 2016; Sumarno et al., 2022). Failure to be a proficient writer can impact an individual's school and workforce success (Graham, 2019a). Reitdijk et al. (2018) explained that writing is a tool that allows students "to communicate, function in society, acquire knowledge," and show others what they have learned (p. 641). The skills needed to master writing require guidance and instruction over several years (Graham et al., 2019). Therefore, teachers play an integral role in their students' growth as writers (Graham, 2022). For students to compose a written document requires knowledge and practice (Sumarno et al., 2022). When the writing process is taught through social interaction, it can be an exciting activity (Sulak, 2018).

Teachers must create a caring social environment to ensure students have optimal learning opportunities (Julien, 2017; Sulak, 2018). Vygotsky believed that social interaction between individuals of different levels and knowledge, such as teachers and students, allows effective learning to occur (Fithriani, 2019). Teachers must consider each student's ability to understand and perform a task to provide the appropriate scaffolding the student needs to succeed. (Schunk, 2016). Through social interaction, educators use scaffolding when students cannot perform a skill independently, which allows them to build on prior knowledge while internalizing new information to build new skills (Sohrabi et al., 2021). For example, when a teacher models the skills needed for writing, students can learn these skills through observation without having to perform the task (Schunk, 2016). Teachers also help students expand their Zone of Proximal Development (ZDP) by providing regular feedback to improve their writing

skills (Fithriani, 2019). As students exhibit their growing ability to perform multiple skills for writing, teachers can gradually reduce the scaffolding and transfer the responsibility to the students can write (Margolis, 2020).

Theoretical

In his theory of instruction, Bruner believed that children could be taught any subject effectively (Stapleton & Stefaniak, 2019). Bruner advocated learning through discovery as it encourages creativity and motivation (Stapleton & Stefaniak, 2019). Students become more motivated and have a higher level of retention when active learning strategies are used (Stapleton & Stefaniak, 2019). Teachers use modeling to move the instruction beyond showing and telling by demonstrating how they make decisions through conversation with their students (Alston, 2020). Modeling can engage students' understanding of cognitive strategies used to write text (Alston, 2020.) When teachers use scaffolding, they offer tools and assistance for their students to develop ways of thinking when writing compositions (Alston, 2020). "Scaffolding helps the learner stay on task by using emotions such as sympathy, excitement, and understanding to motivate and assist them towards success" (Stapleton & Stefaniak, 2019).

The Simple View of Writing theory explains a student's ability to develop as a writer. This theory consists of four components: transcription; text generation; self-regulation; and attention and working memory (Lam et al., 2021). Transcription focuses on handwriting, spelling, and typing (Lam et al., 2021). "Transcription is the ability to put these ideas into text form" (Graham & Eslami, 2020, p. 486). Text generation refers to "the selection of words to produce sentences" (Lam et al., 2021, p. 3). Text generation, also known as ideation, relies on the language within a writer's working memory (Graham & Eslami, 2022). A student's collective knowledge of vocabulary, grammar, syntax, and language fluency is demonstrated

through text generation (Parkin et al., 2020). Studies have acknowledged that oral language proficiency helps individuals to generate writing ideas (Graham & Eslami, 2022). Explicit instruction is necessary to improve students' ability to create text and self-regulate (Parkin et al., 2020). When students use self-regulation for writing, they are self-initiating thoughts and actions required to write a composition (Zumbrunn et al., 2020). Parkin et al. (2020) described goal setting, self-assessment, and writing strategy instruction as self-regulation skills.

The student's working memory and attention affect how transcription, text generation, and self-regulation for writing are impacted (Lam et al., 2021). As a child's transcription ability improves, more working memory and attention can be given to text generation and self-regulation (Lam et al., 2021). Working memory allows individuals to verbalize their thoughts by writing them down (Quinlan et al., 2012). Other researchers simplify this theory even more, stating that it only consists of transcription and ideation (Graham & Eslami, 2020; Zumbrunn et al., 2020). Ideation is generating ideas into spoken and written language (Graham & Eslami, 2020).

Situation to Self

When I began teaching in Texas, I spent several years delivering writing instruction to fourth-grade students to prepare them for their first experience taking the state writing assessment. In the classroom, I noticed that students continually struggled to revise and edit their writing, so I applied for and received a grant that would provide the colored pencils and visuals needed by students to revise and edit their papers successfully. Our school's fourth-grade teachers worked together to provide explicit instruction on using colored pencils to make revision and editing marks. Because each task involved a specific color, students were required to devote time and effort to the individual writing task for revision and editing.

After taking a 10-year break from education, I took a position as a kindergarten teacher in a Colorado school district. To ensure that all kindergarten students received a strong foundation regarding writing, the school district required each kindergarten teacher to take a one-day professional development course to teach students to form letters and numbers and a two-day professional development course for teaching the writing process to kindergarteners. By modeling and providing explicit instruction daily, students understood that all sentences should begin with a capital letter and end with a punctuation mark. The school district's goal for writing in kindergarten was that each student could independently write three sentences about a topic by the end of the year. Many kindergarten students were able to meet this goal. Being naïve, I assumed that kindergarten classes throughout the United States had the exact writing requirements for their students.

In 2015, I moved to Illinois and decided to substitute in primary classrooms in the Chicago suburbs. As a result, I had the opportunity to observe how several teachers approached writing in their classrooms. It appeared that teachers seldom provided direct writing instruction, and many first-grade students had difficulty writing one sentence. For example, I assisted in one classroom several times, where the first-grade students began the day writing one sentence that the teacher would read aloud if the student had started the sentence with a capital and ended it with a punctuation mark. However, I noticed day after day that the same students failed to use a capital letter at the beginning of the sentence and a punctuation mark, even with constant reminders. I became concerned that teachers assumed students had the skills to write a sentence correctly, even when the students continually failed to perform the task.

As a substitute, I visit many primary classrooms where I often see markers in assorted colors next to the writing easel where the teacher models writing and provides instruction.

Teachers encourage students to practice spelling words by writing them in rainbow colors. In these classrooms, posters using colors to emphasize specific teaching points are displayed around the room. Through firsthand experiences and observations, I have noticed that primary-grade school teachers often encourage students to use multiple colors to illustrate a drawing before writing. Many of these teachers dedicated a portion of their classroom to a writing center where various writing instruments in numerous colors were provided for students to use. Teachers can give choices to students during writing time by providing a mixture of drawing utensils and paper because children enjoy using markers, colored pencils, and crayons (Cahill & Gregory, 2016). As children transition from drawing to writing sentences to communicate their thoughts, using colors should still support the students.

Finally, as I reflected on when I taught kindergarten, I remember using multiple colors to record the students' ideas as we brainstormed for writing assignments. By using various colors to record the students' ideas, I was able to help students easily find the idea they wanted to copy onto their papers. After making these observations in multiple classrooms coupled with my experiences, I wondered how teachers used assorted colors during writing instruction, the significance of using colors, and their perspectives about students using multiple colors in their writing.

I want to use my research to help teachers express how their experiences using colors during writing instruction impact their students' attitudes and abilities for writing. Educators must understand how colors affect student behavior and achievement (Gaines & Curry, 2011). Because my research proposal was to examine the teaching experiences of primary grade school teachers when using color for writing instruction, I used a constructivist paradigm (Mackenzie & Knipe, 2006). Social constructivism's ontological assumption states that reality can be viewed

through multiple perspectives (Creswell & Poth, 2018). The philosophical assumption of ontology was addressed by interviewing several primary grade school teachers. The epistemological assumption, which focuses on “how reality is known,” requires the researcher and participants to work together to create a reality based on experiences (Creswell & Poth, 2018, p. 35). I interviewed participants, examined teacher-created documents provided by participants, and observed primary school grade teachers demonstrating how to teach writing. Finally, the axiological assumption was determined by the values I used to guide the research (Creswell & Poth, 2018).

Problem Statement

The problem is that teachers often believe they have not been adequately trained to teach students how to write, much less trained to use colors during writing instruction to motivate and develop their students’ cognitive abilities. While several studies about the impact of colors on cognitive and behavioral development have been conducted, the evidence does not indicate that the outcome and significance of those studies have been presented to teachers who teach writing during their training. Studies show that most teachers believe the college courses and professional development classes provided to them need to be revised in preparing them to teach writing effectively (Graham, 2019a). Therefore, teachers who provide writing instruction to children do not understand the value of using colors to teach writing.

Although teaching children to become competent writers remains a primary educational objective, people are concerned that schools are not fulfilling this objective (Hsiang et al., 2020). Even though educators use various strategies and approaches, problems with writing skills remain (Irons, 2023). Although teaching students how to write effectively remains essential, empirical studies emphasize that many students do not achieve age-appropriate writing

proficiency levels (Camacho et al., 2022). According to Votteler and Miller (2017, p. 79), “many P-12 students are not motivated to write and do not see themselves as writers.” Furthermore, more than half of new college students struggle to write a paper without multiple errors (Harris & Graham, 2016). Because writing is a complex process, teachers need to provide time for students to learn to write and to practice the multiple skills required for writing if they are to become proficient writers (Harris & Graham, 2016).

While data for reading, mathematics, and science assessments were collected nationwide in 2022, the National Center for Education Statistics (2023) has not collected usable data about eighth and twelfth-grade writing proficiency since 2011. The report from 2011 showed that 27% of eighth and twelfth graders in the United States were proficient in writing. However, Texas and Virginia have more recent data regarding students’ writing proficiency. According to the Texas Education Agency (2019b), fourth-grade students who took the STAAR in 2019 scored an average of 3.6 out of 8 on the composition section of the writing test. Results for the 2019 Writing STAAR showed that 33% of the fourth-grade students in Texas met expectations, while 10% had mastered fourth-grade writing skills (Texas Education Agency, 2019a). The Virginia Department of Education (2022b) showed that only 57% of eighth graders passed the state writing assessment during the school year of 2021-2022. The writing proficiency of eighth graders and high school students who took the end-of-the-course writing test in Virginia was 65% for the 2021-2022 school year, which has steadily declined each year from 79% in the school year 2016-2017 (Virginia Department of Education, 2022a).

Purpose Statement

The purpose of this case study was to understand how and why primary school teachers use colors during writing instruction. At this stage in the research, how teachers model the

writing process for their students was defined as writing instruction. The theory guiding this study was the Simple View of Writing which stresses that learning to write is a complicated process that requires teachers to provide explicit and implicit instruction (Lam et al., 2021). In addition, the parts of the brain related to motor planning and execution are activated by watching another person act (Mangen, 2016). Therefore, learning to write has a social aspect and requires the teacher and students to interact during writing lessons.

Significance of the Study

The empirical, theoretical, and practical significance of this study, as it relates to the use of colors by teachers during writing instruction to improve the confidence and abilities of learners regarding writing, were explained. Previous research must be explored when conducting an empirical study to lay a foundation for the research problem and purpose (Durdella, 2019). A literature review did not address how teachers use colors during writing instruction; therefore, a gap in the literature exists. According to Korth et al. (2017), the research analyzing writing practices for primary students remains limited. The current writing practices must be examined before writing instruction in schools can be changed to make it more effective (Brindle et al., 2016; Graham, 2019a; Graham et al., 2021a).

The theoretical significance of this study addressed two types of conditioning: operant and emotional. The conceptual framework for operant conditioning and behavior states that for individuals to understand why an individual performs a task and how they feel about completing that task, a verbal response is required to explain the attitudes and acquired knowledge to perform the task (Schunk, 2016). For example, teachers often complain that the writing plans developed by their district fail to include actual writing instruction (Votteler & Miller, 2017). Reflection also allows teachers to evaluate their professional identities and change teaching

practices that are not effective (Hall & White, 2019). Using colors during writing instruction should reduce anxiety for most students concerning writing and provide more pleasurable feelings, known as emotional conditioning (Schunk, 2016).

This study has a practical significance to the teachers who participated in it, the schools, and the school district because it will help participants and other stakeholders better understand how and why teachers use colors during writing instruction. For change to occur within the school system, teachers are vital for implementing the new process (Smith et al., 2019). The efforts individual teachers use during writing instruction contribute to the goal of changing classroom practices for better writing instruction (Graham, 2019a). Students should receive high-quality writing instruction from one grade level to the next; therefore, school administrators need to establish trusted lines of communication so knowledge, feedback, and possible solution can move easily throughout the school and district levels (Graham, 2019a). Furthermore, policymakers can play a crucial role in improving educators' teaching methods by providing them with opportunities to learn motivation-enhancing strategies for writing (Camacho et al., 2022). Finally, with the information gathered during this study, I want other educators to reflect on their teaching methods during writing instruction so their students' abilities and attitudes regarding the writing process improve.

Research Questions

To conduct a multiple case study about primary grade school teachers' experiences using colors during writing instruction, four research questions (RQ) were designed to guide the study.

RQ 1: How do primary grade school teachers use colors to provide writing instruction to their students?

When teachers choose a color during writing instruction, are they influenced by how they associate colors with their past experiences? For example, research shows that specific colors are often associated with emotions (Hanada, 2018). Furthermore, a person's cultural background also impacts the association of color with emotions (Hanada, 2018).

RQ2: Why do primary grade school teachers use colors in the writing instruction process?

Teachers may want to use colors during writing instruction to motivate students and draw their attention to specific words and skills. Effective teaching should create supportive and encouraging student writing environments (Graham, 2019a). Because a student's motive for writing can influence why, what, and how one writes, researchers and educators need to understand students' motivations for writing to create a stronger foundation for teaching writing (Camping et al., 2023). To meet the goal of students using correct grammar and usage in their writing, teachers need to draw the students' attention to those skills (Graham, 2019a).

RQ3: How do primary grade school teachers learn to use colors for writing instruction?

It is essential to understand the ability and attitude of the teachers concerning writing when examining how teachers approach teaching their students to write. Therefore, teachers' beliefs about writing must be examined because research indicates that teachers who are more positive about their effectiveness to teach writing will spend more time teaching writing (Gui et al., 2022). When teachers are more confident about their abilities to teach writing, their students' writing performance is higher (Graham et al., 2021b). According to Harris and Graham (2016), the effort, self-efficacy, and ability a teacher uses to teach a student a specific skill will directly impact the student's ability to perform that skill effectively; therefore, teachers need to be provided with opportunities to learn how to teach writing.

RQ4: How do primary grade school teachers assess students' writing performance after the use of colors during writing instruction?

Because so many factors must be considered when assessing a student's writing progress, it can be difficult for a teacher. A teacher cannot honestly assess a student's ability as a writer by looking at a single piece of writing; therefore, the teacher needs to talk with a student throughout the writing process as well as watch the student's process for writing to make an assessment (Perkins, 2017). A student's writing quality can differ from assignment to assignment based on the student's knowledge of the subject matter and motivation (Graham, 2019a). Creating individual student portfolios can serve as a form of assessment that identifies strengths and weaknesses (Connor, 2018). For formative assessment, students can respond to their reading or record their feelings in a journal or interactive notebook (Densmore-James et al., 2017). This activity provides the teacher with information about the student's writing progress and allows teachers to give personalized feedback (Densmore-James et al., 2017). For effective feedback, teachers should use student-friendly language that makes the students feel like their writing is progressing (Densmore-James et al., 2017). To provide feedback to students, teachers can use colorful Post-it notes that pose questions (Densmore-James et al., 2017). This type of feedback allows students to make decisions about their work (Densmore-James et al., 2017).

Definitions

1. *Ability* - Ability refers to applying knowledge to achieve practical goals. A skill is developed when an individual uses an ability several times (Pukelis, 2009).
2. *Attention* - The cognitive process that selects from the available information and processes it (Dzulkifli & Mustafar, 2013).

3. *Attitude* - Throughout this paper, the word attitude is used interchangeably for self-confidence, self-esteem, and self-efficacy. Attitude refers to the level of confidence that a person has in themselves to perform a task effectively (Rodriguez & Loos-Sant'Ana, 2015). Self-efficacy is a belief a person has in their capability to perform a task (Graham et al., 2021b).
4. *Cognitive Ability* - How an individual perceives and understands information, pays attention, remembers, and thinks (Dzulkifli & Mustafar, 2013). Cognition comprises several interrelated mental processes, including perception, attention, memory, and thinking (Diachenko et al., 2022; Dutta & Baruah, 2018).
5. *Color* - Color can be identified by three properties: hue, value, and saturation (Gaines & Curry, 2011). Blue, red, and yellow are examples of hue. Value addresses the lightness or darkness of a color, while saturation regards the purity or intensity of a color (Gaines & Curry, 2011).
6. *Instruction* - Instruction occurs when teachers use specific practices to support student learning (Behizadeh, 2019).
7. *Instructional Material* - A physical object a teacher uses during instruction to help increase students' understanding of the concepts and skills (Amarin & Al-Saleh, 2020).
8. *Memory* - The mental process used to encode, retain, and retrieve information gained through sensory experiences to a semantic memory process (Dzulkifli & Mustafar, 2012). Memory is divided into three sections: sensory register store, short-term memory, also known as working memory, and long-term memory (Dzulkifli & Mustafar, 2013).

9. *Modeling* - Modeling occurs when teachers talk about their thought process as they perform a task, so students understand why and how a task is performed (Coker & Ritchey, 2015; Schutz & Rainey, 2020).
10. *Visual perception* - Visual perception occurs when the eye receives incoming visual information, and the brain processes the information (O'Connor, 2015).
11. *Writing* - Writing is a skill one uses to communicate ideas and thoughts by putting them down on paper (Setyowati & Sukmawan, 2019).

Summary

Writing is one skill that students struggle to master. Because of the complexity of writing and their abilities, many teachers fail to teach all parts of the writing process sufficiently to students. However, some teachers acknowledge the importance of teaching their students how to write compositions. This study helps to explain why and how educators use colors during writing instruction in primary grade-school classrooms in the United States. Literature indicates that this topic has not been researched but provides a foundation to support the need for the study.

Through interviews, analysis of teacher-developed material, and observations, I gained new insight into how colors can be used during writing instruction to improve students' attitudes and skills regarding writing.

CHAPTER TWO: LITERATURE REVIEW

Overview

Since this study focuses on how primary grade school teachers use colors to provide writing instruction to their students, several topics were explored. Using the theoretical framework of instructional theory, conditions for learning, and sociocultural writing theory, I explained how children learn. In an overview of writing education, I stressed the difficulties of writing instruction and the importance of students being able to write. Next, two writing processes used to model writing were discussed. To model writing for students, teachers use several types of instructional materials. Then, the individual experiences and professional training that guide primary grade school teachers to teach writing were examined. When teachers provide writing instruction to their students, they often model while students watch the process; therefore, the processes of visual attention and cognitive development were explained. During writing instruction, teachers often use assorted colors to emphasize information; therefore, color theory and its impact on learning are discussed. Understanding preattentive processing and visual search allow the teacher to realize the importance of vision, color, and touch play in helping children to improve their writing.

Theoretical Framework

Jerome Bruner's instructional theory consists of four components: predisposition, the structure of knowledge, optimal sequencing of material, and reinforcement (Stapleton & Stefaniak, 2019). Langer and Applebee (1986) described instruction as a social process between a teacher and the student, which points to the sociocultural writing theory developed by Vygotsky. To keep the students engaged, the teacher should present the material in a simplified and sequential format that allows them to comprehend it (Stapleton & Stefaniak, 2019). Bruner

believed that teachers should use a spiral curriculum because it will enable students to “revisit basic ideas repeatedly” (Stapleton & Stefaniak, 2019, p. 5).

Literacy instruction consists of five components teachers should consider when teaching writing: ownership, appropriateness, structure, collaboration, and transfer of control (Langer & Applebee, 1986). First, teachers must understand how to provide instruction to students so that they can apply it to their writing (Langer & Applebee, 1986). For students to obtain success later as writers, they must receive effective writing instruction in the primary grades (Curtis, 2017). Second, instruction should build on the students' literacy and thinking skills and help them complete tasks when they need assistance (Langer & Applebee, 1986). Students cannot be expected to achieve higher academic standards if they are not provided with a solid foundation of content knowledge from an early school age (Davidson & Pimentel, 2018). Next, teachers should structure the instruction in “a natural sequence of thought and language” that allows the student to internalize the routines (Langer & Applebee, 1986, p. 186). Teachers provide instruction through telling, modeling, questioning, praising, and correcting (Langer & Applebee, 1986). Finally, as students master the skills taught, the teacher gradually removes the scaffolding provided (Langer & Applebee, 1986).

When planning literacy instruction, teachers should also consider the conditions for literacy learning that Cambourne (1995) identified. Learning conditions require observing actions through seeing, hearing, and experiencing (Cambourne, 1995). For learning to occur, students need to be engaged, which requires active participation, such as giving attention to a task (Cambourne, 1995). Furthermore, as a demonstration presented by another person engages the senses of an individual, the brain changes as new information is processed (Rushton et al., 2003). Cambourne also stated that for literacy learning to occur, students must engage with the

language. Expectations of desired behaviors are communicated to learners as they decide what they will learn (Cambourne, 1995). Students are more likely to engage if they believe they can perform the task they observe (Cambourne, 1995) and understand that they have a personal investment in learning (Rushton et al., 2003). Teachers must provide opportunities and time for students to use and practice developing language skills (Cambourne, 1995). Cambourne advocates that learners need opportunities to interact socially with others and perform tasks individually. Examples of conditions for literacy learning can be implemented in the following ways:

- “demonstrate and model authentic examples of written communication
- set clear expectations and value each learner’s efforts and approximations
- develop a culture where children take responsibility for their learning
- provide opportunities for the purposeful use of new skills and knowledge
- give explicit and informative feedback on the progress
- build on learners’ prior knowledge.” (Connor, 2002, p. 32)

Finally, Fisher (2012, p. 300) stated, “All human development is founded within the participation in social and cultural practices,” therefore, the sociocultural writing theory also needs to be considered. The sociocultural writing theory revolves around how an individual’s writing practices develop through interactions with others (Jones, 2015). Vygotsky believed that the influences of the social environment impacted how and what concepts, ideas, and attitudes children learned; therefore, the nature of learning is a natural result of effective interaction and social communication (Cakiroglu, 2018). Bandura’s Social Learning theory states that people will reproduce behavior they have observed others perform (Dutta & Baruah, 2018). Bandura’s theory supports Vygotsky’s Zone of Proximal Development (ZPD). Vygotsky used the concept

of ZPD to describe the amount of learning children can achieve when provided with appropriate educational conditions (Cakiroglu, 2018). Pletcher et al. (2018) stated that Vygotsky's ZPD is used during interactive writing because the teacher provides immediate feedback to the student during a writing activity. In other words, ZPD can be described as the time when a child cannot perform a skill on their own and requires support from someone else to perform the skill (Cakiroglu, 2018; Sidky, 2019). Using scaffolding, children develop the skills to perform more individual activities independently as their cognitive abilities improve (Cakiroglu, 2018). For example, using colors during writing instruction could serve as a bridge between problem-solving with adult guidance and independent problem-solving. Jones (2015) described that the sociocultural and cognitive writing theories are reflected in the writing workshop and interactive writing.

Related Literature

An exploration of peer-reviewed journal articles indicated that the use of color during writing instruction has yet to be studied in-depth. However, significant information has been collected on topics related to this study through a review of peer-reviewed journal articles. First, the implementation of the writer's workshop and interactive writing in the classroom has been explained sufficiently. Next, teachers shared how their self-efficacy to teach writing is influenced by prior learning experiences. By examining how the use of colors impacts an individual's cognitive abilities and memories, one can see the importance of why teachers should use colors for writing instruction. Finally, the cognitive and physical processes required to produce writing will be described efficiently.

Writing

Several issues regarding students' writing in the classroom exist, including little motivation for writing, infrequent formative evaluation, and little to no collaboration between teachers and students (Graham, 2019a). While most children believe that they possess the ability to write at the beginning of their school career, they can lose that belief when teachers fail to motivate them (Julien, 2017). Historically, elementary school teachers in the United States have not devoted much time or attention to writing, as writing has been taught separately from reading (Shanahan, 2015). In addition, teachers often fail to emphasize the importance of writing when students' writing abilities are not tested for their grade level (Votteler & Miller, 2017).

However, the Common Core State Standards (CCSS) have brought new attention to writing, which could lead to increased time and instruction devoted to teaching children to write (Shanahan, 2015). Unfortunately, many teachers believe that “the CCSS-WL omit key aspects of writing development” (Troia & Graham, 2016, p. 1728). Furthermore, the teachers believed that the CCSS-aligned practices prevent students from becoming independent thinkers, which worried several participants (Wilcox et al., 2016). Teachers also expressed disappointment in the instructional modules being overly scripted, which does not seem to agree with the flexible strategies the researchers advocated when discussing a sociocultural understanding of writing (Wilcox et al., 2016).

Successful writing requires good content, organization, language use, grammar, and mechanical components (Meisani, 2022). Since learning to write is a complex process that consists of many language components, including linguistic knowledge, punctuation, spelling, and vocabulary (Sulak, 2018), teachers must provide writing instruction for students to learn how to perform transcription, generate text, and self-regulate which will help students to become

writers. Writing instruction “should include (a) daily time for students to write, (b) instruction in the writing purposes and process of writing, (c) development of fluency in transcription skills, and (d) development of a writing community” (Lam et al., 2021, p 3). Many educators believe that “learning is essentially a process of habit formation” that must be controlled by the teacher (Cambourne, 1995, p. 183).

When many primary-grade students start writing compositions, they believe they have completed their task once the first draft is completed (Young & Stover, 2015). Unfortunately, many teachers support this belief by failing to move beyond the drafting stage of writing (Jasmine & Weiner, 2007). While the success of communicating ideas from writer to reader relies on the correct use grammar and mechanics, studies indicate that students continue to struggle with applying grammatical and mechanical techniques correctly to their writing (Meisani, 2022). However, students must learn that good writing follows a process that requires planning, drafting, rereading, revising, rewriting, and editing (Young & Stover, 2015). Teaching students to write in first grade is essential as students who struggle to write in later school years are more challenging to remediate (Finlayson & McCrudden, 2020). To become competent writers, children must consistently acquire language and literacy skills (Seban & Tavsanlı, 2015). Second-grade students described good writers as possessing natural writing skills, working hard, and paying attention to writing rules, such as punctuation and spelling (Seban & Tavsanlı, 2015). Most of these students believed that becoming better writers required support in using writing conventions (Seban & Tavsanlı, 2015). Therefore, students’ identities as writers are shaped by the writing activities that happen in the classroom (Seban & Tavsanlı, 2015). Young children learn early that writing allows them to share their thoughts and express their needs to others (Jones et al., 2010). Discussing the material being taught enables students to explore, interpret,

and clarify meaning (Cambourne, 1995). When students write for a real audience, they must learn formal writing rules; therefore, they require formal instruction to learn those rules (Pletcher et al., 2018).

The development of early writing skills may be divided into foundational and compositional skills (Jones, 2015). For elementary students to become effective writers, the United States Department of Education Institute of Education Science makes the following recommendations: (a) provide a daily writing time for students; (b) teach students how to use the writing process for a variety of purposes; (c) teach students how to become fluent in handwriting, spelling, sentence construction, and word processing; and (d) create an actively engaged writing community (Houston Independent School District, H. D. of R. and A., 2017). In addition, students' self-efficacy improves when they observe classmates and teachers model a specific writing task because the students believe they can perform the same task (Olson, 2017).

Writing takes effort and years of practice for an individual to master it; therefore, it can cause motivational challenges for some students (Busse et al., 2023). Since younger students are less likely to have developed negative attitudes toward writing and believe in their ability to improve their writing, teachers should understand the importance of helping these students develop their writing skills through explicit writing instruction (Finlayson & McCrudden, 2020). For a literacy program to flourish, teachers need to create strong relationships with students (Densmore-James et al., 2017; Helsel et al., 2022). Having students complete an interest inventory to gather information about students' likes, dislikes, attitudes, and perceived abilities regarding writing allows teachers to plan lessons that will engage and motivate students (Densmore-James et al., 2017). In addition, the quality of instruction directly impacts student

academic outcomes (Smith et al., 2019). Therefore, students should write daily as they learn how to implement the writing process (Jones, 2015).

Modeling is one strategy teachers use during writing instruction. Through modeling the writing process, teachers demonstrate they are writers who might struggle with the challenges of writing for children to make connections to their writing experiences (Cremin, 2017). During modeling, teachers show the physical and mental tasks needed to create a product and connect it to previous learning while stating the specific skill being taught (Schutz & Rainey, 2020). As teachers engage in teaching the writing process, they model it by using oral language and multimodal texts as they provide instruction (Rylak et al., 2022). By observing modeling, students learn to generate positive self-talk and persevere in writing (McKeown et al., 2019).

Primary-grade teachers indicate that little consistency exists for instructional content or practices for writing (Coker et al., 2016). The quality of writing instruction provide to students usually differs among teachers who work at the same school (Elaine & Matsumura, 2019). While teachers may teach writing differently, they should all have a set of common goals for writing (Graham, 2019a). Studies revealed that novice teachers often prefer to use a prescriptive curriculum to teach writing rather than struggling with the complexities of creating their own writing curriculum (Kohnen, 2019). The lack of a commercial curriculum can explain the lack of consistency in writing instruction; therefore, most writing instruction is created in-house by teachers and their peers (Coker et al., 2016). While no established set of skills, knowledge, or processes exist, writing instruction is “more effective when goals, curriculum, instructional methods, and assessment are aligned” (Graham, 2019a, p. 288). However, Helsel et al. (2022) argued that teachers should balance their instructional decisions concerning writing between state standards and district curriculum map with what interests and motivates students as writers.

To implement effective writing instruction, several approaches have been suggested, including explicit writing instruction in prewriting strategies; instruction in the development of fluency, form, and mechanical accuracy; and scaffolding of informational writing and response to literature (Bifuh-Ambe, 2013). However, researchers have found that writing programs throughout the world generally use the same writing practices; however, these practices can differ in the degree they are applied (Graham et al., 2021a). The teachers' choices when planning writing instruction and the students' writing time can influence how young students develop as independent writers (Helsel et al., 2022). Teachers can create effective writing instruction by making connections with their students' lives outside the classroom and using authentic writing prompts (Bifuh-Ambe, 2013). Teachers need to engage students when demonstrating the writing steps by thinking aloud and in mini-lessons (Bifuh-Ambe, 2013).

To help children develop early writing skills, teachers often use two writing instructional methods: the writer's workshop and interactive writing (Jones, 2015; Jones et al., 2010). Not only does the writer's workshop, also known as the writing workshop, and interactive writing stress the importance of writing in early literacy, but they both also engage students in authentic writing tasks while providing instruction based on students' needs (Jones et al., 2010). For example, when using either method, teachers should write mistakes naturally to demonstrate how students can problem-solve when revising and editing (Hall, 2019; Puente & Wilson, 2019). In addition, both methods teach students "to write simple sentences and to use punctuation marks and capital letters in their sentences" (Jones, 2015, p. 41). However, writing focuses on the learners' learning skills, such as letter formation, phonics, syntax, and mechanics (Jones et al., 2010), while the writing workshop focuses on teaching students the process of writing through planning, organizing, and accomplishing a writing task (Rylak et al., 2022). Another difference

between the two instructional writing methods is that the writing workshop presents the writing instruction through a top-down process. In contrast, interactive writing uses a bottom-up approach that is text-based (Jones et al., 2010). In other words, these two writing methods were selected because instruction in the writing workshop was teacher-driven, while the interactive writing program allows the teacher to collaborate with students during writing instruction.

Writer's Workshop

In the primary grades, teachers usually use the writing workshop approach, which stresses the importance of students' attention to content rather than focusing on conventional correctness (Jones et al., 2010). A writing workshop is an instructional approach that teaches foundational and compositional writing skills through daily mini-lessons, independent writing time, conferencing, and sharing (Beschorner & Hall, 2021; Boyd et al., 2020; Jones et al., 2010). The minilessons, typically 5 to 10 minutes, occur when the teacher models or reinforces writing strategies that students should implement in their writing (Boyd et al., 2020; Sidky, 2019). During Writing Workshop, minilessons are explicitly taught, and students are provided with ample time to practice the writing process (Rylak et al., 2022). During the student writing time, the teacher confers with each student about their writing, providing differentiated instruction based on their needs (Puente & Wilson, 2019). By implementing a writing workshop method in the classroom, students are given a choice in selecting a writing topic, are more likely to generate longer compositions, and display greater confidence when sharing their writing (Boyd et al., 2020; Rylak et al., 2022). Comparing a writing workshop approach to a traditional writing instructional approach, researchers stated that when second-grade students used the writing workshop approach, their writings were more substantial in meaning and content, but their use of writing mechanics remained the same (Jones, 2010).

During the 2015-2016 school year, Houston Independent School District (HISD) implemented the Writer's Workshop in kindergarten through fourth grade (K-4) to improve writing scores on the state assessment test (HISD, H.D. of R. and D., 2017). On the 2015 State of Texas Assessments of Academic Readiness (STAAR) writing test, fourth- and seventh-grade students in HISD performed below the state average in meeting the satisfactory standard (HISD, H.D. of R. and D., 2017). The HISD (2017) acknowledged that the effect of the Writer's Workshop had mixed results in the past. The 2016 STAAR writing results for fourth-grade students who participated in the Writer's Workshop method showed only a slightly higher percentage of students achieving a satisfactory score than students who had not participated in the Writer's Workshop, indicating the Writer's Workshop method did not increase student's success on the STAAR (HISD, H.D. of R. and D., 2017).

Interactive Writing

Interactive writing is an instructional process that uses explicit writing techniques for students to use in their writing (Sherry, 2013; Williams, 2018). Teachers can teach students to write through direct instruction, modeling, and guided practice (Williams, 2018). Interactive writing allows teachers to provide purposeful lessons with embedded skills (Pletcher et al., 2018). During writing lessons, the teacher models by thinking aloud during composing. Collaboration between the teacher and students during the writing activity keeps them engaged while they learn what writing means (Hall, 2019; Williams, 2018). When a teacher uses interactive writing in the classroom, they provide even the youngest students with the opportunities to put their thoughts into writing while learning the formative skills for composition (Fisher & Frey, 2018). Instruction provided during interactive writing lessons helps support students' independent writing (Sherry, 2013). Results showed that using the interactive

writing instruction for 10 minutes each day improved students' independent writing skills (Pletcher et al., 2018). As a result of interactive writing lessons, students appear to become more independent as writers and willingly take risks. During the interactive writing lessons, teachers can informally assess students to determine who is grasping the material and what needs to be retaught or reviewed (Pletcher et al., 2018).

During interactive writing lessons, students work with the teacher to compose sentences by connecting letter-sound to generate words (Jones, 2015). The teacher encourages the students to sound out words and use classroom visuals as resources along with what they already know (Sherry, 2013). During interactive writing lessons, children learn “real-world writing in a safe and collaborative environment” (Pletcher et al., 2018, p. 25). During the collaborative interactive writing activity with students, the teacher provides lessons about spelling, punctuation, capitalization, sentence structure, organization, and word choice (Pletcher et al., 2018). The teacher models correct spelling, punctuation, and other conventions by revising, proofreading, and rereading text (Jones, 2015). While the teacher and students create a meaningful text through negotiating, constructing, and rereading, mistakes are corrected (Jones et al., 2010; Jones, 2015; Williams, 2018). Interactive writing instruction allows students to understand that when they make a mistake, they must correct it (Fisher & Frey, 2018).

Since several of a writer's behaviors happen inside the head, teachers must make those behaviors visible during shared writing for children to become successful writers (Perkins, 2017). Teachers may model writing by creating a piece of writing with their students (Hodges, 2017). Interactive writing allows the teacher to share the pen with the students during writing activities (Hall, 2019.) Students hear actual decision-making processes as individuals think aloud during collaboration with the teacher, and they also hear someone other than the teacher explain

the assumptions and misconceptions developed during the writing process (Pletcher et al., 2018). When students offer suggestions, their classmates learn how they think about writing with the teacher's support while effectively experiencing writing (Hodges, 2017). "Instruction in which students interacted with each other and the teacher was more effective than when the teacher predominantly presented information and modeled responses to students" (Finlayson & McCrudden, 2020, p. 2). The evidence-based practices of interactive writing supported students as they continued to grow as writers (Williams, 2018).

Instructional Materials

By using instructional aids, the information communicated to the students during the lesson is reinforced (Amarin & Al-Saleh, 2020). Teachers often use instructional materials to visually deliver instructions to the students (Adalikwu & Iorkpilgh, 2013). However, for instructional materials to be used effectively in the classroom, the teacher should implement them appropriately into the curriculum (Amarin & Al-Saleh, 2020). Teachers use instructional materials to help them meet instructional goals; however, they often face issues finding suitable materials for their students (Setyowati & Sukmawan, 2019).

When textbooks are produced for science, reading, and social studies, publishers incorporate various text features, including color, italics, and bold fonts in print. Seventy-three students, with the average age of 13, evaluated the features of textbooks in which color played a significant role (Hoshangabadwala, 2015). Most of the students scored the use of color as a learning aid for coding, classification, and categorization of information as very important. The students also identified the colors in pictures, charts, and diagrams as very important. More than half of the students felt that presenting information in color was very important. Based on the data provided by students, using colors in texts can be transferred to writing instruction.

While textbooks provide teachers with instructional standards, a curriculum, and multiple learning resources, teachers should also create instructional materials for writing instruction (Setyowati & Sukmawan, 2019). To perform this task effectively, writing teachers must understand the language, the focus of the materials, and the activities planned for the students (Setyowati & Sukmawan, 2019). When instructional materials were used, students performed better than students who were not taught using instructional materials (Amarin & Al-Saleh, 2020). Teacher-created materials allow students to see real language produced by real writers (Setyowati & Sukmawan, 2019). Graphic organizers are a type of instructional material that teachers use to teach writing. By adding color to a graphic organizer, students are provided additional support for writing development (Ewoldt & Morgan, 2017). Graphics can aid a student's comprehension of the text and engagement with the material (Danielson & Sinatra, 2017).

After analyzing existing literature concerning the impact of colors used in designing instructional materials, Amarin and Al-Saleh (2020) made the following recommendations. First, teachers should use colors that promote comfort when creating instructional material. Next, use bright colors to motivate learning. When combining colors in an instructional aid, the colors should complement each other to stimulate learning. As teachers design instructional aids, they should also consider the learners' age and gender as well as the effect that colors have on emotions. Finally, Amarin and Al-Saleh warned against using too many bright colors as they can overstimulate students. Chang and Xu (2019) suggested that using colors when designing learning material should be limited to low-level cognitive tasks such as searching and recognition. Their findings indicated that the information could help teachers make better color

choices when designing learning materials to increase students' attitudes and motivation as well as improve their learning performance.

Teacher's Self-Esteem Concerning Writing Instruction

Teachers and students find writing to be a challenging task (Philippakos et al., 2018). Writing has several components, such as prewriting, drafting, conferencing, revising, editing, sharing, and publishing which individuals must learn (Casey et al., 2016). Teachers who align their writing instruction with a constructivist orientation focus on teaching a writing process approach and providing more time for students to write (Wang & Matsumura, 2019). When teachers align their writing instruction with a behaviorist orientation, they focus on teaching individual writing skills in isolation rather than during the students' writing time (Wang & Matsumura, 2019). These same teachers provide limited writing instruction in grammar and mechanics (Wang & Matsumura, 2019).

Because of their experience and education, teachers are the best writers in their classrooms, but they often forget this fact (Puente & Wilson, 2019). When teachers feel unprepared to teach writing, they develop negative attitudes toward writing and spend less time teaching it (McKeown et al., 2019). A teacher's inadequate preparation to teach writing is related directly to student writing performance (Harris & Graham, 2016; McKeown et al., 2019). Many elementary teachers do not feel qualified to teach quality writing or have the time to teach it (Bifuh-Ambe, 2013). Twenty percent of teachers reported that they did not take any coursework related to writing instruction during their teacher preparation program (Troia & Graham, 2016). As a result, teachers often limit writing instruction in primary grades because they believe they do not have the skills to teach writing (Rietdijk et al., 2018). However, several support systems exist for teachers who do not feel competent to teach writing.

To implement effective writing instruction, teacher training plays an integral part (Finlayson & McCrudden, 2020). Textbooks and teacher guides provide detailed instructions for teachers to use, as well as ideas provided by colleagues (Dunstan, 2020). Teachers reported that they had received professional development for writing in face-to-face workshops, from colleagues, and from reading about effective writing instruction (Troia & Graham, 2016). After analyzing their data, Korth et al. (2017) determined that teachers had a disconnect between their beliefs and practices about providing writing instruction; therefore, teachers should “be given opportunities to improve the understanding of the development of emergent skills” (p. 246) which they can use for the implementation of writing instruction. Davidson and Pimentel (2018) suggested that teachers should be provided time for ongoing, sustained professional learning throughout the school year, where they plan lessons with other teachers. Teachers need to be active writers if they want to create a community of writers; therefore, they must find opportunities such as professional development that help them grow as writers (Hall & White, 2019). One of the most effective ways of improving how teachers teach writing is to provide training where the teachers write themselves (Cremin et al., 2020).

Conscious or unconscious beliefs held by teachers influence the instruction they provide; therefore, an examination of those beliefs must be conducted to understand an individual’s teaching process (Rietdijk et al., 2018). Teachers’ self-efficacy also influences their teaching practice (Ritchey et al., 2015). Educators develop self-efficacy in teaching writing based on knowledge, beliefs, and opinions about writing (Finlayson & McCrudden, 2020). Teachers’ attitudes toward teaching writing might also be influenced by their students’ lack of confidence in writing, short attention spans, and the varied levels of the students’ writing, which can result

in writing lessons being shortened or eliminated (Snyders, 2014). Unfortunately, children can develop a self-efficacy about writing that reflects that of their teacher (Snyders, 2014).

When implementing practices into their writing instruction, teachers often combine their experiences from writing instruction when they were students with the knowledge and skills they learned during their preservice teacher education, professional development from fellow educators, and the adopted curriculum (Rietdijk et al., 2018). Teachers who view themselves as inadequate writers lack the confidence to teach writing, sporadically schedule writing, emphasize conventions over content, and do not differentiate instruction (Harward et al., 2014). Some teachers indicated that the lack of time and children with varying abilities were hindrances (Harward et al., 2014). In addition, teachers are frustrated by the range of their students' abilities to write effectively, which includes deficiencies in grammar, punctuation, spelling, and forming ideas that prevent them from writing effectively (Korth et al., 2017). Not only did the teachers doubt the learning abilities of some students regarding writing, but they occasionally struggled with their abilities to teach writing. For some teachers, limited resources and pedagogical knowledge continue to contribute to their inability to provide students with quality writing opportunities (Wang and Matsumura, 2019).

Teachers who viewed themselves as good writers believed writing is an essential skill, scheduled writing daily, scaffolded students' writing experiences, and integrated reading and writing (Haward et al., 2014). Teachers that have more confidence in their teaching abilities, enjoy providing writing instruction, and view their teaching practices as effective are more likely to engage in teaching writing (Graham, 2019a). For teachers' individual beliefs about teaching writing to change, Wang and Matsumura (2019) argued that the shifting vision of writing would need to be communicated through district policies and assessments. Ritchey et al. (2015)

suggested “that the choices teachers make in providing writing instruction are influenced” by undergraduate programs for teaching writing, professional development, and the school’s adopted writing curriculum (p. 1334). Effective professional development helps teachers overcome inadequate preservice preparation in writing that they received (McKeown et al., 2019). Professional development allows teachers to learn about new curricular material and implement it by developing teacher knowledge, understanding, and skills (McKeown et al., 2019). Following quality professional development activities, teachers should be supported in the classroom to ensure they successfully provide instruction to their students (Smith et al., 2019).

Professional development can improve teacher performance in teaching writing (McKeown et al., 2019). However, Howell et al. (2021) stated that teachers’ practices often are not changed by a one-time professional development. Many professional developments implement a comprehensive approach to literacy that can require teachers to use too many methods (Zhang & Cook, 2019). Because learning a new instructional approach is hard work, teachers need help implementing it as designed (Ray & FitzPatrick, 2022). Therefore, for professional development to be effective, administrators must provide time for teachers for planning, coaching, and participating in workshops (Philippakos, 2022).

Practice-based professional development is the most effective method to help teachers implement evidence-based writing practices (Ray & FitzPatrick, 2022). When modeling, teachers expressed that cognitive modeling, especially using self-statements, was the most difficult (McKeown et al., 2019). Principals engaged in the professional development programs at their schools believe that modeling for the teachers and feedback for teachers practicing modeling are the most effective components for teachers’ development in writing instruction (Philippakos, 2022). Teachers supported by professional development that provides coaching and

teachers' writing instruction showed increased confidence in teaching writing and improved students' writing (Philippakos & Voggt, 2021). Practice-based professional development allows teachers to practice modeling a writing lesson before presenting the lesson in the classroom (Ray & FitzPatrick, 2022).

Brain

Writing is a powerful cognitive process because writers must analyze their thoughts and meaning while sequencing and forming words to create text (Jones et al., 2010). Educators must consider the complexities of cognitive progress when planning instruction (Schunk, 2016). Donnelly et al. (2016) describe cognition as a “set of mental processes that contribute to perception, memory, intellect, and action” (p. 1198). Several brain areas are simultaneously engaged when a student is involved in a learning activity (Rushton et al., 2003). Furthermore, the brain's emotional center affects a person's memory and learning ability (Rushton et al., 2003). The ability of an individual to write letters correctly can impact the cognitive processing demands that can be used for other skills needed for the writing process (Jackson, 2015). The cognitive and motivational factors of contemporary information processing theory focus on the learner's attention while constructing and processing information (Schunk, 2016). The brain perceives patterns, such as repeating shapes, forms, and textures to determine what is important and what is not (Ryan, 2016). Patterns allow the brain to save time decoding visual information (Ryan, 2016). When a single system is used to process information, the cognitive processing of a person can overload with too much information (Chang & Xu, 2019). Meanwhile, presenting information in multiple formats can decrease cognitive overload (Chang & Xu, 2019). When writing, an individual uses “a complex system of inter-working cognitive processes” (Hodges, 2017, p. 139).

Immordino-Yang and Fischer (2008) described the brain as the central organ for learning. The brain works as a computer that receives, analyzes, coordinates, and transmits information (Kotulak, 1997). Sinke et al. (2018) explained that the brain as a complex integrative network with connected regions that interact. The brain includes the prefrontal cortex, the motor cortex, the visual cortex, and the auditory cortex (Kotulak, 1997). Different parts of the brain function for different purposes; however, they work together to make connections and memories (Kotulak, 1997). The brain's two hemispheres perform specialized cognitive functions and combine information to produce a unified cognition (Schyns, 2020).

During working memory, Anderson et al. (2018) explained that the left prefrontal cortex is instrumental in encoding and audio processing, while the right prefrontal cortex is responsible for memory retrieval and visual processing. Stimulation to the brain helps develop vision, language, muscle control, and reasoning (Kotulak, 1997). The senses provide the brain with information that helps it keep connections that have already been established (Kotulak, 1997). Working together, the brain and eye make connections as images are processed and stored in the visual cortex for future use (Kotulak, 1997). The eye sends information along the optic nerve's three channels, color, form, and motion, to the visual cortex for the brain to process (Robertson, 2018). Memory cues function as information that acts as a prompt to access memory stored in long-term memory (Woods & Silvennoinen, 2022). For example, recognizing a word visually requires an individual to consider the word length, letter order, position, phonology, and semantics; therefore, several brain regions must work together (Liu et al., 2021). Before children can read and write, they learn language by listening (Kotulak, 1997). Hearing allows the brain to access the spoken word, which it then uses to build meaningful sentences (Kotulak, 1997). While the auditory cortex takes in the spoken word, the motor cortex controls the muscle of speech

(Kotulak, 1997). Language develops in correlation to the brain's maturity and specialization (Sholihah, 2022). Therefore, oral production occurs before writing production because both brain hemispheres must be optimized to produce writing (Sholihah, 2022). Kotulak described language as the most significant cognitive skill, which becomes more difficult to learn after the age of 12. Sholihah (2022, p. 216) stated, "Language serves as the foundation of human cognition."

Vision

Because vision is a dominant sense (Rekow et al., 2022), people gain more information visually than by combining all the other senses (Schunk, 2016). Approximately "40 percent of the human brain is involved with seeing and interpreting what we see" (Robertson, 2018, p. 12). When the brain is presented with an overwhelming amount of input, the attentional mechanisms of the visual system compensate by selecting a subset of the input to process more extensively while setting aside the rest of the information for limited analysis (Wolfe and Horowitz, 2004). Because selective attention is believed to improve processing efficiency, allowing the brain to process a selected portion of the material is more efficient (Drisdelle et al., 2020). Visual selective attention happens when preferential processing is given to some information while other information becomes suppressed (Feldmann et al., 2015). Interested in the amount of information an individual can process in a limited time frame, Helmholtz conducted darkroom experiments that laid the foundation for visual attention (Restak, 2008). Through covert visual attention, Helmholtz voluntarily concentrated on one thing while excluding attention from other things (Restak, 2008).

According to Wolfe and Utochkin (2019), preattentive features guide a person's attention in a visual search. Color, form, spatial position, and movement are preattentive properties of visualization, which can make understanding information easier (Hossain, 2018). Form as a

feature examines shape, size, and grouping, which can be applied to reading and writing (Hossain, 2018). Since the brain has a limited capacity to process incoming information, color works as an important visual stimulus to aid in the retention of information (Finn et al., 2011). During learning, the cognitive load lowers when color coding is used (Skulmowski, 2022). Color cues are examples of preattentive visual features that make an object pop out from surrounding distractors (Krekhov & Kruger, 2021). Using a subset of Gestalt laws, Ryan (2016) stated that there are four ways to recognize patterns during data visualization: proximity, continuity, similarity, and closure. Closure allows people to visually identify groups through “clear boundaries that help isolate items and minimize the opportunity for error” (Ryan, 2016, p. 157). The Gestalt theory stresses that only when an individual is actively aware of information can meaningful perception and insight occur (Schunk, 2016). Individuals learn through explicit and implicit learning. Explicit learning occurs when the individual is aware of what is being learned, while implicit learning occurs without the individual being aware that learning is occurring (Wang et al., 2020). Information learned explicitly is stored first in working memory and then transferred to long-term memory (Wang et al., 2020). Researchers theorized that the brain might similarly process implicit memory (Wang et al., 2020). Color plays a vital role in visual communication design by attracting attention and enhancing Gestalt laws of perception (O’Connor, 2015). After procedural information becomes ingrained, the procedures can be performed with little conscious awareness (Schunk, 2016).

The human visual system has been described as a pattern-seeking instrument (Robertson, 2018). As the human eye quickly scans an object, it tends to focus on brighter items (O’Connor, 2015). Since objects exist in the context of their relationship to a background, conscious processing of an object's attributes acts selectively (Appelbaum & Norcia, 2009). When

individuals make it easier to see important patterns, they help improve cognitive activity (Ware, 2013). Ware (2013) argued that when people wish to see a detail, they could by focusing their attention on the visual image. For example, when a child adds a primary color to a black-and-white page, the color will pop out. A visual search task occurs when someone is looking for something but is unsure where to locate it (Alvarez et al., 2005). During a visual search, the preattentive stage requires that the entire screen is processed to identify features which allows a feature to be quickly and efficiently identified (Casteau & Smith, 2020). Time must be spent searching for the object, even when it is visible (Alvarez et al., 2005). While color helps to reduce visual search time, the search time varies for colors (Chang & Xu, 2019). Some visual searches require more attention because the tasks are more difficult to process (Wolfe & Horowitz, 2004). Ware (2013) defined a visual query as a hypothesis that requires a cognitive task to be performed. A visual query should have a simple pattern that can be held in the visual working memory so that the individual can perform it quickly and with a low error rate (Ware, 2013).

According to Healey and Enns (2012), what people see is determined by where their attention is focused and what is in their minds before viewing something. People cannot recognize all visual objects at one time; therefore, they must choose one thing to focus on from a group of irrelevant ones (Chan & Hayward, 2013). Schunk (2016) defined attention as a concentrated mental activity that examines a limited amount of information. While “attention is not always a conscious process,” it is essential to learning (Schunk, 2016, p. 172). Young students have trouble focusing on relevant information and switching attention rapidly between activities (Schunk, 2016). However, color coding allows an individual to visually distinguish more easily between segments, which increases learning performance (Skulmowski, 2022).

Since individuals focus on what looks different on a page using fewer colors will have a greater impact (Robertson, 2018). When deciding what colors to use for communicating, Robertson (2018) suggested that colors should be chosen thoughtfully and have a purpose.

To reduce extraneous cognitive load, teachers can use visual displays to help scaffold students' learning (Chu, 2020). When studying text and graphics together rather than text alone, students learn better (Kuhlmann & Fiorella, 2022). The primary purpose of visual displays designed for educational purposes is to communicate important information (McCrudden & Rapp, 2017). Visual displays affect cognitive processing in various ways as people interact with and learn from them (McCrudden & Rapp, 2017). When visual displays are integrated with text, their proximity allows for simultaneous processing in the working memory (Chu, 2020). One way visual display affects cognitive processing is through selection, which means focusing attention on information to be processed into memory (McCrudden & Rapp, 2017). Visual display designers use signaling to help individuals select important details, which uses cues such as color, arrow, bold print, and underlining (Castro-Alonso et al., 2021; McCrudden & Rapp, 2017). Semantic visual displays are composed of symbols, often in the form of text, which convey important information (McCrudden & Rapp, 2017). Since underlining or highlighting essential text information can be done easily and quickly, it is a popular strategy to support learning (Castro-Alonso et al., 2021). While signaling may point a person toward what information should be selected, it does not mean learning occurs (McCrudden & Rapp, 2017).

People use a variety of attentional strategies to prioritize and select sensory information (Leber & Irons, 2019) because processing information within working memory may depend upon an individual's learning style (Anderson et al., 2018). Individuals can use these strategies to choose whether or not to perform an attentional task (Leber & Irons, 2019). An important part of

an attention-related task includes making decisions based on the information provided (Leber & Irons, 2019). For example, audio-visual stimuli can influence attention more than audio or visual stimuli in isolation (Ning et al., 2022). People often choose not to use valid spatial cues to help in visual target identification, which can impact task performance when they determine that the task requires greater effort to process (Leber & Irons, 2019). Individuals decide if they value speed or accuracy when performing a visual task (Leber & Irons, 2019). Leber and Irons noted that while a person might begin a task to achieve a high level of accuracy, he may decide that the task's difficulty is not worth the extra time. To prioritize accuracy, individuals can be offered rewards (Leber & Irons, 2019).

Color

Because an individual can only visually process a limited amount of information at a given time, visual cues such as color can be used to direct one's attention to objects given the highest priority (Yaron & Lamy, 2021). According to Ware (2013), color's most important role in visualization is coding information because visual objects often represent complex data. Color works as a meaningful memory cue to retrieve information because it is processed separately from other sensory information through a section of the visual cortex reserved solely for processing color (Woods & Silvennoinen, 2022). When visuals blend information using features such as color or imagery, they become more memorable (Ryan, 2016).

Ware (2013, p. 122) stated that when someone wants "to make it easy for someone to classify visual symbols into separate categories," using color can be effective. Research shows "that the retention performance for color cues diminishes at a slower pace than other visual features" (Skulmowski, 2022, p. 4622). Colors should be consistent and easy to understand to help a person to search more accurately (Zhang et al., 2022). Color can be affected by its hue,

saturation, and luminosity, as well as how other colors are used (Gonzalez-Martin et al., 2022; Zhang et al., 2022). Fisher and Meyer (2018) stated that color is an invaluable tool for visualization because it carries a great deal of meaning and can be used with other visual structures. In a visual system, color is favored over shape (Healey & Enns, 2012). Individuals can see color patterns even with random variations in shape (Healey & Enns, 2012). When color is used, a viewer can tell immediately if a task has been performed (Healey & Enns, 2012).

The effect of certain colors has been known to motivate older individuals (Mehta & Zhu, 2009; Steele, 2014). Due to poor control over colors, earlier research revealed that color had little or no effect on cognition or behavior (Brooker & Franklin, 2016). Researchers argued that the findings regarding the impact of color on cognitive task performance have been inconsistent (Mehta & Zhu, 2009). For example, researchers acknowledged that they failed to monitor the colors used, so they could not identify the effect each color had on information recall (Stitt & Pula, 2013). Initially, the research that evaluated color and psychological functioning focused on arousal, physical strength, preference, time perception, and attention (Elliot, 2019). Recent research that used a more rigorous framework for color performance revealed a consistent pattern of the effect of colors on cognition and behavior (Brooker & Franklin, 2016).

An individual's color preferences can affect how information is processed (Woods & Silvennoinen, 2022). For example, people may associate a color with an object they like, while disliking other colors because of their association with things they do not like (Woods & Silvennoinen, 2022). Some people perform tasks more effectively when one color is present, while the appearance of the same color impairs the cognitive performance of other people (Xia et al., 2016). The contextual cue, color, can shape cognitive processes and behavior (Garrido et al., 2019). Garrido et al. (2019) noticed for some people that red inhibits performance, while for

other individuals, red facilitates performance. Compared to performance using the grey screen, the color red reduced performance on the cognitive tasks of children ages 8-9 by about 6%, similar to the performance of adults (Brooker & Franklin, 2016). However, when Sun et al. (2020) evaluated the effects that colors have on detailed-oriented cognitive processing by determining the psychological effects of red in different contexts, they reported that red often causes individuals to become alert and more focused on processing details. While color preferences vary between cultures, research shows a strong preference for red over green and grey (Woods & Silvennoinen, 2022). Warm colors, such as red, yellow, and orange, have a greater impact on attention than cold colors, such as brown and gray (Diachenko et al., 2022). Chang and Xu (2019) explored how colors influence learners' memory and cognition as well as their attitudes and motivation. While some learners reported that color-coding distracted and did not hold their attention, other learners stated that color helps form memory, enhances learning, and helps to process information efficiently (Chang & Xu, 2019).

Research experiments that studied specific colors for attentional preferences revealed different outcomes. Some experiments indicated that red and yellow were preferred to blue, while other experiments indicated no evidence of that outcome (Elliot, 2019). Most research concerning the effect of color on cognitive performance focused on using red versus blue (Mehta & Zhu, 2009). The meaning of colors for individuals can be related to their experiences and culture (Chang & Xu, 2019). Because colors are associated with events, objects, and emotions, an individual may prefer one color over another (Gonzalez-Martin et al., 2022). The influence of color on an individual's cognition and behavior is associated with experiences in life (Xia et al., 2016). For example, individuals may associate red with mistakes as their teachers marked incorrect answers in red (Mehta & Zhu, 2009; Oktem & Olgunturk, 2019; Xia et al., 2016).

Because some people associate red with danger, researchers have found that red creates an avoidance motivation (Oktem & Olgunturk, 2019). When compared to other colors, the color black resulted in having the most negligible impact on stimulating attention and memory (Dutta & Baruah, 2018). Some people associate black with sadness and depression (Diachenko et al., 2022). The brain processes and stores images presented in color more efficiently than black, white, and grey images allowing for better recall (Finn et al., 2011). Research shows that memory retention was better with colored pictures than with black-and-white pictures (Diachenko et al., 2022). Students' abilities to recall information improved significantly when the information was learned from colored text on white paper rather than from black text on white paper (Stitt & Pula, 2013).

Because using color improves attention and memory when introducing new materials to children (Dutta & Baruah, 2018), teachers should use colors in various ways during writing instruction. Teachers can use colors to edit spelling, add words, or identify capitalization, punctuation, and sight words. Highlighting letters, numbers, or words in red, green, blue, and yellow can make learning them easier (Dutta & Baruah, 2018). Other teachers may use colors to stress the parts of speech used in a sentence. Some teachers have created blogs to provide color-coded strategies for their peers to use during writing instruction. For example, one writing strategy uses color to signal the purpose of the sentences. Topic and conclusion sentences are written in one color, while another color is used for detailed sentences (Ewoldt & Morgan, 2017). When using colors during writing instruction, teachers should provide direct and explicit instruction (Ewoldt & Morgan, 2017). Teachers can use the color-coding strategy of selective highlighting through explicit instruction and extensive modeling (Caudill, 2018). When teaching the writing process to third- through fifth-grade students with learning disabilities, teachers have

used colors as a strategy for writing instruction as students' overall understanding of the writing process can potentially improve (Ewoldt & Morgan, 2017).

Using colors during writing instruction requires more planning and preparation but can be effective when strategically and systematically implemented (Caudill, 2018). While using color to code information during writing instruction, teachers should limit the numbers of colors they use so the material does not become overly complicated (Caudill, 2018). Primary grade school teachers should consider the color preference of their students. Studies show that seven-year-olds prefer the colors red and yellow, which are warm; however, blue remains the favorite color of seven-year-olds (Gaines & Curry, 2011). As children get older, their color preference switches to cool colors associated with blue (Gaines & Curry, 2011). While the human mind continuously works to organize visual information, too much color makes visual searching harder (Gaines & Curry, 2011). Once a teacher assigns a color to a purpose for writing, the color should be used consistently to avoid confusion (Caudill, 2018; Ewoldt & Morgan, 2017). To improve memory performance, the same color should be used for encoding and retrieval processes (Dzulkifli & Mustafar, 2013). To maximize the speed and accuracy that an individual performs a visual task, teachers should select colors from two different categories (e.g., blue and green) rather than the same category (e.g., green) to use for writing instruction (Reppa et al., 2020). Furthermore, memory performance also improves when the correct colors are used to contrast the information (Dzulkifli & Mustafar, 2013). When people use contrasting colors, they can save time and reduce the effort needed to search through information (Hossain, 2018).

Touch

Perez-Bellido et al. (2018) argued that touch plays as much of a part in perceiving spatial information as vision, as people usually use multiple senses to integrate information. Effective

communication between the eyes and hands allows an individual to copy, draw, and write (Dere, 2019). Young children respond well when the material is presented using multisensory methods (Goswami, 2008). When writing by hand, the brain continually receives visual, motor, and kinesthetic feedback (Mangen, 2016). The motor system receives input from an individual's vision regarding spatial orientation and letter formation (Dere, 2019). The formal writing process requires an individual to perform several physical tasks, such as holding a pencil, creating letters correctly, and leaving appropriate space between letters and words (Cakiroglu, 2018). Through the sensory and motor processes of handwriting, individuals visually see the development of letters and can recall them (Mangen, 2016). The instruments children choose to write with affect how and what they write (Cordero et al., 2018). An individual can produce writing by hand, dictation, typewriter, word processor, or speech synthesizer (Graham, 2019b). In a writing-rich environment, children are provided with a variety of writing tools, such as pencils, pens, markers, and colored pencils (Jones, 2015). Therefore, hands play a crucial role in students learning to write (Cordero et al., 2018). The hand plays an integral part during writing instruction as it holds and controls the writing tool (Mangen, 2016).

Summary

To summarize, a person's cognitive ability is related to the ability of the person to process information, which includes selecting and attending to features, constructing knowledge, relating new information to stored knowledge, and organizing knowledge (Schunk, 2016). During this processing of information, the brain receives information, holds it in the memory, and retrieves it when needed (Schunk, 2016). Being able to retrieve information is important to learning (Schunk 2016), and color aids in the retrieval (Chang & Xu, 2019). Schunk (2016) suggested that the more links provided between memory and information, the more likely an

individual will be to activate information stored in memory. Therefore, touch, visual search, and color should easily activate the necessary information in a person's memory when writing.

Humans are multi-sensory beings, so the more senses such as vision, hearing, and touch are engaged, the more likely the students will imprint the skills into long-term memory to recall for later use. To obtain information, people use vision, hearing, and touch (Chang & Xu, 2019).

After examining learning theories, writing approaches, and how the brain processes information, it is evident that using colors during writing instruction helps improve students' writing ability over time. Teachers should use the interactive writing approach to help students learn how to write compositions, as evidence indicates that students prefer this approach. This approach allows students to engage socially with others while learning new information. While engaged in learning, students can devote the appropriate attention to the material presented during writing instruction when color is used to direct focus on a specific task, skill, or object. Once they have practiced writing with a group, the students should be able to perform the task independently.

CHAPTER THREE: METHODS

Overview

A qualitative multiple case study was conducted to understand how and why primary grade school teachers use colors during writing instruction. In this chapter, I explain how and why the study was conducted. To produce the best results, the researcher must consider how each part of the methodology works as part of the study (Corbin & Strauss, 2015). First, the significance of the setting selection and participant recruitment was explained. Next, interviews, audio-visual materials, and observation for data collection were discussed. Finally, participants' privacy and secured data storage were addressed for ethical consideration.

Design

When conducting a study, researchers must decide which type of method they want to use: quantitative or qualitative. In quantitative research, the researcher tries to determine “only one truth” by testing a hypothesis using “a limited range of predetermined responses” (Farrelly, 2012, p. 508). For the results to apply to a larger population, a quantitative study requires a large sample size to provide numerical data with unbiased results (Farrelly, 2012). Quantitative research does not provide a careful analysis of how and why training affects teachers' abilities and attitudes (McKeown et al., 2019). Unlike quantitative research, which focuses on examining the outcomes of experiments and surveys from large groups, qualitative research allows the researcher to understand how events affect a small number of individuals in real-world settings (Yin, 2016). Qualitative research allows the researcher to represent participants' perspectives about a topic through evidence from multiple sources (Yin, 2016). In qualitative research, participants' responses are not limited, which allows participants to provide a deeper, richer narrative for the researcher to analyze (Yin, 2016). Because I wanted to understand my participants' experiences with using color to teach writing, I decided to use a qualitative research

method. By conducting a qualitative study, I hoped to identify themes that can be used in the future to conduct quantitative studies that show how using colors during writing instruction can motivate students to become better writers.

Qualitative research methods include the following approaches: narrative research, phenomenological research, grounded theory research, ethnographic research, and case study research (Creswell & Poth, 2018; Merriam & Tisdell, 2016). Researchers select their qualitative research approach based on the research questions they use for their study (Creswell & Poth, 2018). The narrative approach often requires the extensive collection of a person's life story to address a cultural or historical aspect, while the phenomenological approach often focuses on a shared experience (Creswell & Poth, 2018). Grounded theory research develops a theory based on participants' views, but ethnographic research focuses on the shared patterns of a group's culture (Creswell & Poth, 2018). Through a case study, the researcher conducts an in-depth study examining the participants' perspectives on a phenomenon in real-life situations (Creswell & Poth, 2018; Gall et al., 2007; Yin, 2018). After examining these qualitative research approaches, I chose the case study approach to explore the participants' experiences using colors to teach writing in the classroom.

When researchers conduct qualitative research in the field of education, they often use a case study approach (Gall et al., 2007). A case study should also be bounded by a time frame, geographical area, and a specific area of concern (Baxter & Jack, 2008; Creswell et al., 2007; Yin, 2018). For this study, participants were interviewed and observed regarding their writing instruction in the primary-grade classroom at public schools in the United States from the Spring of 2022 to the Spring of 2023. To learn how teachers use colors to instruct students to write, I decided to perform a qualitative study using a multiple case study. A multiple case study was

chosen because the primary-grade school teachers are located at different elementary schools, and the school districts did not require teachers to use a specific writing curriculum. Using a replication design for the multiple case study, I found similar results and differences (Creswell et al., 2007; Yin, 2018). By conducting a multiple case study, I collected information regarding the experiences of how each participant used colors to instruct students how to write, and each participant provided a unique perspective about their experiences concerning teaching writing. By sharing the participants' experiences, I believe other teachers will consider new ways to use colors when providing writing instruction to their students.

Research Questions

Four research questions were created to guide this study about understanding why and how primary grade school teachers use color during writing instruction.

RQ1: How do primary grade school teachers use colors to provide writing instruction to their students?

RQ2: Why do primary grade school teachers use colors in the writing instruction process?

RQ3: How do primary grade school teachers learn to use colors for writing instruction?

RQ4: How do primary grade school teachers assess students' writing performance after the use of colors during writing instruction?

Setting

Even though several elementary schools in school districts in the United States have both English-only classrooms and bilingual classrooms, the study focused on the perceptions of participants who teach in English-only classrooms at this time. Once participants were selected, the time and place for interviews and observations were determined by both the participants and me to make sure the participant was inconvenienced as little as possible because I believed

potential participants would be more forthcoming and more relaxed, which led to better developed and truthful answers to the interview questions. When conducting an interview, the time and place should be convenient for the interviewee (McGrath et al., 2019). Most participants chose to do the interview in their classrooms, so I saw examples of how each participant used colors during writing instruction.

Participants

Twelve primary-grade school teachers that have used a variety of colors during writing instruction participated in the qualitative study. For qualitative studies, Brinkmann (2013) suggested that the number of participants should be around 15 to make handling the data practical. Creswell and Poth (2018) recommended that the number of participants is kept between three and 30 so extensive information can be collected from each participant. With this number of participants, saturation should occur. Saturation occurs when no new information or themes are produced (Creswell & Guetterman, 2019; Merriam & Tisdell, 2016). When conducting a qualitative study, the participants selected should help the researcher understand the phenomenon being studied (Sargeant, 2012). Participants should be knowledgeable and have first-hand experiences with the topic being investigated (Fossey et al., 2002; Horsburgh, 2003; Rubin & Rubin, 2005). To find participants that meet the criteria required to participate in this study, I asked the school district's gatekeeper to provide an introduction to all the elementary school principals in the district. Since gatekeepers control access to potential participants, researchers should work with the gatekeepers to identify potential participants for their study (DeJonckheere & Vaughn, 2019).

I conducted a multiple case study using maximum variation. While participants were required to teach a primary grade, which would be first, second, or third grade, and use colors

when teaching writing, I wanted to maximize the differences between participants regarding personal education and writing training as well as writing and teaching experiences. Using teachers as participants to explore the study's topic is important because through real-life experiences, teachers learn and construct their pedagogical knowledge (Chow et al., 2015).

Purposeful sampling to conduct the study was used to collect the most relevant data related to the study's topic (Yin, 2016). By conducting a purposeful sampling, I gathered an extensive range of information and perspectives about the study's topic, which prevented the appearance of the findings from being biased (Yin, 2016). To find the participants for this purposeful sampling, principals and language arts instructional coaches at elementary schools within two school districts were asked to help identify potential participants, who were then contacted through various methods such as emails, phone calls, letters, and face-to-face interaction. According to Merriam & Tisdell (2016), standard forms of purposeful sampling include snowball, chain, or network sampling. Through snowball sampling, participants recommend other individuals to participate (Creswell & Guetterman, 2019). Because I did not know the best people to recruit for my research, I asked each participant to make recommendations about individuals who might participate in the study.

Initially, I wanted to conduct my study in school districts located in North Texas. I contacted 16 school districts in North Texas. Eight school districts responded to my request. Two school districts permitted me to conduct my study in their elementary schools. I contacted 40 principals in one school district and 24 principals in the second school district. In the first school district, two principals gave me the names of teachers at their school who might be potential participants. I contacted 17 teachers in that school district, and only one teacher agreed to participate in my research study. Two other principals also responded that they had shared

information about participating in my research study with members of their staff who were potential participants, but no one showed interest. In the second school district, one principal responded to my request for participants and gave me 12 names. While I contacted those 12 teachers twice, no teachers from that district responded. Another principal indicated that they had shared the information about my study with their staff.

Realizing that soliciting school districts for permission to conduct my study and then contacting principals for information about potential participants was time-consuming and created unnecessary roadblocks, I decided to try another approach with the approval of the IRB. I began to solicit North Texas teachers through Facebook and Linked In; however, I received no responses to my post. I contacted the IRB again to expand the area where I could find teachers to the entire state of Texas, but I still struggled to find participants. I asked the IRB for a final modification to expand my study's recruitment of participants to the entire United States which they granted permission.

Procedures

I sought conditional approval for the multiple case study from the Institutional Review Board (IRB) at Liberty University (See Appendix A). No data was collected from human participants or the gatekeepers before I received approval from the IRB (Corbin & Strauss, 2015; Creswell & Poth, 2018). The purpose of the IRB is to ensure that the individuals who participate in a research study are protected (Jacob & Furgerson, 2012); therefore, all participants must sign a consent form (Sanjari et al., 2014). Before participants can be recruited, a researcher may need permission from the site, so the Accountability and Continuous Improvement Department of two large suburban school districts in North Texas were contacted for approval (see Appendix B). The researcher will explain the study and ask for help in identifying and recruiting potential

participants for the study (Arcury & Quandt, 1999). Once the department gatekeeper provided permission to contact elementary school principals and instructional coaches, introductory emails and flyers were sent, and follow-up phone calls were made. The principals and instructional coaches were asked to assist in identifying primary-grade school teachers who teach writing as potential participants in the study. To help find primary grade-school teachers to participate in this study, the recruitment flyer and an email were sent to primary-grade school principals at all the elementary schools in the school districts (see Appendix C and D). Potential participants were asked to contact me via phone or email so I was aware of their interest in participating in the study. While I preferred to meet face-to-face with potential participants, I used technology to conduct most of my research due to the concerns surrounding COVID. Participants who expressed interest in the study were contacted by email to discuss the consent form and the purpose of the study. I sent the consent form to interested individuals and then discussed it with them by email (see Appendix E). After individuals agreed to participate, they were asked to email the signed consent form back to me. For a participant to give informed consent, the researchers should inform them in advance which data will be collected and how it will be used (Sanjari et al., 2014). Participants were given the consent form shown in Appendix D. The participants were assured that their identities would be concealed, and their privacy would be respected (Sanjari et al., 2014). Furthermore, participants were assured that their participation was voluntary and refusal to participate would not negatively impact their position in the school district. The consent form should always inform potential participants that they have the option to not participate in the study (Dooly et al., 2017).

I scheduled a time with each participant to conduct an interview. Before each interview, I asked for three documents where the teacher modeled writing to the students. By requesting the

documents before the interview, participants would begin to reflect on using colors during writing instruction before the interview. Following the interview and document collection, an observation of the participant demonstrating a writing lesson was conducted so I could observe how the participant modeled the writing process. The same observation protocol was used for all observations (see Appendix F). Due to the concerns involving COVID, I used an audio-visual program to conduct and record the interviews and observations. Following each interview and observation, audio and video tapes were transcribed verbatim. Following the transcriptions of the interviews and observations, I contacted some participants to conduct a follow-up interview to clarify any questions about the observation, documents, and missing information.

The Researcher's Role

As an elementary school substitute that has worked in several elementary schools, I considered how my connection would affect my interactions with the school district's gatekeepers and potential participants. I did not have an authority role with any of the participants, so I believe my connection had little negative impact on the gatekeepers, principals, instructional coaches, and primary grade school teachers. The researcher's ability and interest in conducting first-hand research are essential to bring innovation to teaching (Chow et al., 2015). I feel that I performed my role as a researcher to ensure participants felt comfortable when I was interviewing them and observing them using color during their writing instruction in the primary-grade school classroom. Corbin and Strauss (2015) encouraged researchers to treat participants with dignity as well as respect for their time. During interviews with primary-grade school teachers, a video-audio recorder was used to record participants' responses to ensure that the information used in the study was accurate. By recording interviews, researchers can return to the source to check for accuracy (Seidman, 2006). When conducting the study, I also

considered the following preconceived thoughts and ensured they did not influence its outcome. Having observed and interacted with many elementary school educators when they teach writing, I believe not enough time is devoted to teaching writing. I also think that most elementary teachers have not been trained to teach writing or have been provided with the appropriate writing curriculum.

Data Collection

Because a case study approach was selected, data were collected in multiple forms (Creswell & Poth, 2018). Data triangulation happens when information is collected from multiple sources to support findings and receive a rating of high quality (Yin, 2018). Data were collected by interviewing participants, reviewing teacher-created documents, and making observations during writing instruction. These three methods are commonly used together during a qualitative study (Turale, 2020). When multiple sources are used, confidence in the study's accuracy increases (Yin, 2018).

Interviews

I conducted the interview first as it allowed me to build a rapport with the participants and a better understanding of their experiences with using colors during their writing instruction before evaluating the handwritten documents and conducting the observation. To lessen concerns about exposure to germs and increase the likelihood of teachers participating, interviews with participants were conducted using the visual/audio application ZOOM. Rowley (2012) suggested that conducting interviews through Skype or another visual/audio application could help a researcher find potential participants who were unwilling to meet face-to-face. The same visual/audio application was used for the observations where the participant modeled a writing

lesson. Following each interview, I recorded my reflections and thoughts on the participant and setting.

Before conducting the actual interviews used in the study, the questions and interview process were refined through a field test of three to five nonparticipants (Creswell & Poth, 2018). Using a field test, the researcher can ensure that interview questions are clear and concise (Creswell & Guetterman, 2019; McGrath et al., 2019). This allows the researcher to refine the interview procedures (Yin, 2018). To ensure the best possible outcome for an interview, Goodell et al. (2016) advised that researchers should avoid giving overtly positive feedback, presenting their perspectives about the research study, and asking leading questions to prevent participants from providing only the answers they think the researcher wants to hear. Using the feedback from field-test participants, the researcher can modify and change questions that reflect the participants' concerns (Creswell & Guetterman, 2019; Rowley, 2012).

During the interview, participants may share their attitudes, beliefs, or experiences concerning a specific topic (Rowley, 2012). Rather than using a structured interview format, semi-structured interviews were conducted using a list of questions as a guide. Rowley suggested that well-phrased questions should be asked in a specific order during a semi-structured interview as it helps the researcher compare participants' responses during analysis. By using semi-structured interviews, researchers can ensure that the study's concepts are consistently addressed while also asking questions that are relevant to a specific participant (Corbin & Strauss, 2015). Using this method also allows participants to share information that may not have occurred to the researcher but is valuable to the study (Corbin & Strauss, 2015). This process allows unplanned questions to be asked in response to the participant's answers to the questions in the guide (Yin, 2016). Interviews often resemble guided conversations that help to explain the

participant's perspective of "how" and "why" something occurs (Yin, 2018). While conducting an interview, the researcher might ask a follow-up question which may be added to future interviews of other participants (Jacob & Furgerson, 2012).

At the beginning of the interview, the time, date, and place where the interview occurred were recorded, as well as the participant's name, position, and amount of teaching experience. Jacob & Furgerson (2012) suggested that the researcher should write big, expansive questions because it allows the participant to talk freely and may lead to information the researcher had not considered. When conducting an interview, the researcher should ask open-ended questions while listening attentively (Quaquebeke et al., 2018). Using open-ended questions, the researcher invites the participants to share their thoughts which may result in an elaborate and undetermined response (Quaquebeke et al., 2018). Following each interview, I recorded notes about the participant's body language and nonverbal cues relevant to the study's topic. I also recorded any other thoughts I had about the interview that were relevant to the study. After the interview has been transcribed, the researcher may want to conduct a second shorter interview to clarify information and ask questions that may have been missed in the first interview (Jacob & Furgerson, 2012).

I conducted a complete interview with each participant during a recorded conversation during 2022-2023 using a video/audio format. To allow the conversation to flow normally and be respectful of each participant's time, I used two devices to audio record the interviews while video conferencing with the participant. Using two devices to record the interview, I had a backup copy in case something happened to one of the devices or recordings during or after the interview. DeJonckheere and Vaughn (2019) suggested using two recording devices during each interview in the event one device fails to produce a usable recording. Before any interviews, I

practiced using all the technology I used during interviews and observations to avoid recording problems. Since I am slow at writing by hand, I only made minimal notes during the interview. When a recording device is used during an interview, the interviewer can focus on building rapport with the participant rather than concentrating on writing extensive notes (DeJonckheere and Vaughn, 2019). A researcher builds rapport with participants by listening attentively and acknowledging that the participant is the expert on the study's topic (DeJonckheere and Vaughn, 2019). I asked each participant the following questions using an interview protocol (see Appendix G).

1. Describe your philosophy of teaching writing to children.
2. What training did you receive for teaching writing prior to becoming a teacher?
3. What training for teaching writing have you received since you became an educator?
4. What training have you had regarding the use of colors in writing instruction?
5. What guides your teaching methods for writing? (Curriculum, district guidelines, professional development, create your own, etc.).
6. Describe how you teach the writing process in the classroom.
7. How have you used colors to teach the writing process?
8. Why do you use colors to teach writing?
9. How often do you teach writing? How is that time distributed between instruction and practice?
10. Please explain how you decide what colors to use when modeling the writing process to your students. (e.g., Do you assign colors to specific tasks ahead of time or make decisions as you are modeling?)
11. What benefits do you think using colors during writing instruction have?

12. What disadvantages do you think using different colors can have during teaching students how to write?
13. What is your experience regarding children using colors during writing?
14. What do you believe are the students' attitudes and abilities when colors are used for writing?
15. How does your school promote the continuity of using colors for writing instruction within and between grade levels?
16. I know your time is valuable, and I appreciate you sharing your thoughts and experiences about teaching the writing process with me. In conclusion, what else would you like to share with me about the writing program in your classroom?

When developing the questions for the interview, I wanted the participant's answers to follow a natural progression; therefore, the interview began with broad questions that built a foundation for the participant's knowledge and skill of teaching the writing process before asking more specific questions about using colors during writing instruction. When conducting an interview, the researcher should begin with questions that encourage the participant to talk and end with thanking the participant (Creswell & Poth, 2018). Questions 1, 2, 3, and 4 allowed the participants to provide background information about their experiences and philosophy about teaching writing to their students, which addressed RQ 3. Most elementary school teachers have reported that the teacher preparation programs they attended did not prepare them adequately to teach writing (Sulak, 2018). Calkins and Ehrenworth (2016) suggested that teachers' knowledge of writing must be improved through comprehensive professional development if students' writing is expected to improve.

When answering question 9, participants explained how much time they devote to the writing. To improve as writers, students need adequate time during the school day to write (Calkins & Ehrenworth, 2016). Questions 6, 7, and 10 addressed RQ 1. Teachers should provide effective writing instruction to students through explanations, thinking aloud, and modeling (Jones, 2015). Furthermore, students' ability to acquire writing skills increases when teachers consistently provide explanations and modeling during writing instruction (Jones, 2015). Questions 13 and 14 applied to RQ 4. If teachers expect students to improve as writers, they must provide clear goals for the students to achieve (Calkins & Ehrenworth, 2016). Information to answer the second research question was gathered by asking questions 5, 8, 11, and 12. Depending on how teachers answer question 11, the data could be applied to the first three research questions. Questions 15 and 16 provided new information that was evaluated to determine if the data could be applied to any of the RQs. To improve writing instruction, schools need to provide time for teachers and administrators to share new ideas and skills, which can improve teaching skills, efficacy, and attitudes toward writing instruction (Graham, 2019a). Graham stressed that "students need to receive high-quality instruction from one class to the next" (p. 291). Question 16 was important because participants may have something important that they want to add that was not addressed in previous questions (Corbin & Strauss, 2015). McGrath et al. (2019) stated that a question similar to Question 16 was suitable for closing an interview.

Document Analysis

When I scheduled the interview, I asked the participants if they could also provide three handwritten examples of documents that were created during writing instruction, which were discussed at the end of the interview. By asking for these documents before the interview, each

participant began to reflect on their use of colors during writing instruction. By having the documents available at the interview, I could ask questions about the documents and not be concerned if documents would be provided at a later date. The collection of handwritten examples before the observation also provided me with some knowledge of what to expect during the observation. Documents are ready-made sources of data that existed before the collection of the data (Merriam & Tisdell, 2016). Often representing a natural part of the research setting, documents include material that can be written, visual, digital, and physical (Merriam & Tisdell, 2016). The documents provided by the participants included colors and were created during a writing lesson in front of students. I asked the participant to explain how and why they used the colors they did for each document. When analyzing teacher-created documents, the researcher must examine them critically to determine how they reflect the participant's perspective (Saldana, 2016). Information gathered from documents should be connected to data collected from the interviews and observations (Bhattacharya, 2017).

By using memoing during my analysis of the documents, I could record my thoughts about this type of data collection. Memoing provides "a snapshot of thought processes at a given stage of the research" as well as a protective shelter where the researcher can take risks without fearing judgment from others (Birks et al., 2008, p. 71). The use of memoing allows the researcher to retain ideas that otherwise risk being forgotten; therefore, the researcher can benefit from using it from the beginning of the study (Birks et al., 2008; Glaser, 2013). Even though memoing can take many forms and be performed in a variety of ways, it is essentially "the written records of the researcher's thinking" (Glaser, 2013, p. 4). Memoing allows researchers to record their private thoughts about their studies and should not be made available to others (Glaser, 2013). However, Birks et al. stated that memoing helps the researcher create an audit

trail that shows how decisions were made for conducting the study and the steps taken to perform the study. Memoing also allows the researcher to track data collection and issues concerning participants (Glaser, 2013). By reviewing memos, the researcher may develop new concepts and identify links between ideas and concepts (Glaser, 2013). To allow for cross-referencing later, the researcher should date and label the memo's content as it is created (Birks et al., 2008). Through memoing, selective and theoretical coding develop (Glaser, 2013).

Observations

Within a week of a participant completing the interview, an observation of the participant demonstrating a writing lesson was conducted by video as the participant modeled using colors during writing instruction in their classroom. Since COVID remained a concern, I did not go into the classroom but viewed the demonstration using ZOOM calls from a different location. Information gathered from observations was used to answer RQ 1. Observations allow the researchers to observe the study's phenomenon as it naturally occurs, giving them first-hand experience to evaluate (Merriam & Tisdell, 2016). An observation can complement an interview by providing new understanding and data for the study (Yin, 2018). To be considered data, a systematic recording of an observation must occur (Fetters & Rubenstein 2019). Observations happen in the environment where the phenomenon takes place (Merriam & Tisdell, 2016). Direct observations provide added understanding about a topic and complement the participants' interviews (Yin, 2018). Before the observations, researchers must determine which of the following items to include in their notes about the observation: the physical setting, the participants, activities, interactions, and conversations (Merriam & Tisdell, 2016). During the observation, the participants demonstrated how they would teach students how to write. Field notes were taken that described what was happening as well as my reflections about the

observation were recorded. While the research questions serve as a guide for observation, the researchers are free to record any information they believe is relevant to the study (Fetters & Rubenstein, 2019). Saldana (2016) encouraged the researcher to analyze the artifacts in the setting as they provided details about the participant and environment.

As recommended by Creswell and Poth (2018), observations were conducted from a nonparticipant position, which allowed me to watch from a distance and not interact directly with the activity or individuals. Video and audio recordings were used to record participants teaching writing and to document my thoughts and observations. Using digital recordings, a researcher can create analytic memos that focus on different details of the observation when reviewing it multiple times (Saldana, 2016). During observations, researchers record field notes to provide in-depth details and to remember events that occur; therefore, the notes must be factual, accurate, and without bias (Yates & Leggett, 2016). Therefore, I wrote descriptive and reflective field notes using the observation protocol located in Appendix F. First, I noted the instructional tools the teacher used during instruction. The teacher's physical actions were described. Finally, I detailed what colors the teacher used and how those colors are used to address specific skills.

Data Analysis

Data analysis of a qualitative case study requires the researcher to pull apart the data and then combine it to determine meanings relevant to the issues (Creswell & Poth, 2018; Shkedi, 2005). Qualitative research involves the researcher looking for patterns and themes that emerge from their findings (Bloomberg and Volpe, 2012; Merriam & Tisdell, 2016). While looking for patterns and themes, I used memoing and coding to record my thoughts about the material. During data analysis, memoing allows the researcher to make notes regarding links between concepts and codes (Bailey, 2007). Analysis for a multiple-case study happens in two stages: the

within-case analysis and the cross-analysis (Merriam & Tisdell, 2016). First, the researcher uses the within-case analysis to focus on a comprehensive description of each case followed by a cross-case analysis where the researcher looks for similarities and differences between the cases to find themes that fit all the cases (Creswell & Poth, 2018; Merriam & Tisdell, 2016). Finally, the information from the cross-case analysis was synthesized to make assertions and generalizations of the findings that apply to all cases (Creswell & Poth, 2018; Merriam & Tisdell, 2016). By using cross-case analysis, I wanted to find how the cases are similar and different. The cross-case analysis allows researchers to identify the common relationships among cases and how the cases differ (Stake, 2005). Lunenburg & Irby (2008) suggested creating data matrices to compare the data between cases.

To ensure that the analysis of interview transcriptions was not limited, the researcher checked the transcriptions against the audio of each interview (Creswell & Poth, 2018) and had participants complete a member check. When errors were found, the necessary corrections and additions were made to the transcriptions. While reading the data, notes were taken, and summaries were created for each transcription of interviews and observations. As the transcripts were read, memoing and coding occurred. Finally, the code was condensed into themes that were analyzed.

To organize the data for analysis, a spreadsheet was created, which aided in locating information efficiently (Creswell & Poth, 2018). Each row on the spreadsheet was dedicated to one participant, while multiple columns were used for the following categories: demographics, interviews, documents, and observations. In addition, a row for each question and its answers was used for the interview section. By creating a spreadsheet, I could identify differences and commonalities in the teachers' perspectives regarding using colors when teaching writing.

Once each transcription was completed, it was read thoroughly to identify small categories of information to be coded (Creswell & Poth, 2018). When a researcher moves from data collection to data analysis, they code the data into a word, phrase, or sentence representing specific aspects of data (Clark & Veale, 2018). Saldana (2016) emphasized that the coding method should be aligned with the research questions. Because coding breaks down the data into the smallest unit, the researcher uses the code to find connections between different pieces of data (Holley & Harris, 2019). While a code is often a significant word or phrase, it can also act as a prompt that causes the researcher to reflect on the deeper and more complex meaning it reveals (Saldana, 2016). Holley and Harris (2019) recommended that the researcher reviews the code several times and adjusts as needed. The codes should be combined to determine themes about the issue (Creswell & Poth, 2018). Creating code occurs when the researcher notices repetition and patterns across the transcripts of interviews and observations (Buetow, 2010; Guest et al., 2012).

When analyzing the documents from each participant, I noted similarities and differences in the use of colors (see Appendix H). I evaluated if a teacher used a color consistently or randomly. I also determined what writing skills were being targeted using colors. By analyzing the documents created during writing instruction, the data helped answer RQ1. Finally, the data collected from the documents was evaluated against the data collected during interviews and observations.

Trustworthiness

Trustworthiness can be defined as the amount of rigor and honesty the researcher demonstrates regarding the research procedures and study results to the reader (Pratt et al., 2020). To establish trustworthiness, the researcher must explicitly and methodically describe

how each research study step is performed (Yin, 2016). In addition, researchers can show others the validity of their work by providing credibility, dependability, confirmability, and transferability. For the credibility of a study to be successful, the researcher must use triangulation and participant feedback as well as peer review. The more trustworthy a study is, the more likely future researchers will be able to replicate the study (Pratt et al., 2020).

Credibility

For a study to be credible, the reader must have confidence that the data and its interpretation are believable (Major & Savin-Baden, 2010; Whittemore et al., 2001). The credibility of a study occurs when the researcher demonstrates that data have been collected and analyzed correctly (Yin, 2016). Triangulation and participant feedback are two ways a researcher can ensure credibility for their study. To ensure the accuracy of the data, triangulation is required. The data were triangulated using method triangulation and data source triangulation. Triangulation is the process of confirming information from at least three different sources (Creswell & Guetterman, 2019). Method triangulation requires several methods, such as interviews, observations, and document analysis, to collect data about the study's topic (Carter et al., 2014). For data source triangulation to occur, data must be collected from different individuals to gain multiple perspectives on the same topic while gaining validation for the data (Carter et al., 2014). For example, using multiple methods to gather information for this study, the data can be triangulated to show that evidence for codes and themes can be found in different sources (Creswell & Poth, 2018).

Through member checking, a researcher can validate the findings by consulting with the participants during the analysis (Saldana, 2016). According to Creswell and Guetterman (2019), member checking is a process used by researchers to ask participants if the themes identified by

the researchers are accurate. Allowing participants to provide feedback about the study's findings and interpretations enables the researcher to analyze the data accurately (Baxter & Jack, 2008; Creswell & Poth, 2018; Gall et al., 2007). Participants for my research were given a transcribed copy of their interview to confirm the accuracy or make corrections to those documents on a member check form modeled after one developed by Yocum et al. (2015; see Appendix J). If the participants identify discrepancies, errors must be corrected, and the report may need to be rewritten (Gall et al., 2007). Finally, credibility was developed by stating the biases and experiences researchers bring to a qualitative study about the phenomenon (Creswell & Poth, 2018). I have described my experiences in chapter one and my biases in chapter three of this proposal. Using peers to evaluate the research process and data also help to ensure credibility (Major & Savin-Baden, 2010). Yin (2018) recommended discussing the questions that an individual is trying to study with a colleague for the study to be conducted correctly. By having peers examine my study during data analysis, I received constructive criticism about my coding process to determine if I was making plausible decisions about my findings based on my data.

Dependability and Confirmability

For a study to have confirmability, the results must be confirmed by others (Lichtman, 2014). As the researchers reread the data collected, they memoed ideas and key phrases to synthesize the information analytically (Creswell & Poth, 2018). Memoing and keeping a log book help to create an audit trail because it shows the development of ideas as the researcher analyzes the data (Creswell & Poth, 2018). The reasons for deciding what information to include and exclude in the findings should also be recorded in the logbook (Creswell & Poth, 2018). I had my participants and peers confirm the data collected and analyzed. Dependability and confirmability require detailed notes from the study's beginning to end. All data collected during

the study will be kept for at least three years, making it available for others to inspect (Gall et al., 2007). Creswell & Poth (2018) urged researchers to have an auditor with no connection to the study examine the process and product for accuracy. The auditor will determine if the data support the findings of this study.

Transferability

Transferability implies that findings may be applied to similar situations (Major & Savin-Baden, 2010). To ensure that other researchers can transfer the research to their study, researchers must richly describe the context and strategies that make the findings applicable to different settings (Holley & Harris, 2019). By providing step-by-step documentation of the study, other researchers can follow the original researcher's procedures when replicating the study (Bloomberg & Volpe, 2012). In Chapter 3, I have detailed my plan to conduct the research for my study. When a researcher provides a detailed description of participants and settings, readers can determine if those findings can be transferred to new settings (Creswell & Poth, 2018; Gall et al., 2007).

Ethical Considerations

Before data were collected for the study, each participant was assigned a pseudonym to maintain privacy. Interviews were conducted where other individuals could not hear the conversation. I correctly reported all findings while presenting multiple perspectives (Creswell & Poth, 2018). Participants and the school district will be provided copies of the study's report (Creswell & Poth, 2018).

Two audio recording devices were used simultaneously for individual interviews and observations to prevent equipment issues and data loss. Audio recordings of observations and interviews were transcribed as soon as possible. Protecting the confidentiality of the participants

requires the storage of the data to be kept securely, making it difficult for other individuals to gain access to the information (Hammersley & Traianou, 2012). After the information was entered into a computer database, a backup copy was added to a thumb drive device which is being kept in a secured location. All collected data have been stored on a password-protected computer. Paper documentation is being held in a locked box in a secured location. At the end of three years, all data related to the study will be destroyed.

Summary

A qualitative case study was conducted in the United States by contacting primary school teachers at public schools to understand how primary grade-school teachers use colors to provide writing instruction to their students. After achieving approval from Liberty University's IRB, the participants and sites were chosen carefully. Data for this study were collected through interviews, documents, and observations of the participants. The participants were asked questions about teaching writing in the primary-grade classroom and how colors were used during writing instruction. Following data collection, the data were analyzed to establish codes and themes. Ethical considerations that protect the participants and data happened throughout the study. To ensure the trustworthiness of the study, the data collected were triangulated and examined for transferability, credibility, confirmability, and dependability.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this study is to understand how and why primary-grade school teachers use colors during writing instruction. I designed four research questions to guide the study. In this chapter, data collected for the study were examined. First, participants for the field test and the study were described. The data collected from the interview were grouped by research questions. Data were analyzed by examining the participants' answers to the interview questions, participants' demonstrations of writing lessons, pictures of documents used during writing lessons, and member checks. After analyzing the data, four themes and an outlier finding were developed.

Field Test Findings

Before conducting the study, I field-tested the interview questions through ZOOM with five elementary teachers who used colors during writing instruction. By conducting the field test with peers, I could think about how the interview questions were worded and how the participants responded. For example, I considered deleting question 13 as it was similar to question 14, but I learned that using both questions allowed participants to elaborate on their previous answers, therefore, providing new information related to the study. The field test also allowed me to practice asking the interview questions, which helped me feel more comfortable interviewing the participants. I also became familiar with using ZOOM for audio and video interviews and demonstrations by conducting field tests.

Participants

I spent several months trying to find participants through school districts in Texas, but I was unsuccessful in finding individuals to participate in my study. I contacted principals in one

school district four times, and in another school district, I contacted principals twice but got limited responses. Several school districts declined to participate in my study. After considering all my options to find participants for my research, I applied to the IRB to modify my research setting to all public schools in the United States. Once the IRB permitted me to expand my study's recruitment of participants to the entire United States, I was able to find enough participants. I posted my social media document six times on Facebook and three times on LinkedIn. In the end, I recruited one participant through a principal's introduction, two participants through social media, and nine participants through face-to-face interactions. For individuals who agreed to participate face-to-face, I emailed them with a social media post to provide them with more information about the study. All individuals were emailed a Consent Form through DocuSign. Once an individual signed the Consent Form and returned it through DocuSign, a time was selected for the interview. Each participant was sent a ZOOM link, where they demonstrated a writing lesson and completed an interview. Eleven participants submitted at least three pictures of writing documents. The demonstration of the writing lesson and the interview were recorded during ZOOM meetings. All data for this study were collected between March 2022 and February 2023.

Before providing the findings for the cross-case study, a basic profile of each participant will be given. The profile includes each participant's demographics, philosophy of teaching writing, and how they use color to teach writing as well as a demonstration of a writing lesson using colors and descriptions of documents submitted. Each participant was given a pseudonym for this study based on their participant number. Five participants taught first grade, four taught second grade, and three taught third grade. Three teachers taught in public schools in large metropolitan areas, while nine teachers taught in rural public schools. Three teachers taught in

public schools in large urban areas while nine teachers taught in rural public schools. The demographics of individuals who participated in the study were included in Table 1.

Table 1

Demographics for Participants

Participants	Gender	Pseudonym	Grade Taught	Years Taught	State	Month/Year	Interview in Minutes
1	M	Andrew	3 rd	3	TX	April 2022	21:44
2	F	Beth	1 st	27	IL	Nov. 2022	21:53
3	F	Cathy	1 st	26	VA	Nov. 2022	18:17
4	F	Diane	2 nd	<1	VA	Nov. 2022	18:55
5	F	Emily	2 nd	9 or 10	VA	Nov. 2022	16:56
6	F	Frankie	2 nd	21	TX	Nov. 2022	17:36
7	F	Gayle	2 nd	14 or 15	VA	Jan. 2023	12:20
8	F	Hannah	3 rd	6	VA	Jan. 2023	7:48
9	F	Iris	1 st	26	VA	Jan. 2023	9:00
10	F	Jessica	3 rd	20	VA	Feb. 2023	9:56
11	F	Kim	1 st	7	VA	Feb.2023	16:38
12	F	Lisa	1 st	14	VA	Feb.2023	15:22

Andrew

Working at a Texas public school in the suburbs of a large metropolitan area, Andrew teaches third grade. Andrew stated that he wants his students to have fun with writing. In third grade, many of his students think writing is daunting. “Writing more than three sentences is overwhelming,” and teachers expect their students to write a whole page. Therefore, Andrew helps his students pick something easy for them to write about: personal narrative. Andrew also finds it helpful to break writing down into steps. On the first day, the students will brainstorm. Andrew described several ways to brainstorm, beginning with drawing pictures with labels. Drawing pictures provides freedom to students who don’t have a great vocabulary. Andrew

shared that drawing pictures sometimes gives his students more ideas and begins to activate their sensory experience. Some students might write a few phrases, while others write sentences during brainstorming.

Andrew teaches his students to begin personal narratives with an attention grabber. Next, he will have his students write three or four paragraphs before they revisit their introductory paragraph to rewrite it. Andrew stressed that there needs to be flexibility when students write because some students are faster, and others are slower when it comes to writing. Andrew stated “It is ok to start over . . . If you try to make a kid write about something (and) they’re not having fun . . . that’s going to be miserable for you and the kid.”

Andrew recalled learning how to teach writing from his school’s vice principal, who helped him plan his writing curriculum. Andrew tries to teach writing three to five times a week. He stated that the students’ writing time could vary from 15 to 30 minutes, depending on the time spent on the writing lesson. “Writing is such a small portion of the day. There’s not a lot of time to always pull a group” and discuss how to improve their writing. However, Andrew takes time during the reading block to work with students in groups of two. They will read each other’s stories and talk about them while providing positive feedback.

When Andrew brainstorms during writing instruction, he will draw things in colors to make them more engaging for the students. Andrew explained that using colors to teach writing captures the student’s attention more and helps them to discriminate between things. He stated “If it’s all one color, it all looks like one blob to them. They don’t realize there are smaller constituent parts, so it’s just hoping that it activates their brains.”

Andrew decides what colors to use during writing instruction to ensure his students can see what he is trying to emphasize. For example, if he selects red for the introductory paragraph,

he might choose blue for supporting details or sensory details. Andrew also uses colors to emphasize spelling and grammar rules, so hopefully, the students will have fewer errors in their writing.

Using a smartboard, Andrew taught a grammar lesson to his students about adding suffixes to root words. The root words were written with red, blue, and black; then, the students wrote suffixes in another color using blue, black, or red. At the end of the lesson, Andrew used yellow to emphasize the suffix of a word written on the board. To review terms with suffixes, students were told to play a game on the website, Gimkit.com. Students matched definitions to words with suffixes. All words in the game were written in white that were written on backgrounds of blue, green, orange, and brown. Following the grammar lesson, Andrew reviewed sensory words with his students. As students generated sensory words, Andrew recorded words in the correct category. For example, words for smell were written in black, while words for feel were written in red. Sound words were written in blue, taste words in green, and words for sight in purple. Students were then told to incorporate sensory words into their brainstorming picture for their writing activity. Andrew did not submit the requested documents for this study, but I requested photos of the documents four times.

Beth

Having been a teacher for 22 years, Beth currently teaches first grade at a public school in the suburbs of a large city in Illinois. She believes that teaching writing is a way for students to communicate their thoughts and ideas. Beth shared:

Sometimes, I don't think that they realize that when they are talking to me or that they are having a conversation with someone else, like those words that they speak, those are the words they can actually write during writing time.

Using the common core standards to teach writing, Beth begins the school year using writing as a response to reading. Beth stated that she never asks her students to do any writing that she has yet to demonstrate because she wants her students to know what the expectations are. Beth's students have writing activities twice a week during language arts rotation. These activities often relate to the season, holidays, or current events. During these activities, students must write a sentence with at least five words that go with a picture they draw.

While Beth never really thought about the importance of colors in writing, she just knew it was important. According to Beth, "I think sometimes instinctively you change colors when you're working with kids just to make things easier for them visually or to make things stand out if you are doing a writing on chart paper." When Beth makes graphic organizers or charts to hang up in the classroom, she does use different colors so the students can see the different parts. In addition, using different colors makes it easier for the students to find the necessary information.

For her lesson demonstration, Beth used green, yellow, and red markers to write on a poster to teach transition words to her students. Transition words that could be used at the beginning of a story were written in green, while transition words that could be used in the conclusion were written in red. As a class, Beth would help students brainstorm transition words. Examples of middle transition words written in yellow included "another" and "a second idea." The poster was left up for students to look at when completing a writing project.

Beth shared five documents she used in her classroom to teach writing. She typically uses three colors for each document, which appears to signify something in the lesson. Four documents were written on chart paper with markers. These documents included the parts of an opinion paper, transition words, story elements, and a writing example of the main ideas and

details. For the opinion paper, Beth used blue for the opinion, red for the reasons, and green for the conclusion. When making the “Transition Words” chart, Beth used green for transition words that could be used at the beginning of a writing paper. Transition words in the middle were written in black beside a yellow circle. Transition words that can be used at the end of a paper were written in red. The story elements chart had a list of characters in purple, settings for places in red, and settings for the time in green. For the writing example, the title was written in red, the main idea was in blue, and the three supporting detail sentences were in green. Students are allowed to use these posters as resources during writing. Using blue, red, and green, the fifth document was written on an 8 ½ by 11-inch lined paper during a lesson about paragraph writing. Each sentence in the document was written with a marker in a different color.

Cathy

Working as a first-grade teacher in a rural public school in Virginia, Cathy has taught for 26 years. She believes teachers should make writing fun and engaging for children by selecting topics they find interesting and can make connections with. While her school district does not have a specific writing curriculum, Cathy tries to tie her writing lessons to the topics she teaches in the classroom. Cathy described the writing process she has used in her classroom, beginning with brainstorming, coming up with ideas, and creating writing webs. After reviewing sentence writing rules, students began writing one sentence with a picture. As students get better at incorporating capitals, spaces, and punctuation, students start to write more sentences.

Cathy believes using colors to teach writing is something teachers do subconsciously. Although Cathy selects the colors she uses as she models a concept for her students, she tries to pick the brighter colors, the oranges, the blues, the reds, and the greens. “When I do the anchor chart, I try to use color to draw their attention to what we are talking about. If I just wrote in

black marker the whole time, it just wouldn't catch their attention." Cathy stated that the use of colors helps engage students. "It helps to catch their attention. If it is just mono color, it is not going to be as interesting." She then elaborated "If you are making it more colorful and more inviting and engaging, they are going to be more interested in doing the writing than if you are just writing it in black and brown or whatever."

Cathy provided an example of students being engaged in a writing lesson. "The other day I was like, 'You know what? It might be easier for them if I do each sentence in a different color.'" When she did, students commented, "Ms. Cathy, you wrote each sentence in a different color. It was much easier for us to see each sentence because you wrote it in a different color."

Using a whiteboard and dry-erase markers, Cathy created a writing web about the word "cat." "Cat" was written in red and circled in black in the middle of the board. Students then would provide words to describe the cat. For example, if a child said "fluffy," Cathy would write it on the board with an orange dry-erase marker. Cathy changed the color to red when she added the word "whiskers" and to purple when she added the word "animal." Cathy wrote the words in different colors, hoping the students would realize that each word represented a different detail about the main idea. She stated that the web would continue to branch out as more words were added. Cathy would then have the students write sentences in their journals using the web.

Cathy submitted four documents that were created during writing lessons. Chart paper and markers were used for each document. While multiple colors were used for each document, colors were often used consistently for a purpose. Two documents focused on grammar lessons involving nouns. One of the lessons about nouns focused on types of plural nouns. Each type of plural noun was written in a different color: orange, brown, and blue. Red was used to circle or underline letters to draw attention to those letters. Another document focused on what a noun is:

a person, place, or thing. A picture was drawn for each section. The title for each section was in a different color than the other words in that section. Nouns for a person were written in blue and pink. Nouns for places were green, while nouns for things were blue, orange, and green. One document reviewed how questions were started and the end punctuation. Question words were in purple, while the question mark was in turquoise. The reasons for the questions were written in red. The fourth document provided information about sentence writing. Each sentence was written in a different color.

Diane

As a first-year teacher in a rural public school in Virginia, Diane feels like she does not have much experience with teaching writing; however, she thinks it is important for students “to understand what they are writing before they actually put it on paper.” Diane stated that she doesn’t teach writing as much as she likes, but she does teach it at least once a week. When she does teach writing, Diane begins by speaking out loud about her thought process as she writes to help her students understand what is happening in her head. However, students write daily in their writing journals during language arts rotation.

Diane likes using colors to teach writing because it helped her learn when colors were coordinated. When she uses colors to teach writing, Diane plans ahead of time what colors she will use for what she is teaching. Diane believes that using colors during writing helps students to connect the pieces. “A bunch of my students just love using color in general, and I feel like it motivates them to write.”

Using a dry-erase board and dry-erase markers, Diane taught a lesson about verbs, capitals, and punctuation. On the board, she wrote, “I kick the ball.” While the other words were written in black, “kick” was written in red to show what the noun was doing. Diane then used a

purple marker to underline the capital at the beginning of a sentence and put a period at the end of the sentence. She repeated this process by writing another sentence. After teaching the lesson to her students, Diane would have her students use a red crayon to circle the verbs on a worksheet. Students would then use another color to mark the capital letters and punctuation.

Diane furnished four documents she used to teach writing. Each one was written on chart paper with markers. For three documents, Diane purposely chose two colors in addition to black. One poster focused on subjects and predicates. The definition for subject was in blue, while the definition for predicate was in red. Diane used the same colors for the subjects and predicates when she wrote sentences. In the next document, Diane used the same colors to define the problem and solution; however, she wrote her example sentences in black. For the third document, Diane used blue, green, and black for predictions. The example for writing a prediction was in blue, while green was used for decoding predictions when reading text. The last document was a list of writing topics written in several colors and generated by the students. At the bottom of this document was an 8 1/2 by 11-inch computer-generated paper that provided writing topics for a particular month. Each topic also included a colorful picture.

Emily

Working in a rural public school in Virginia as a second-grade teacher, Emily has been a teacher for ten years. After becoming a teacher, Emily took a college course that opened her eyes to allowing children to become engaged in writing and have them write daily. Therefore, the children become used to writing. Emily explained, "My kids have a pretty good attitude about writing, but I think that is because I really enjoy teaching it." She also stressed that students should be given choices about what they want to write. Although she uses the standards of

learning to guide her writing lessons, Emily takes things she has learned over the years and has created the way she teaches writing.

Emily described what she considers an ideal week of teaching writing. On Monday, Emily selects a book to read to her students, then the students brainstorm writing ideas associated with the book. Students would begin writing a rough draft based on their brainstorming ideas on Tuesday. Then on Wednesday, students would finish their rough draft and add details. Students edit their writing on Thursday. On Friday, students would write a final draft and illustrate their writing. Emily encourages her students to complete the writing portion before they begin their illustration.

Using colors can be a huge benefit if students are taught a system they can use the entire school year because they get into a rhythm of knowing what each color means, according to Emily. In her classroom, Emily uses black because black is usually already on their paper. Emily tells her students they don't have to copy what she writes in black because it is already on their paper. Students are required to copy everything she writes in blue. Emily uses blue because she likes that color. Emily uses red because it pops out. During brainstorming activities, Emily will write in red, which signals to the students that these are choices from which they choose for the writing activity. Emily stated that she doesn't think she ever really used any other colors. However, upon examining the documents submitted by Emily, I noticed that she also used green on two documents.

Using a dry-erase board and a blue marker, Emily taught a lesson on vigorous verbs. First, the teacher and students brainstormed a list of 18 verbs. The list included the words: cuddle, nibble, slither, and squeeze. Emily wrote the verbs in blue because she wanted her students to copy the verbs in their writing journals.

Four documents submitted by Emily were written on a smartboard with a stylus. The first document began with “I am thankful for _____ because _____” written in blue. This was followed by a list of 20 items written in red. An example of using commas in a series was written in green at the bottom of the board. The second document was a rough draft written in blue on the smartboard. The rough draft was edited in green. The third document was a retelling of a story written on the smartboard. The beginning, middle, and end were written in black. Beside each black word was a sentence written in blue. The fourth document listed ways students could help their community and country. Students brainstormed the list for a writing activity. “My community” and “My country” were written in black, and the information the students had brainstormed was in blue. Emily also submitted a fifth document of a word wall students could use for writing. Words written in black have been added to the word wall on Post-it notes. Post-it notes were yellow, blue, and pink.

Frankie

Currently working as a second-grade teacher in a Texas public school in a suburb of a large metropolitan area, Frankie has been a teacher for 21 years. Frankie stated that she loves hearing her students say, “Is it writing time yet?” “That tells me that something is going right in here. Where they are enjoying the freedom of just being able to voice their ideas and be creative with their stories.” Frankie believes every day should be a writing instruction day. In her classroom, writing has a 45-minute block. When she teaches writing, she usually begins by reading aloud a book. After reading the book, she and the students brainstormed about a small-moment story related to the book. Next, students brainstorm about small moments from their lives that could be a topic for writing. Then, Frankie begins to model writing a small-moment story of her own. Finally, the students will try writing their ideas out on their own.

Frankie described her use of colors during writing instruction as superficial and incidental. Frankie shared “When I do an anchor chart, I have certain colors that I like to use, but it doesn’t mean one single thing. It is just colors that I feel make the content stand out.” However, Frankie does not use yellow or pink on anchor charts. From time to time, Frankie will run materials for her writing lessons on colored paper for a change of scenery or the novelty of the experience.

Frankie’s students have access to black and blue pens for writing activities. She has seen her students using the blue pens; however, “they aren’t doing anything special with the blue pens.” Frankie stated that if she knew more about using colors in writing, she would love to see what impact colors would have on her students’ development as writers.

Frankie began the demonstration by discussing her expectations for her students as writers. She talked about writers might want to write about an entire vacation, but that might be too long of a time to write about because it would not have enough details for the readers; therefore, as writers, her students should focus on one moment in time called a small-moment story. Next, she read the book, “Night of the Veggie Monster,” which takes place during one meal. She discussed how the story took place during a short time and how the author was able to include a lot of detail. Next, Frankie and her students picked out all the details from the “Night of the Veggie Monster.” Then Frankie discussed how the students could use anything from their daily lives to write about. Frankie brainstormed with her students and made a small-moment list with them from which they could choose a topic. Frankie modeled for her students how to write a small-moment story as she wrote about a breakfast she had eaten. She used red, green, yellow, and purple to color-code the paragraphs. Students then began working independently on their own small-moment stories.

Frankie provided four documents. Three documents were created using chart paper and markers, while the fourth document was a computer-generated graphic on 8 ½ by 11-inch paper. The first document on chart paper was titled “Literary Language” and featured similes and idioms that students could use in their writing. Similes were written in turquoise, while idioms were written in red. Definitions for idioms were written in black. The second chart paper was a Venn diagram comparing cats and dogs. Facts about dogs were written in red, while facts about cats were written in blue. Facts about both cats and dogs were written in green. This document was created as a brainstorming activity before students began a writing assignment. The third chart paper was a friendly letter. The date was in orange, while the greeting was in purple. The body of the letter was written in red, with the closing in turquoise. The color black was used to draw attention to capitals and punctuation. The fourth document was a bubble map with the word “Noun” in the middle and “adjective” extending in four directions. All the bubbles were in different colors.

Gayle

Gayle teaches second grade at a rural public school in Virginia. Being in education for 15 years, she believes that all children can write once they learn how to transfer the ideas in their heads onto paper. While Gayle follows the state learning standards, she is responsible for creating her lessons. During the writing block in her classroom, Gayle spends a lot of time modeling her expectations for writing. Gayle explained “We talk about what we are going to be doing. We generate some ideas together, we brainstorm, and then I do one on the board for them.”

When creating an anchor chart to teach a concept, Gayle likes to make them colorful. “There is a reason I did them that way . . . to distinguish between things. So, verbs might be one

color; nouns might be another color.” While she acknowledges that she does not have a method when selecting the colors she uses during writing instruction, Gayle stated that she picks two contrasting colors to help her students distinguish between two things. She believes that using colors can be beneficial to students’ learning. For example, by using a specific color for nouns, Gayle can make sure her students understand what a noun is. Gayle explained why she used colors. “Maybe they would want to learn a little bit more if it is colorful. I like to look at colorful things, you know? I want to make it as enjoyable as I can for them.”

During her demonstration, Gayle began by reading *The Important Book* by Margaret Brown. Then Gayle modeled to her students how to brainstorm things that were important to her. She drew a black heart and wrote each word in a different color. Next, she directed her students to brainstorm a list of important things using their favorite colors. Finally, Gayle modeled how to write a paragraph about one of the ideas from her brainstorming activity; however, she stated that she wrote that paragraph all in black. Then, Gayle had each of her students select an idea from their list and write a paragraph.

Gayle submitted six writing documents where colors were used. Three documents were word banks that focused on a grammar topic students could use in writing. Topics for these documents were verbs, nouns, and adjectives. One document provided tips that students should use during writing, while another provided topic ideas for writing. The final document showed the beginning, middle, and end of a writing paper. The tools used to create all the documents consisted of chart paper and markers. Three of the documents included a drawing of a child. While all six documents were colorful, specific colors were not used consistently for a particular purpose.

Hannah

Hannah, a third-grade teacher, works at a rural public school in Virginia. She has been a teacher for six years. Hannah explained that all students start with their strengths and weaknesses in writing. Some students prefer writing because it allows them to be creative, while others do it because they have to do it. We all need good written communication skills, according to Hannah. Hannah incorporates the standards of learning for her state into the writing curriculum that she develops for her students. In Hannah's classroom, writing is taught once or twice a week, but students practice writing for at least 15 minutes daily.

Hannah spends the first half of the year assessing her students' editing and spelling skills and learning their endurance level for writing. During the first quarter, most students start the school year with the ability to write a cohesive sentence, so Hannah focuses on teaching them how to build a paragraph. Hannah also focuses on grammar, capitalization, punctuation, and vocabulary building during the first quarter. When she has her students write, Hannah tells them to write about whatever they want as long as it is school appropriate. "Tell me your life. Tell me your stories. Make stuff up. Make me a story," Hannah said. During the second quarter, she begins teaching her students the writing process. Students begin brainstorming, writing a rough draft, editing, revising, and completing a final draft that they can write or type.

Hannah instructs her students to use colors to dissect their writing. For example, after students write a paragraph, they will use one color to identify the main idea while using another color to identify supporting ideas. Students can choose the colors they use during a writing activity if they implement them correctly. She stated, "They don't always love it, but it helps them to connect better to other parts of the curriculum." Hannah believes using colors to teach writing makes writing more engaging and attracts the eye.

For her demonstration, Hannah posted a proofreading activity on her classroom smartboard. As students identified mistakes in the text on the smartboard, Hannah used a stylus to mark the mistakes in green, yellow, and tan before correcting the text in black. Students wrote the exact text in their writing journals earlier, using colors of their choice to identify the mistakes.

Hannah shared four documents she had created to teach students how to write. All the documents created by Hannah were written on chart paper with markers. Three documents focused on a particular type of writing: organized paragraph writing, friendly letter writing, and researching informative paper writing. The text for the organized paragraph writing paper was black, while a different color was used to identify each sentence. Three colors were used for the friendly letter document. The title was green while the letter was blue, and definitions for parts of a letter were in red. Hannah only used two colors for the research informative paper document. Green was used for the title, numbers for each sentence, and underlining important words. All sentences were written in black. The fourth document focused on examples of using commas in a series. The title and commas were in red. The sentences were written in blue. Green was used to separate the sentences. After examining the teacher-created documents, it appears that Hannah thought out how to use each color as she created each document. She also submitted two examples of students' work when colors were used during writing.

Iris

As an educator for 26 years, Iris currently works as a first-grade teacher in a rural Virginia public school. Iris stressed that children must know their letters and sounds to form words before writing sentences. Writing sentences “is just a process that we have to teach and continually practice. We practice it with the spelling words.” Iris stated that she thinks writing is

more embedded in the lessons she teaches than as a subject by itself; however, she does teach it at least once a week during spelling. When modeling how to write sentences, Iris emphasizes using capital letters at the beginning, spaces between words, and punctuation at the end of a sentence.

When modeling writing on the board, Iris uses colors to draw her students' attention to something. However, she does not have a consistent way that she uses colors when teaching writing. Sometimes, she will write one sentence in one color, then write the following sentence in another color. Next, students will use different colors to circle capital letters, spaces, and punctuation. Iris stated that using colors in writing helps her students to focus and not get overwhelmed with all the words.

Iris demonstrated how she models writing a sentence on the whiteboard. First, she said the words for the sentence "The cat is black" out loud while counting the number of words on her fingers. She then drew four lines on the board in black. Next, Iris reviewed what a sentence begins with before writing the word "The" on the first line. At the same time, she reminds the children how to spell the word "the." While writing the word "cat" on the next line, Iris sounded out c-a-t. As the teacher continued to write "is" and "black," she also sounded them out. With prompting, the students tell Iris to add a period at the end of the sentence. Students were then selected to come up to the board, select a color, and mark where the capital letter was, where the punctuation was, and where the spaces should be in the sentence. While Iris wrote the lines and the sentence all in the same color, the capital letter and period were circled in two different colors, while the line between words to show spaces was in a third color.

Iris provided six documents that she has in her classroom to teach writing to her students. One document that described what a writer does during writing was written on yellow

construction paper with a green marker. Two documents were typed and printed on 8 ½ by 11-inch paper. Those documents focused on what makes a good sentence: capital letters, spacing, and punctuation. While most of the documents were in black ink, the colors purple and green were used on these documents to draw attention to certain words. Chart paper and markers were used for the other three documents. One document provided words in multiple colors that students could use in their writing, while another used colors for irregular plural words. The last document was created to teach students about questions. The colors used on this paper each served a purpose.

Jessica

As an educator for 20 years, Jessica teaches third grade in a rural public school in Virginia. Writing instruction occurs every day in Jessica's classroom. Jessica stated that she models the writing process more than she teaches it. After she finishes modeling the writing objective for the day, her students get to practice it. Using the writing process, Jessica and her students work through different topics, from brainstorming until a final draft is completed.

Jessica thinks she doesn't use colors to teach writing on purpose. When she does use different colors, she does it so her students can see different things better. If she wants her students to remember something, Jessica will use different colors. Using colors makes things stand out. "I have no rhyme or reason as to which colors I am using," Jessica said. "I just make sure I pick a different color." Jessica also allows her students to use colors to highlight their writing during editing because the color will jump out to them when they write their final draft.

Jessica demonstrated how she taught a lesson to her students about abbreviations for the days of the week and the months of the year. For the lesson, Jessica created three computer-generated documents on 8 ½ by 11-inch paper. Each of these documents was bordered in green

with the titles in blue. The names and abbreviations for the days of the week and months of the year were in black. After using these documents to give direct instruction to her students, Jessica collaborated with her students to complete an activity sheet with the abbreviations. Students decided on the answers, then Jessica wrote the responses on the whiteboard with dry-erase markers. The answers were written in alternating colors to make it easier for the students to copy them onto their papers.

Jessica provided four pictures of examples of using colors during writing lessons. One picture showed students how to add transition words into their writing. The teacher had written on the whiteboard with dry-erase markers. While most of the writing was in black, the words “opening sentence was in green as well as the word “next.” Two documents were created with chart paper and markers. One of these documents described what complete sentences are. Each sentence was written in a different color. The other document on chart paper was a grammar lesson about using “me” and “I.” Each sentence was written in a different color, but “I” and “me” were inserted into each sentence using brown. The fourth document was a computer-generated document on an 8 ½ by 11-inch piece of paper that reviewed root words and affixes. Root words were printed in blue, while affixes were in different colors.

Kim

Kim, an educator for seven years, teaches first grade at a rural public school in Virginia. “I love teaching writing,” said Kim. She continued “I think my kids are amazing writers. I love to see their progress, and I love to see what they come up with. And I especially love when they do a free write.” When Kim teaches writing, she likes to be direct and clear while building on foundational skills. “Everything you do is to get them ready for the next step,” Kim stated. She

elaborated “It’s not something that they are definitely going to grasp all at once in first grade. So, it’s definitely a process we do throughout the year. It’s an ongoing process.”

Each day, Kim spends 20 minutes on explicit writing. She tries to keep her writing instruction to under five minutes because she wants her students to have time to do their writing, to think about it, to add pictures, and to make any corrections they need to make. Kim likes to use visual aids when she teaches about prewriting or the brainstorming process. Next, Kim takes her students through the rough draft process. She provides examples or posters for those steps and has her students practice going through those steps. When Kim teaches her students to make corrections in their writing, she uses the term “editing” to ensure that writing vocabulary gets into her students’ brains. Kim has also provided a clip chart for her students to visually see where they are in the writing process.

When Kim uses colors to teach writing, she usually sticks with the basic colors and likes to use contrasting colors. Kim declared that red and blue are the most common ones she usually grabs for writing instruction. Kim continued that she has used color for simple things. For example, if the students were instructed to include sight words in their writing, she has her students go back and highlight or underline them in color. Another example Kim gave is when her students are instructed to use nouns and adjectives in their sentences. She has them write the nouns in blue and the adjectives in red, which Kim believes makes the information stick in her students’ minds.

Kim stated, “Kids love color. It is eye-catching.” Color helps children to organize information visually. While Kim doesn’t think color changes her students’ writing ability, she believes they are more engaged when using colors to write than just black and white. “When I

pull out my colored markers, they are definitely excited that they get to use the fun colors. They will ask for a certain color, so they get to use their favorite color.”

Using a whiteboard and dry-erase markers, Kim demonstrated how she would teach a brainstorming lesson with her students. In the center of the whiteboard, she wrote the word “love” in purple. She drew a line from it and wrote “dog” in green. Attached to the word “dog” with lines were the words “cuddly” and “fun,” also written in green. Next, Kim used a blue dry-erase marker to write the word “mom,” which was attached to the word “love” by a line. Kim wrote a sentence about one of the things she loves. She spoke the sentence she planned to write, then counted the number of words she wanted to write. After Kim wrote the sentence in blue, she underlined the diagraphs in green and the blends in red. She then encouraged her students to draw a picture using realistic colors to go with the sentence.

Kim shared six pictures of documents she created during writing lessons. Four of her pictures were about nouns. To make these documents, Kim used chart paper and markers. One document was about common and proper nouns. Kim used the same color to match common and proper nouns. She used the colors: red, light green, dark green, orange, light blue, dark blue, and purple. Another document focused on singular and plural nouns. All words were written in black, but the “s” at the end of words was underlined in red. The third document submitted was about irregular plural nouns. Again, Kim used the same colors to match singular nouns to their corresponding plural noun. The colors used were red, blue, orange, and purple. For the fourth document, Kim defined a noun as a person, place, or thing. Titles were written in black, and nouns were written in purple. For each type of noun, Kim drew a picture. Kim also included a picture of a computer-generated 8 ½ by 11-inch document about question words. When the question word was used in a sentence, it was red, while the rest of the sentence was in black.

Each question word had a picture to help the students understand its meaning. The sixth document showed twelve sets of sight words on different colors of laminated paper. The laminated papers were the size of a 3 by 5-inch card. While the words were written in black, the laminated papers were red, blue, green, pink, orange, purple, and yellow. A ring held together each set of sight words. Students are allowed to use these sets of sight words when writing.

Lisa

Having worked as a teacher for 14 years, Lisa teaches first grade at a rural Virginia public school. Lisa believes that being able to write is very important as any other subject because it is a life skill. Therefore, she incorporates writing into math, social studies, and science. Lisa shared that her students spend a good chunk of the day writing. Her language arts block is broken into two parts, and writing is incorporated into both sections.

“If everything is all in black, . . . a kid’s eyes can get lost,” stated Lisa. Therefore, she often uses colors for organization. “If I want something to stand out, (I) use a bright yellow highlighter or just colors that go together.” By using different colors, Lisa’s students can differentiate what they are working on. Children generally have positive attitudes toward using colors. “They want to get the highlighters out,” Lisa declared. Lisa also believes that using color is fun and more appealing to the eye. When color is involved, Lisa thinks it helps her students to be more motivated when writing.

Lisa demonstrated how she reviewed nouns and verbs with her students. For example, she said “stapler,” and students would tell her if it was a noun or verb. Since it was a noun, she wrote it in blue. Next, Lisa said the word “jumped,” which the students identified as a verb, so she wrote it in purple. She repeated the process by saying a list of words that the students as a class identified as nouns (blue) or verbs (purple). Once the activity was completed, Lisa had her

students select a noun and a verb from the lists on the whiteboard. Then, students wrote a sentence using the words they chose. They used a blue crayon to write the noun and a purple crayon for the verb with the rest of the sentence written in pencil.

For writing instruction, Lisa submitted three pictures of how she used colors. The first picture was a list of words written in four different groups. Each group was a different color: pink, blue, orange, and green. Students could refer to these words during writing. Another document was a computer-generated document on a smartboard. The teacher modeled how students could highlight sight words in their writing using red, pink, purple, green, yellow, and blue. The third picture was a student's example that focused on finding their sight words in writing. The student used green and red to mark the sight words.

Results

Data were collected using three methods to understand how and why primary grade school teachers use colors during writing instruction. First, I interviewed all participants about how and why they use colors during their writing instruction. All participants also demonstrated using colors during writing instruction to teach a lesson. Next, participants submitted more than 50 documents that showed how colors were used during writing instruction. Tables and figures compared the information provided by the participants. Then, the interviews, lesson demonstrations, and documents were analyzed and coded. After the data were coded, four themes and an outlier finding were developed. The enumeration table in Table 2 shows the frequency of the open codes found in the data and how those codes relate to the themes. The enumeration table was fashioned after an enumeration table created by Yocum et al. (2015). Finally, all participants were sent a transcript of their interview and a member check to ensure credibility and accuracy.

A theme was developed for each research question. Theme 1 discussed the methods and tools that teachers use when using colors to teach writing. Theme 2 stated why teachers used colors when teaching writing. Theme 3 revealed that teachers need more training in teaching writing and how to use colors to teach writing. In theme 4, teachers perceived that students respond positively toward using colors during writing instruction as it helps them focus and find information. However, an outlier finding was developed through the interview question about the disadvantages of using colors during writing instruction. Teachers expressed that using colors during writing instruction could negatively impact some students.

Table 2

Enumeration Table for Codes Related to Themes

Open-Codes	Enumeration of open-code appearance across data sets	Themes
Brainstorming	16	Methods Teachers Use to Teach Writing with Colors
Modeling	13	
Sentence and Paragraph Writing	20	
Writing Across Curriculum	5	
Instruction Time	19	
Writing Process	6	
Using Markers on Paper and Whiteboards	27	
Grammar	15	
Color Choice	7	
Electronic Devices	11	
Create their curriculum Requirements	10	
Distinguish Between Things	19	Purposes of Using Colors for Writing Instruction
Focus	6	
Enjoyment	3	
Positive Attitude	2	
Captures Student's attention	12	
Organization	3	
Make Connections	3	
Engagement	7	
Mentor	2	
No training in college	11	
Training in College	2	

No training as a professional	18	Training Received for Teaching Writing and Using Colors for Writing
Professional Development	6	
No Schoolwide support	12	
Teammates	2	
Student use of colors	11	
No student use of colors	3	Assessing Student Performance
Engagement	7	
Excitement	7	
Improves learning	6	
Positive Attitude	4	
Focus on Colors and Not Concept	4	Negative Effects of Using Colors
Color-blindness	3	
Distraction from Too Many Colors	6	

Methods Teachers Use to Teach Writing with Colors

After reviewing the data from the interviews, lesson demonstrations, and submitted documents, I learned that all teachers who participated in the study used colors to teach writing in various ways. Teachers used colors when teaching grammar, spelling, sentence writing, and the writing process, which included brainstorming and editing. Participants use whiteboards, smartboards, chart paper, 8 ½ by 11-inch paper, and Post-it notes to write on during writing instruction. Documents were created with markers, printer ink, or a stylus. While they used colors during writing, most teachers did not have a plan on which colors to use when they were creating documents. The colors teachers use to teach writing varied greatly, with one teacher using six colors and another using ten colors.

Purposes of Using Colors for Writing Instruction

Reasons why participants use colors to teach writing varied. Some participants used colors because they visually captured the students' attention, allowing them to discriminate between things and making writing easier. Other participants used colors to organize. "I just try to use a different color when I want something to jump out more or be more noticeable," declared Participant 10. Participants also used colors for writing instruction because they felt

students were more engaged in the activity. Participant 3 stated “If you are making it more colorful and more inviting and engaging, they are going to be more interested in doing the writing than if you are just writing it in black and brown or whatever.”

Training Received for Teaching Writing and Using Colors for Writing

During the interview, participants expressed that they received no training on using colors to teach writing; however, they all used colors in writing instruction. Participants learned on their own how to use colors during writing instruction. When talking about the use of colors in writing, participant 3 stated, “There’s not really any guidelines, or it’s not really anything that anyone really mentions. I think we just kind of do it on our own.” Participant 2 explained how she thinks teachers start using colors in writing. “I think sometimes instinctively you change colors when you're working with kids just to make things easier for them visually or to make things stand out.” Teachers also reported they did not receive guidance on teaching writing before becoming a teacher. While a few teachers have taken some courses for teaching writing, most participants have had little support teaching writing and were responsible for developing writing lessons.

Assessing Student Performance

Participants addressed students’ writing performance by talking about students’ attitudes and abilities. First, when colors are used during writing, students are more engaged and have positive attitudes. According to Participant 11, “If they get to use colors, they are more engaged.” Participant 10 declared, “I think they enjoy it because it is a little different than just using the everyday old pencil, they use all the time.” Participant 7 presented the same opinion in another way, “I do think that it does make it more interesting for them than just regular paper and pencil. . . maybe not so bland. Maybe they would want to learn a little bit more if it is colorful.”

Participant 1 said, “I think if they think writing is boring, which at this point a lot of them still do, then at least they get engaged.”

Next, participants explained that students could find information easier and focus better during a writing lesson. “They can see the colors they need to fix when they are writing it as their final draft,” Participant 10 stated. Participant 1 declared, “That it captures their attention more and so that they can discriminate between things . . . If it's all one color, like it all looks like one blob to them, they don't realize there's smaller constituent parts.” Participant 9 explained, “It helps them focus and not get overwhelmed as much with all of the words.” Participants 1 and 4 thought using colors in writing appeals to artistic students and visual learners.

Outlier Findings

The fifth finding does not apply to the research questions but addresses issues teachers should consider when using colors in writing instruction. For example, when discussing the disadvantages of using colors, some participants thought too much color could cause students to become overstimulated. Other participants believed the use of colors during writing would not be beneficial to students who have color vision deficiency. Another concern for participants was that students might focus too heavily on the colors rather than the concepts for writing.

Member Checks

All 12 participants were emailed member checks (Appendix L) along with transcripts of their interviews. The member checks asked each participant to review the transcript of their interview and make corrections if needed. The member checks also included the four themes and an outlier that were found when the interviews, demonstrations, and documents were analyzed. Eleven participants returned their member checks. Participant 8 did not respond to two emails that were sent. Nine participants strongly agreed that their transcripts were accurate. For theme 1,

nine participants strongly agreed, and two participants agreed. After reviewing theme 2, nine participants strongly agreed, and two participants agreed. For theme 3, ten participants strongly agreed, and one participant agreed. For theme 4, ten participants strongly agreed, and one participant agreed. Finally, nine participants strongly agreed with the outlier finding, while one participant strongly disagreed. The data collected on the member checks from each participant is detailed in Appendix M.

Research Question Responses

Before the themes could be determined, research had to be conducted to collect data for the research questions. Data were collected by conducting interviews, observing demonstrations, and analyzing written documents. Table 3 shows which research methods were used to answer each research question.

Table 3

Research Questions as Applied to Methods

RQ #	Interview	Demonstration	Documents
1	Yes	Yes	Yes
2	Yes	No	No
3	Yes	No	No
4	Yes	No	No

Note. This chart shows the triangulation between the research questions and the methods used to collect data.

RQ1: How do primary grade school teachers use colors to provide writing instruction to their students?

Interview questions 1, 6, 7, 9, and 10 address RQ 1. Interview question 1 allowed each participant to explain their philosophy about teaching writing to their students. Several participants chose to explain how they teach writing by describing the process or a lesson in

questions 1 and 6. These two questions allowed participants to reflect on their writing process before discussing their use of colors in teaching the writing process in their classroom. The participants' philosophy about teaching writing often paralleled how they taught writing to their students. Eight participants discussed using brainstorming during writing lessons. Six participants discussed modeling or talking through the process of writing. Seven participants mentioned editing or mechanics as part of the process of writing. Reading and writing are connected according to four participants.

Six participants talked about students including pictures with their writing. Two participants talked about colors briefly during questions 1 and 6. Participant 1 stressed that pictures should be used during the brainstorming process, because it activates their sensory language, which makes writing more inclusive for ESL students and students with dyslexia or are autistic.

Participants explained how they use colors during their writing instruction to their students. Participant 1 used colors during grammar lessons and brainstorming pictures. Two other participants (4 and 5) also stated they use colors for brainstorming. Eight participants (2, 3, 4, 5, 6, 7, 10, and 11) indicated that they used colors during writing for anchor charts or graphic organizers. Colors are also used to indicate whether a student should copy or can make a choice, according to Participant 5. Participant 8 uses colors for word work, editing, and color-coding paragraphs into the main idea and supporting details. Participant 9 uses color throughout the writing process. For example, to separate sentences and to identify capitals, spaces, and punctuation. Participant 11 uses colors to identify parts of speech and sight words. Organization is the reason Participant 12 uses colors.

Participants fell into three groups when asked how they decided which colors they used during writing instruction. Two participants decided what colors they would use before writing instruction. Four participants choose colors as they are modeling. Five participants just chose colors that they liked or were contrasting. Participant 6 explained how she chose the colors. “Red and blue are just the most common ones, and that is what I usually grab first.”

At the end of her interview, participant 2 shared that she had never considered the importance of colors in writing or that they could be beneficial in any way, but she knew it was important. “I never really thought anything more about it until I started these conversations with you so now, I am actually becoming more mindful about it,” participant 2 stated.

When answering question 9, participants explained how much time they devoted to the writing process. The amount of time participants teach writing each week varied immensely. Participants 4 and 9 said they teach writing at least once a week. Participant 2 explained that students write in her class twice a week. Writing occurs every day in the classrooms of nine participants. Participant 12 stated that writing takes up “a good chunk of the day” as she uses it in reading, math, social studies, and science. Participant 11 tries to limit the writing instruction to five minutes daily. She explained “I like my portion to be as short as possible because I want them to have the most amount of time to do their writing, to think about it, add their pictures, and have time to make any corrections.”

Observations and written documents also supported the findings for research question 1. All participants demonstrated how they would teach a writing lesson using colors to their entire class. Four participants demonstrated a brainstorming lesson for writing followed by a sentence or paragraph writing activity. Four teachers taught lessons that began as grammar lessons that could be applied to writing. One teacher chose a lesson about suffixes and then a lesson about

brainstorming sensory words. The grammar lessons included suffixes, verbs, nouns, abbreviations, and punctuation. The other three participants focused on areas of the writing process: transition words, sentence writing, and editing.

Three teachers had students present when they taught the writing lesson. Two teachers emailed me a video of their lessons. The rest of the demonstrations were recorded through ZOOM. All teachers chose to write on a whiteboard or smartboard. Two teachers incorporated computer-generated documents into their writing lessons. Three participants called on students to interact with the written words on the board during the writing lesson. The students would select colors to mark or write information according to the objective of the writing lesson. Following the writing lesson, four participants directed their students to use colors to perform the writing activity.

Table 4

Data from Demonstrations of Writing Instruction

Participant	Lesson	Colors	Tools used	Month/Date
1	Suffixes; Sensory words for brainstorming	Black, blue, red, yellow, green, purple	Smartboard, stylus	April 2022
2	Transition words	Green, yellow, red	Chart paper, markers	Nov. 2022
3	Brainstorming, Sentence writing	Red, black, purple	Dry-erase markers whiteboard	Nov. 2022
4	Verbs, punctuation	Black, red, purple	Dry-erase markers whiteboard	Nov. 2022
5	Verbs	blue	Dry-erase markers Whiteboard	Nov. 2022

6	Brainstorming and paragraph writing	Red, green, purple, black, yellow	Whiteboard, dry-erase markers	Nov. 2022
7	Brainstorming And paragraph writing	Red, blue, green, purple, black, yellow	Whiteboard, dry-erase markers	Jan. 2023
8	Editing	Black, yellow, green, tan	Computer-generated document, Smartboard, stylus	Jan. 2023
9	Sentence Writing	Black, purple, red, orange	Dry-erase markers whiteboard	Jan. 2023
10	Abbreviation	Blue, green, black, red, purple, orange	Dry-erase markers whiteboard Computer-generated documents	Feb. 2023
11	Brainstorming, sentence writing	Green, purple, blue	Dry-erase markers Whiteboard	Feb. 2023
12	Nouns, verbs in sentence writing	Blue, purple	Dry-erase markers, whiteboard	Feb. 2023

Besides demonstrating how to teach a writing lesson, each participant submitted at least three teacher-created documents used for writing instruction. Each document was evaluated using the Analysis of Documents by Participant form (Appendix J). Each document was evaluated for colors used, tools used, the purpose of the document, and if the use of colors had a purpose. After each document was evaluated, the data for all documents were combined for each participant. Then the data from all participants' documents were evaluated together.

Each participant was asked to provide three pictures of examples of colors used for writing. Eleven participants submitted documents. A total of 53 examples of writing instruction were submitted. One participant submitted three pictures of documents, while four participants submitted four documents. Two participants submitted five pictures of documents, and four

participants submitted six pictures of documents. One participant used four colors for writing instruction. Four participants used six colors during writing instruction while two participants used seven colors. Two participants used eight colors, another used nine colors, and another used ten colors.

The topic for 15 documents involved grammar lessons about nouns, verbs, adjectives, commas, and suffixes. Writing rules and tips were the topic of seven documents. Six documents were word lists students could use in their writing. Seventeen documents focused on sentence writing, paragraph writing, types of writing, and parts of the writing process. Three documents focused on transition words, while three documents focused on questions. Finally, two documents listed writing ideas from which students could choose.

Upon evaluating the pictures of the documents, I noticed that all participants used black, red, blue, and green. Eight participants also used purple. Seven participants used yellow and orange. Seven participants used pink. Two participants used brown. One participant used both the colors turquoise and peach. Participants chose colors for a purpose when they created 27 documents. However, the colors used in 26 documents did not serve a purpose when used. Ten documents included drawings of people or things but were not evaluated.

For one document, a participant submitted one that was written all in blue. Two colors were used for writing instruction on eleven documents. When participants used two colors for writing instruction, the colors varied. Black and blue were used for one document, while black and yellow were used for another document. Blue and green were used for one document. Green and black were used for three documents. Yellow and green were used for one document. Red and orange were used for one document. Two documents were written in purple and black, while another two documents were written in red and black.

Fourteen documents were written in three colors. Seven documents were written in blue, green, and red. Two documents were written in black, blue, and red. Green, red, and yellow were used for one document, while blue, black, and green were used for another document. One participant created a document using orange, purple, and green, while another participant created a document in black, red, and green. The colors black, red, and yellow were used for one document. Four colors were used for nine documents, while eight documents were written in five colors. Six colors were used to create four documents. Four documents had seven colors on them. Eight colors were used on one document.

Participants used the following tools while teaching writing: smartboard, stylus, whiteboard, dry-erase markers, computer, printer, printer ink, 8 ½ by 11-inch paper, chart paper, construction paper, Post-it notes, and markers. Nine participants used chart paper and markers to teach writing, while one only used a smartboard with a stylus to teach writing, as well as Post-it notes for a word wall. Eight participants used different tools for writing instruction, while four participants consistently used the same tools for their writing instruction. Thirty-four documents were created on chart paper. Two participants used a smartboard to present five writing lessons. Two participants submitted pictures of writing lessons written on a whiteboard. Seven participants produced computer-generated documents on 8 ½ by 11-inch white paper. One document was written on construction paper, and another document used Post-it notes. Ten figures showing the different ways teacher-created writing instruction are in Appendix K.

Table 5

Analysis of Participants' Documents

Participant	Number of documents	Colors used	How used	Tools used	Color used for a purpose on document
1	0	N/A	N/A	N/A	N/A

2	5	Black, yellow, red, green, blue, purple	Emphasizes sentences, sentence positions, transition Words	Markers, chart paper, 8 ½ by 11-inch lined white paper	Yes – 5
3	4	Purple, pink, green, red, blue, brown, orange, turquoise, black, yellow	Emphasize sentences, words, pictures	Markers, chart paper	Yes – 2 No – 2
4	4	Blue, Red, Green, Black	Pictures, words, parts of sentences, topics	Markers, chart paper	Yes – 3 No – 1
5	5	Black, blue, red, green, pink, yellow	Words, spelling, sentences, Word wall	Smartboard, stylus; post-it-notes, markers	Yes – 4 No – 1
6	4	Red, blue, purple, orange, black, green	Topics, Parts of speech, meanings, words, Friendly letter	Markers, chart paper 8 ½ by 11-inch white paper, ink, printer, computer	Yes – 3 No – 1
7	6	Black, blue, red, Green, blue, pink, purple	Pictures, words, ideas, the position of sentences	Markers, chart paper	No – 6
8	6	Blue, green, red, black,	Emphasize Words, sentences,	Markers, chart paper, 8 ½ by 11-inch white paper, ink,	Yes – 3 No – 1 2-Student work

		peach, brown	parts of words, friendly letter	printer, computer	
9	6	Black, green, purple, orange, yellow, Red, pink, blue	Nouns, tips for writers, Word list, question words	Chart paper, Markers, 8 ½ by 11- inch paper, computer, printer, ink, construction paper	Yes – 1 No – 5
10	4	Purple, blue, red, brown, green, black, orange, pink, yellow	Sentence writing, transition words, grammar lessons	Whiteboard, dry-erase markers, chart paper, Computer, 8 ½ by 11- inch white paper, printer, ink	No – 4
11	6	Red, blue, Green, Black, Purple, Orange, yellow, pink	Grammar lessons (nouns), Question words	markers, chart paper, Computer, 8 ½ by 11- inch white paper, printer, ink, Colored paper, laminating material	Yes – 4 No – 2
12	3	Pink, red, purple, green, red, blue, black, yellow	Identifying sight words in writing; word list	Dry-erase markers, whiteboard, computer 8 ½ by 11- inch paper, printer, ink, Smartboard, stylus	Yes – 1 No – 2

RQ2: Why do primary grade school teachers use colors in the writing instruction process?

Information to answer the second research question was gathered by asking participants questions 5, 8, 11, and 12. Before exploring why participants used colors, participants discussed what guided their writing instructions. Several participants shared that while they use the state standards for writing instruction, they have little or no curriculum to follow. Eight participants stated that they began by looking at their state standards for writing. The way Participant 1 teaches writing is due to the information his vice principal gave him. Participant 6 said the way they taught writing was 100% driven by the Units of Study curriculum. Seven participants develop their writing curriculum.

Participants use colors during writing instruction for a variety of reasons. Eight participants (1, 2, 3, 8, 9, 10, 11, 12) declared that using color captures the students' attention visually. Participant 3 stated, "It helps to catch their attention. If it is just mono color, it is not going to be as interesting." Five participants (1, 2, 3, 7, 12) stressed that using colors helps students to discriminate between things, making writing easier. Participant 1 hoped it activates their brain to where they realize, "Oh, like, this is not one big thing. It's several small things." Four participants (3, 4, 8, 12) also felt that using colors during writing instruction engages the students making the activity fun and exciting. Two participants (11, 12) thought using colors helped organize. The use of colors helps students know what to do, Participant 5 explained. Citing personal experience, Participant 4 revealed, "I know that helped me to learn. Coordinating colors to what I'm learning." Participant 6 stated that her use of colors during writing instruction was superficial and incidental.

Benefits of using colors during writing centered around four reasons. Participants 1, 2, 4, 7, 9, 10, 11, and 12 expressed that using colors made things more noticeable and helped students find information. Participants 2, 3, 8, and 11 believe the use of colors during writing appeals to

the senses, especially visually. Third, participants 3 and 12 thought using colors during writing is inviting, engaging, and enjoyable. Fourth, if students are taught a system using colors, they would know what to do, according to Participant 5. Participant 6 could not identify any benefits.

When asked what the disadvantages of using colors during writing instruction might be, participants gave five reasons. Participant 1 thought the only drawback of using colors was that they could slow down the lesson. Participant 2 believed that the use of colors might limit student ownership. Participants 3, 4, 5, 10, and 12 were concerned that students might be distracted if too many colors overstimulated them. Participants 5, 6, and 7 expressed concern for students who might be color-blind. Participants 7, 9, and 11 stated that students might focus more on the colors than the concepts taught. Participant 8 did not see any disadvantages to using colors for writing instruction.

RQ3: How do primary-grade school teachers learn to use colors for writing instruction?

Questions 2, 3, 4, and 15 allow the participants to provide background information about how they learned to teach writing and how they learned to use colors in their writing instruction. Based on the information provided by the participants, participants stated they had received minimal training in writing instruction and no training in using colors, which led to the participants having to develop their way of using colors during writing instruction. For example, two teachers recalled an instructor at college or a professional development mentioning the use of colors in writing but did not elaborate on how to use colors during writing instruction.

Eleven participants could not recall any training to teach writing before graduating college. One participant responded that the training they received to teach writing had been embedded into their college language arts classes. Once they became educators, four participants took professional development classes for teaching writing, while one took a college course

focused on teaching writing. Three participants were mentored by others who helped them with their writing instruction. Four participants stated they had no training to teach writing since becoming an educator.

While all 12 participants used colors to teach writing, ten stated they had no training in using colors. During college, one participant briefly heard how using colors helps students process information, and she likes using colors. Another participant shared that during a professional development workshop, they were told to use colored pens for writing but not how to implement their use. Finally, two participants stated that using colors to teach writing is instinctual.

One participant acknowledged that they planned writing instruction with their grade-level team but still needed to discuss the use of colors during writing instruction. Eleven participants did not acknowledge that they planned with their grade-level teammates. All participants reported that collaboration between grade levels for writing instruction was nonexistent. In addition, all participants reported that using colors during writing instruction was not discussed within and between grade levels.

RQ4: How do primary grade school teachers assess students' writing performance after the use of colors during writing instruction?

Interview questions 13 and 14 apply to RQ 4. The participants explained how they assessed their students' performance when colors were used during writing instruction. Participant 1 stated that using colors during writing is too messy and distracting because not all students have the necessary supplies. Participants 2, 3, 10, 11, and 12 used colors to highlight sight words or to practice writing their word work (spelling). Participant 2 said they would consider having their students use colors for editing and revising if time permits. Participants 3

and 5 have students use colors for illustrations that accompany their writing. Participants 4, 5, 6, and 9 stated they did not have students use colors for writing. Participant 7 has their students use colors to distinguish between two things. Participant 8 explained that having students highlight different things while writing makes it more engaging.

When participants were asked to describe students' attitudes and abilities when colors are used to teach writing, they often stressed that the student's attitude affects their ability. Four participants (3, 5, 8, 12) noted that students are more positive when using colors in writing instruction. According to three participants, using colors during writing motivates students, while three participants found that using colors during writing improved engagement. Participant 11 stated, "I don't want to say that color is changing their ability in any way, but I think they are definitely going to be more engaged." Participant 9 stated that students don't comment on the use of colors, so she did not know. However, students' abilities were briefly discussed when participants were asked about the benefits of using colors during writing. Eight participants believed abilities to focus are improved as well as the ability to find materials improved. Participant 7 stated that students might "want to learn a little bit more if it is more colorful," while Participant 10 declared, "It does help them to see their mistakes more."

My research is credible and trustworthy because of the triangulation of the data collected from each participant's interview, observation of lesson demonstration, and documents for research question 1. Research question 1 asked how primary grade school teachers use colors during writing instruction. Data revealed that participants used multiple tools and colors to teach writing. The interview process was also used to answer research questions 2, 3, and 4. Finally, a member check was used to determine the accuracy of the transcription of each interview and

theme development. Table 6 below shows which research question was used to develop each theme.

Table 6

Themes Related to Research Questions

Research Questions	Themes
1. How do primary grade school teachers use colors to provide writing instruction to their students?	Teachers use various methods and tools when using colors to teach writing.
2. Why do primary grade school teachers use colors in the writing instruction process?	Teachers use colors during writing instruction to help students focus on something specific and to engage their students.
3. How do primary grade school teachers learn to use colors for writing instruction?	Teachers receive little to no training on using colors during writing instruction.
4. How do primary grade school teachers assess students' writing performance after the use of colors during writing instruction?	Teachers reported that using colors during writing instruction provides a positive experience for students as it helps students focus and find information. Teachers perceive that using colors during writing instruction might negatively impact some students.

Summary

Data collected on how teachers use colors during writing instruction were collected and analyzed. Twelve primary school teachers participated in this research study. The teachers completed an interview over ZOOM, performed a demonstration of a writing lesson during a ZOOM call, and furnished at least three pictures of how they use colors in their writing lessons. The data collected during the interview were analyzed to see how it applied to each research question. Demonstrations and documents provided by participants were analyzed. The data from documents and demonstrations were applied to research question 1. Pictures of documents

created by participants were grouped by how the teachers used the document during writing instruction. Four themes and one outlier were developed. For each research question, a theme was developed. Member checks were sent to participants to check for accuracy.

CHAPTER FIVE: CONCLUSION

Overview

This study was created to understand how and why primary grade school teachers use colors during writing instruction to help all educators learn how to use colors to teach writing instruction to their students. The results of the data collected were summarized into four themes. To support how my findings can help improve writing instruction for students, a discussion of the findings was supported by relevant literature. The implication section discusses ways administrators can help improve writing instruction and the use of colors in writing. Finally, I explain what limited my research and conclude with ways other researchers could build upon my research.

Discussion

This study allowed me to explore how teachers use colors during writing instruction. Teaching their students how to write a composition remains a concern of educators. Educators continue to look for ways to improve writing instruction to engage their students to become better writers. While previous research discusses how teachers teach writing, the research on teachers using colors during writing instruction needs to be more extensive. My research introduced how and why teachers use colors during writing instruction, which could lead to educators focusing on improving their writing instruction using colors.

Interpretations of Findings

Themes were created by analyzing the data collected to learn about teachers' experiences using colors during writing instruction. Participants used a variety of methods and tools when using colors during writing instruction. Teachers used colors during writing instruction to engage, motivate, and help students to focus on writing concepts. Because teachers have no

training on how to use colors during writing instruction, they have to create their own methods. Teachers believe that students have a positive attitude toward writing when colors are used during writing instruction; however, they believe that the use of colors during writing instruction could negatively impact some students.

Summary of Thematic Findings

By conducting this study, four research questions were answered. To answer research question one, interviews, demonstrations of writing lessons, and document submissions were analyzed to determine how teachers use colors during writing instruction. Participants used colors during writing instruction in numerous ways. Teachers who participated in this study implemented colors into their writing instruction during grammar lessons, spelling, and the writing process. For writing instruction, participants used different types and sizes of paper and markers as well as electronic devices. When creating documents during writing instruction, most participants decided what colors they would use as they wrote because they had not planned how to use each color.

To answer research question two, participants explained why they used colors during writing instruction. One reason participants used colors during writing instruction was that the colors visually draw the students' attention to what the teacher is trying to emphasize. Using colors helps students focus, allowing them to discriminate between things and making writing easier for them. In addition, some participants use colors for organization. Students are more engaged in writing activities when teachers use colors during writing instruction, according to participants. After evaluating the data, I determined that the reason teachers use colors during writing instruction is directly related to research question four which focused on how primary

grade school teachers assess students' writing performance after the use of colors during writing instruction.

Research question three investigated how primary grade school teachers learn to use colors for writing instruction. While all participants use colors during writing instruction, most have received no training on how to use colors during writing instruction. Participants discussed that they learned to use colors during writing instruction on their own. Their explanations included "I like colors," "It makes sense," and "It's instinctual." Most participants did not recall receiving any training in teaching writing before becoming a teacher. After becoming teachers, some participants have taken courses about teaching writing. However, several participants revealed that no writing curriculum had been provided, so they had to create writing lessons. Participants also shared that teachers at their schools do not collaborate on their writing instruction between grade levels.

Although the purpose of this study was to explore teachers' experiences using colors during writing instruction, teachers also need to evaluate how using colors during writing instruction impacts student learning. Therefore, research question four focused on how primary grade school teachers assess students' writing performance after the use of colors during writing instruction. The teachers reported that students' performance was enhanced when they used colors during writing instruction. Teachers assess students' writing performance through the attitudes and abilities that students demonstrate during writing. Participants thought students were more engaged and had more positive attitudes when using colors during writing instruction. Participants also stated that students could find information easier and focus better.

Interpretation #1. The way teachers use colors to teach writing is directly impacted by the training they have received to teach writing. Participants in this study indicated limited

experiences learning how to teach writing. These limited experiences affect how the participants teach writing. While research has been developed about how colors impact an individual's response time in different subjects, little research has focused on how elementary school teachers use colors to teach writing. Salteh and Sadeghi (2015) reported that teachers' unique educational experiences shape their beliefs about teaching and learning. The experiences that influence these beliefs are personal experience, experience with schooling and instruction, and experience with formal knowledge (Salteh & Sadeghi, 2015). Their research indicates that the teachers' beliefs impact teachers' actual instructional classroom practices. Factors that affect how a teacher practices their teaching and learning beliefs are prescribed curriculum, time constraints for classroom delivery, high-stakes examinations, pressure to comply with program requirements, and classroom management (Salteh & Sadeghi, 2015). Technical knowledge helps teachers to analyze their teaching and to try out new ideas. When teachers use their practical knowledge to determine what is suitable for teaching, they make step-by-step decisions in the process of lesson delivery (Salteh & Sadeghi, 2015). My study confirmed that teachers analyze their teaching and are willing to try new ideas as they make step-by-step decisions when providing a lesson.

Interpretation #2. Although the purpose of this study was to explore teachers' experiences using colors during writing instruction, teachers also need to evaluate how using colors during writing instruction impacts student learning. The teachers reported that students' performance was enhanced when they used colors during writing instruction. Teachers assess students' writing performance through the attitudes and abilities that students demonstrate during writing. Participants thought students were more engaged and positive when using colors during writing instruction. Participants also stated that students could find information easier and could focus better.

Due to low motivation to engage in writing, many students need help to develop their writing skills (Camacho et al., 2022). Therefore, the researchers believed that more attention should be devoted to how teachers motivate students to write (Camacho et al., 2022). This study suggests that using colors during instruction can help motivate children to write. However, the study revealed that teachers do not often have a plan as to how to use colors during writing instruction. By having teachers reflect on their use of colors during writing instruction, teachers may consider how they will use them.

Interpretation #3. Although this study deals with how and why teachers use colors, it is also important to consider if using colors during writing instruction can negatively affect students. When questioned about the disadvantages of using colors for writing instructions, participants suggested that some students might be overstimulated if too many colors were used. Some participants stated that using colors during writing instruction could be a disadvantage for students with color blindness. Some participants were concerned that students might fixate on the colors rather than the concepts for writing.

Participants pointed out two issues that might impact students negatively when colors are used to teach writing: students could be overstimulated by colors, and students who are color blinded. Therefore, these issues were something that needed to be explored. Students who are hypersensitive to stimuli are often diagnosed with ADHD (Oktem & Olgunturk, 2019). During 2018-2019, 8.7% of children between the ages of 3 and 17 in the United States were diagnosed with ADHD (Kesten et al., 2021). Students, who have Inattentive ADHD, have “difficulty in organizing and concluding a task, has difficulty in focusing on the details or following the instruction,” as well as being easily distracted and forgetting details (Oktem & Olgunturk, 2019, pp. 390-391). It has been reported that students with ADHD exhibit differences compared to

their peers who do not have ADHD (Oktem & Olgunturk, 2019). Oktem and Olgunturk described a study that indicated children with ADHD make more blue-yellow errors when compared to peers without ADHD but did not make more red-green errors than their peers without ADHD. Children with ADHD have shown improved control of attention and motor processes when stimulated by colors (Imhof, 2004). Oktem and Olgunturk (2019) stated that students with ADHD improve academic performance when colors are used. Therefore, based on results from previous studies, teachers do not need to be too concerned about using colors during writing having too much of a negative impact on students with ADHD.

The experience of color blindness or color-vision deficiency occurs when an individual cannot perceive some color hues or all color hues like individuals who do not have color vision deficiency (Allen et al., 2022). According to previous studies, the prevalence of color vision deficiency is approximately 7% to 8% of the male population and 0.4% to 0.5% of the female population (Sato et al., 2018; Stoianov et al., 2019). While the ability not to distinguish between different colors does not affect people's learning and cognition, there remains a challenge in terms of color-related activities (Lin et al., 2019). Therefore, teachers must be aware of students' abilities to see colors and find ways to aid their students when colors are used for writing instruction.

Implications for Policy and Practice

“Color is a powerful tool for encoding and emphasizing visual information present in our life routine despite culture or lifestyle,” according to Stoianov et al. (2019, p.855). An individual's cognitive abilities are motivated and improved by using colors. This statement supports what Participant 11 stated during her interview, “I tell them all the time that our world is full of big, beautiful colors, so they should be including those in their pictures. You know,

making connections to things that they see around them is always beneficial.” Therefore, using colors to teach writing is a logical step in helping students to become better writers. Information learned through this study supports the need for teachers to use colors when providing writing instruction.

Implications for Practice

The current writing practices must be examined for schools to design a more effective writing curriculum (Brindle et al., 2016; Graham, 2019a). While all participants used colors during writing instruction, several participants stated that they selected colors to use during the lesson and had not considered why they chose those colors. Some participants indicated that this study made them reflect on how they use colors, and they would try to improve how they use colors in writing instruction. By reflecting on their teaching strategies, teachers can change or improve their effectiveness (Hall & White, 2019). Therefore, educators should consider when and how they use colors to teach writing to engage their students during writing instruction.

Implications for Policy

The study revealed that teachers need more training and support for teaching writing. Therefore, schools and their administration should implement several recommendations to help teachers learn how to help their students become better writers. First, classes to teach writing should be conducted at the college level for individuals considering teaching. School administrators could support teachers by offering more professional development classes and using colors for writing instruction. If school administrators want to improve literacy instruction and student performance schoolwide, they need to focus on professional development for writing (Lillge, 2019). Knowing that young students become better writers as they build upon previous writing skills and knowledge to effectively meet the challenging goals for the next level of

writing, all educators should work together to improve children's writing skills (Bazerman, 2013). Therefore, school administrators should also encourage teachers to share their knowledge about writing instruction and how to use colors in writing instruction within and between grade levels.

Theoretical Implications

All participants reported using colors during writing instruction because they thought it engaged their students more and made it easier for them to find information. Stitt & Pula (2013) stated that students benefit when color is added to text because sensory reinforcement can aid information recall. Because the skills needed to become an effective writer do not happen naturally (Graham & Harris, 2015), teachers must use explicit and implicit ways to teach writing (Fisher, 2012). Parkin et al. (2020) stated that explicit instruction is necessary for a student's ability in writing to improve.

Participants reported that students were motivated when colors were used during writing instruction. According to Votteler and Miller (2017), many students are not motivated to write. However, Cambourne (1995) stated that students need to be engaged in learning. Rushton et al. (2003) added to the discussion that the brain processes new information when a person's senses are engaged through another person's demonstration. Teachers can motivate their students to become better writers when they model their expectations for the students, which makes it easier for the students to apply their new knowledge (Olson, 2007). Based on this information, teachers can help motivate their students to write when they use colors during writing instruction.

Empirical Implications

The body of research examining writing instruction remains limited; therefore, more research must be conducted to expand the knowledge of how teachers provide writing instruction

(Graham, 2019a). My research focuses on an area of writing instruction that has not been studied and provides new information that could help teachers improve their writing instruction. Graham (2019a) stressed that new methods need to be tested to help teachers acquire the needed information for teaching writing. After evaluating previous research on writing instruction, this study supports the need for professional development and teacher preparation courses that focus on writing instruction in the primary classroom. This study describes several ways that teachers can use colors during writing instruction to motivate students to improve their writing. Using the information provided by participants, a professional development course that focuses on writing instruction could be developed using colors during writing instruction to engage students. Furthermore, it shows that administrators need to place more emphasis on providing teachers with opportunities to learn how to use colors during writing instruction. Schools and school districts need to try to change how writing is taught in the classroom (Graham, 2019a).

Limitations and Delimitations

I purposely limited my research to public school teachers who taught first, second, or third grade. I chose public school teachers because these teachers are required to follow state standards for writing and maintain a state teaching license. Public school teachers are also required to have a college degree. I focused on teachers who taught in the general education classroom; therefore, I did not include any special education teachers or bilingual teachers in my study. I did not use kindergarten teachers as kindergarten students spend most of their writing time learning sounds and how to form letters before moving to write words. I did not interview teachers who had recently retired from teaching first, second, or third grade because they were not currently teaching children and needed easy access to things that could be used to create documents for writing instruction and to demonstrate a lesson. In Chapter 1, I stated research that

said second graders were more eager to write than fourth graders and how important it is to provide a foundation for young writers; therefore, I purposely chose not to have fourth-grade teachers participate in my study.

Several individuals considered participating in the study but declined for various reasons: the feeling of being overwhelmed, did not believe that they used colors in their writing instruction, and did not teach writing in first, second, or third grade, so the sample size was limited to 12 people. Because this study was limited to teachers known to me, not all ideas about using colors in writing instruction have been discussed. Also, each participant provided writing instruction numerous times throughout the school year using colors, but I limited the observations to one writing lesson for each participant; therefore, I could have missed other ways the participants used colors during writing instruction. While teachers were asked to present three pictures of documents created during writing instruction, I might not have seen all the ways teachers use colors when creating documents during writing instruction.

Because my study focused on the documents created by teachers during writing instruction, I did not evaluate students' work when they used colors during writing. I also did not talk to any students; therefore, I had to rely on the participants' experiences and perceptions of how using colors during writing instruction affected their students. If I had talked to students, I could have asked what they remembered about their teachers using colors to teach writing.

Recommendations for Future Research

Research for this topic could be expanded by interviewing special education teachers, fourth-grade teachers, bilingual teachers, and teachers in other countries. Teachers in these categories might provide new ideas for using colors during writing instruction to help students to become better writers. The same study could be repeated with educators in other areas of the

United States since there were 1.8 million elementary school teachers in the United States during the 2017–18 school year, according to the U.S. Department of Education (National Center for Education Statistics, 2022). Based on the data collected in this study, a survey could be developed for a quantitative study that investigated how teachers use colors in teaching writing. Furthermore, this study could also be modified to learn how teachers use colors during instruction in other subjects such as math, reading, science, or government.

To assess how the use of colors affects students' performance, a quantitative or mixed methodology study could be conducted in classrooms or schools. For a quantitative study, researchers may focus on a specific part of writing, such as brainstorming, the main idea and supporting details, or editing for capitalization and punctuation. Teachers could use a rubric before presenting instruction using colors in writing to establish a baseline for their students' writing and then use the same rubric after six weeks of writing instruction with colors. Researchers could also conduct a quantitative study concerning how students with ADHD and students without ADHD respond to colors used during writing instruction. A quantitative study could be developed to learn how students with color vision deficiency react to colors used during writing instruction. Because participants voiced concern about the minimal impact of using colors during writing instruction has on students with color vision deficiency, a study could be designed to determine the effects graphic organizers or other visual teaching strategies such as underlining would have on these students. Researchers could also design a quantitative study to see how students with dyslexia respond to colors being used during writing instruction.

Conclusion

After analyzing data from 12 participants, four themes were developed. During writing instruction, teachers described how students were more engaged in writing when colors were

used. For example, one participant shared an experience that occurred in her classroom. She had written several sentences, each in a different color. Students told her, “It was much easier for us to see each sentence because you wrote it in a different color.” Based on the experiences of the study’s participants, teachers should consider using colors during writing instruction. The study also revealed that school administrators need to consider providing more support to teachers for writing instruction because participants reported they had received little training to teach writing and no training on using colors during writing instruction. Recommendations for future research will help teachers learn new ways to implement the use of colors in writing instruction.

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APPENDIX or APPENDICES

Appendix A: IRB Application

3/3/23, 11:17 AM IRB - Submission - A Multiple Case Study of Primary Grade School Teachers' Experiences about Using Colors to Teach Writing - ...

17
Rhonda Holcomb ▾

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Study Details
Submissions

Approved

IRB-FY21-22-407

A Multiple Case Study of Primary Grade School Teachers' Experiences about Using Colors to Teach Writing

PDF
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Approval Date:	Expiration Date:	Organization:	Active
12-22-2021	N/A	Graduate Education	Submissions:
			N/A
Admin Check-In Date:	Closed Date:	Current Policy:	Sponsors:
N/A	N/A	Post-2018 Rule	N/A

Key Contacts		Attachments	
Team Member	Role	Number	Email
Rhonda Holcomb	Principal Investigator		
Rhonda Holcomb	Primary Contact		
Russell Yocum	Co-Principal Investigator		

Appendix B: Permission Letter

[Insert Date]

[Recipient]

[Title]

[Company]

[Address 1]

[Address 2]

[Address 3]

Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting a qualitative research study as part of the requirements for a doctoral degree. The title of my research project is A Multiple Case Study of Primary Grade School Teachers' Experiences About Using Colors To Teach Writing. The purpose of my research is to explore how some primary grade school teachers use colors when providing writing instruction to their students in order to improve students' writing abilities.

I am writing to request your permission to conduct my research in **school district's name**. Once I receive permission from **school district's name** to conduct the study, I will need the email addresses of all primary grade school teachers or the email addresses of their principals. I will send each potential participant the attached flyer.

Potential participants will be asked to contact me if they are interested in participating in the study. Participants will be presented with the attached informed consent form prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time. For the study, each participant will need to complete an interview using an online platform, an observation using an online platform, and provide three teacher-created documents where they modeled writing to their students. Interviews and observations will be conducted through a video format such as Zoom.

Thank you for considering my request. If you choose to grant permission, please provide a signed statement on official letterhead indicating your approval.

Sincerely,

Rhonda Holcomb

Doctoral candidate at Liberty University

Research Participants Needed

The Use of Color during Writing Instruction

- Do you teach writing to students in first, second, or third grade?
- Do you use different colors to grab your students' attention during writing instruction?

If you answered **yes** to both of these questions, you may be eligible to participate in an educational research study.

The purpose of this research study is to explore how some primary grade school teachers use colors when providing writing instruction to their students. Benefits include reflection on how you teach the writing process to your students. Participants will also receive a \$10 gift card as a token of appreciation.

The study is being conducted online using a Zoom platform. Each participant will be interviewed, observed teaching a writing lesson, and will provide three teacher-created documents from writing lessons.

Rhonda Holcomb, a doctoral candidate in the School of Education at Liberty University, is conducting this study. **Please contact Rhonda Holcomb at for more information.**

Appendix D: Recruitment E-Mail

Dear Teachers:

As a graduate student in the School of Education at Liberty University, I am conducting a qualitative research study as part of the requirements for a doctoral degree. The title of my research project is A Multiple Case Study of Primary Grade School Teachers' Experiences About Using Colors To Teach Writing. The purpose of my research is to explore how some primary grade school teachers use colors when providing writing instruction to their students in order to improve students' writing abilities. I am writing to invite eligible participants to join my study.

Participants must use color to teach writing. Participants must teach students in one of the following grades: first, second, or third.

Participants, if willing, will be asked to

1. Participate in an interview about how they teach writing. This process should take approximately an hour. The interview will take place through a video platform such as ZOOM or Skype. The interview will also be video/audio recorded for accuracy.
2. Within a week following the interview, you will be video recorded, providing writing instruction to your students. Each observation will be approximately 30 minutes.
3. Provide three teacher-created documents from when you modeled writing to your students.
4. If needed, participate in a follow-up interview to clarify any questions that may develop once I review my notes from the interview, observation, and evaluation of documents. This interview should occur within two weeks of the observation and could last 30 minutes.
5. Participate in a member check to ensure that the researcher accurately recorded your perspective before publishing the study.

Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please contact me for more information.

A consent document is attached to this email. The consent document contains additional information about my research. If you choose to participate, you will need to sign the consent document and return it to me at the time of the interview.

As a token of appreciation, participants will receive a \$10 Amazon gift card following the member check.

Sincerely,

Rhonda Holcomb
Graduate Student at Liberty University

Appendix E: Recruitment E-Mail

Calling all 1st, 2nd, and 3rd grade teachers!



Writing + COLORS = Possibilities

Liberty University's doctoral student Rhonda Holcomb is looking for volunteers to participate in a research study to explore how 1st, 2nd, and 3rd grade teachers use colors to teach writing. If you have used markers, colored paper, technology, or etc., to teach writing, she wants to hear from you.

Participation consist of about an hour for each volunteer, which includes an interview, a writing lesson demonstration, and photos of 3 writing lesson samples. NO student involvement required.

BE PART OF THIS IMPORTANT RESEARCH!

To volunteer for this study or get more information please email:

Appendix F: Consent Letter (Institutional Review Board, 2020)

Consent Form

A Multiple Case Study of Primary Grade School Teachers' Experiences About Using Colors to Teach Writing

Rhonda L. Holcomb
 Liberty University
 School of Education

Invitation to be part of a Research Study

You are invited to participate in a research study on how teachers use colors to provide writing instruction to their students. You were selected as a possible participant because you use color to teach the writing process in one of the following grades: first, second, or third, and instruction is provided in English. Taking part in this research project is voluntary. Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

What is the study about and why is it being done?

The purpose of this study is to explore how primary grade school teachers use colors during writing instruction to teach their students how to write sentences and paragraphs. Teachers will be asked about their experiences and beliefs concerning teaching primary grade school students how to write.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following things:

6. I will interview you about how you teach writing. This process should take approximately 30 minutes. The interview will take place through a video platform such as Zoom or Skype. The interview would also be video/audio recorded for accuracy.
7. Within a week following the interview, you will be video recorded demonstrating how you provide instruction to your students on how to write. Each observation will be approximately 15-20 minutes.
8. I will ask that you provide me with three teacher-created documents from when you modeled writing to your students.
9. If needed, I would like to conduct a follow-up interview to clarify any questions that may develop once I review my notes from the interview, demonstration, and evaluation of documents. This interview should occur within two weeks of the demonstration and should last approximately 30 minutes.
10. You will be asked to evaluate a member check for accuracy of the information you provided which should take approximately 15 minutes. The member check will consist of my analysis of the data that participants provided during interviews, demonstration, and evaluation of documents as well as a transcription of your interview.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study. Benefits to society may include improving the teaching skills of primary grade school teachers for writing.

What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life. For full disclosure, I am a mandatory reporter, and will be required to report child abuse, child neglect, or intent to harm self or others if made privy to information.

How will personal information be protected?

The records of this study will be kept private. In any sort of report, I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

- Participants will be assigned a pseudonym. I will conduct the interviews in a location where others will not easily overhear the conversation.
- Data will be stored on a password-locked computer and may be used in future presentations including dissertations and published journal articles. After three years, all electronic records will be deleted.
- Interviews will be recorded and transcribed. Recordings will be stored on a password-locked computer for three years and then erased. Only the researcher will have access to these recordings.

How will you be compensated for being part of the study?

Participants will be compensated for participating in this study. As a token of appreciation, each participant will receive a \$10 Amazon gift card following the completion of the study.

Is study participation voluntary?

Participation in this study is voluntary. Your decision on whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Rhonda Holcomb, a doctoral candidate in the School of Education at Liberty University. You may ask any questions you have now. If you have questions later, you are encouraged to contact her. You may also contact the researcher's faculty chair Russell Yocum.

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515, or email at irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy of the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

The researcher has my permission to audio-record/video-record me as part of my participation in this study.

Signature of Participant

Date

Printed Name of Participant

Signature of Researcher

APPENDIX G: Observation Protocol Template (Creswell & Poth, 2018)

Date: _____ Participant: _____ Descriptive Notes	Length of Observation: _____ Setting: _____ Reflective Notes
Number of students instructed _____ Tools the participant is using to provide instruction for writing _____ _____ _____ _____	What participant did after whole group instruction for writing? _____ _____ _____ _____
Instructions provided by the participant _____ _____ _____ _____ _____ _____ _____ _____	What did students do after the instruction period? _____ _____ _____ _____ _____ _____ _____ _____
What students did during instruction? _____ _____ _____ _____ _____ _____ _____	What tools did students use to perform the task? _____ _____ _____ _____
What feedback did the participant give the students? _____ _____ _____	Sketch of Setting where Observation Occurred

APPENDIX H: Interview Protocol

INTERVIEW PROTOCOL

Before I begin asking the interview questions, I will state the purpose of the study. I will say, “The purpose of this interview is to learn about your experiences as a teacher who uses color during writing instruction. Thank you for allowing me to interview you. Let’s begin.”

Name _____
Grade taught _____
School _____
Number of years taught _____

1. Describe your philosophy of teaching writing to children.
2. What training did you receive for teaching writing prior to becoming a teacher?
3. What training for teaching writing have you received since you became an educator?
4. What training have you had regarding the use of colors in writing instruction?
5. What guides your teaching methods for writing? (Curriculum, district guidelines, professional development, create your own).
6. Describe how you teach the writing process in the classroom.
7. How have you used colors to teach the writing process?
8. Why do you use colors to teach writing?
9. How often do you teach writing? How is that time distributed between instruction and practice?
10. Please explain how you decide what colors to use when modeling the writing process to your students. (e.g. Do you assign colors to specific tasks ahead of time or make decisions as you are modeling?)
11. What benefits do you think using colors during writing instruction have?
12. What disadvantages do you think using different colors can have during teaching students how to write?

13. What is your experience regarding children using colors during writing?
14. What do you believe are the students' attitudes and abilities when colors are used for writing?
15. How does your school promote the continuity of using colors for writing instruction within and between grade levels?
16. I know your time is valuable, and I appreciate you sharing your thoughts and experiences about teaching the writing process with me. In conclusion, what else would you like to share with me about the writing program in your classroom?

Appendix I: Participants' Responses to Interview Questions

Table 7*Teacher's Philosophy of Teaching Writing*

Participant	Responses	Inference
1	<p>I like to start with doing personal narratives because then they're just thinking about something that's already happened to them. So, my philosophy is to start writing with personal narratives because they don't have to be as creative. They don't think of things like plot. They're just thinking about their life outside of that. I think it's helpful to break it down into steps. So, the first day we just do a picture and label brainstorm, but there's freedom in that. Like some kids don't have as great a vocabulary because they're ESL learners, or they're dyslexic or whatever the case may be. So those kids might have like a brainstorm that's all pictures, whereas other kids might have a brainstorm that's just like a few phrases, and other kids might have a brainstorm that's like sentences. But the idea is they sit down, and they first brainstorm eight personal experiences, and they pick one they think they can talk the most about. And once they pick that one, they brainstorm. Like, what are five things that happened on that day or on that occasion? . . . They brainstorm, and they write about each of those things. And after they've created all the paragraphs, we start talking about how can you link these things together.</p> <p>So, for me, what happens is we start with personal narratives. We brainstorm different personal narratives. Then we brainstorm about a specific personal narrative. Then we start writing individual paragraphs. Right before the individual paragraphs, we'll talk about what an introduction looks like and an attention grabber . . . but the introduction is kind of difficult. It's something we go back to because they sometimes will start with an introduction thinking they're going to write the future paragraphs about certain things, right? And then they try to write about something that they introduced and they're like, "Oh, this is boring, or it doesn't take up enough space. I don't know how to describe this," and then they change it. So, it's like after we write the introduction, we then write like three or four paragraphs of different ideas they've had. Then we have to go back and rewrite the introduction. And that's pretty much</p>	<p>Personal narrative</p> <p>Brainstorm by drawing pictures</p> <p>Write</p> <p>Write introduction</p> <p>Paragraph</p> <p>Starting over is okay</p> <p>Enjoy</p>

the steps we take. The philosophy is I really just want them to have fun with it. You know, in third grade, a lot of them think it's daunting, so I'm OK if they started writing about something and they're not interested in it anymore. "OK, start over whatever, what's the big deal? You know, what's one of the other eight things you brainstormed." Because if you try to make a kid write about something they're not having fun with and you're talking about it being like a multi-day project, that's going to be miserable for you and the kid. They're not going to produce something that's good. So, I just want them to mostly enjoy it.

- | | | |
|---|---|--|
| 2 | I've never really thought about my philosophy of teaching writing to children. I do try to get them to realize that it's a way to communicate their thoughts, their ideas. Sometimes I don't think that they realize that when they are talking to me or that they are having a conversation with someone else, like those words that they speak, those are the words they can actually write during writing time. So, you know if I just verbally say just tell me about the characters in the story, they can tell me. But if I say, "Write about the characters in the story." They are like, "Whoa! I don't know what to write." So helping them to realize that writing, speaking, and talking are really all connected. It's just a different format to get your thoughts across. | Communicating thoughts

Speaking ideas help to write ideas |
| 3 | I think that writing with children should be in a way fun. It should be engaging to the children. Try to make it about topics that are of interest to them. You know, even in the classroom, if we have to teach about something that's not the most exciting, trying to kind of tie it in with real-life situations or something like that so they can develop connections and get ideas. I think also in writing they need to try to sound out as many words as they can when writing. They can have sight words. They can have a word wall to look at, but I don't think they should every word be "How do you spell this? How do you spell that? How do you spell this?" I know my kids do that a lot in here, and I tried to say, "It is okay if you make a mistake." | Fun and engaging

Tie to real life

Develop connections

Sound out words |
| 4 | My philosophy for teaching in general . . . is more social-emotional than academic. If the kid can't sleep, he is not going to be able to do anything including writing. I feel like me. Personally, I don't know my philosophy in writing | Social-emotional |
-

	because I don't have that much experience in teaching writing myself. But what I like to do is not just to have them write but also to brainstorm. I think it is so important for them to understand what they are writing before they actually put it on paper. Or at least brainstorm it on paper first, if that makes sense. When I correct their writing, sometimes I use a highlighter, and it is colored. I use a highlighter to make the letter for them to trace so they understand how I did it. I don't know. I don't have a philosophy just yet. I think that is something I need to work on.	Brainstorming Still forming philosophy color
5	I know that for me, I took the Shenandoah University writing course. They offered it here through our school. So that was awesome. It really opened my eyes up to really allowing children to become engaged in writing and to write daily so it becomes something they are used to doing, and it becomes I don't want to say the word easier, but things flow. It is a lot about choice. Giving them the choice of what to write. So, I guess my philosophy is just engaging students in wanting to create things and to being able to make choices about what they want to write.	Engage Daily choice
6	If I think about it in terms of the Lucy Calkins experience . . . I think that it has some great benefits to it, but then it is lacking in other areas. And so, I listen to the trainers, and I go to this PD on it. They're all about getting kids just to write. Forget about all the other stuff, mechanics. Let's just get them to love writing. So, we do all that, and then there are three pages where there are no periods. And there is no real guide in that to show them how to successfully punctuate their work and to fill those natural places for periods and punctuation marks. Those natural pause places. I do like just letting the kids write, and I love to hear them say, "Is it writing time yet?" That tells me that "Ok, something is going right in here. Where they are enjoying the freedom of just being able to voice their ideas and be creative with their stories." I don't know if I have a philosophy, and I don't know if that is a philosophy or not. But that is kind of where I am right now.	Just write Professional development Forget mechanics Freedom of voicing ideas
7	Well, I obviously believe all children can write. I mean, I think the biggest thing is generating ideas. You know all kids have ideas in their heads. It's just the process of getting those ideas from their head to the paper. So there are all different kinds of stages, you know, in between, from just	All children can write

	having that idea and needing a lot of scaffolding. It is a lot of modeling. Then there's other kids who have a thought in their head, and they can write it down right away, and so then you are trying to enrich them even more. But again, all kids can write. All kids can have ideas to get on paper.	Generating ideas to put on paper Model
8	They all start at their own pace. They all start at their own strength. They all start at their own weaknesses. Some of it is more preferred because of creativity, and some of it you have to work harder for because they just do it because they have to do it. And that is totally fine too. We all need good written communication skills, but nowadays, with technology, even though I teach the grammar, they only need to get through so much of it before the technology side takes over.	Start at your own pace Written communication skills Technology replaces students' skills
9	With writing, the students have to learn their letters and sounds in order to put together the words. Once they can start spelling some words, we can begin to work on the sentences. We talk about having a capital letter at the beginning of a sentence and spaces and punctuation. Part of phonemic awareness is also counting how many words are in a sentence so they can do that. Things like compound words. They will confuse them when you are doing the phonemic awareness part of it . . . This year we started out with just the words and are building up to sentences. There are some years that we get to three sentences by the end of the year. This group this year, I might hopefully get to two sentences on topic by the end of the year, so it is just a process that we have to teach and continually practice. We practice it with the spelling words and applying it into the sentences. Of course, you have writing prompts that they can do. We try to write some in social studies and science. At all times, we are trying to make sure that they are putting capital letters, spaces, and punctuation at the end.	Need foundational skills Sentence writing Write across curriculum
10	So, for me like, especially with third grade, it's a process. So we literally work through the process with a new topic all the time. And to me the more modeling, the better and more they get to practicing it. That's my thing.	Process Modeling Practicing
11	Well, I love writing. I love teaching writing. My philosophy is you have got to do it every day, and you have to be very explicit in how you teach it. So, I like to start the year by going back and focusing on letter formation. Starting from	Daily

	the very basics of how to form a letter properly, starting with following the path from top to bottom or bottom to top. In kindergarten, this was important, but I like to do a review for this in first grade. Where does your picture go? Where do your words go? They need to match, right? They need to do that. Then we go into the basic sentence, and what are the different parts of a good sentence and showing them what that looks like . . . I like to model everyday writing so they can see how to walk through it. I talk about, “Ok, I am going to start my sentence with a capital letter, and look, I want to put spacing after this word. Oh, I need to sound this word out because it is not a sight word.” So, we walk through how to sound it out, then I talk about how we finish the sentence . . . So, it’s being very, very explicit, and then meeting with the kids every day correcting their writing. . . So then, when they are doing a big writing prompt, if we are going through the writer’s process, making sure we are doing a writer’s workshop. So, we are kind of doing that in smaller groups. I like writing to be very, very, very explicit. And that’s my philosophy.	Explicit Foundation Model Sentence writing Writer’s process
12	I obviously think it is very important. I think it is as important as any other subject because it is something that is very important for the rest of your life. It is pretty much a life skill. It is hard to get by with just reading the rest of your education and into adulthood if you are not able to write efficiently. I also think that it should be done obviously frequently but not just during writing time, not just during language arts, but you know, incorporating it into every subject incorporated into math, social studies, science, and every other subject.	Life skills Important subject Incorporate in all curriculum

Table 8*Training to Teach Writing Prior to Becoming a Teacher*

Participant	Responses	Inference
1	I'm sure there was some training in that EC-6 test you take to become an elementary teacher, but I don't remember what it was, so to me, it really feels like none.	No training
2	I can't recall any training I had to teach writing in any of my educational classes.	No training

3	I don't think in college they taught us about teaching writing. It was more about the philosophy of it. I don't know if before I began teaching writing that I had any training in writing.	No training
4	I did take a lot of courses in writing, well, not specifically writing. It was mostly reading and language arts in general. I did have this one class that I still remember. We were doing contractions, and we used a Band-Aid for "do not," and then we combined it and did a Band-Aid to show the little apostrophe. But during that time, I learned a lot about how it's part of it. I still remember learning how to read their writing at this age just because a lot of their words are misspelled. And a lot had to do with how they hear it and how they actually write, and that is what I have to read it. That is how they write. I don't know. I'm trying to remember exactly what I learned. But it was during COVID time too, and I didn't get that much in writing. It was mostly reading.	Embedded in language arts classes
5	I am not sure that I had any classes in school that were directly about writing. I took literacy. You know, you take a course in reading and stuff like that. I'm sure it was embedded in that. I don't remember that in my undergrad or graduate.	Don't remember
6	I don't recall one thing that I learned in school about the teaching of writing.	No training
7	I think I had a creative writing class. I did that. I think that is about it. There wasn't specifically writing. I think it was just the creative writing class. (Responded to the question, "No one taught you in college how to teach kids how to write?") No, no.	No training
8	In college, let's see, I don't think I received any training, honestly. Yeah, most of my college training wasn't relate at all to teaching.	No training
9	Ooh. That s been like a long time. I don't remember. I was trained in whole language in college, but I don't remember an actual writing class. But I've might of; I just don't remember it.	Don't remember

10	Probably not a lot. I don't remember any classes before getting certified. I don't know if we had a specific class just for writing. Not that I can remember. My memory is bad. It has been a while, but I don't remember us having a specific writing class.	Doesn't remember
11	I don't remember anything specific about writing.	Don't remember
12	I don't remember any.	Don't remember

Table 9*Training to Teach Writing After Becoming a Teacher*

Participant	Responses	Inference
1	When I got here to (school's name) last year, the vice principal helped a lot . . . She's the one that kind of showed me and Miss T. that pattern of what you can do for fiction or nonfiction, for personal narrative. You introduced that genre. Then you introduce the pictorial brainstorm for various ideas. And then, she introduced the whole process, kind of, but not in a step-by-step way. It was like she sat down with us, and she said, "OK, like, let's plan out your writing curriculum for the whole next two months. Like, what are you going to do on this date?" Then if it was from her, so mostly I was directly mentored how to teach writing by our vice principal just because me and Mrs. T. as the other third-grade teacher, kept on asking her, "Hey, we don't really get how to teach writing in, you know, you're really good at this. So how do you do it?" I never did like a writing PD.	Mentor by vice-principal
2	Not much . . . There was a consultant we had many, many years ago who I cannot recall her name. I remember her coming in and teaching me and the kids together about getting the kids involved. So, if I am writing and I want to underline or circle all the punctuation marks, I don't need to do that. The kids can come up and find that. So just the interactive writing that was the word I was searching for. We did have a very short time that we had a consultant to teach interactive writing. I can't even think of any formal training that we have had. or I've never even gone to any	Consultant taught interactive writing no formal training

	writing training. We don't really have a writing curriculum. We've never had a writing curriculum. If we did, maybe there would have been training that went along with it.	no curriculum for writing
3	I've done the Handwriting Without Tears. I'm doing; it's kind of in conjunction with reading and writing, the letters training now. I don't know if there were any other ones, there might have been that I can't think of. Oh, when I was in W. in conjunction with like the phonetics, they kind of tied in phonetics with the formation of the letters in the writing. Like you are learning the letter "A," and it makes the "a" sound. But also, we did a lot of the gross motor skills. "Ok, we are going to stand up, and we form a letter "A." Start building that connection between the mind and the hands.	Class on Phonics Professional development for handwriting
4	Nothing so far except for our writing journal that we have. We have like writing work menu, and they get to choose like a topic. Just letting them have choice, I feel like the biggest thing I've learned so far . . . The writing menu came from my team.	teammates
5	I know for me that I took the Shenandoah University writing course with Mary Tedro. They offered it here through our school, so that was awesome. It really opened my eyes up to really allowing children to become engaged in writing and to write daily so it becomes something they are used to doing, and it becomes I don't want to say the word easier but things flow. It was probably the only thing. I feel like writing is sometimes not focused on.	Writing course at a university Daily Not focused on
6	Finally, when I got to (school's name) was when I kind of got turned on to Lucy (Caulkins). And that was my first exposure to the Units of Study. And I did like sitting down with the kids and going through those lessons about writing small-moment stories. Most of my professional development has been geared toward the units of study. If I think about it in terms of the Lucy Calkins experience. . . . I think that it has some great benefits to it, but then it is lacking in other areas. And so, I listen to the trainers, and I go to this PD on it. They're all about getting kids just to write. Forget about all the other stuff, mechanics. Let's just get them to love writing.	Professional Development-Unit of Study (Lucy Calkins)

7	We have had a lot of spelling professional development. Writing specifically, I don't think I've had anything specific to writing. I think it all been spelling or guided reading, and we were given ideas but not really specifically writing on its own.	PD for spelling and reading, none for writing
8	None. Other than professional development, I do on my own. None.	None
9	The county has gone through a few things. We tried the 6 +1 writing traits, so we were trying that. There was another one that might have had. There was a crate that had different activities. It might have gone with 6 + 1 traits. Not a lot of training. Not specifically on writing, never really had a specific curriculum to follow. I did the four-square writing before. That wasn't really a training, though, just receiving, you know, buying the book and doing it. So official training, I would say 6+1 is the only that the county tried to push, and it didn't last very long.	6+1 Writing No specific curriculum to follow Four-square writing
10	It has been a while, but I know I have had some professional development to talk about some steps about student using their voice. You know seven steps of writing. I forget what it was called, but I know there was one specific professional development.	Professional development
11	Not much. There's not a lot of focus on writing. You know, you get reading lots and math lots, but a lot of people don't focus as much on the writing component, but you know, writing and reading go hand and hand, so you can see them developing at the same time, and they should be taught crossing over at the same time.	Not much Not a lot of focus on writing
12	None. Other than maybe like. I taught preschool prior to this, so I did have some Handwriting Without Tears training when I taught preschool, but as far as teaching 1 st grade here, I haven't had anything.	None Handwriting professional development

Table 10*Training Using Color to Teach Writing*

Participant	Responses	Inference
1	There was no training about that. It was just like a general rule. If something's boring, kids are not going to pay attention. Noticing people do it in math, a lot like that was kind of accidental. You know, in math, if you go look at anchor charts or anything on teacherspayteachers you see that it's color coded. So, you're just like, "Oh, I should color code stuff too, you know?"	No training Instinctual
2	None. I never really thought about it until I started having a conversation with you. I think sometimes, instinctively, you change colors when you're working with kids just to make things easier for them visually or to make things stand out if you are doing a writing on chart paper. I will change colors sometimes if I am doing a large writing. But I think it is more to separate different parts of the writing so the kids can visually see the different sections.	Never thought about it No training Instinctual Make things easier visually
3	None.	No training
4	Honestly, the only thing I can think of is in college, I did have a class and she did mention how using color can help the kids. ... She mentioned color and how it can help students process information or something like that. It hits a different part of the brain. All I know is I like color to begin with. I think it is nice and the kids get excited when I use different colors. I just kind of did it because I think it is nice.	Briefly mentioned in college Helps to process information Likes colors
5	I've never had any training in that.	No training
6	Nothing formally or really informally has ever been put out there. If I go back into Lucy, but she talks about not that this is color related. She talks about letting them. That writing is messy and that they can use colorful pens. But the idea of the pen was to make the handwriting part a little bit easier and smoother, and also that they are not focused on their mistakes. They can write something and	Students can use colored pens to write No training

	not like it and not worry about erasing it. They can just mark it out and keep going, and that lets the teacher have a little insight into what was going on in their thinking but nothing really formal in terms of color.	
7	I don't think I've had any training on that.	No training
8	No training, just what I do on my own.	No training
9	None	No training
10	None	No training
11	No training. Nothing like that.	No training
12	None	No training

Table 11*Guides Teacher for Writing Instruction*

Participant	Responses	Inference
1	Yeah. For me, it was just what (vice-principal) had taught me. I know there's TEKS about it, but like the TEKS, for writing are just so general, that it's almost not useful, it seems, you know, it's like, "OK, teach personal narrative, OK, great. Thank you." But it's not as step-by-step as it seems like with math, where it's like teach one by two-digit multiplication . . . So, with writing, it seems like more kind of open.	Guidance from vice-principal does not find TEKS helpful
2	The common core standards would be what determines what I teach for writing.	Common core standards
3	Some of it is we tied it in through the curriculum that we write. But I don't know per se that (school) or (school district) has a set like writing curriculum, but I just kind of use the topics we are teaching in the classroom and kind of tie it with the writing. Like whatever we are learning in language. Like when we are doing plural nouns, we are going to write some sentences about plural nouns. Or maybe we are reading a story about fall. We are going to write about your favorite thing about fall. There's not, per	Teacher writes curriculum by tying into other topics

	se, a curriculum that I follow. I kind of just tie it in with writing. I know when I was in (school district), we had a set writing curriculum that we follow, but here they don't have anything like that that I know of.	
4	Well, we have the writing journal, which is part of the daily five. And that is schoolwide, I'm assuming, starting in second grade at least. One of the stations they do is work on writing, but they also have handwriting as well . . . But it is no curriculum. It is based on whatever we can provide.	Schoolwide writing journal Based on what the teacher provides
5	We definitely have kind of create your own right now in _____ County . . . The SOL guides us on what we focus on. However, I have taken the things that I have learned over the years and in that course, and I created the way I teach writing.	Created the way I teach uses SOL
6	It had been a 100% curriculum for many years. For as long as I've been in (school district). The more that we've gotten to know the units of study, the Lucy (Caulkin) stuff, and the goods and bads of it, the more we started seeing the need of supplementation. With that, when we gather to talk about ELA and what we are going to plan for the next week or weeks out. We look at the Lucy stuff. There are some built-in breaks throughout the year, whether it is for testing or running records or whatever, that we bring in other resources. Lots of time, we get stuff from TeacherspayTeachers because some of the stuff that we like is tied to the TEKS. It is ready-made. It is just easy and fun to implement some of the things out there that we see. There are some thematic units that we are able to bring back in a little more, and they have a writing component that we like. That hits on more of the skills that the Lucy stuff lacks, like cause and effect, compare and contrast, those kind of things. We are able to bring in a little bit easier with those resources available.	100% curriculum Plans with others Lucy Caulkin supplementation TEKS Premade teacher resources
7	We follow the SOL, but we do create our own lessons. We don't have a curriculum that we follow in (the school district).	SOL create our own
8	What I have to do is through the curriculum through standards, but how I incorporate it and use it is I create my own.	Create my own standards

9	Of course, the standards of learning guide what the students need to know. And then, I was trained in the Orton-Gillingham so making sure that the students can apply the spelling words into sentences was emphasized in that training. So, the Orton-Gillingham has helped me in applying it in the spelling part.	Standards of learning Orton-Gillingham
10	I guess you would say curriculum. I use the standards of learning. So, the big thing for third grade using writing as a process, and that is what I focus on.	Curriculum; standards of learning; focus on process
11	Probably create my own. It's just something I've figured out over the years. And I'm a pretty explicit person in general. So, I like it to be very clear and direct and very, I don't know if linear is the correct word, but building on foundational skills. So, everything you do is to get them ready for the next step.	Create my own
12	Create my own aside from we are provided with the handwriting without tears book for first grade . . . For the most part, I create my own.	Create my own

Table 12*Description of Teacher's Writing Instruction*

Participant	Responses	Inference
1	First, we pick a genre, either personal narrative or fictional text. Then we do a pictorial. Brainstorm with labels and captions is optional because drawing the pictures sometimes gives kids more ideas, right? Because as they're thinking about what the thing looks like or what the event looks like, it begins to activate their sensory experience. And since we want them to include their sensory language in the writing, it's very helpful to have them draw the pictures. It's also more inclusive for people that are ESL and more inclusive for people that are dyslexic or autistic . . . After we do the pictorial brainstorming, we say, "OK, we have these eight ideas we can write about. Pick one. What do you think you could write the most about?" Because in third grade, there's still this idea that writing more than three sentences is overwhelming. And it's like, "OK, well, we're expecting you to write a whole page. So, let's pick something that's just the easiest for you to write about." And after they	Brainstorm Pictures Sensory Inclusive

<p>pick that, they brainstorm again. But now it's like, come up with three to five ideas about that experience, and then they do another pictorial label catch and brainstorm, except now they're brainstorming about a specific experience. Then I always talk about the importance of an introduction and attention grabbers and summarizing what you're going to talk about, and we have them write that introduction for just one day. If they don't finish it, we just move on because we know we're going to revisit the introduction, and it's going to have to change once their paper is finalized. So, after we write the introduction in one day, then we pretty much spend a day or two per paragraph, depending on how long of a writing block we were able to have that day. So, I feel like it's easier if we just say let's finish this paragraph today. But sometimes we run out of time. If we have like a full 30 minutes to write, then the expectation is to finish it that day. But if something happened and writing is now 15 minutes, not including the lesson, right? But just 15 minutes of independent writing, then we say, "OK, we'll spend two days on this paragraph," but some kids get ahead, and that's totally great. I have gifted and talented kids, so they might. The expectation might be one paragraph, but they might finish three, or they might finish the whole paper. Well, then it's like, "OK, well, now you can write about something else, you know?" So, there's also flexibility for those kids that are faster or slower. The general expectation is to finish one paragraph. But by the time the class has written one story, my gifted and talented kids might have written three or four, and there's no reason to make them keep on working with something that, at that point, they don't know how else to improve. And since writing is such a small portion of the day, there's not a lot of time to always pull a group with them and say, "OK, now that you're ahead, let's dive deeper into this, or let's talk about ways of doing this at a higher rigor." So, sometimes it's just allowing them to express their creativity through multiple projects. So, after we finish writing all the paragraphs, then we look if it all flows together. And at that point, during my reading block, actually, sometimes I'll make it a station where the teacher's table is. I'll call two people over, and we'll read each other's stories, and we'll talk about it. You know, it's kind of like a positive feedback-only thing because in third grade, since they're still getting used to writing, if you're trying to get caught up in the writing, and people</p>	<p>Importance of introduction and attention grabber</p> <p>15 to 30 minutes of students' writing</p> <p>Paragraph</p> <p>Writing</p> <p>Flexibility</p> <p>Peer writing</p> <p>Positive feedback</p>
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are still literally crying over having to write. It's just kind of like, let's build your confidence.

- 2 If I'm going to teach, let's say, opinion writing, before I ask the kids ever to write on their own, especially something that I haven't taught them yet, how to do something like formally. First, we would discuss what we are going to write about. We would talk about the different parts of an opinion paper. A lot of times, I get them just to talk first. "What do you like better, brownies or cookies? Turn and talk to your partner. Tell your partner what your preference is. What you like most, and then why do you like cookies more than brownies? Ok, now, boys and girls, what you just said to your partner those the words you are going to use for your writing. What you like better, that's your opinion. I like chocolate chip cookies more than brownies. So now I am going to write that 'In my opinion, chocolate chip cookies are better than brownies.' Using that word opinion, and then when you give your reasons. That's your first, your next paragraph." And after we just quickly talk, I would then make an anchor chart with an opinion statement. I would do that in one color. "Boys and girls, here's our opinion statement says what you're thinking. What your opinion is. My opinion is blank is better than blank, or I like this better more than I like that." Just different ways to phrase their opinion, and then I would change my marker color and give my first reason. "I like chocolate chip cookies more than brownies because they are round, and I like round things better than square things. I also like chocolate chip cookies more than brownies because I can eat three of them, and I can't eat three brownies." And then do our wrap-up sentence. "Boys and girls, when you are done, you have to restate your opinion. It's really just saying what your first sentence was in a different way. Now you know why I like chocolate chip cookies more than brownies." And as we are talking through that, I would make the poster so when it is their time to write, they can look at it. They can see. "Ok, here's how I start my first sentence, my introduction. Here's how I am going to start my reason sentence. Here's how I am going to start my next reason sentence." So, they have something that they can look back at to visually remind them of all the different steps that they need to put into their writing. So, now their writing is their pictures, fall pictures, and they just have to write a sentence that goes with their
- Opinion writing
- Talk it through first
- Model writing
- Color
- Poster for reference
- Visual reminder
- Pictures,
-

	<p>picture, and they do know that they have to have five words in their sentence. So, I tell them that we can't write a sentence with three words. That is what a kindergartener would do. Right now, it really is just seasonal. So, whatever the season is, whatever the holiday, writing about the election, if it was principal day, we would write a letter to the principal, so really just topical writing they would do during one of their rounds. And then, we also do writing in response to reading. So, one of the writing things we did yesterday was what is a question you have about this story by just looking at the title and illustration, what question do you have? So just kind of a quick writing to go with the lesson.</p> <p>I never ask them to do any writing that I haven't already demonstrated or gone over with them, so they know what the expectations are unless it's word work where it is more of a free write time.</p>	<p>Five-word sentences</p> <p>read</p>
<p>3</p>	<p>In the beginning of the year, we talked a lot about brainstorming and coming up with ideas before you can even start to write. You have to have ideas about what you are going to write about. We did the writing web. I picked a topic. Then as a class, we did a writing web on the board, and then I kind of tried to have them do writing webs to kind of get ideas about what they were going to write about. And then, after we talked about the writing webs, we kind of went into the writing part. But before they do a lot of writing, we are also teaching them about capitalization, the spacing, punctuation, making a complete sentence, and we kind of tie that in with what we are teaching. . . . In the beginning, they just wrote one sentence and a picture. Then as they got better at incorporating the capitals and the spacing and the punctuation and they were better at getting ideas, I said, "Ok, you are good at writing one sentence. Now we are going to increase it. You have to write two sentences with your picture." And now we are saying, "Ok, we have talked about characters and setting in reading. We need to tie that in with our writing. You have to have three sentences. Kind of a beginning, middle, and end. They don't always do that but increasing what they have to write. Trying to add more details.</p>	<p>Brainstorm</p> <p>Model</p> <p>Writing webs</p> <p>Parts of a sentence</p> <p>Sentence writing</p> <p>Pictures</p>
<p>4</p>	<p>Well, how I did it personally was I showed them an example. I didn't write anything just yet, but I had an idea of what I wanted to write. What I did was I talked through</p>	<p>Talked through the thought process</p>

	<p>my thought process. “Okay, I thought today I would write about the first time I scored a goal in soccer.” So, while I was writing it, I was speaking out loud my thought process for them to understand what is going on in my head. I’m not just writing it. Then we started learning about beginning, middle, and end. We started doing punctuation. So as we are learning those things, I am telling them to apply it to their writing as well. Because if they haven’t learned it yet or they don’t have the refresher about it, I don’t expect them to do it just yet.</p>	<p>Modeling</p> <p>Speaking about the thought process</p> <p>Punctuation</p>
<p>5</p>	<p>My ideal week of writing would be to take a story, a read-aloud, and read them a book that either is based on a theme or based on focus on writing. The two differences in that are one might be that we are writing about fall, so I choose a fall book to read and then brainstorm ideas from that. This week we are learning about verbs and working on verbs. So, I might find a book that has really good verbs in it and read a book like that and just encourage them to write with verbs. But say it is a seasonal or a theme or something like that, we take the book. We read it on Monday, and we do some brainstorming about ideas we could write about that book. Then on Tuesdays, we would begin writing a rough draft based on the brainstorming ideas. Then on Wednesday, they would finish their rough draft and add details. So, I focus on adding more descriptions, more details. How are you going to write your story so your readers can visualize what your characters look like? You know all that kind of stuff, how they are, what they sound like, the setting, you know all that kind of stuff. Then on Thursday, they edit their writing. Then on Friday, they would write a final draft and do an illustration. Most of the time, in second grade, I do encourage them to write first. Sometimes I do feel like second graders can get carried away illustrating and not doing enough writing. So, in my class, I do encourage the writing portion first. So, that would be like my ideal week of writing lessons.</p>	<p>Read</p> <p>Brainstorm</p> <p>Write rough draft</p> <p>Edit</p> <p>illustrating</p>
<p>6</p>	<p>The first thing we do is, I will usually start with a read-aloud of some sort. So, when we were talking about the Lucy stuff, the writing small moments, I began with a couple of different books read aloud. One was called Night of the Veggie Monster. One was Alexander and the Terrible, Horrible, No Good, Very Bad Day. Those are both super engaging books, and they are good for showing</p>	<p>Read aloud</p> <p>Write about small moments</p>

	what a small-moment story looks like. From that we brainstorm. The kids get little books, little miniature composition books. And they brainstorm about things. Write about small moments in their lives that could be topics for a writing or for a book. So that's the next step that we do. We do one together, and then they do one on their own. From that, it would go to a modeling-type situation, where I'm modeling a small moment story of my own on an easel, usually, sometimes on the document camera, and then they try it out on their own. That is a typical lesson.	Brainstorm Model writing
7	I have a lot of kids who need a lot of structure. They need a lot of examples. They need a lot of guided writing, modeling of what I expect. So, we usually do things together in the beginning. I just don't say, "Here is your writing prompt. Go." It's more we sit on the carpet, we talk about what we are going to be doing, we generate some ideas together, we brainstorm, and then I do one on the board for them. Most of the kids in my class now can start and write a couple of sentences on their own. There are a couple of kids in my class where I have to write a sentence for them, and they will just copy the sentence.	Modeling Talking Brainstorming Sentence writing
8	So, we start off the year learning how to do the editing functions. And I assess them on their basic spelling levels because of their word study and then what they can do with their endurance. Because if they don't have the endurance, they can't write a paragraph even if it is sloppy and disorganized. . . . Most of my third graders come in with cohesive sentences, and it's just building to a paragraph from there. So, quarter one is all on the grammar. Can I capitalize my I's? Am I doing my second-grade standards of punctuation and capitalizing beginning of sentences? And we do common versus proper nouns, commas in a series, and while that is happening on the editing aspects, on the side, they are doing their word study, which is expanding their vocabulary. On another side, they are just writing. "Whatever you want to write about, as long as it is school appropriate, go for it. Tell me your life. Tell me your stories. Make stuff up. Use your computer games. Make me a story." From there, we then start learning about the writing process. About quarter two, maybe about halfway through, that is where they start taking their ideas and forming them into cohesive stories, working through brainstorming and then rough	Editing Grammar Prior knowledge Writing process Brainstorming Rough draft Lots of mistakes

	<p>draft and then edit. Revising is still really sketchy at this point, but that is something that tends to come toward quarter four. Then the final draft, and they usually get the choice to type or handwrite it. They still make mistakes, a lot of mistakes, but their ideas come out more organized that way than they would if I just taught the writing process and then said, "Just go for it," because they kind of have a filter turned on a bit now. "Oh, have I read it out loud now? Does it make sense? Oh, Ms. _____ said I always need to be capitalized. Now I know. So now I know that it is a separate word." They just need to work on their physical handwriting.</p>	<p>Moving from sentences to paragraphs</p>
9	<p>Like I said earlier, you have to see what the kids know. You start out with the sounds and putting them together to make words before you can go to sentences. Hearing how many words are in the sentences so they can draw their lines for each word and then filling those in. We use the COPS.</p>	<p>Prior knowledge</p> <p>Sounds to words to sentences</p>
10	<p>So, at the beginning of the year, we learn the different steps of the process. And then, we work through a different topic through the process, starting with brainstorming. We do a different step of the process each day. So, we are gone through everything with our final draft.</p>	<p>Writing process</p> <p>Brainstorming</p> <p>Final draft</p>
11	<p>So, I like to use visual aids. So, we talk about prewriting or the brainstorming process. Then taking them through the rough draft. So, we would have an example or poster for each of those steps and practice going through each step. And it's not something that they are definitely going to grasp all at once in first grade. So, it's definitely a process we do throughout the year. It's an ongoing process. Obviously, they will continue throughout their whole school career adding on to it. But I like to make sure that I'm using the terms within so when we are working on brainstorming that I say, "This is our brainstorming step, or this is a rough draft. A rough draft is this." Then when we are talking about corrections, I like to use the term "edit" just to make sure it gets into their brains as vocabulary. But just a lot of practice, repetition going back over it. And then I've also used in the past a clip chart so as they are working on different steps. They can visually see what step they are working.</p>	<p>Visual aids</p> <p>Brainstorming</p> <p>A process that is built on throughout the school career</p> <p>Writing vocabulary</p> <p>Practice</p> <p>Editing</p> <p>Clip chart</p>

12	Well, at the beginning of the year, I actually just start with seeing where the kids are at with letter formation, writing the alphabet, things like that. And moving forward from there, I start with paper that is obviously they are making letters bigger when they are still learning to write and things like that. So, I change the paper throughout the duration of the year where we are starting with paper that has bigger lines. And they are drawing pictures to go with it, and then you know, increasing that as we go to eventually, we are using composition notebooks where the lines are smaller for them to write in. So, that's one thing that I do for the things that they write in. And we do a weekly poem. So, I will have them sometimes write things to go along with our weekly poem. And then, during my guided reading groups where I have my class divided into four groups. But when they come to my table, I always incorporate writing with my guide reading too. Whether we read a book and they are writing, then we are writing about the book that they read, or if we are just writing sentences for sight words. Things like that I incorporate it into that . . . but frequently into math and definitely in science and social studies too.	Prior knowledge Letter formation Lined paper Weekly poem Reading Incorporated into other subjects
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Table 13*Implementation of Colors During Writing Instruction*

Participant	Responses	Inference
1	I use it mostly to teach grammar. If we're talking about capitalizing the initial letter, I'll make the initial letter a different color. Or if we're talking about what is the prefix and what is the root word, I'll use it to emphasize that. Or if we're talking about what letter changed in this irregular plural, then I'll use color to emphasize that. So, it's to emphasize spelling and grammar rules in writing so that hopefully, as we continue, their writing will have less errors. If I'm brainstorming, I'll just use the digital pen to draw something in color, and I will switch with others up there to kind of make it more engaging (Pointing at the whiteboard.)	Grammar lessons- Prefix-root word Capital letters Brainstorming pictures
2	If I am making the graphic organizers or charts to hang up in the room, I do make those different colors so they can see the different parts. I usually do a title in one color. For any part of a poster that I am making that has different	Graphic organizers; Charts

	sections, I always change the color so they can see the different parts of it.	See different parts
3	A lot of time, when I do the anchor chart. I mean, I don't think directly I teach color. It is kind of more indirect. Like a lot of times when I do the anchor chart, I try to use color to draw their attention into what we are talking about. If I just wrote in black marker the whole time, it just wouldn't catch their attention. I try to make the title in one color. Like we are doing question words now. The question words in another color. Then when I write information about why we use question words, I might write it in a different color. To kind of break it down for them, and they can kind of see and to catch their attention.	Anchor charts
4	Well, what I did was what to write . . . It is just a list we all came up with ideas of what we could write about holidays, birthdays, favorite day of the week, whatever. And I wrote it all in different colors. Let's see what else have I've done in writing . . . I have that Subject and Predicate poster, and Oh, I have problem and solution as well. And I did problem and solution. I did blue and red to coordinate with it.	Brainstorming Posters
5	Definitely, when we brainstorm on the board. If they have a particular graphic organizer or a worksheet, that kind of starts their writing. Whatever is on that worksheet is usually on there in black ink, so I will rewrite the black ink on the board in black. I will tell them, "This is already on your rough draft paper or brainstorming paper. You don't need to copy this." And then everything they do need to copy, I will write in blue. And then the brainstorming part, I usually will write in red. These are all the choices that we came up with as a group that you can choose from. You don't have to write all of this. So those are the colors I usually use for some reason.	Brainstorm Graphic organizers For copying and choice
6	You know nothing that stands out to me except using different colors on an anchor chart, but there would be no rhyme or reason to anything that I'm doing. Just to make ideas stand out.	Anchor chart
7	So, I would say one thing we do is make anchor charts for all of the concepts we are working on. For instance, when we did subject-predicate, we would make an anchor chart together. I would put the subjects in one color and the predicates in another color. All my posters we make are	Anchor chart

	different related things as they branch off so the kids can see visually how they are grouped and how they are connected.	See visually
12	I use colors a lot just for organization.	organization

Table 14*Reasons for Using Colors in Writing Instruction*

Participant	Responses	Inference
1	So that it captures their attention more and so that they can discriminate between things. Like sometimes, if it's all one color like, it all looks like one blob to them, they don't realize there's smaller constituent parts. So, it's just hoping that it activates their brain to where they realize, "Oh, like, this is not one big thing. It's several small things."	Capture students' attention; discriminate between things; activates brain
2	I think it is a visual reminder for the kids to see that something is changing, a different part of it. They can reference things at a glance. It is easier if they know that the title is always in red. They always know to look for the red section. Just to make it easier.	Visual reminder; reference things at a glance; make writing easier
3	I think it helps to engage them. It helps to catch their attention. If it is just mono color, it is not going to be as interesting. The other day kind of normally, a lot of times on the board I will just choose one bright color and write the sentences all in one color. Then that day, I was like, "You know what? It might be easier for them if I do each sentence in a different color." And they commented to me "Ms. (Cathy), you wrote each sentence in a different color. It was much easier for us to see each sentence because you wrote it in a different color."	Engages; Catches their attention; Easier to see
4	. . . coordinated with what it was saying and the name of whatever topic, if that makes sense. I don't know. To me, that helps. I know that helps me to learn. Coordinating colors to what I'm learning. I think it helps visual learners as well. I don't know. All I know is I like colors to begin with. I think it is nice, and it gives, and the kids get excited	I don't know; I like color; helps me learn; Helps visual learners; Kids excited

	when I use different colors. So, I don't know. I just kind of did it because I think it is nice.	
5	Like I said, so they can focus. So, they know if they see something in black, that's on my paper, and "I know I don't have to copy that. When I see things in blue, I know that I have to start with that. I have to have those in my sentences. And then whatever is in red, I know that we brainstormed that as a class, and that's lots of ideas, and I only need to choose some of them."	To focus Knows what to do
6	My use is so superficial and incidental.	superficial
7	All my posters we make are very colorful and a lot of them you know there is a reason I did them that way. You know what I mean so. Kind of to distinguish between two things. So verbs might be one color, nouns might be another color.	Distinguish between two things
8	It just makes it more engaging, and it attracts the eye.	Engaging; attracts the eye
9	To bring their attention to something specific.	Bring attention to something
10	So, when I am writing on the board, I often use different colors just so something stands out more ... so they can see different things in writing ... So, it stands out more, and it is something they need to notice and remember.	Stands out so they can see different things; to notice things
11	It's eye-catching. The kids like it. It helps organize. So, they can see visually because first grade you know, don't necessarily need pictures for everything as they start to become more confident readers, but they are not quite ready to read. Not every student is ready to read everything independently, so they do need those visual cues and clues to help them. So, yeah, mostly organizing the information visually. I can see as the biggest benefit.	Eye-catching; Kids like it; Helps organize; can see visually
12	Mostly because it is fun. It's more appealing to the eye. It is better organized. Like I said, when we do our poem, if we were just circling, highlighting everything in the same color, we wouldn't really be able to see. Wouldn't be able to see why things were what they were ... If you do it in color, we are able to differentiate what we are working on in that way.	Fun; appealing to the eye; helps differentiate; helps organize

Table 15*Time Allocation for Writing Instruction*

Participant	Responses	Inference
1	For instruction, for writing, I would say we spend ideally ten or eight minutes just talking about like what the expectation is now. Some days it's longer, you know, like if we're introducing a whole thing. Like if we're talking about personal narratives for the first time or if we're talking about introductory paragraphs for the first time, it's going to be like a whole lesson. But it's something that we try to do three to five times a week. We try to really do it a little bit every day.	3 to 5 times a week – every day Instruction 8 to 10 minutes
2	It depends on the year. So, maybe five years ago, I probably, well actually more than five years ago when we adopted our new benchmark reading series, I probably did writing four days a week where I formally taught writing, and then they went to their desks, and they wrote. Now, I formally teach writing starting second quarter. I'll start with opinion writing. So, each quarter I teach opinion writing. Now obviously, I've been teaching writing all year, but I haven't been teaching it for a standard. I've been teaching it as a response to reading and when they are in guide reading groups three days a week. When they are in rounds, they have word work, and two days, they have writing. So, one round would be meet with the teacher, one round would be the iPad, one round would be read to self, another round would be either word work or writing.	Two times a week Opinion writing
3	We usually do writing every day. Somedays, the period of time is longer. Sometimes it just might be like when we do writing; it might just be incorporated into whatever we are kind of learning in language arts. Like we might just be doing a worksheet, and they might just be writing the answers. Then sometimes, it is more in-depth. They will be getting their journals out. They will be drawing pictures and writing sentences to go with it. It just kind of depends on the individual day, what they are writing. If it is a story or, I guess, rote writing more.	Every day
4	Unfortunately, not as much as I would like. I think there just isn't as much time in the day as we wish as teachers. I	At least once a week;

	feel like every teacher feels that way. I would say I teach writing, specifically writing, at least once a week.	Not enough, as I like
5	So, this is not my greatest year in writing. But you know, this year, I feel like we are focusing so much on relationships after Covid. But normally, I would be in full swing, and I would be teaching writing every single day. But this year, we are doing a lot more freewriting, and we will print menus for them. Like we have these seasonal menus. And if it is a free write day, they can write whatever they want, or they can look at the menu to get ideas. But in my classroom, we write every single day. The actual teaching process just depends about what we have been talking about. We've been talking about verbs. So necessarily talking about writing a sentence with verbs every single day, but that is a portion of writing that we are talking about.	Normally teach every day freewriting
6	So, every day should be a writing instruction day unless something crazy comes up that morning. It is a 45-minute section of time. Our whole ELA block is about 100, and . . . they want 150 minutes, but they don't know that doesn't fit into our day. So, I get a good 120 minutes for the workshop model that our district uses. 45 minutes is reading, 45 is the writing, and then the rest is mechanics and phonics instruction and that sort of thing. Writing by itself, I would say 45 minutes.	Every day for 45 minutes
7	I don't think we do as much writing as we should. We just don't have enough time to do as much as we should, but every day I try to do my work on writing rotations. So, a lot of time, they do have journal prompts that they do. Some kids, like I said have just the sentences to write. They are just copying the sentences, but a lot of the kids, we try to get them to work on writing rotation every day. But if we are teaching a new concept, then I might teach that on Monday, and then we will do our activities together. Then maybe on Tuesday, we will review, and we'll go over some more examples, and I might have them do a little bit on their own. But I don't really set them free to go do that concept by themselves until probably day three or four.	Every day Not enough time journals
8	Writing is taught probably once or twice a week, depending on where we are in the quarter. And practice is every day at least 15 minutes.	Instruction once or twice a week; practice

		every day at least 15 minutes
9	I would say we probably do not instruct a lot on it. I think it is more embedded in what we do. So, like when they are doing their spelling at least once a week, they are writing a sentence using some of those words. You put it together. Writing sentences, like I said, you kind of work on that when you are answering questions or writing about animals that hibernate. By the end of the year, we do a research project because that's a standard. But by the end of the year, you hope they can write a few sentences. So, like I said, I think writing is just more embedded in lessons.	Once a week Not a lot of instruction Embedded in lessons
10	I think I more model than teach it. At the beginning of the year, it was more teaching, and now it is more modeling and having them practice and talking them through how I did it so they can do it. We talk about it every day.	Every day Modeling practicing
11	I can get in about 20 minutes of explicit writing. I like my portion to be as short as possible because I want them to have the most amount of time to do their writing to think about it, add their pictures, and have time to make any corrections or edits they need to make. So, I would say maybe I like to keep it under five minutes for my portion, and then they get about 15 minutes. And if they run over, then they can obviously set it to the side and come back to it later and finish up if they need more time.	5 minutes of writing instruction; 15 minutes of student practice every day
12	Well, we have two blocks of language arts. During the first block is when we do our writing and grammar ... So, we do a lesson, and then usually a writing assignment that goes along with that. So, that's another probably five to ten minutes. And then my second block is where we do the reading rotations with each getting 15 minutes in that period of time, and then like I said, science and social studies usually almost always writing are incorporated. A good chunk of the day.	A good chunk of the day Writing lesson- 5 to 10 minutes

Table 16*Decision-making for Using Colors During Writing Instruction*

Participant	Responses	Inference
1	I just make decisions as I'm modeling. I mean, I never really thought about it until we were talking . . . I never really thought about what parts to assign different colors to. It was more like, "I just want you to see this is the part I'm talking about today, so it's a different color from everything else," or using it like a highlighter instead of like a key. But a key is also a good idea.	Choose colors as modeling Never thought about it To see a certain part
2	I just make decisions as I am modeling. I usually try to use darker colors than lighter colors so they are easier to see. If it is seasonal, maybe I'll use black and orange but just really brighter colors, and if there is a theme to it, I would maybe make my colors match my theme.	Choose colors as modeling Use darker colors – easier to see
3	I just do it as I model it. I just kind of try to pick out the brighter colors the oranges, the blues, the reds, the greens. I don't use as much, you know, the browns or those kinds of colors.	Choose colors as modeling Bright colors
4	I do it ahead of time. I can't do it while I model. I'm actually like I have OCD tendencies. So, if I don't have my word problem in a straight line, it like bothers me. So, I usually make my anchor charts beforehand. And then they think it is a good magic trick. I pull it out of nowhere. (Funny voice) "Oh, my goodness." So, I think it is pretty funny, but I do it beforehand, and that just because I want to make sure that my poster looks right and I haven't misspelled anything.	Decided ahead of time Anchor charts
5	So, most of the time, like I've already said I've already kind of fallen into these colors. I choose black on purpose because that usually the black ink that's already on their paper. And then blue, I don't know why. I like blue, I guess. And then red just because it kind of pops out with all the different kinds of choices on the brainstorming part of it. I don't think that I ever really used any other colors. I might use other colors if I have to draw an illustration, but that is not always with writing.	Decided ahead of time

6	I haven't thought about colors in terms of teaching writing. My answer would be goofy. Because if I told you that when I do an anchor chart, I have certain colors that I like to use but it doesn't mean one single thing. It is just colors that I feel make the content stand out.	Uses colors like to use Haven't thought about it
7	I really don't have a method or anything. I think it is just, you know, say like it is nouns and verbs. I might just pick two contrasting colors. I won't pick like red and pink. I don't think a lot of kids could really differentiate between those, you know if they looked at them quickly. So, I mean, I kind of do contrasting colors, I would say.	Don't have a method but picks contrasting colors
8	I give them their own colors to assign. Yeah, I let them choose their own colors. It's just a voice and choice option. But I do make it clear like that this has to be one, and this has to be another color.	Allows students to assign
9	As I am modeling	Choose colors as modeling
10	I just made sure I picked a different color. I have no rhyme or reason as why to which colors I was using.	Just choose a color
11	I usually stick with the basic colors, and I like to use contrasting colors. You know, I wouldn't use necessarily a red or orange together just because they could be so visually close, and some kids would be, "That is definitely red. No, that's definitely orange." So, if you get like a stark contrast, you know, like a green and orange most kids, unless they are color blind, can definitely tell those are two separate colors. That's kind of how I decide. Then red and blue are just the most common ones, and that is what I usually grab first.	Choose contrasting colors
12	I pick colors that, to be honest, that I like often. But I will make sure that they are contrasting colors that might go along with what we are writing . . . or if I want something to stand out, you know, use a bright yellow highlighter or just colors that go together. If we are doing things like that or I might coordinate it with their group. Like their color group that they are in because the structure of that really helps them a lot because I use that for matching.	Choose colors like and are contrasting

Table 17*Benefits of Using Color in Writing Instruction*

Participant	Responses	Inference
1	I think it helps them to see the individual parts like to differentiate between what is the introductory paragraph and what is like, you know, the first paragraph of your story, or to differentiate between what is the root word versus what makes it a plural, or to differentiate between what is the root word versus the prefix. So, it helps them to identify the smaller parts of language and the smaller parts of a paper.	Differentiate Identify smaller parts of language
2	I think for kids who aren't maybe the best readers, they can find the section that they may need to work on by the colors. So, if it's more of an introduction, and then topic sentences, and conclusion, they might not be able to read it to determine what part of the writing is on my paper. So, if they need to write their conclusion, they know that it is the last color on the paper. "I have to look at the last color. That's where the conclusion is going to be. Oh, here is where Mrs. (Beth) wrote, 'Now you know why I like this.'" They can find the colors to help them, or the change in the color to help them . . . It also just visually pulls their eyes in. So, if they wrote a whole paper front and back and they have no punctuation. And I go back and circle where all their punctuation should be. They can visually see, "Oh, here's the orange circle. That's where I have to go back and reread and put in punctuation."	To help find information visually pulls their eyes in
3	I kind of think that it ties back in with some things I said before. I think color helps to catch their attention . . . It is like the classroom. If you have a bright and inviting classroom with lots of colors, the kids are going to be coming in, and they are going to be interested and want to learn. I think it kind of goes all the way across the board in writing too. Like if you are making it more colorful and more inviting and engaging, they are going to be more interested in doing the writing than if you are just writing it in black and brown or whatever. I think the color catches their attention and draws them to it and makes them more engaged as well.	To catch their attention more inviting more engaging

4	I don't know. I feel like it helps students connect the pieces. If that makes sense. I keep going back to the problem/solution anchor chart, but then I've only been teaching for a couple of months. My mind worked in a really weird way growing up, so I'm hoping maybe this reaches one kid even. But like if they are reading a book and they associated the problem being red. I feel like that it is better for them to remember that the red was what fixed the problem. Like they associated it, if that makes sense. I feel like that would be a big benefit. But like I said, I don't know too much about it. So, it is a coincidence that I use colors. I just really like colors.	Help connect the pieces Make associations Like colors
5	I think it can be a huge benefit because if students are taught to use same system the entire school year, then they can get into the rhythm of knowing exactly. This color means this, and that color means that, and the other color means that. And they can really focus on what they are supposed to be doing instead of staring at the board and deciding now, what am I supposed to write?	When taught the system, students know what to do allows them to focus on the task
6	I think if I knew more about colors in writing, I would love to see what impact that would have on their development.	Does not know
7	You know, really trying to distinguish between two things. For instance, between nouns and verbs. I want to make sure they understand what the noun is in the sentence and what the verb is in the sentence. So, I want to make sure that I'm using those separate colors and that the kids know which colors go with which one.	Distinguish between things
8	I think it appeals to the different senses, and they like messing up their stuff. So they can scribble on stuff.	Appeals to different senses
9	Like I said earlier, just to bring their attention to something so that if they need to look at what I did. You can say, "Look at what I did in red up there in my example." . . . It helps them focus and not get overwhelmed as much with all of the words.	Bring attention to something; helps to focus; keeps from getting overwhelmed
10	I think it just makes something stand out . . . So, I just try to use a different color when I want something to jump out	Makes things stand out;

	more or be more noticeable. . . . Same thing. I just think it would be more noticeable for them. The important things.	more noticeable
11	Well kind of the same reason why I would use them. Kind of like we discussed earlier. It's easy to organize. It makes it visually appealing. Kids love colors. I mean, you're hard-pressed to find a kid that doesn't want to use color or doesn't want to color in some way. Like I said, organizing and visually seeing the information that way is probably the most beneficial.	Organizing; visually seeing information; Kids love color; visually appealing
12	I think it makes it more enjoyable for them. Gives them more motivation because there is color involved. So, I think it benefits them by giving them more motivation and encouraging them to do it. You know, just looking at things helps them separate, depending on what you are doing. You know, if everything is all in black, especially looking at a whole bunch, a kid's eyes can get lost. So, it can help them if you want to look at a certain sight word. Putting it in a sentence makes it a lot easier for them to pick out words or certain letters within words. Or you can make them a different color to point out certain letters in words.	More enjoyable; more motivating and more encouraging; helps them find things easier

Table 18

Disadvantages of Using Colors During Writing Instruction

Participant	Responses	Inference
1	It's just a little slower, I mean unless you or it could take more prep time. But not a significant amount slower.	Slows prep time
2	Maybe if they rely on my hints maybe where they could do more of the proofreading themselves to find things, so if I am always the one to do the color reminders, then I am taking some of the ownership off of them to find things.	Limits student ownership
3	I suppose for some children the color might be distracting. Like if you have a child who maybe has attention problems or things like that. Maybe for that student, the color would be distracting because they would be more interested in looking at the colors than the concept you are trying to teach them in writing. For those kinds of students, maybe the plain black or brown writing might be easier for them to focus because they are not looking at the color.	Distracting Focus on colors and not a concept

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| 4 | They could get distracted in the sense if it is posted in the classroom. If it is too much color. Like I have a lot of color in the classroom. If I put too much color up, I know I do have some kids that are easily distracted. They will get distracted with the amount of color if I use too many colors. So, I have to be sure that I use the right amount and not go overboard with it. | Distracting if too much color |
| 5 | Well, the years I have been doing it, I haven't really noticed any disadvantages. I guess maybe if anybody was colorblind, that could be a disadvantage. Um, I don't know if it would be overstimulating for some kids to see different colors. I've never come across that. | Color-blind
overstimulation |
| 6 | I don't know there would be any disadvantages other than except the occasional color-blinded child maybe. | Color-blind |
| 7 | Maybe if they would get kind of stuck on a color. Like, "I don't have the blue crayon to underline this one." You know, that might be something you know to get stuck on the concept of the color, not the concept of the activity or the strategy that I am teaching. They might be just kind of hung up on what color to use if you have a student who is color blind. That might make a huge difference. | Becoming stuck on color instead of concept; color-blind; color not available |
| 8 | If it is legible, you can see it with the different colors. I don't have a problem with any colors. | None |
| 9 | I know, like one time, I was making a pattern. One sentence would be one color, and I kept going back and forth just between colors. They got focus on me making a pattern which is good because first graders need to know what a pattern is, but hopefully, they weren't just stuck on the colors. You know that they were still focused on what we were writing and sounding out the words with me. | Becoming focused on color and not writing concept |
| 10 | The only thing is when they are doing word work. Sometimes I do allow them to write their words in different colors. The only disadvantage is I point out to them that you have a five-letter word, but we are not using five different colors, one color per word. Just distracting, focusing for them; otherwise, I don't see it being a disadvantage thing. | Can be distracting; prevents focusing |
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11	You don't want them to associate too strong of a connection where they can only use the information in that color like they might rely too heavily on the color and not necessarily focus on the information.	Making too strong of a connection to color for information
12	I think probably just if you use too many. You know there's a line where things can get too much and connect that with classroom décor. Too much going on or might be on the spectrum or stimulate the eye too much. I would say the only disadvantage is using too much of it.	Using too much; too stimulating

Table 19*Experience with Children Using Colors During Writing*

Participant	Responses	Inference
1	I like it if it's digital. Like if they're typing on Seesaw, I like that. If they're using an actual crayon or colored pencil, then it's just too messy, too distracting. It's kind of like, "Can I borrow that color from you? Can I walk across the room and get this color from that person?" So, to me, it's been better digitally because everybody has equitable access to colors, and there's less disruptions.	Likes the use of colors digitally; students using actual colors is too messy and too distracting.
2	If they are writing independently sometimes, we do rainbow write for their sight words. There is not a lot of time when I am working on revising and editing. If I was really focusing on that skill, then I would probably have a color assigned for the different editing portions of the paper. You know, if they forgot a word or maybe any word you forgot, you put the carrot in and write that word in green. Or if you are editing for spelling, maybe your spelling editing is always in purple.	Use rainbow colors for sight words Consider using colors for editing
3	I haven't used it a lot in writing, but I know when we do our word sorts. I do have as one of the activities when they are doing the word sort on the second or third day. After they have sorted the words and written them in sentences, I do let them rainbow write the words. That is one of the cases where they are using color. I mean, most of the time, when they are writing in their journals and those kinds of things, I have them use a pencil. They can use the colors to draw the pictures to go with their writing,	Rainbow write word work Draw pictures for writing

	but for the most part they use pencils in the classroom to write, so there's not a lot of colors.	
4	Honestly, I don't have much experience with them using colors during writing. I personally haven't. I haven't really been able to do that too much. It is mostly me using the color, not so much them.	Students don't use color for writing
5	Well, I always ask them to write in pencil because that way, they can erase and edit and change things, so I'm not really sure that they write in color. But when they illustrate, I do encourage them to use lots of different colors in their illustrations.	Students don't use color for writing
6	I am not familiar with any. I don't have any.	None
7	To distinguish between two different things. I would have them use two different colors.	Use colors to distinguish between things
8	I think it makes them more engaged towards it. Sometimes if it's just a highlighting activity with writing highlighting different stuff... they don't always love it, but it helps them to connect it better to other parts of the curriculum.	More engaged; highlighting; helps them to connect to parts of the curriculum
9	They don't really use color much in their writing. They do like for their decodable stories. I have a paper that has a story on there, and they will highlight the features that we are learning about. So, if we are learning about the "ch," they go through and find all of the words with the "ch" and they color that so that when they are reading the story, they are supposed to focus on that and realize the "ch" makes the "ch" sound So when they are sounding out the word. Like I said, it brings their attention to it. So that's more maybe highlighting than using colors.	Students don't use it in writing but use it for reading
10	So, for editing, they do highlight their mistakes, so that is a good thing. Because it jumps out to them when they do their final draft. They can see the color they need to fix when they are writing it as their final draft. Word work, I think it is just a different avenue to help them to remember their words some more when they are writing them.	Students use highlighters during editing Use color for word work

11	<p>We'll use it during the graphic organizer. They'll use it to show their different sight words or to underline or highlight different sight words. There are different activities you can do. If they are learning a couple of different sight words at a time, they might play a game where you roll a dice and whatever number then they get to write the word in a color. I've seen centers like that used in the past. Another way we do it is that I'm just thinking about it now is CVC words. So, within a word, you know, differentiating between the constants and making the vowels stand out. Or if there is a blend, they are focusing on making the blend stand out as they are learning it, so I do that in different ways when we are building the letters using all code-in boxes and things like that. Then they can, the vowels are always red. Just make it to stand out and help them remember that is going to be that short vowel sound, or I got flipbooks, you know, where they can pair up different beginning, middle, and ending sounds and sound out the words. So, the beginning sounds are in one color, and then the ending sound and middle sound in different colors kind of to visually cue them that they are working on different parts of the word. So that would be another way I would use color.</p>	<p>Use it to identify sight words</p> <p>graphic organizers</p> <p>Use colors to build words</p> <p>Use at writing centers</p>
12	<p>I'm not sure how to answer that. Like I've already said, having them pick up a certain or different crayon to highlight words or to write words or differentiated different letters that we are working on during that time.</p>	<p>Highlight words</p>

Table 20

Students' Attitudes and Abilities about Using Colors in Writing

Participant	Responses	Inference
1	<p>I think if they think writing is boring, which at this point, a lot of them still do, then at least they get engaged. "OK, if I write, then I can change the color or something." So, it's just a secondary way of keeping them engaged. Whenever you talk about different types of learners, there's ones that are artistic. You know, those types of learners, even if they don't like writing, will like the writing process because now they're getting to do something that's kind of artsy. Now, I haven't seen it be a problem because we're typing. But they could start drawing, but if they're going to draw,</p>	<p>Engaged</p> <p>Helps artistic learners</p>

	they're going to draw whether it's a pencil or a colored pencil, you know, so everyone gets extra.	
2	I think if they could write in marker, I think it would be much more exciting for them. Like "Ooh, I can write my story in marker." I always had markers and colored pencils in a writing center where they actually went before COVID. But with COVID, we still don't have our writing center where they go sit. They do everything at their desk. But I think kids were always leaning toward using colored pencils than they were their regular pencils. Just a little motivation, something different that they didn't usually get to do.	More exciting Motivating Colors and markers at writing centers
3	I think it can help them have a more positive attitude toward writing in the classroom. And I don't know if it affects their writing or not. I mean, they don't use a lot of colors, so.	Positive attitude unsure about ability
4	I feel like it could be enhanced. I feel it could help them. A bunch of my students just love using color in general. And I feel like it motivates them to write or to do anything, really.	Enhances; helps; motivates; loves using colors
5	My kids have a pretty good attitude about writing, but I think that is because I really enjoy teaching it. And I think if you enjoy it, and they're second graders, so like whatever aura you have and excitement you have for learning usually rubs off on most of them.	Good attitude excitement
6	I would have to believe that if there were a system in place that it would be more engaging.	More engaging
7	I do think that it does make it more interesting for them than just regular paper and pencil . . . maybe not so bland. Maybe they would want to learn a little bit more if it is colorful. I like to look at color. I want to make it as enjoyable as I can for them, so I think adding color would definitely do that.	More interesting; improves learning; enjoyable
8	They are way more positive. It is like coloring. They are way more positive.	positive
9	I don't know that they really say much you know about it unless like the patterns.	unsure

10	I think they enjoy it because it is a little different than just using the everyday old pencil they use all the time. When they are actually doing their work on writing, I think they actually enjoy the editing because they get to use a highlighter. It does help them to see their mistakes more.	Enjoy using colors; Improves visibility; Helps see mistakes
11	I don't want to say that color is changing their ability in any way, but you know, I think they are definitely going to be more engaged . . . If they get to use colors, they are more engaged because when I pull out my colored markers and things like that, they are definitely excited that they get to use the fun colors. They will ask for a certain color, so they get to use their favorite color. That's always exciting for them, and I tell them all the time that our world is full of big, beautiful colors, so they should be including those in their pictures. You know, making connections to things that they see around them is always beneficial, but I would say they are probably a little bit more engaged than if they are just using black and white.	Ability the same More engaged Exciting Makes connections beneficial
12	They have generally positive attitudes toward it because I think it's more motivating for them. They want to get the highlighters out.	Positive attitude; motivating

Table 21*Participant's Experience of a School's Continuity of Using Colors for Writing Instruction*

Participant	Responses	Inference	Inference
		between grade level	in grade level
1	I don't think there's a discussion about that, you know. Well, we would need to start with having a discussion about how we taught the continuity of spelling or vocabulary within or between grade levels and then, from there, actually move on to the writing process. We don't even have the more basic level, but I think it would be a good idea.	None	None

2	I don't think we have ever once had a conversation or a discussion about using colors in writing, let alone between teachers than grade levels.	None	None
3	There's not really any guidelines, or it's not really anything that anyone really mentions. I think we just kind of do it on our own. I guess subconsciously; I might use it more than I realize I do. But I guess we use it more subconscious like it's not in the curriculum. You don't get training. They don't tell you that you have to use color. It's just something that, after years of teaching, you might start to incorporate into your teaching to help you.	None Do it on our own	None
4	None that I know of. Yes, our team plans together, but between grade levels, I don't know about that. But in our team level, we like to plan altogether. Of course, we are all at different spots. We all have writing journals. We all have the writing menu but don't talk about color.	Plan writing but not with color	None
5	I don't think there is any. No one ever told me to do it. I kind of automatically did it.	None	None
6	There is nothing schoolwide about that.	None	None
7	I don't know if there is anything that has been told to us about using color.	None	None
8	They don't.	None	None
9	The school never talked about colors in writing.	None	None
10	Well, I don't think the school has ever talked about it, to be honest.	None	None
11	I mean, that is not really something that they are pushing.	None	None
12	I haven't really heard any talk about colors in writing, honestly, until you. Obviously, I use it, but like it being talked about in a professional development way or planning instruction, I haven't really had any experience.	None	None

APPENDIX J: Document Analysis

Analysis of Documents by Participant

Participant _____

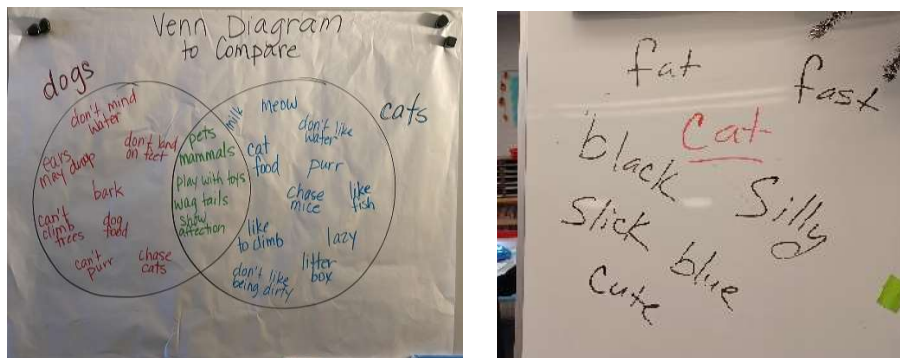
Date documents received _____

Document	1	2	3
Date created			
Type of Document (example: letter, journal, prewriting, draft)			
Colors used			
Tools used			
How colors used (ex: spelling, revision, parts of speech, punctuation, capitalization)			
Colors have a purpose: Yes or No			

APPENDIX K: Teacher-created Documents

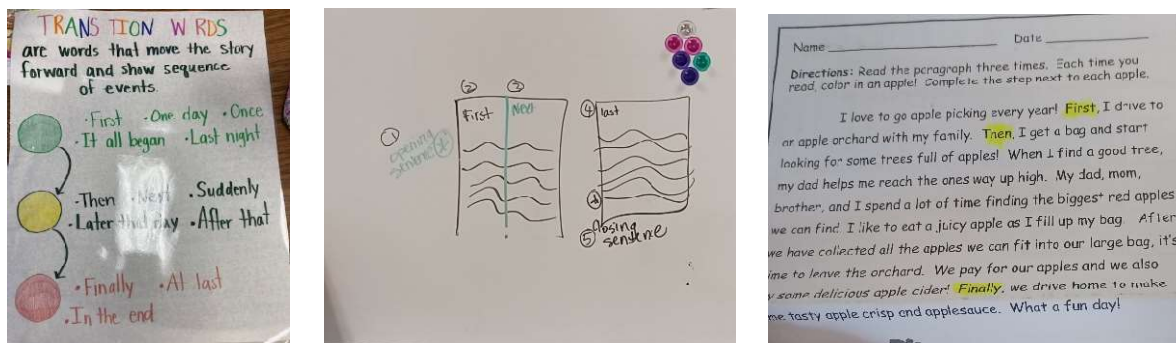
Ten figures were created to show the different ways teachers presented the same material. All documents have more than one color on them. Teachers provided documents for brainstorming before a writing activity. Examples are shown below (Figure 1). Three teachers showed how transition words were taught during writing class (figure 2). A first-grade, second-grade, and third-grade teacher provided examples of paragraph writing (figure 3). Examples of grammar lessons were provided by five teachers (figure 4). Three first-grade teachers provided examples for teaching question words and how to use those words (figure 5). Two participants showed how they edited their writing (figure 6). Two teachers submitted examples of how to write a friendly letter (figure 7).

Teachers provided teacher-created posters that students could refer to during writing throughout the year. These reference materials were posted on classrooms' walls. Two participants submitted posters that listed ideas for writing (Figure 8). Some teachers used the list of writing ideas to help students select a topic to focus on during journal writing. Three participants provided pictures of documents that referred to the components of a sentence (Figure 9). Three participants provided different formats for word lists to be presented to their students for writing (Figure 10).

Figure 1**Examples of Brainstorming**

Note. Participant 6 provided a brainstorming activity where students compared dogs and cats.

Participant 3 provided a photograph of a brainstorming lesson about describing a cat.

Figure 2**Examples of Using Transition Words in Writing**

Note. Participant 2 provided a reference chart for transition words students could use during writing.

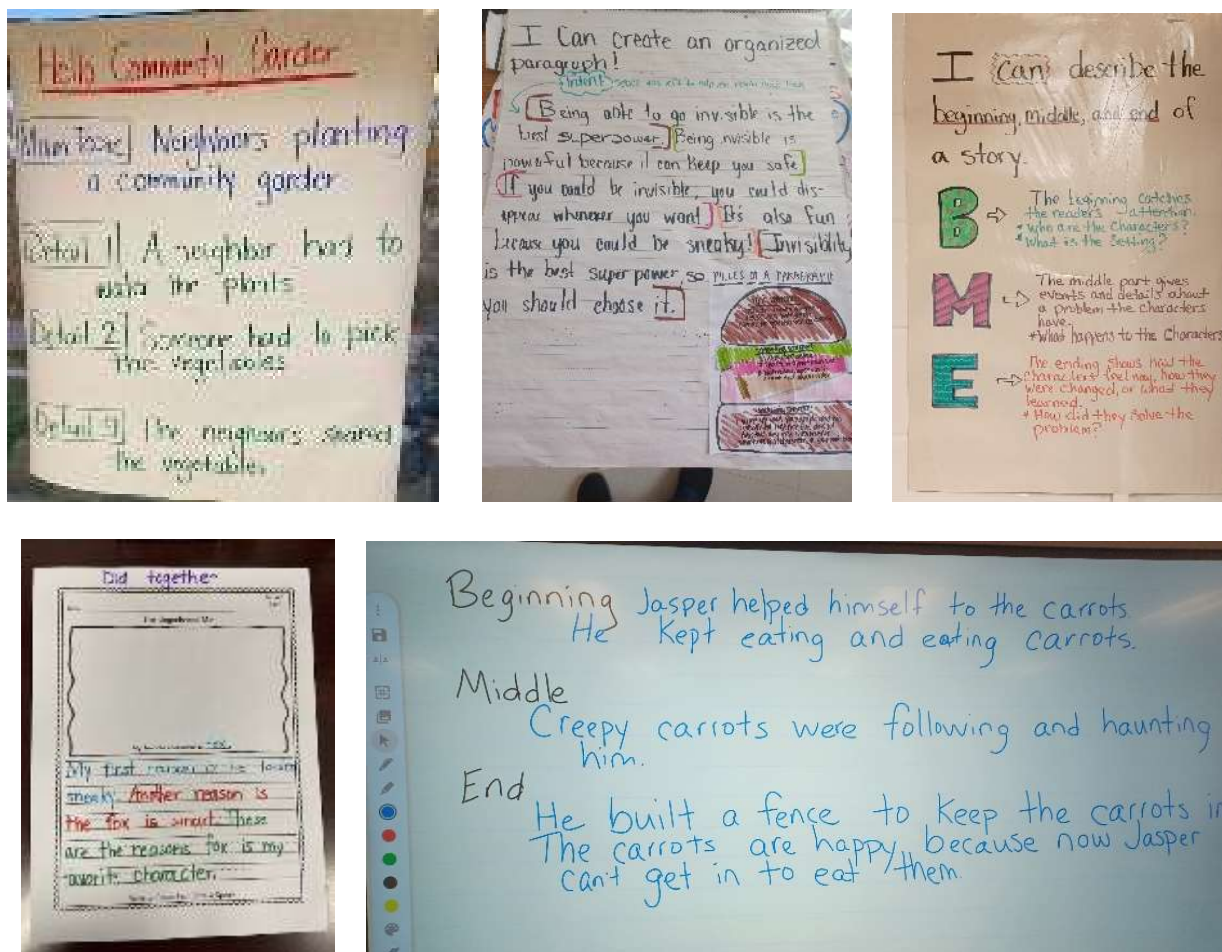
Participant 10 taught her students to use transition words at the beginning of a

paragraph. Participant 8 provided a picture of a student's paper where a highlighter was used to

mark transition words.

Figure 3

Examples of Writing Paragraphs



Note. Participant 2 used red, blue, and green to teach the main idea with supporting details.

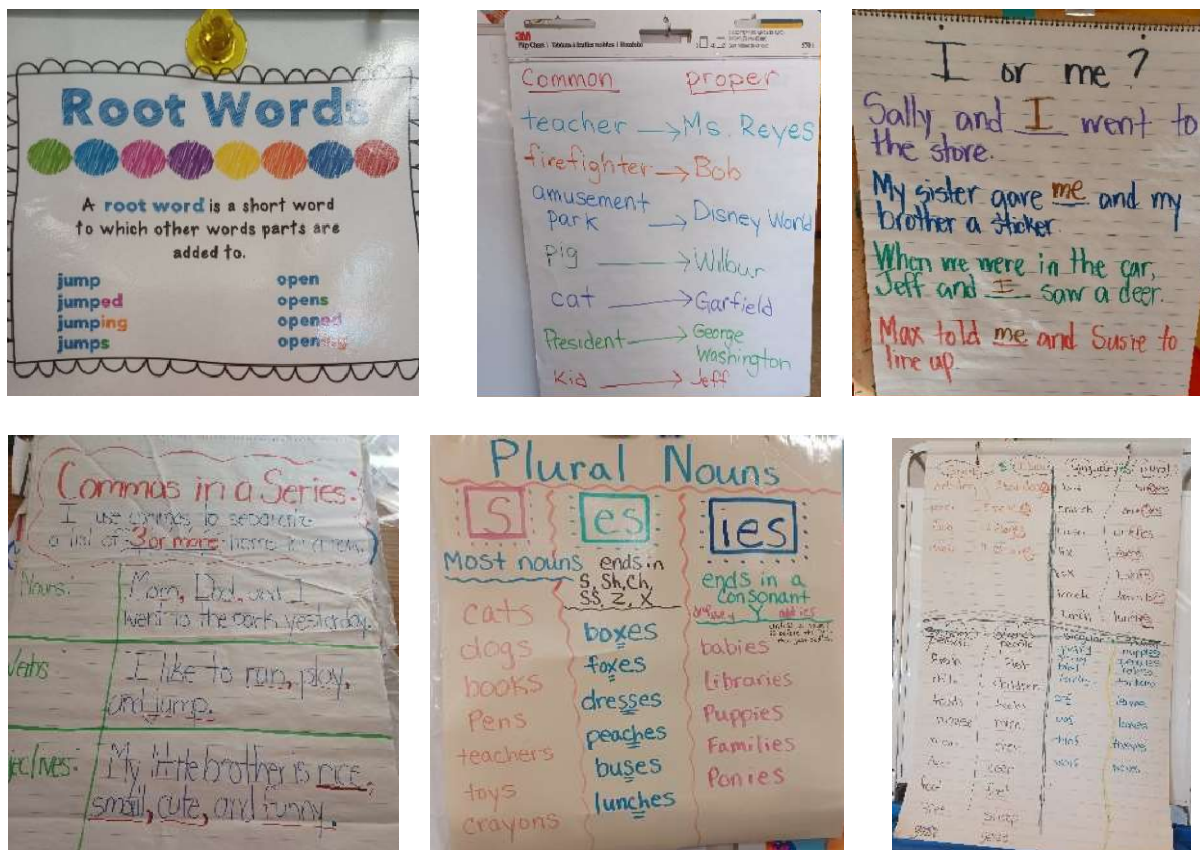
Participant 8 used colors to mark the beginning and end of sentences in paragraphs. Participant 7 provided a chart that showed students how to write a paper with a beginning, middle, and end. Participant 2 wrote sentences in different colors with her students. Participant 5 wrote a paragraph on the board using black and blue ink.

To help students to develop as writers, teachers provide grammar instruction. Teachers provide documents of grammar lessons where teachers focus on capitalization, suffixes, and

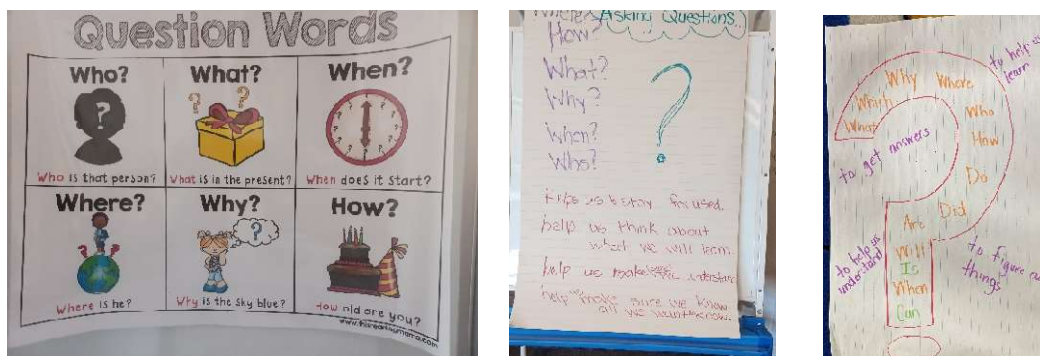
parts of speech. During lessons about suffixes, teachers used a different color to emphasize the suffixes. Examples of documents used during grammar lessons are shown below.

Figure 4

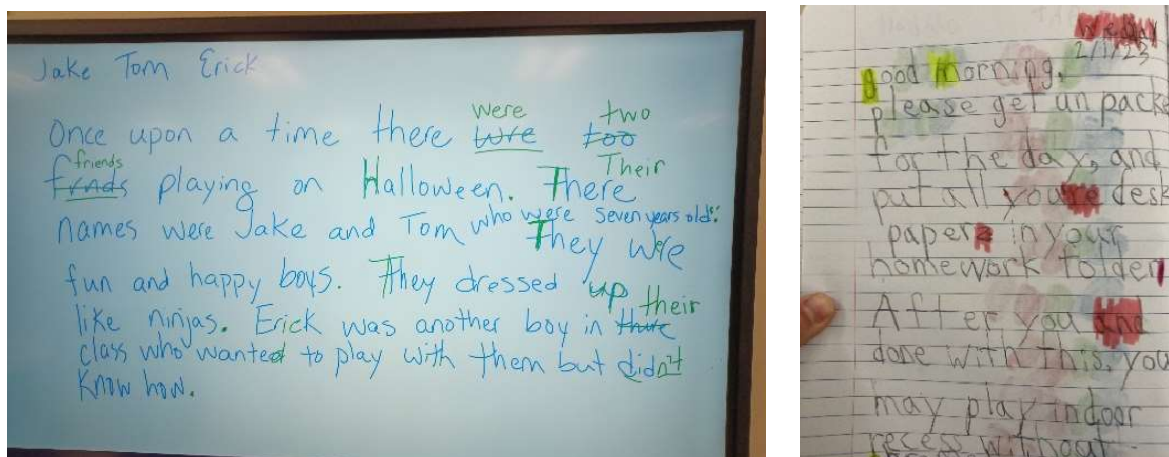
Examples of Grammar Instruction



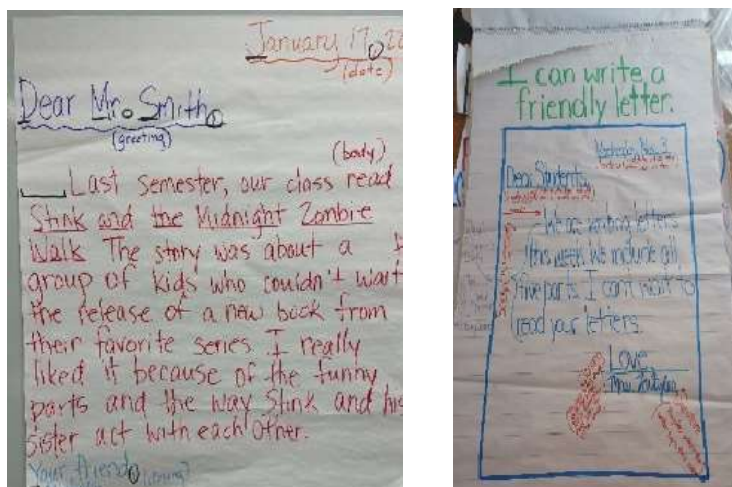
Note. Participant 10 created a root words chart for students to learn about suffixes. Participant 11 created a document while teaching a lesson about common and proper nouns. Participant 10 provided a document created during a grammar lesson about “I” or “me.” Participant 8 submitted a document about using commas in a series. Participants 7 and 3 created documents about plural nouns.

Figure 5*Examples of Writing Questions*

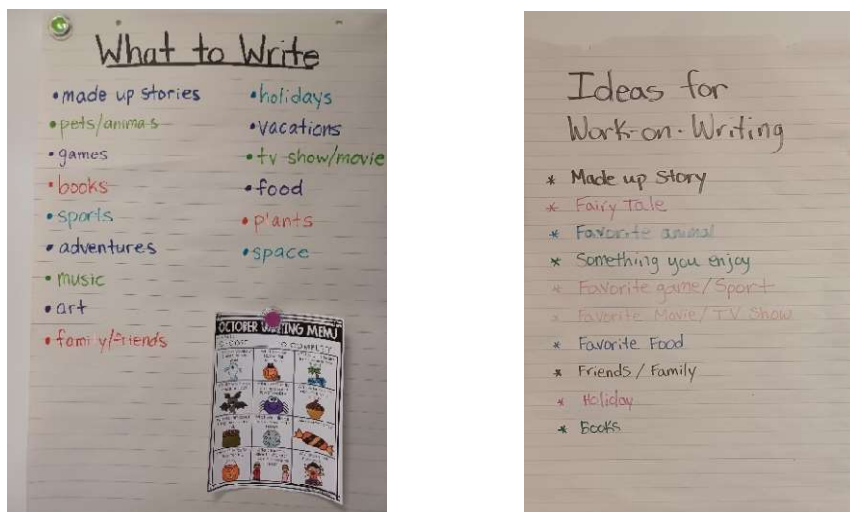
Note. Participant 11 taught question words using a computer-generated page highlighting question words in red when used in a sentence. Participant 4 created a chart using question words that emphasized the purpose of those words. While Participant 7 presented a document similar to Participant 4, different colors were used, and more question words were recorded.

Figure 6*Examples of Editing*

Note. Participant 5 used a smartboard to teach her students how to edit their writing. Participant 8 submitted a student's example of editing a document.

Figure 7*Examples of Writing a Friendly Letter*

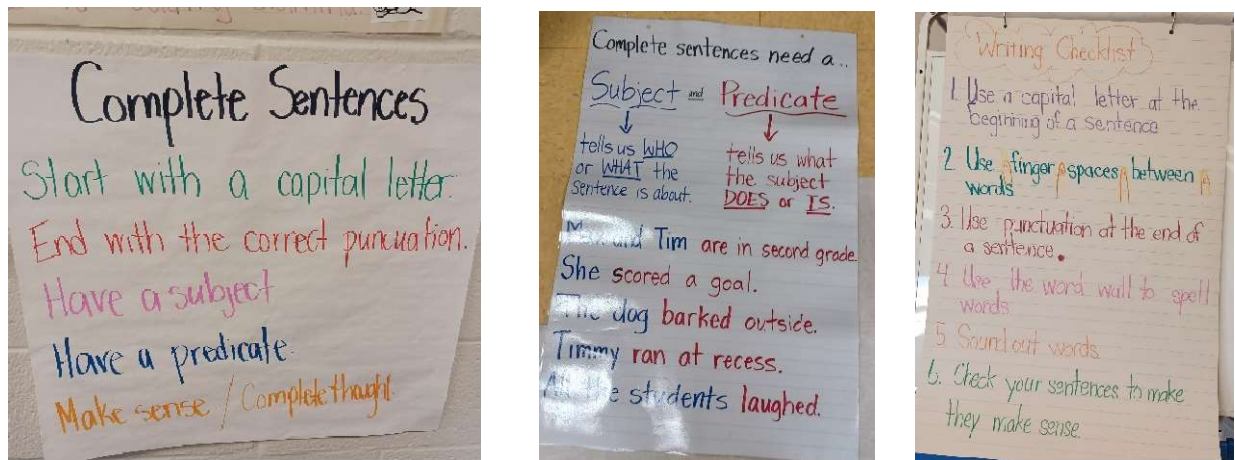
Note. Examples of how to write a friendly letter were submitted by participants 6 and 8, respectively.

Figure 8*Examples of Ideas for Writing*

Note: Participant 4 used a monthly printed chart attached to a chart she had hand-written titled “What to Write,” which students could refer to throughout the year. Participant 7 provided a photograph of “Ideas for Work on Writing.”

Figure 9

Examples of Instruction for Constructing a Sentence



Note: Participants 10, 4, and 2, respectively, shared documents that emphasized how to construct a complete sentence.

Figure 10

Types of Word Lists for Students' Use



Note: Three participants displayed words that students can use in their writing. Participant 11 provides words for students to use by flipping through cards on a ring. Participant 9 listed sight words inside a snowman on chart paper. Finally, participant 5 displayed Post-it notes with words written on them to create a word list for student use.

APPENDIX L: Member Check Form (Yocum et al., 2015)

Teachers' experiences with using colors to teach writing

Debriefing Statement

Thank you for having participated in my study regarding **primary grade school teachers' experiences with using colors during writing instruction**. This debriefing serves to share with you the results of my study. Additionally, this debriefing serves to increase the trustworthiness of my research by allowing you the opportunity to review transcripts of your participation in a one-on-one interview (if applicable) and to indicate your level of agreement with my conclusions based on the research.

Thank you again for your time.

1. If you participated in a one-on-one interview session as part of this research, a transcription of your interview will be provided to you at the time of this debriefing. Please take a moment to review the transcript. You can make a note of any corrections you feel necessary on the margins of the transcript. If you participated in the one-on-one interview, please indicate your level of agreement with the following statement. If you did not participate in the one-on-one interview, please skip to question number two (2) below.

The transcript accurately reflects my interview with the researcher.

Strongly Agree/Agree/Disagree/Strongly Disagree

2. The next several statements will summarize the themes we identified during our data analysis. For each statement, please indicate your level of agreement with the validity of the identified theme. You may also use the space provided to make any notes about each identified theme.

After reviewing the data from the interviews, lesson demonstrations, and submitted documents, all teachers who participated in the study used colors to teach writing in a variety of ways. Teachers use colors when teaching grammar, spelling, sentence writing, and the writing process, which includes brainstorming and editing. Participants use whiteboards, smartboards, chart paper, 8 ½ by 11-inch paper, and post-it notes to write on during writing instruction. Documents were created with markers, printer ink, or a stylus. While they use colors during writing, most teachers do not have a plan on which colors to

use when they are creating documents. The colors that teachers used to teach writing varied greatly with one teacher using 6 colors while another teacher used 10 colors.

I agree that this theme is a sensible conclusion considering my knowledge of the research topic.

Strongly Agree/Agree/Disagree/Strongly Disagree

My notes about the theme, if any:

Reasons why participants use colors to teach writing varied. Some participants used colors because they visually capture the students' attention which allows students to discriminate between things which makes writing easier. Other participants use colors to organize. Participants also used colors for writing instruction because they felt students were more engaged in the activity.

I agree that this theme is a sensible conclusion considering my knowledge of the research topic.

Strongly Agree/Agree/Disagree/Strongly Disagree

My notes about the theme, if any:

During the interview process, participants expressed that they have received no training on how to use colors to teach writing; however, they all use colors in writing instruction. Participants learned on their own how to use colors during writing instruction. Teachers did not receive guidance on how to teach writing prior to becoming a teacher. While a few teachers have taken some courses about teaching writing, most teachers have little support in teaching writing and are responsible for developing their own lessons.

I agree that this theme is a sensible conclusion considering my knowledge of the research topic.

Strongly Agree/Agree/Disagree/Strongly Disagree

My notes about the theme, if any:

Participants addressed students' writing performance by talking about students' attitudes and abilities. First, when colors are used during writing, students are more engaged and have a positive attitude. Next, students can find information easier and are able to focus better during the writing lesson.

I agree that this theme is a sensible conclusion considering my knowledge of the research topic.

Strongly Agree/Agree/Disagree/Strongly Disagree

My notes about the theme, if any:

When discussing the disadvantages of using colors some participants thought too much color could cause students to become overstimulated. Other participants believed the use of color during writing would not be beneficial to students who are color-blind. Another concern for participants was students might focus too heavily on the colors rather than the concepts for writing.

I agree that this theme is a sensible conclusion considering my knowledge of the research topic.

Strongly Agree/Agree/Disagree/Strongly Disagree

My notes about the theme, if any:

Appendix M: Participants' Responses to Member Check

Participant 1 provided a comment for four themes. For theme 1, he wrote:

As I am writing on the board, I try to transition colors as I transition points. For example, I might do the hook in one color while doing the body of the paragraph in another color. However, the main reason I use color is to make the lesson more visually engaging. Every once in a while, things are color-coded, but there are certain problems with this. For one, students may not have access to the same colors. Additionally, it takes too long. ELAR is broken up into so many parts in early grades grammar, writing, phonics, spelling, reading fluency, and reading strategies that there isn't time to do anything slowly. If you fail to streamline your lessons in every way possible, the only option is to skip a segment of ELAR.

After reviewing theme 3, participant 1 stated:

I agree that there was no guidance given in writing instruction. What was available in lesson plans was a general direction like teaching personal narrative or informational texts. However, it was not properly segmented. It should have had incremental steps like teaching brainstorming with the following technique for a specified time and then allow students to brainstorm for a specified time. Then teach writing a hook for a specified time and give students the allotted time to perform a task. Teach writing an introductory paragraph for this allotted time, then give students this specified time to complete the task.

All of this would have to be done with a degree of differentiation as well. It being the case that gifted students and tier 3 ESLs are working on the same project means that a gifted student might finish three stories or texts in the time another student might

complete one. For example, by the time I get to instruct, adding sensory language, metaphors, or similes to the text tier 3's might be making a final draft of their first story, while GT students might be working through the first draft of their third story.

While he strongly agreed with the findings for theme 4, participant 1 wrote:

Student performance is so subjective in writing. Additionally, student growth is so difficult to measure. What does growth mean in writing? How can that factor into a grade when most students don't have English proficiency? They might be performing what is considered failing work oftentimes, but English is their second language, so shouldn't grades be considered on some sort of curve?

Participant 1 strongly disagreed with his fellow participants about theme 5. He argued:

I taught autistic students and experienced no issues with overstimulation. Distraction with color only occurs if it is used rarely. If it is novel, students will become distracted.

Additionally, it is more likely students can get distracted while writing on apps rather than paper with various colors. Students who are color blind are only affected by color negatively if it is used to label things without adequate explanation. Additionally, even though color-blind people may see the color differently, they can almost always tell a change in color has occurred.

Table 22

Data from Member Checks

Participant	Transcript	Theme 1	Theme 2	Theme 3	Theme 4	Outlier Finding
1	N/A	Agree	Agree	Strongly Agree	Strongly Agree	Strongly Disagree
2	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Agree
3	Agree	Agree	Agree	Agree	Agree	N/A

4	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
5	N/A	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
6	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
7	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
8	N/A	N/A	N/A	N/A	N/A	N/A
9	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
10	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
11	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
12	N/A	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree

Note. N/A stands for no answer.