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MIDDLE-LEVEL TEACHERS' ATTITUDES ON DISCIPLINARY LITERACY INSTRUCTION IN THE NON-ELA CLASSROOM

by

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The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this dissertation. The College of Education will ensure this dissertation is globally accessible and will not permit alterations after a degree is conferred.

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DEDICATION

This dissertation is dedicated to my parents, Kenny and Vicki Bowers, whose sacrifices afforded me every opportunity to pursue my ambitions. My achievements are a testament to their unwavering support. I am also grateful to my brother, Josh, and to my best friends—Lyndsey, Sarah, and Ryana—whose understanding, care, and humor have been a source of strength throughout this journey. Additionally, I must acknowledge the educators who have shaped my values and approach to my work. Towers and Jennifer cultivated my capacity from my earliest years as a teacher and have continued to guide me toward instructional excellence, while Emily and Sarah have been invaluable thought partners, ensuring that each day working with students is both meaningful and fun. Lastly, I dedicate my work to my cocker spaniel daughter, Georgie—this work is to give you a better life.

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Abstract

The persistent gaps in student achievement, particularly in the context of discipline-specific literacy skills, across public schools in the United States continue to widen. With a focus on South Carolina, this study investigates how professional development efforts have sought to address these gaps and enhance literacy instruction. Despite many initiatives, testing scores and teacher perceptions reveal limited progress in literacy outcomes. The study discusses a key challenge: the lack of substantial literacy instruction beyond English language arts (ELA) classes, resulting in a growing disparity between literacy mastery and the current reality. The research acknowledges the existence of literacy-focused professional development efforts for educators but highlights the resistance and perceived unpreparedness of teachers from various disciplines in integrating discipline-specific literacy practices.

The study's purpose is to explore middle-level teachers' attitudes towards incorporating disciplinary literacy instruction in non-ELA classrooms, examining the challenges, benefits, and disparities across subject areas. Additionally, the impact of disciplinary literacy professional development on teacher attitudes is investigated. This qualitative collective case study employs a cross-case analysis to compare the attitudes of teachers from different disciplines, aiming to uncover variations and insights. Recognizing the significance of teacher attitudes in curriculum success, the research contributes to a deeper understanding of the factors influencing teachers' engagement with new instructional frameworks.

The study provides essential context for understanding the challenges and opportunities associated with incorporating disciplinary literacy practices in non-ELA

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classrooms. By delving into teachers' attitudes and perceptions, the research aims to shed light on the complexities of improving literacy outcomes across various subject areas and offers insights to inform educational policy and practice. This study highlights the critical need to bridge the gap between literacy instruction and subject-specific content, emphasizing the importance of understanding teachers' attitudes and challenges in achieving this integration.

Chapter One: Problem and Significance

Gaps in student achievement, specifically students' ability to engage in conversation, thoughts, and writing that demonstrates discipline-specific literacy, is a common concern amongst public school stakeholders across the country (Shanahan, 2014). Throughout the last few years, national, state, and local legislatures have prioritized literacy instruction and continually funded initiatives to prepare secondary educators in every subject area for the critical task of increasing student achievement in literacy (Shanahan, 2014). This increased legislative focus on literacy instruction highlights the recognition of its pivotal role in fostering not only academic success but also the development of crucial communication skills essential for students' future endeavors (Shanahan, 2014).

Background of Problem

In South Carolina, legislation such as the Read to Succeed Act which requires all schools to focus on improving reading proficiency among students (South Carolina Legislature, 2014). This law mandates the identification and intervention for struggling readers in kindergarten through third grade, providing appropriate support and interventions (South Carolina Legislature, 2014). It also emphasizes the appointment of literacy coaches in elementary schools to assist teachers in implementing effective reading instruction strategies (South Carolina Legislature, 2014). The act encourages professional development for teachers to enhance their skills in teaching literacy, advocates for summer reading camps to prevent learning loss, and includes a retention policy for students who are not reading at grade level by the end of third grade (South Carolina Legislature, 2014). For secondary educators, a literacy-focused, graduate-level course has been mandated for every teacher regardless of their discipline (South Carolina Legislature, 2014).

However, problems with positive literacy outcomes persist—state testing scores and anecdotal teacher perceptions show little positive moment because of these policy initiatives (National Center for Education Statistics, 2022). According to the National Assessment of Educational Progress from 2022, 39% of all fourth graders in South Carolina read below a basic level and 28% meet basic expectations without showing proficiency (National Center for Education Statistics, 2022). Eighth grade scores show an even more startling reality with 38% of all students scoring below basic expectations for reading and 36% merely meeting the basic requirements (National Center for Education Statistics, 2022). Both grades also indicated a significant decline from the last test administration—highlighting the major gaps in literacy instruction statewide (National Center for Education Statistics, 2022).

In fact, the research shows there is little literacy instruction happening in any class beyond English language arts (Nokes, 2010; Snow, 2002). With most English language arts (ELA) classes lasting around 45-60 minutes of a student's day, it is impossible to assume that this subject-area alone can combat the growing chasm between literacy mastery and the current reality (Nokes, 2010; Snow, 2002). Middle schools must move toward a literacy approach that empowers every teacher to engage in reading, writing, and talking that represents the professional standard for their specific discipline. While some factors of the Read to Succeed courses address this reality, student outcomes show how little transference has occurred from these classes to instructional practice. More research is needed to fully understand the perceptions of secondary educators in non-ELA courses toward incorporating disciplinary literacy.

Statement of Problem

Some efforts have been made to move modern curriculum towards embracing the disciplinary literacy framework—many preservice teacher programs have developed strong literacy infusion in their classes for all candidates (Accurso, 2017; Copeland et al., 2011; Fang, 2014; Nokes, 2010). However, teacher resistance remains a significant barrier to success as researchers note that teachers feel overwhelmed by the need to "design curriculum, instruction, and assessments to apprentice students to these disciplinary literacy practices in ways that simultaneously develop students' content knowledge" (Accurso et al., 2017, p. 86). The general problem is that, while most teachers have experienced professional development that is designed around the disciplinary literacy model, there has been little transference to instruction in varying subject areas and teachers report feeling ill-equipped for this work (Accurso, 2017; Brozo, 2018; Howell et al., 2021).

Purpose of the Study

The purpose of this qualitative collective case study is to analyze the attitudes of middlelevel teachers toward disciplinary literacy instruction in the non-ELA classrooms. To better understand these attitudes, the researcher specifically examines the challenges and benefits that teachers perceive when thinking about the inclusion of specific disciplinary literacy strategies within their classroom. Additionally, the study seeks to understand what drives the variances between the different attitudes across disciplines such as science, social studies, and mathematics. To provide clarity on what instructional leaders can do to increase literacy outcomes, the researcher analyzes the impact of disciplinary literacy professional development on teacher attitudes. As the literature review will illustrate, research has been conducted on the

importance of disciplinary literacy instruction to student retention—the attitudes and dispositions of teachers who do not primarily teach English language arts remains an unanswered question.

Significance of Study

Teacher attitudes, which is defined as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor," is one of the most crucial factors in ensuring the success of any curricular approach (Eagly & Chaiken, 1993 as cited in DeVault, 2021, p. 672). This type of research is important since the success of curriculum initiatives is heavily reliant upon "teacher attitudes toward several shifts in teaching practices" (Laboy-Rush, 2011 as cited in Al Salam et al., 2017, p. 64). Failure to understand why teachers experience resistance or excitement when approaching a new instructional framework is central to the likelihood that it will become realized in a classroom setting. When teachers hold favorable attitudes toward a learning theory, they are likely to approach it with "positive attributes (cognitive), experience positive emotional reactions in response to it (affective), and engage in behaviors that foster and support it (behavioral)" (DeVault, 2021, p. 672).

Additionally, the state legislature's funding of literacy initiatives, such as Read to Succeed, accounts for a sizable portion of the state's general budget. After just four years of this law's implementation, it is estimated that South Carolina has invested over \$214 million (Bowers & Ziesig, 2020). This large price-tag coupled with lower mastery scores in literacy that extend to decreased understanding in social studies, science, and mathematics, make the need for greater understanding around literacy practices overwhelmingly evident (National Center for Education Statistics, 2022).

Organization of the Study

This qualitative investigation takes the form of a collective case study with each discipline functioning as its own case. In its origin, educational case studies emerged as a byproduct of new policies that were created using data about education that lacked context (Hamilton & Corbett-Whittier, 2013). Therefore, case studies can provide a wealth of context that informs educational stakeholders, even those who make policy decisions, about the intricacies of the topic. Yin (2014) describes this as "studying the meaning of people's lives, as experienced under real-world conditions" (p. 9). While numbers and data points can be decontextualized and used with ulterior purposes, case studies are "able to deepen understanding in real contexts" because of its ability to capture the complexity of a context (Hamilton & Corbett-Whittier, 2013, p. 4).

A collective case study is an appropriate methodology for current research because it completes an examination of more than one case, can spawn useful data that is contextualized, and can be used to deepen an audience's understanding of this issue so informed changes can be implemented. Using a cross-case analysis, the researchers will be able to compare the results of each case against each other. This approach will allow researchers to understand the differences between disciplinary literacy attitudes common amongst science, social studies, and mathematics teachers. Collective case studies are analyzed using a social-constructivist worldview—those within this theoretical framework "[assume] that individuals seek understanding of the world in which they live and work" (Creswell, 2009).

Limitations of the Study

Responses about students' outcomes based on literacy integration were collected only from the perspectives of the teachers and the researcher, which may not have captured the full

picture of the students' mastery of literacy skills. Additionally, incorporating student selfassessment and peer evaluations could provide valuable insights into how students perceive their own literacy growth within diverse subjects. Other studies that focus on obtaining different data sources and adding other measures for assessing student progress could contribute to richer data analysis and a fuller understanding of the impact of disciplinary literacy practices in non-ELA courses.

Summary

This introduction presents an overview of the problem and its significance in the context of student achievement and literacy instruction. It highlights the nationwide concern regarding students' discipline-specific literacy skills and the efforts made by legislatures to address this issue. Despite these efforts, there are persistent problems with positive literacy outcomes, as indicated by state testing scores. The chapter emphasizes the need for literacy instruction beyond English language arts classes, given that most of a student's day is spent outside of these classes. It also points out the challenges faced in implementing disciplinary literacy practices across different subjects.

The problem statement for the study identifies teacher resistance as a barrier to the success of disciplinary literacy initiatives. The purpose of the study is to examine middle-level teachers' attitudes toward disciplinary literacy instruction in non-ELA classrooms. This chapter also highlights the crucial role of teacher attitudes in curriculum success, as favorable attitudes are essential for effective implementation. Finally, the chapter explains the organization of the study, which will involve a collective case study approach, analyzing each discipline as a separate case to gain contextualized insights with reference to limitations. The next chapter

provides a greater context for understanding these topics by examining the existing literature on the topic of disciplinary literacy and related professional development.

Chapter Two: Review of Related Literature and Research

There is substantial research on disciplinary literacy and how it might be integrated into the specific content standards for each subject area elementary and secondary settings. In large part, this is due to the numerous literacy initiatives that the United States government has funded and continues to fund. Many published works include a focus toward how disciplinary literacy increases student outcomes. While these previous studies offer valuable insight for understanding and influencing curriculum initiatives in all subject areas, they provide only partial solutions for instructional leaders seeking to understand how disciplinary literacy initiatives can be maximized. A limited body of knowledge exists regarding what contributes to teachers' overall perceptions of this educational theory.

The goal of this literature review is to summarize the history of disciplinary literacy research and provide background on various discipline-specific literacy strategies. Also included in this discussion is a focus on the history of literacy leadership with specific reference to preservice teacher training, professional development, and instructional coaching geared towards increasing disciplinary literacy aims. Finally, there are several considerations from the research on the impact of teacher attitudes toward complex change initiatives in curriculum.

Clarification of Terms

Disciplinary literacy refers to the skillful use of specialized ways of reading, writing, and speaking that are specific to a discipline (Fang & Coatoam, 2013; Moje, 2008; Shanahan & Shanahan, 2008; Shanahan & Shanahan, 2012; Shanahan & Shanahan, 2014). This type of pedagogy is built from the understanding that each discipline has its own way of communicating ideas—knowledge that is critical to preparing students to do work in a specific field (Shanahan

& Shanahan, 2012; Shanahan & Shanahan, 2014). It focuses on giving students the resources needed to understand the professional expectations and nuances of the discipline they are studying so they are prepared to navigate real-world scenarios (Shanahan & Shanahan, 2012; Fang, 2012). Researchers of this movement have noted that the implementation of disciplinary literacy moves students beyond intermediate literacy to noticing the unique socio-cultural characteristics of a text in a specific discipline—specifically, what evidence is important and how ideas are organized and presented (Moje, 2015; Shanahan & Shanahan, 2012). Within the disciplinary literacy framework, teachers in each subject area "[build] an understanding of how knowledge is produced in the disciplines, rather than just building knowledge in the disciplines" (Moje, 2008, p. 97).

This type of approach is critically important as more generalized content-area reading approaches have proven to be a poor means for developing students to meet the literacy demands of a particular field (Shanahan & Shanahan, 2012; Grysko & Zygouris-Coe, 2020; Moje, 2008). One of these generalized literacy pedagogies is called content area literacy which provides strategies that can be applied to any text with little adjustment (Shanahan & Shanahan, 2012). Content area literacy is commonly used at a secondary level as an alternative to disciplinary literacy (Shanahan & Shanahan, 2008; Brozo et al., 2013).

Content area literacy is also known as intermediate literacy which focuses on reading and literacy skills, like generic comprehension strategies or normative word meanings, which are common to most reading tasks (Shanahan & Shanahan, 2008; Ehren et al., 2010). Intermediate literacy is a higher form of literacy development than foundational literacy which includes basic reading skills, such as decoding and knowledge of high frequency words, which are necessary to understanding all texts or completing any literacy task (Shanahan & Shanahan, 2008; Ehren et al., 2008; Ehren et al., 2008; Ehren et al., 2010).

al., 2010). Content area literacy and disciplinary literacy emerged and evolved following an initiative called Writing Across the Curriculum—an instructional pedagogy that was designed to ensure that students have frequent and significant opportunities to write-to-learn and learn-to-write in every content area (Condon & Rutz, 2012). Understanding these literacy strategies involved an in-depth look at teacher attitudes, a tendency in psychology that is shown through evaluating something with varying degrees of favor or disfavor (Eagly & Chaiken, 1993 as cited in DeVault, 2021).

Disciplinary Literacy

Disciplinary literacy emerged from content-area literacy practices—the most common use of literacy-based instruction at a secondary level which focuses on generalized practices that proficient readers can employ when interacting with any text (Shanahan & Shanahan, 2012; (Shanahan & Shanahan, 2008; Fang & Coatoam, 2013). Currently, many curriculums have students operating at a basic level of literacy; whereas the disciplinary literacy model emerges as the highest level of literacy because it teaches students the specialization of reading skills required to understand the specific subject they are in (Shanahan & Shanahan, 2008; Fang & Coatoam, 2013). Proponents of the disciplinary literacy approach believe that this theory allows teachers to focus on "the specialized knowledge and abilities possessed by those who create, communicate, and use knowledge within each of the disciplines" (Shanahan & Shanahan, 2012, p. 7). While there is a tendency for people to conflate the two together, content-area literacy and disciplinary literacy approach the teaching of reading, writing, and talking skills in contrasting ways—failure to understand the difference between the two is one of the major reasons why disciplinary literacy has not been successfully implemented in many cases (Shanahan & Shanahan, 2012). Parenti (2018) differentiates content area literacy from disciplinary when

stating that the latter is "not designed to provide strategies for improved acquisition of content area text; rather, it is asking students to adopt the language and thinking habits aligned...the discipline" (p. 473).

Some critics of the debate between disciplinary literacy and content-area literacy argue that educators must embrace the most effective elements of both through productive dialogue that shifts in focus from one literacy camp or the other to a more comprehensive literacy approach in content area classrooms (Brozo et al., 2013). Those in this center believe that developing collaborative teams that can contextualize generic literacy strategies within the content area so every teacher is able to embrace them will allow both disciplinary literacy and content area reading to work in tandem to produce learners who are well-versed in literacy practices (Brozo et al., 2013).

Other researchers insist on the inclusion of disciplinary literacy as the primary means of literacy development believing that "general reading ability is not sufficient for more advanced achievement in the content areas" (Reed et al., 2017, p. 254). Where content-area literacy merely provides literacy skills and asks them to be used with any text with little adjustment, disciplinary literacy focuses on giving the tools that experts in that discipline use to extract meaning from a text, (Shanahan & Shanahan, 2012). Evidence suggests that instructional leaders should embrace a model that "reveal[s] how content experts and secondary content teachers read disciplinary texts [and] make use of comprehension strategies" (Shanahan & Shanahan, 2008). A siloed focus on the content of a class should be abandoned and literacy instruction "should move beyond the time-honored focus on basic skills" to better embrace nuances of that discipline so that students are prepared to navigate real-world scenarios (Fang, 2012, p. 19).

Disciplinary Literacy in Mathematics

Mathematics teachers have historically been the "least likely to be offered support in learning about, designing, and refining disciplinary literacy practices, despite the highly specialized and prevalent literacy practices that math demands" (Ippolito et al., 2017, p. 67; Colonnese et al., 2018). One of the biggest challenges in integrating the two disciplines, writing and mathematics, is the insistence from state and national legislation that pushes discrete and siloed testing in both subject areas (Ippolito et al., 2017). However, research findings suggest that an increase in sharing and reflecting on written ideas produces a deeper internalization of concepts fundamental to mathematics into mathematics instruction, students can demonstrate a deeper and much more well-versed understanding of the concepts they are discussing (Colonnese et al., 2018; Rothstein, 2007). Through the inclusion of this discipline in the overall disciplinary literacy process, academic achievement in both mathematics and literacy are improved (Colonnese et al., 2018).

Researchers in mathematics also emphasize the importance of equipping students for the transition from a knowledge-based society to a conceptual-based society wherein "academic knowledge alone will not protect workers from obsolescence and the impact of global competition" (Rothstein, 2007, p. 22). One of the most critical needs that students of mathematics must fill in this concept-society is the ability to turn data and information into a narrative (Rothstein, 2007). A foremost issue instructional leaders have faced when trying to integrate literacy into mathematics classrooms is the tendency of teachers to "gravitate toward those disciplines they consider kindred: English with social studies, mathematics with science"—however, the conceptual age will require the merging of all subject areas (Rothstein, 2007, p.

23). To shift to positive teacher perceptions of disciplinary literacy, mathematics teachers must be offered specific, assessed strategies instead of generic ones that could be applied to any subject area (Brozo & Crain, 2018). By introducing strategies for writing that are "designed to promote active engagement during knowledge construction significantly increased [students'] problem-solving abilities," literacy will emerge as an important piece of mathematics instruction (Brozo & Crain, 2018, p. 8).

Mathematics teachers can integrate disciplinary literacy practices by having students identify vocabulary specific to the mathematics genre—this is an important foundational step towards developing mathematical literacy. Additionally, utilizing general literacy skills such as identifying text structures (e.g., compare and contrast, problem and solution) could aid students in their pursuit of merging the two disciplines together (Rothstein, 2007). To increase student discussion of mathematics concepts in ways that reflect the discipline's expectations, students can answer the following questions: What is the problem asking you to do? What is your plan for solving the problem? (Brozo & Crain, 2018). Using a strategy like this one infuses both ELA and mathematics disciplines in a way that is both specific and applicable for teachers of mathematics.

Disciplinary Literacy in Science

Previous research may have argued that science should be approached in a solely kinesthetic manner—however, an analysis of the working time of modern scientists showed a significant portion of their discipline-specific duties involved language and literacy making the implementation of discipline-specific literacy in this subject-area critically important to preparing students for scientific endeavors (Grysko & Zygouris-Coe, 2020). In fact, studies now show that there is a significant correlation between reading comprehension and science achievement and literacy skills are foundational to science curriculum at every academic level

(Reed et al., 2017). Grysko and Zygouris-Coe (2020) believe that "an early focus on supporting students' disciplinary literacy in inquiry-oriented science is essential for building a solid foundation from which future science learning can be built" (p. 487). This is evident when the students begin writing about the content they learned in science class as it is a natural extension of what they were already learning (Clark et al., 2021).

Data gathered from classrooms that have implemented a science curriculum that explicitly taught literacy strategies concurrently with science standards suggest that the inclusion of literacy efforts ensured that students made significantly greater progress in science mastery than their peers (Fang & Wei, 2010). These findings support the conclusion that even minimal literacy support in science-specific instruction can have a profound impact on student achievement (Fang & Wei, 2010). Through the implementation of literacy that mirrors the professional expectations of the science discipline, teachers can develop student mastery in both standards while addressing literacy concerns (Lapp et al., 2013). Creating a culture of disciplinary literacy in science classrooms begins with having students talk about the science concepts they are learning through strategies like utilizing a driving question with guided discussions, building conversations about science explorations studied in the classroom, and an increase in the number of read-alouds used with science texts (Wright & Gotwals, 2017).

Educators typically employ a traditional focus on narrative stories as the primary literacy exposure for most students—to prepare students for literacy work outside of the English language arts classroom, teachers "provide detailed insights about differences associated with reading informational and narrative texts" (Lapp et al., 2013, p. 110). For example, a teacher might ask students to tackle a scientific article using annotations, partnered reading, reflective writing routines, and text-based questioning (Lapp et al., 2013). Through the implementation of

strategies such as these, science teachers can ensure that their students fully understand Common Core and Next Generation requirements without neglecting the reading, writing, speaking, and listening skills pertinent in literacy instruction (Lapp et al., 2013).

Disciplinary Literacy in Social Studies

Disciplinary literacy in social studies is built from Schneider's (2014) advocacy for two truths: "history has its own literacy practices that we must learn and teach others to know and respect" and "history teachers need to take responsibility for developing the disciplinary literacy practices of their students" (p. 28). Through elevating the practice of reading like a historian, getting students to engage in writing about what they are reading, and having students discuss and write to organize evidence they discovered while reading, social studies teachers can engage both the literacy expectations (Schneider, 2014). By embracing Schneider's (2014) principles and incorporating these active learning strategies, social studies educators can empower their students to comprehend historical content while also becoming critical thinkers and effective communicators.

Other researchers suggest that the simple act of conducting read-alouds using contextfocused text, like one from the geographic region that students are studying, increases students' functional language because it allows them to understand what this discipline sounds like when read at an expert level (Britt & Ming, 2017). Teachers might also elevate disciplinary literacy practices by implementing text sets that combine informational geographic texts with narrative texts that occur in a specific region to deepen students' understanding of both the human and nonhuman elements found in geography or by using literature circles, a common, collaborative literacy approach to textual understanding, so students can engage with discipline-specific texts while learning from their peers (Britt & Ming, 2017). Additionally, social studies teachers can

spend time analyzing sources with students, write daily, practice reasoning, and encourage collaborative discourses (Schneider, 2014). Through implementing these practices within the existing social studies curriculum, teachers can show respect for disciplinary norms while also preparing students with literacy practices (Schneider, 2014).

Other Strategies and Practical Implementations of Disciplinary Literacy

The literature on disciplinary literacy approaches goes beyond a theoretical push for its inclusion in instruction by offering several practical applications that educators might employ across various disciplines. The following ideas emerge from the wealth of literature that exists on teaching the differing nuances of each subject area in ways that encourage students beyond a general understanding of the content. These practical applications serve as valuable tools for educators, enabling them to tailor their teaching methods and materials to foster deep and meaningful engagement with discipline-specific literacy skills, enriching students' learning experiences.

There are many opportunities for literacy success in different disciplines when the guided retelling protocol is utilized, and teachers model academic language and thinking habits (Parenti, 2018). Through the implementation of guided retelling, or supported interactions with the text, teachers can generate prompts for students to discuss a text that is based on the professional expectations of that discipline. For example, a guided retelling of a literary text often includes sentence prompts aligned with the elements of a plot structure whereas a retelling for a scientific text could have sentence prompts that more closely resemble the scientific method (Parenti, 2018). For younger students, guided retelling can be used as a "pedagogical tool that fits seamlessly into any instructional routine and is a plausible example of how disciplinary literacy can be accomplished in elementary classrooms" (Parenti, 2018, p. 478).

Grammar and structure expectations that are specific to language arts, science,

mathematics, and history can also be used to better understand what disciplinary literacy looks like in these fields (Fang, 2012). The functional linguistics framework posits that language is "both a theory of human experience and a creative resource for making meaning" (Fang, 2012, p. 20). Making meaning within disciplines requires a specific knowledge of the functions of that particular field (Fang, 2012). Much of the functional language included in literary texts that might be used in an English language arts classroom resembles the grammar common in life with minor variation—it can express emotion or change syntax to reflect personalities and regions (Fang, 2012). Conversely, science focused texts are dependent on static writing that depends on consistency (Fang, 2012). Like science, mathematics uses more static texts—however, this discipline uses a combination of linguistic, symbolic, and visual resources to construct meaning (Fang, 2012). Through understanding the various expectations of grammar norms in each discipline, teachers can be better prepared for disciplinary literacy conversations (Fang, 2012).

Other functional language analysis studies have also demonstrated that domain-specific vocabulary is needed for comprehension—thus illustrating the importance of educating learners on the distinct characteristics of texts within a specific discipline (Fang & Schleppegrell, 2010). This creates an impetus to include discipline-specific ways of using language explicitly, so educators can help students who might have little access to these ways of making meaning outside better engage with content-specific knowledge (Fang & Schleppegrell, 2010). The future of disciplinary literacy research should move toward ensuring that Common Core standards are rightly addressed by domain-specific literacy instruction (Fang & Coatoam, 2013).

Attitudes and Influence on Behavior

To thoroughly assess teacher attitudes, it is imperative to delve into the extensive body of research conducted by psychologists in the field of education and beyond. While the definition of attitude is continuously debated, Ajzen and Fishbein's seminal work proves that attitudes are shaped by beliefs stored in memory and influences behaviors. They suggest that attitudes reflect one's evaluations or judgments regarding various aspects of one's surroundings. Ajzen and Fishbein (1977) argue that attitudes are dynamic, instead of fixed, and can shift based on individual motivation and cognitive abilities to process information. Therefore, understanding the nuanced nature of attitudes is essential when examining teacher attitudes and their implications for educational practices.

Additionally, understanding attitudes is crucial because a person's attitude towards a specific action is one indicator of reliably predicting whether they will engage in that action (Ajzen & Fishbein, 1977; Armitage & Christian, 2003). This suggests a close connection between attitudes and behaviors. Considering this link, the attitudes of teachers can wield considerable influence over the learning atmosphere and the achievements of students. Ajzen and Fishbein (1997) also emphasize that attitudes towards behaviors are rooted in our perceptions of the potential positive and negative consequences associated with those behaviors (Armitage & Christian, 2003). This suggests that the evaluations of actions are based on one's beliefs about their outcomes.

Content in Leadership

Increasing teacher efficacy in literacy instruction is a primary concern for those who understand the impact of teacher attitudes on complex curricular changes. Insight on how disciplinary literacy is taught to both preservice teachers and experienced classroom educators

can illuminate how instructional leaders might increase the level of confidence teachers have in their ability to guide students to literacy success. By focusing on these gains in collective teacher efficacy, teacher attitudes can be harnessed to ensure disciplinary literacy instruction is exemplary.

Preservice Teacher Preparation

Initiating curricular changes includes preparing novice teachers for these new implications on instruction so they are graduating as highly qualified teacher candidates. When instructing future teachers in various subject-areas, it is important to determine how to prepare them to meet the demands of disciplinary literacy instruction in whatever field they enter (Fang, 2014). Teacher educators must "engage in social, semiotic, and cognitive practices compatible with those undertaken by disciplinary experts" (Fang, 2014, p. 444). To ensure students are ready for modern expectations in each discipline, teacher education programs must also "foreground, differentiate, and address the unique literacy demands and habits of mind related to specific disciplines" (Fang, 2014, p. 444). By acknowledging the purpose of literacy instruction, teacher educators can ensure preservice teachers are prepared for developing discipline-literate students (Fang, 2014).

This is made difficult by the changing normative output each discipline must master to comprehend text in a particular context. For example, social studies experts employed a great deal of sourcing, or understanding the origin of the text, when reading whereas mathematicians did not care about authorship (Shanahan et al., 2011). Additionally, all discipline-experts cared about the use of corroboration to ensure the validity of a text (Shanahan et al., 2011). Using the research produced by these disciplinary experts, preservice teachers can learn what specific strategies ought to be included in their instruction.

These preservice programs also prepare future teachers to work with disciplinary literacy in a variety of classroom environments including extensive student support (Copeland et al., 2011). Recently, the increase in scrutiny and public interest around literacy is impacting the work that teachers in special education environments are doing with students (Copeland et al., 2011). Studies show that the biggest hindrances to preparing teachers for literacy in specialized classrooms was the impact of state and local legislation that makes it difficult to adjust instruction to meet the needs of varied learners (Copeland et al., 2011). Many preservice teachers have incredibly low expectations for the literacy content that students with learning or cognitive disabilities can accomplish—a mindset that they must shift to make any progress toward developing strong literacy teachers (Copeland et al., 2011). When preparing novice teachers for these literacy requirements, instructional leaders must coach around these barriers.

Professional Development and Instructional Coaching

Since the severe gap in literacy achievement requires every teacher in a school to provide rich literacy experiences that are specific to their domain, literacy-centered professional development should be a primary concern for instructional leaders (Binkley et al., 2011). Much research on successful professional development models on disciplinary literacy suggests that workshop models encourage teachers to form on-going collaborative relationships so that innovative teaching and reflective teaching practices, rooted in literacy, can continue (Binkley et al., 2011). Additionally, research suggests that developing collective competencies amongst teachers seeking literacy leadership includes implementing observation-reflection cycles that encourage teachers to implement teaching strategies viewed in other content-areas (Howell et al., 2021). By allowing science, social studies, and other disciplines to observe and reflect on literacy

strategies implemented by English Language Arts teachers, they were better able to transfer literacy cultures into their own content-areas and classrooms (Howell et al., 2021).

Other professional development series have reported success with getting teachers to engage with primary source texts related to their content standards by creating translations of the domain-specific articles, so they are accessible to students (Koomen et al., 2016). This practice allows teachers to "[mediate] the gap between the language of [of the domain and the] classroom" (Koomen et al., 2016, p. 849). Additionally, this professional development model allows teachers to develop documents that could function as a guide to a particular genre of reading within the disciple—making even more domain-specific texts accessible to students (Koomen et al., 2016). The results of these initiatives demonstrate high margins of success in getting teachers to develop high-quality materials for students to use and success in the number of teachers willing to implement this work into their instruction with students—a discovery that is useful to those developing professional development that encourage disciplinary literacy (Koomen et al., 2016).

Recent History of Literacy Legislation

The national level has enacted numerous policies and initiatives to promote and enhance literacy skills among its young citizens. Additionally, each state has created programming to support the national vision of reading. South Carolina's most recent efforts include the passing of the Read to Succeed Act. Understanding this legislative history is essential for comprehending the evolution of literacy education and moving toward more successful models. This examination focuses on providing a summary of each educational act passed at the national level since the beginning of the decade, how the state of South Carolina has supported those laws in their context, and how these acts specifically informed literacy instruction.

No Child Left Behind (2001)

In January 2002, the No Child Left Behind Act (NCLB) was enacted, targeting disadvantaged students through Title I provisions. This was a landmark education policy initiative in the United States, significantly expanding federal oversight of the nation's public schools beyond what was accomplished with the Elementary and Secondary Education Act (Dee & Jacob, 2011). This legislation mandated states to establish annual student assessments tied to state standards, aiming to identify schools not making Adequate Yearly Progress (AYP) towards the goal of universal proficiency in reading and mathematics by 2013-2014—it also imposed sanctions and rewards based on each school's AYP status (Lee & Reeves, 2012). This push for accountability was driven by the belief that publicizing detailed school performance data and connecting it to consequential outcomes could enhance the effectiveness of public education (Dee & Jacob, 2011).

The impact of NCLB on student literacy achievement is a subject of intense debate. Evidence suggests that NCLB did not have a significant impact on fourth-grade reading achievement as promised (Dee & Jacob, 2011). According to a study completed by Lee and Reeves (2012), "achievement gains have either remained the same or declined after NCLB" (p. 24). The specific literacy instruction offered in the NCLB model was known as the Reading First Initiative and was designed to concentrate on early and ongoing reading development, emphasizing five key areas: phonics, phonemic awareness, fluency, vocabulary, and comprehension (Pruisner, 2009). What separated this reading program from its predecessors is its use of high stakes testing as an indicator of student achievement (Pruisner, 2009).

Critics of NCLB argued that this legislation mandated the "what, how, and when to teach reading to students in their classrooms" (Afflerbach et al., 2008, p. 364) which generated too

much of a focus on reading strategies as opposed to increasing reading capacity through the development of real-world literacy skill. Additionally, these explicit mandates on how to teach led to an increase in scripted curricula for teachers with instructional excellence becoming less important than a teacher's ability to implement purchased lesson plans with fidelity (Dennis, 2017).

Despite these clear guidelines for reading instruction, minimal growth from the Reading First program was reported with gaps between socioeconomic groups widening—therefore, lawmakers voted to eliminate its funding citing that, "the program has had no impact on students' reading comprehension" (Afflerbach et al., 2008, p. 364). While NCLB represented a significant shift in education policy, its ultimate effectiveness in improving reading outcomes remains unlikely and subject to ongoing debate.

Every Student Succeeds Act (2015)

The Every Student Succeeds Act (ESSA), enacted in 2015, replaced the No Child Left Behind Act with a promise to grant states greater autonomy in shaping their education systems (Foster, 2023). This new act empowered states to determine their own academic standards, accountability measures, and interventions for struggling schools (Foster, 2023). ESSA emphasizes flexibility and aims for an approach that reflects the unique needs and contexts of individual states and communities (Foster, 2023).

ESSA's focus is on comprehensive literacy instruction and its aim is to integrate evidence-based practices. It also grants priority to literacy initiatives from early education through the secondary level and encourages students toward the tools and support they need to become proficient readers and writers through real-world contexts (Foster, 2023). Comprehensive literacy instruction integrates key pillars such as phonics and comprehension like

NCLB—however, this approach doesn't focus solely on equipping students with strategies. Instead, it emphasizes personalized, authentic learning experiences and teacher facilitation within a professional community (Dennis, 2017). Specific strategies associated with comprehensive literacy include the integration of literacy into a variety of content areas—an important tenet of the disciplinary literacy movement (Dennis, 2017). This has prompted schools to reevaluate their literacy programs, placing a greater emphasis on balanced literacy approaches that incorporate phonics, vocabulary development, comprehension strategies, and writing instruction in authentic ways (Foster, 2023).

South Carolina's Read to Succeed (2014)

Slightly editing the ESSA of 2015, the state of South Carolina introduced a unique policy known as Read to Succeed (R2S) following the 2013 state education report card's revelation that some districts reported graduation rates as low as 60%, and nearly 30% of third graders in one-fourth of the school districts were not reading at grade level (Barrett-Tatum et al., 2019; Klar et al. 2020). R2S mandates that both certified teachers and preservice teachers, spanning all grade levels and administrative roles, must complete reading courses or engage in professional development specific to their positions (Barrett-Tatum et al., 2019). Additionally, districts and schools are required to assess and provide intervention for students who are reading below grade level (Barrett-Tatum et al., 2019). Students falling short on standardized or state end-of-grade tests may face retention or be subject to summer intervention requirements (Barrett-Tatum et al., 2019). While this policy was enacted before ESSA and many of R2S's tenants focus on early interventions for primary-level learners, significant portions of the policy impact middle-level learners and align with ESSA's requirements for state departments of education.

At its origin, Read to Succeed faced challenges from middle schools who struggled to meet the demands of implementation due to a lack of revenue provided for reading coaches and resources for reading instruction—elements required by the policy (Klar et al., 2020). The effectiveness of R2S in South Carolina is a topic of ongoing debate and discussion. Concerns about funding, teacher training, and the adequacy of support services continue (Klar et al., 2020). The effectiveness of R2S on student outcomes is also a topic of widespread debate. In 2017, several years after implementation, the National Assessment of Educational Progress ranked 4th graders in the state as 47th in the nation for reading achievement (Calhoun, 2019).

The office of former State Superintendent of Education in South Carolina, Molly Spearman, published a progress report on this initiative in 2018 which explicitly confessed that the outcomes from R2S are below their intended goal of having 95% of all students in the state reading at grade level (South Carolina General Assembly, 2018). Shortly after, a 2019 bill was introduced in the South Carolina State Legislature to amend the R2S program, including adjustments to the summer reading camps and the role of literacy coaches (Calhoun, 2019). This legislative action suggested that there were ongoing efforts to assess and refine the program (Calhoun, 2019).

For the 2024-2025 school year, Act 114 introduced updates to professional learning and literacy endorsement requirements for many educators in South Carolina (South Carolina Department of Education, 2025). Under this change, only certain teachers are required to complete Read to Succeed courses (South Carolina Department of Education, 2025). Specifically, educators certified in Early Childhood, Elementary, Special Education, English for Speakers of Other Languages, and Montessori Education must earn the Read to Succeed Literacy Teacher endorsement (South Carolina Department of Education, 2025). Additionally,

administrators whose roles significantly involve reading and literacy instruction, support, or interventions must continue to meet Read to Succeed renewal requirements (South Carolina Department of Education, 2025).

The history of literacy initiatives, such as the Read to Succeed legislation, reflects the state's efforts to address low standardized test scores and literacy challenges in its education system. These changes in policy and ongoing efforts to assess and refine programs like R2S are likely to have a considerable influence on teacher perceptions—the absence of this requirement for teachers of content areas other than English Language Arts naturally raises questions about the role of literacy instruction across content areas. For example, the temporary suspension of R2S endorsement requirements for certain educators may shape their perceptions of the importance and relevance of disciplinary literacy training. Potential implications for teachers' perspectives on disciplinary literacy might include a devaluation of literacy's role in non-ELA classrooms.

Summary

This literature review focuses on disciplinary literacy research and its integration into secondary settings across various subject areas. It highlights the importance of understanding disciplinary literacy as a specialized approach to reading skills required for specific subjects. The review emphasizes the need for instructional leaders to maximize disciplinary literacy initiatives. The research indicates that disciplinary literacy differs from general content-area literacy, as it aims to provide subject-specific reading and comprehension skills. While some suggest integrating both approaches, others argue that disciplinary literacy should be the primary means of literacy development for advanced achievement in the content areas.
The review examines disciplinary literacy in three subject areas: mathematics, science, and social studies. It shows the importance of integrating literacy strategies within these disciplines to improve students' understanding and achievement. Furthermore, the literature review addresses teacher preparation, professional development, and instructional coaching to increase teacher efficacy in disciplinary literacy instruction. The review concludes with a brief overview of legislation surrounding literacy efforts nationwide and in South Carolina since early 2000 and offers insight on a context that may shape responses garnered in the study.

Understanding the unique literacy demands of various academic disciplines and offering teachers individuated training and support are essential steps in successful disciplinary literacy initiatives aimed at enhancing student achievement. In the following section, this study will outline how the research findings will be applied to investigate teacher perceptions of existing disciplinary literacy practices. By bridging the gap between theory and practice, this research contributes insights that can lead to the refinement and implementation of disciplinary literacy strategies in educational settings.

Chapter Three: Method and Procedures

With most English language arts (ELA) classes lasting around 45-60 minutes of a student's day, it is impossible to assume that this subject-area alone can combat the growing chasm between literacy mastery and the current reality for many students. Middle schools must move toward a literacy approach that empowers every teacher to engage in reading, writing, and talking that represents the professional standard for their specific discipline. While some factors of the Read to Succeed courses, a literacy-focused, graduate-level course mandated for every teacher regardless of their discipline in South Carolina, address this reality, more research is needed to fully understand the perceptions of secondary educators in non-ELA classes toward disciplinary literacy.

Study Overview

The purpose of this study is to analyze the attitudes of middle-level teachers toward disciplinary literacy instruction in the non-ELA classrooms. To better understand these attitudes, the researcher examined the challenges and benefits that teachers perceive when thinking about the inclusion of specific disciplinary literacy strategies within their classroom. Additionally, the researcher sought to understand what drives the variances between the different attitudes across disciplines such as science, social studies, and mathematics. The specific question that was answered was: *What factors influence non-ELA middle-level teachers' attitudes toward disciplinary literacy instruction in their classrooms?* The following questions support the overarching research question:

• What do middle-level teachers perceive as the challenges and benefits of literacy instruction in their classrooms?

- What factors influence the variations in teacher attitudes toward literacy instruction?
- How do teachers perceive the implementation of professional learning on disciplinary literacy?

Research Design

This qualitative investigation takes the form of a collective case study with each discipline functioning as its own case. In its origin, educational case studies emerged as a byproduct of new policies that were created using data about education that lacked context (Hamilton & Corbett-Whittier, 2013). Therefore, case studies can provide a wealth of context that informs educational stakeholders, even those who make policy decisions, about the intricacies of the topic. Yin (2014) describes this as "studying the meaning of people's lives, as experienced under real-world conditions" (p. 9). While numbers and data points can be decontextualized and used with ulterior purposes, case studies are "able to deepen understanding in real contexts" because of its ability to capture the complexity of a context (Hamilton & Corbett-Whittier, 2013, p. 4).

A collective case study is an appropriate methodology for current research because it completes an examination of more than one case, can spawn useful data that is contextualized, and can be used to deepen an audience's understanding of this issue so informed changes can be implemented. According to Yazan's (2015) analysis of Yin's work, case studies must include a review of all relevant literature before the data collection phase of research. In this study, the researcher will follow Yin's (2004) perspective by examining the documents on disciplinary literacy development for teacher use.

In this collective case study, each non-ELA discipline was examined individually and in relation to one another. This means that teacher attitudes towards disciplinary literacy in mathematics, science, and social studies were analyzed using multiple qualitative methods such as document reviews, focus-groups, and individual interviews—giving each case multiple data points that can be triangulated to produce meaning (Merriam & Associates, 2002). This comprehensive approach to the collective case study allowed for a nuanced understanding of teacher attitudes and practices regarding disciplinary literacy in various non-ELA disciplines, offering valuable insights for educational improvement and reform efforts.

Using a cross-case analysis, the researcher compared the results of each case against each other. This approach allowed an understanding of the differences between disciplinary literacy attitudes common amongst science, social studies, and mathematics teachers. Collective case studies are analyzed using a social-constructivist worldview—those within this theoretical framework "[assume] that individuals seek understanding of the world in which they live and work" (Creswell, 2009). Figure 3.1 contains a visual of this specific design.

Figure 3.1

Visual of Design



Setting

The school district for this study is a unified system covering 800 square miles in the upstate of a southern state (SC School Report Card, 2022). It encompasses 49 elementary schools, 19 middle schools, 2 K-8 schools, 15 high schools, and 18 special schools, and child development centers across both urban and rural parts of the county (SC School Report Card, 2022). With the student-population at approximately 77,000, the district is one of the largest in the nation (SC School Report Card, 2022; Institute of Education Sciences, 2022). Of this population of students, the district's attendance summary reports around 17,000 are black, 14,000 are Hispanic, 39,000 are white, and 7,000 are in other ethnic categories (SC School Report Card, 2022).

There are 5,027 teachers employed by the school district (SC School Report Card, 2022; Institute of Education Sciences, 2022). Out of that total, 63.2% of teachers boast an advanced degree (SC Report Card, 2022). Among low-poverty schools, 18.9% of the teachers are considered inexperienced and 4.3% are teaching in an area outside of their certified field (SC Report Card, 2022). There is an 85.9% retention rate for teachers from the previous year in the district (SC Report Card, 2022). Since the district covers such a broad context, economic makeup varies significantly across schools. The 2021 census suggests that 14.2% of school-age children are living in poverty (Public Education Partners, 2023). While only 1.7% of students were considered homeless, the substantial number of students in the district means that this percentage represents approximately 1,300 learners (Public Education Partners, 2023).

One specific school within this district was identified as the primary research site—Pine Tree Middle School. This school, located in Camden, South Carolina, serves a diverse population of approximately 753 students across grades 6 through 8 (South Carolina School

Report Card, 2023). The school is situated in an area that reflects significant economic challenges, as evidenced by a high percentage of students qualifying for free or reduced-price lunch; these socio-economic factors contribute to the school's focus on creating an inclusive and supportive environment to address academic and social needs effectively (South Carolina School Report Card, 2023).

Demographically, the student body at Pine Tree Middle is primarily composed of Hispanic and African American students, with smaller proportions of Caucasian and other ethnic groups (South Carolina School Report Card, 2023). The school has implemented targeted programs to support multilingual learners and students requiring additional academic assistance (South Carolina School Report Card, 2023). These efforts are designed to improve outcomes, especially in critical subjects such as English Language Arts and Mathematics (School Digger, 2024). Despite these efforts, Pine Tree Middle School's performance metrics highlight challenges, with the school receiving an "Unsatisfactory" overall rating for the 2023-2024 academic year (South Carolina School Report Card, 2023). This rating indicates a need for significant improvement to meet state standards and the Profile of the South Carolina Graduate.

Secondary Setting Information

The district where this study will be situated employs several academic specialists who are primarily responsible for assessing, developing, and evaluating curriculum, coordinating special programs, and providing for the continuous improvement of instruction (Camden County Schools, 2023). Several professional development sessions on disciplinary literacy have been conducted periodically on an elective basis for teachers who chose to attend. The academic specialists conduct various professional development sessions throughout the year to reinforce the work of disciplinary literacy.

Additionally, district specialists have created a disciplinary literacy framework for teachers to use when thinking through how to implement disciplinary literacy initiatives (Camden County Schools, 2018; Camden County Schools, 2024a). The district-created framework defines disciplinary literacy as a practice "based on the premise that students can develop deep conceptual knowledge in a discipline only by using the habits of reading, writing, talking, and thinking that each discipline values and uses" (Camden County Schools, 2024a). This definition guides the resource as it provides explicit instruction for how teachers of science, social studies, mathematics, and English language arts (ELA) should employ disciplinary literacy-focused pedagogy when completing tasks, engaging with texts, and talking in their subject area (Camden County Schools, 2024a). The distinctions that the district provides allow teachers to see what literacy practices are critical to developing students who are ready to meet the discipline's professional standards—the resource will be explored further in the document review section.

Participants

Since this study seeks to understand the attitudes of middle-level teachers in non-ELA subject areas toward disciplinary literacy practices, the target population consists of teachers who teach grades six through eight in those disciplines—science, social studies, and mathematics. Each grouping of content-area teachers will compose one case within this collective case study. The sampling frame, also known as the "specific list of potential participants that is representative of the target population" (Privitera & Ahlgrim-Delzell, 2018, p. 157) includes teachers from the southeastern school district where the study is positioned.

To recruit teachers, the researcher used non-probability sampling to select a small group of participants from the accessible population (Privitera & Ahlgrim-Delzell, 2018). This type of

sampling is most appropriate since it is not possible to identify the entire target population—all middle level teachers in non-ELA subject areas (Privitera & Ahlgrim-Delzell, 2018). This sampling selection limits the results to a singular district. The diverse and large sampling of teachers who are employed by the district ensures that it is a varied representation of the beliefs of the state at large. However, the various district-generated supports for disciplinary literacy may have some impact on teachers' attitudes and must be considered among the findings.

The school selected for this study was determined by district-level administrators. Mathematics, science, and social studies teachers at the selected school were invited to participate in the study, although there was no incentive to participate. Further details about demographics for participants in the focus-group phase are included in Table 3.1.

Table 3.1

Focus-Group	Gender	Ethnicity	Years of Experience
Middle Level Science	Female	Caucasian	8 years
	Male	Caucasian	30 years
	Female	Caucasian	20 years
Middle Level Mathematics	Female	Caucasian	5 years
	Male	Hispanic	4 years
	Female	Caucasian	18 years
Middle Level Social Studies	Female	Caucasian	30 years
	Female	Caucasian	22 years
	Female	Caucasian	24 years

Focus-Group Participant Demographics

Following the analysis of the focus-group responses, the researcher invited any teacher interested in continued contributions to the study to participate in individual interviews. These selected participants answered questions focused on understanding the nuanced experiences of teaching literacy skills within a particular discipline. Table 3.2 provides demographic data for participants involved in this portion of the research.

Table 3.2

Individual-Interview Participant Demographics

Discipline	Gender	Ethnicity	Years of Experience
Middle Level Science	Female	Caucasian	8 years
	Female	Caucasian	20 years
Middle Level Mathematics	Male	Hispanic	4 years
	Female	Caucasian	5 years
Middle Level Social Studies	Female	Caucasian	30 years

Procedure: Data Collection and Analysis

Collective case studies allow researchers to view each individual case as a part of a full collection that is understood in more robust ways when viewed together (Stake, 2006). Gathering evidence from multiple sources is one of Yin's (2011) principles that is used to ensure case study reliability and validity. This study utilizes multiple methods to gather data from a variety of sources for each case in the study. These methods include analyzing documents related to disciplinary literacy, conducting focus-group interviews with teachers in science, social studies, and mathematics classes, and engaging in individual follow-up interviews with teachers after the focus-group session. Through the analysis of several data types, validity is ensured in each case as the results "[remain] the same at other times, in other spaces, or as persons interact differently" (Stake, 1995, p. 112). The remainder of this chapter will discuss how the researcher collected data used for this study in the four phases outlined in Table 3.3.

Table 3.3

Data Collection Phases

Phase	Data Collection Tasks
Phase 1•Participant Recruitment•	Meet with district officials to determine school settings Invite math, social studies, and science teachers to participate and complete focus-group consent forms (Appendix A)
Phase 2 • Document Collection and Document Analysis •	Collect disciplinary literacy-related documents from the district and the state department Analyze the documents collected
Phase 3 Focus-Group Interviews and Analysis	Conduct focus-group interviews by discipline-specific certification using the focus-group protocol (Appendix C) Record and transcribe the interviews Analyze the results through thematic coding
Phase 4 Individual Interviews and Analysis • •	Recruit any teachers for individual interviews from the focus-group interviews based on their interest in continued contributions Invite interested teachers to participate in the next phase Complete individual interview consent forms (Appendix B) Conduct individual interviews using the individual interviews protocol (Appendix D) Record and transcribe the interviews Analyze the results through thematic coding

Data Sources

The researcher implemented the following instruments to answer the specific questions posed by this study. Taken together, these instruments provide a greater understanding of the context surrounding disciplinary literacy instruction in the setting that was studied. The researcher meticulously employed these instruments to gather comprehensive data and ensured a thorough analysis of disciplinary literacy instruction within the chosen research setting.

Document Review

Stake (2006) believed that document review is a critical element in case studies. The documents reviewed in study include: (a) the disciplinary literacy framework available to teachers on the district's academic landing page, (b) the district's curriculum maps for specific content areas, and (c) ELA standards as defined by the South Carolina Department of Education. The researcher organized the documents to develop a greater understanding of the study context. This analysis informed the interviews that are conducted for this study (Yin, 2011).

Interviews

Conducting interviews allows researchers to understand traits related to teacher attitudes that are not directly observable. For this research, two types of interviews were conducted. The first type involves semi-structured focus-group interviews conducted with teachers of mathematics, science, and social studies. The second type consists of semi-structured individual interviews conducted with teachers from the focus-groups following the data analysis portion. When patterns emerged that needed clarification, the interview protocol was developed to gain clarity from key focus-group participants. To conduct the study, the researcher sought approval from the district office that the schools are located in.

Additionally, the researcher contacted the principal of the school used in the study to secure their participation and obtain permission for conducting focus-group interviews and individual interviews at their respective schools. Focus-group interviews and individual teacher interviews ranged in length from 30 to 60 minutes. They were conducted in a convenient location and at a time that did not compromise instruction—such as during the teachers' typical planning meetings.

Focus-Group Interviews

Questions for the semi-structured focus-group interviews (Appendix C) were generated by drawing from examples in the literature on teacher perceptions of curriculum initiatives. This type of interview protocol design allows for an in-depth look at the participants beliefs and the factors that developed these attitudes. The purpose of conducting these focus-groups with teachers in common subject areas is to gain greater understanding of how each specific discipline views the challenges and benefits of literacy instruction. The researcher asked the structured questions to preserve consistency and so that participant responses can be compared.

These interviews were recorded and then transferred to a secure computer for transcription—the data collected was housed in encrypted storage. Additionally, any information obtained in connection with this study that can be identified will remain confidential. This information is protected and all identifying codes will be destroyed at the completion of the study.

Individual Interviews

Individual interviews were used as a follow-up step after an analysis of the data collected from the focus-groups. These participants were invited to expound on the thoughts they expressed during the focus-group interviews. The protocol for these interviews (Appendix D) focuses on questions that allow teachers to describe their interactions with literacy on a more granular level. These interviews also occurred at a convenient time that does not distract from instruction for students and lasted between 30 and 60 minutes. As with the focus-group interviews, individual interviews were recorded and transcribed to ensure validity. This transcription is also stored in an encrypted file and kept confidential until it is destroyed when the study is completed.

Data Analysis Plan

The current study follows a constant comparative method, or thematic analysis, for this qualitative design—this data analysis process results in the identification of categories of meaning (Glaser & Strauss, 1967). These categories emerge from the organization of excerpts of data into groups according to similar attributes (Glaser & Strauss, 1967). The groups are then organized in a structured way (Glaser & Strauss, 1967).

The researcher began the data analysis process by reading transcripts of the focus-group interviews and individual interviews to understand the raw data. After becoming familiar with the data, the researcher generated codes based on themes that emerged in the transcriptions. After searching for these themes and reviewing them, the researcher was able to define and name them.

Ethical Considerations

Since this study includes human participants, several ethical considerations must be made to ensure the protection of the subjects and their data. To obtain informed consent for the study, participants must complete the Focus-Group Interview Consent form and the Individual Interview Consent form (Appendix A; Appendix B). Each consent form assures subjects that there will be no consequences for refusing to participate or withdrawing from the study. It also provides several explanations for how the data collected will be protected and participant identities secured. These interviews were recorded and then transferred to a secure computer for transcription—the data collected will be housed in encrypted storage until the completion of the study. At this point, the data will be destroyed.

Summary

This collective case study primarily focuses on understanding the attitudes of middlelevel teachers in non-ELA subjects towards disciplinary literacy instruction. With ELA classes alone insufficient to bridge the literacy gap, the study aims to explore the challenges, benefits, and factors influencing teachers' attitudes towards incorporating specific literacy strategies within their subjects. The study takes a qualitative approach, using the collective case study methodology to analyze attitudes across disciplines (science, social studies, mathematics) in a southern school district. The study involves document analysis of literacy-related materials, focus-group interviews with teachers, and subsequent individual interviews for clarification. The goal is to identify key themes and categories that illuminate the nuances of teacher perceptions, contributing to the development of more effective literacy strategies for non-ELA subjects.

Chapter Four: Findings

This collective case study focused on the attitudes of non-ELA teachers towards disciplinary literacy. Each case explored this topic with teachers in the specific content area of social studies, science, or mathematics. Data collection included document review, focus-group interviews, and individual interviews. One school was intentionally selected as the research site due to its diverse student population, established professional learning communities, and access to disciplinary literacy initiatives at both the state and district-level.

Each method for collecting data throughout the study was designed to answer the primary research question: *What factors influence non-ELA middle-level teachers' attitudes toward disciplinary literacy instruction in their classrooms?* Additional questions explored in the study include:

- What do middle-level teachers perceive as the challenges and benefits of literacy instruction in their classrooms?
- What factors influence the variations in teacher attitudes toward literacy instruction?
- How do teachers perceive the implementation of professional learning on disciplinary literacy?

State, district, and school documents related to disciplinary literacy were reviewed and analyzed prior to focus-group and individual interviews. These documents included materials such as instructional frameworks, professional development materials, and discipline-specific curriculum maps. Through this review process, additional context was established to aid in the interpretation of participant interview responses. All teachers within the identified disciplines at the research site were invited to participate in the focus-group interviews. After completing focus-group interviews, participants were invited to an individual interview to provide additional information or context for the study. A select number of teachers who participated in a focus-group elected to not participate in the individual interview process citing limited time constraints or little additional information to share as primary reasons for their withdrawal from participation in the final phase of data collection. Table 4.1 displays information about the recruitment process for participants, including the number of teachers invited to participate from each content area, the actual number of those who elected to participate, and the number that elected to also participate in the individual interview process.

Table 4.1

Content Areas	Number of Invited Participants	Final Number of Focus Group Participants	Final Number of Individual Interview Participants
Social Studies	8	3	2
Science	9	3	2
Mathematics	7	3	1

Participant Recruitment Outcomes

Findings from the document review process are separated by those provided at the state level and at the district level. Then, the findings of each discipline-specific case are presented using themes that emerged as the transcripts from focus-group interviews and individual interviews were analyzed and coded to provide a holistic answer to each of the research questions proposed in this study. Finally, the chapter concludes with a synthesis of the findings which will be discussed further in chapter five.

Document Review Analysis

This document review examines a variety of educational resources and frameworks related to disciplinary literacy within the context of South Carolina and Camden County Schools. Merriam (1998) defines documents mined for data during the case study process as, "a wide range of written...material relevant to the study at hand," (p. 112). This analysis focuses on South Carolina's College- and Career-Ready Standards for English Language Arts, Camden County Schools' Disciplinary Literacy Framework, and subject-specific curriculum maps in science, social studies, and mathematics.

These documents provide insight into how disciplinary literacy is integrated into classroom practices, highlighting differences across subjects and evolving standards. While the state's revised 2024 ELA standards shift away from explicit disciplinary literacy instruction, Camden County Schools' resources demonstrate a strong commitment to embedding these practices across disciplines (Camden County Schools, 2024a; South Carolina Department of Education, 2015; South Carolina Department of Education, 2024). Each document includes strategies that challenge students with discipline-specific tasks, ensuring they develop the critical thinking and communication skills necessary to excel as historians, scientists, mathematicians, or authors. This analysis, when examined alongside the focus group interviews and individual interviews included in this study, provides strong context answering the proposed research questions. As Merriam (1998) explained, documents should "ground an investigation in the context of the problem being investigated" (p. 126).

South Carolina Standards for English Language Arts

The 2015 South Carolina College- and Career-Ready Standards for English Language Arts (ELA) include a specific section on disciplinary literacy for each grade-level and define it as

the practice of "reading, writing, communicating, thinking critically, and performing in meaningful, relevant ways within and across disciplines" (South Carolina Department of Education, 2015, p. 107). According to the standards, these practices teach students the language and thinking processes specific to each discipline which enables them toward a greater understanding of the content (South Carolina Department of Education, 2015). The South Carolina Department of Education (2015) specifies that students in this state must "expertly navigate curriculum, paying close attention to practices unique to a particular discipline" (p. 9). It asserts that disciplinary literacy is designed to work alongside Inquiry-Based Literacy Standards, and they highlight the importance of "extending and deepening understanding of content through purposeful, authentic, real-world tasks" (South Carolina Department of Education, 2015, p. 9). Recently, these ELA standards have been revised for the state of South Carolina. The disciplinary literacy requirements for students are no longer explicitly included in the recently revised standards implemented for the 2024-2025 school year (South Carolina Department of Education, 2024). The revised standards emphasize general literacy skills applicable across disciplines but do not explicitly address the integration of content-specific literacy practices as outlined in the previous standards (South Carolina Department of Education, 2024).

It is important to note that these insights on the instruction of disciplinary literacy are included for ELA teachers, but this study focuses on the attitudes of science, social studies, and mathematics teachers toward disciplinary literacy instruction. This discrepancy raises questions about how disciplinary literacy is understood and implemented in non-ELA classrooms and whether these teachers feel adequately supported in applying literacy strategies that align with their specific disciplines.

Camden County Schools' Disciplinary Literacy Framework

The Camden County Schools' Disciplinary Literacy Framework (2024) was developed by the district's academics department and is shared with all teachers at every school in the district. This guided document emphasizes teaching students specialized strategies for engaging with texts unique to different academic disciplines (Camden County Schools, 2024a). The approach centers on the four components of disciplinary literacy: reading, thinking, talking, and writing and it aims to guide students to "create, disseminate, and critique information" (Camden County Schools, 2024a, p. 1) in discipline-specific ways. It encourages students to adopt the lens of professionals in various fields—such as scientists, historians, mathematicians, and authors—to develop critical content literacy skills and it emphasizes how teachers play a crucial role by designing tasks aligned to standards, selecting authentic texts, and scaffolding students' communication processes in a way that yields expert-level thinking in each discipline (Camden County Schools, 2024a).

According to the framework, students in English Language Arts classes should engage with disciplinary literacy by analyzing texts for the author's purpose, structure, and craft (Camden County Schools, 2024a). Students are taught to read "for authentic purposes" (Camden County Schools, 2024a, p. 2) such as uncovering themes, analyzing relationships among ideas, and engaging in mental dialogue with authors. They examine both fiction and non-fiction texts, exploring how elements like literary devices and structural choices influence meaning—using discussions, debates, and written communication which the framework suggests are central to the process and enable students to articulate claims, build on others' ideas, and critique texts using academic language and evidence (Camden County Schools, 2024a).

The district's framework outlines disciplinary literacy in mathematics as the interpretation of symbols, patterns, and word problems to solve tasks and communicate solutions—in this process, students engage in reading to identify relationships and extract relevant information, applying mathematical reasoning to develop solutions (Camden County Schools, 2024a). They articulate their thinking through discussions, debates, and written formats, such as explanations, and justifications (Camden County Schools, 2024a). Similar approaches are evident in science and social studies, where students use inquiry-based methods to analyze historical events or scientific phenomena, evaluate sources, and present findings (Camden County Schools, 2024a). Across disciplines, the framework emphasizes scaffolding and feedback to help students approach tasks as experts in the field, encouraging deep comprehension and critical thinking (Camden County Schools, 2024a).

Camden County Schools' Discipline-Specific Curriculum Maps

Camden County Schools' curriculum maps, utilized by each subject area, provide teachers with a guide for when standards should be taught and instructional resources to support those standards (Camden County Schools, 2024b). The maps specific to the subjects examined in this study, science, social studies, and mathematics, were explored to understand what resources related to disciplinary literacy are imbedded in the curriculum and provided to teachers at the research site. All subject areas included specific resources to promote reading and writing through instruction in the content-area (Camden County Schools, 2024b).

The science curriculum map contains several literacy tasks for students to increase their ability to read and write like a scientist—tasks include analyzing data to construct explanations, using scientific vocabulary to describe phenomena, evaluating claims based on evidence, and creating arguments supported by data from multiple valid and reliable sources (Camden County

Schools, 2024b). A key focus of the science curriculum map is supporting students' ability to construct claim-evidence-reasoning (CER) responses; these responses require students to articulate a clear claim that answers a scientific question, support that claim with evidence drawn from observations or reliable data and provide reasoning that links the evidence to the claim using scientific principles (Camden County Schools, 2024b). The district maps take the statemandated standard, such as "make, support, or refute a claim that increases in the size of the human population and per-capita consumption of natural resources affect Earth systems," and explicitly integrates the CER framework, guiding students to evaluate the strength and validity of their evidence while drawing meaningful connections between scientific concepts and real-world issues (Camden County Schools, 2024b, p. 2). By practicing CER responses, students not only refine their critical thinking and analytical skills but also learn to communicate scientific ideas effectively.

The social studies curriculum map incorporates several similar strategies that encourage students to read and write like a historian through analyzing primary and secondary sources, evaluating multiple perspectives, constructing evidence-based arguments, and engaging in inquiry-based activities that focus on significant historical questions and concepts (Camden County Schools, 2024b). A frequent assessment option for social studies units is a claim-evidence-reasoning (CER) response—in this subject area, CER responses require students to develop a clear claim addressing a compelling historical question, support that claim with evidence from historical documents or artifacts and provide reasoning that links the evidence to the claim through historical context and understanding of key principles (Camden County Schools, 2024b). For example, the curriculum integrates CER into tasks like analyzing the development of federalism in the United States by evaluating excerpts from foundational

documents, such as the Constitution and the Declaration of Independence, and constructing arguments about their historical significance and impact (Camden County Schools, 2024b).

The curriculum map design for mathematics is notably different from other subject areas; however, disciplinary literacy practices are evident in the problem-solving protocol, called Read, Analyze, Identify, Solve, and Engage (RAISE), that informs how students respond to all concepts taught (Camden County Schools, 2024b; Camden County Schools, 2024c). The RAISE Mathematics Problem Solving Protocol guides students through a structured process of reading, analyzing, identifying, solving, and engaging with complex mathematical problems. This strategy encourages students to thoroughly understand the problem's vocabulary and context, identify the relevant information and hidden questions, and create efficient plans for solving multi-step problems (Camden County Schools, 2024c). The protocol focuses on the importance of justification and clear communication, prompting students to "communicate using precise mathematical vocabulary to justify the solution" and explore connections between their solutions and real-world applications (Camden County Schools, 2024c, p. 3). The protocol also ensures that students can use their knowledge of mathematical concepts to articulate their reasoning. Through these processes, students develop their critical thinking skills and learn how to write and communicate as a mathematician.

The remainder of chapter four provides the findings from focus-group interviews and individual interviews as separate cases delineated by disciplines. This data combined with the analysis of relevant documents provides contextualized findings to answer the proposed research questions. Additionally, the results of this study provide insights to be applied to future practices and explored in future research—topics that will be expounded upon in chapter five.

Case Study A: Mathematics Teachers

Through focus group interviews followed by individual interviews, teachers expressed mixed feelings about the integration of reading and writing into mathematics instruction. While they acknowledged the benefits of building literacy skills to support real-world problem solving, they also highlighted barriers, such as the massively increased cognitive load for students when answering literacy-driven mathematics questions and insufficient professional preparation for this task. By leveraging interdisciplinary partnerships with teachers on their grade-level and adopting practical literacy strategies, teachers found ways to bridge the gap between subjectspecific learning and increased reading and writing tasks.

Balancing Literacy with Subject-Specific Goals

Many participants in the study suggested that non-ELA teachers, especially those who are impacted by test scores and increased pressures on student mastery, often struggle to incorporate literacy practices while prioritizing their own required content. This tension was a prominent theme in focus group discussions and individual interviews. Mathematics teachers shared their frustrations with balancing how to teach mathematics concepts while integrating reading and writing tasks. These competing demands shape their perceptions of disciplinary literacy and their place in mathematics instruction. One mathematics teacher expressed a widely shared concern, questioning whether integrating literacy activities detracts from the time and attention needed to focus on core mathematics content:

So, my thought was... am I focused on them learning math or am I focused on their literacy skills? Both are important, but if you [must] learn math, can you do it whether all that extra language around it is there or not?

The teacher suggested that literacy, although important, is an additional challenge, especially for students not native to the English Language, which diverts attention from mathematics content and adds an additional layer of mastery required to find success. This comment reflects a common sentiment among teachers who believe that literacy demands can sometimes overshadow the core objectives of a mathematics lesson.

Another participant emphasized that the shift towards real-world problem-solving in mathematics has led to a greater reliance on literacy skills. He explained that the type of mathematics questions students currently face often require significant literacy abilities, as students need to understand context, process information, and articulate their reasoning in a way that previous formats, such as solving simple equations, did not require when he stated: "[The] style of questions [students are] asked to complete and asked to process... they're required to have some strong sense of literacy to comprehend what it's even like asking." This perspective acknowledges that in the modern mathematics classroom, literacy and mathematics are inseparable, especially given the increasing prevalence of word problems and critical thinking tasks that students must solve. His point underscores how literacy is not just an additional skill for students to develop, but an essential one for tackling the kinds of mathematics problems students face today.

One of the primary challenges teachers discussed in the focus group was the cognitive load placed on students when they are asked to read and analyze complex word problems while also solving mathematical equations. The literacy demands of mathematics instruction can sometimes feel overwhelming, particularly when students struggle with reading comprehension or vocabulary. In a follow up individual interview, one teacher explained how this

comprehension challenge becomes particularly pronounced for students who are learning English, as her school serves a high population of multilingual learners:

I would say that's a giant barrier to entry in terms of their success in math problems when there's so many heavy word problems and you have basic English language skills. That's a unique situation to us here at our school.

This observation points to the root of the most prominent barriers expressed by mathematics teachers first in focus-group interviews and then in individual interviews: the belief that many literacy barriers hinder mathematical comprehension. For many students, reading and understanding the language used in mathematics problems is the first hurdle before they can even begin to solve the problem. This added layer of complexity presents a barrier to mathematics mastery, as students must divide their attention between understanding the words and solving the math, rather than focusing solely on mathematical procedures.

Benefits of Literacy Instruction for Solving Real-World Problems

Despite the challenges, mathematics teachers also recognized the many benefits that literacy instruction brings to the mathematics classroom. Teachers interviewed individually noted that real world problems offer students the opportunity to develop critical thinking and analytical skills that are essential not only in mathematics but in other areas of life as well—these problems specifically require a great deal of disciplinary reading and writing. One participant elaborated on this benefit, saying:

In terms of writing, that's something that I have been trying to focus more on this year... is to have students use writing to [support] their answers and their conclusions. So, we do a lot of exit tickets where I might ask them to explain how to do a process.

This emphasizes the benefit of writing as a tool for reinforcing understanding. Disciplinary writing in mathematics allows students to clarify their thought processes and ensures they comprehend the mathematics concepts with which they are working. By explaining their reasoning, students improve their retention and problem-solving abilities. This aligns with the broader educational goal of helping students develop both mathematical and literacy skills simultaneously.

In a subsequent individual interview, a teacher further illustrated the benefit of integrating literacy by highlighting the district's use of a strategy called RAISE (Read, Analyze, Identify, Solve, Engage)—the same one that emerged in the document review of the district's curriculum maps. She noted that this strategy has been helpful because literacy is being used as a supportive skill for solving mathematics problems, rather than as an obstacle. As students become more accustomed to explaining their thinking when solving problems, they internalize the process of engaging with a complex mathematical task; thus, emphasizing the benefit that discipline-specific literacy stills can bring to the current demands of middle-level mathematic curriculum.

Gaps in Literacy-Related Professional Development

Middle-level teachers' attitudes toward disciplinary literacy are heavily influenced by the quality of their professional preparation and ongoing development opportunities. Effective training equips teachers with strategies and confidence to incorporate literacy practices into their subject areas, but significant gaps in both preservice and in-service training often leave them underprepared. Insights from the focus group reveal the need for more targeted and subject-specific professional learning to support teachers in bridging literacy and content instruction, especially in mathematics classrooms.

Teachers' initial preparation programs played a significant role in shaping their readiness to incorporate literacy strategies into their classrooms. For one teacher, completing his teaching credential program in another state provided extensive exposure to methods for supporting diverse learners with literacy skills, particularly multilingual learners through courses designed specifically for mathematical literacy strategies that were practical to the instruction of discipline-specific concepts. These courses were focused on Universal Design for Learning (UDL) principles but incorporated protocols for reading and writing that helped the participant see how literacy could exist in the mathematics classroom. This comprehensive preparation allowed the teachers to integrate strategies for multilingual students and apply these UDL strategies in their instructions. As a result, he felt confident addressing the literacy demands of his mathematics classroom. The teacher explained that the principles gleaned from in-service training have not been reflected in his experiences with mathematics specific literacy instruction since seeking certification in the state of South Carolina:

I haven't really experienced any PD like that since I've been here. Most of the time, the conversations we sit through are too about encouraging reading and writing in other subject areas [are] too general and I can't find [a] handle for them in the pacing and curriculum maps we use. It's like they exist outside of real-world application for us. In an individual interview with this teacher, he reemphasized that this gap in his professional learning since teaching in South Carolina felt starkly contrasted with these preservice experiences.

Different to the previous teacher's preservice experience, other teachers in the focus group who completed their preservice programs in South Carolina noted a lack of focus on mathspecific literacy instruction. One teacher described her frustration with the general nature of

literacy training in her South Carolina teacher preparation program which utilized Read to Succeed courses as a literacy requirement for graduation. She found that this required Read to Succeed coursework provided little guidance on how to incorporate literacy into mathematics, noting:

If you were ELA or if you were social studies or even if you were science, it was really easy for you. But if you're math... no one specified, and there were never examples on how to do it in math.

These gaps in preservice preparation illustrate the challenges teachers face when they are expected to integrate literacy into their instruction without sufficient training. Once in the field, teachers often look to professional development to fill the gaps in their preservice training. However, these participants explained that they have not experienced any professional learning around disciplinary literacy that has provided strategies applicable to their discipline.

This sentiment was also expressed by a participant who has been teaching mathematics in the state of South Carolina for 18 years when she confessed in her follow-up individual interview that the constant evolving laws around the Read to Succeed initiative have impacted her requirements for taking this course; each time she is required to take it, "a new proviso is passed or something changes and it isn't required anymore for secondary math teachers." Because she has not taken any Read to Succeed courses and she did not have any preservice training related to literacy instruction, her only experiences with this topic come from professional development experiences she has elected to attend. She expressed that these trainings have also left her without sharp vision for implementation:

I've attended conferences and every once in a while, we have a training on reading and writing and why it needs to be included in our classes and sometimes, it's interesting or

sounds like a good idea but I don't ever turn around and apply those things to what I'm teaching because it feels like an add-on to teaching math... like, it might be cool if we had time but it isn't essential to what we have to get through for the year. I have done some cross-curricular projects after state testing is over but I haven't learned anything yet that makes me think it's worth changing how I teach math every day.

Her experiences, combined with the experiences of other participants, suggest that the gap in professional development related to disciplinary literacy training for middle-level mathematics teachers may exist across state, district, and preservice learning.

Practical Strategies for Literacy Implementation

All three mathematics teachers emphasized that collaborating with ELA colleagues was one of the most effective ways to develop disciplinary literacy skills in their content area. ELA teachers serve as valuable resources for aligning literacy expectations across disciplines, providing guidance on strategies and standards already being reinforced in English classes. One teacher shared how she consulted her ELA colleague for help incorporating writing into her mathematics projects:

With some of the projects we've done this year, I was like, 'You're going to have to write a paragraph because I know that that was what my ELA teacher was requiring.' And so, I asked her, 'What do you specifically require in their paragraphs?'

By mirroring these writing expectations in her mathematics classroom, the participant believed that she increased consistency for students while reinforcing literacy skills across subjects. This type of collaboration allows mathematics teachers to maintain their focus on math-specific content without being overwhelmed by the nuances of teaching writing. By leaning on their ELA

colleagues' expertise, mathematics teachers found that they could seamlessly incorporate literacy practices in ways that enriched their instruction rather than detracting from it.

The use of straightforward and practical strategies that could be easily applied in a mathematics context also encouraged the use of disciplinary literacy practices for one participant. The teacher recounted her experience with the RACE writing strategy, initially skeptical of its application in math:

My last school required that we all learned the writing strategy that they were going to make everyone use, which is the RACE writing strategy. And so, I mean, at the time, I was like, 'When do you want this in my room?' But it does help when I do bigger projects that do have some kind of reflection piece at the end.

By implementing strategies like RACE, teachers found a structured and manageable way to integrate writing into their mathematics instruction. This approach helped students articulate their reasoning and demonstrated that practical tools can effectively bridge literacy and content learning. When asked in her individual interview for further details about her implementation of writing tasks in her mathematics class, she also stated her belief that more mathematics teachers would utilize literacy skills if they were shown simple strategies like RACE or other response methods that "spelled out exactly what students need to do" instead of "just saying they need to read and write." Her comments suggest that mathematics teachers are willing to engage in disciplinary literacy practices but may be unsure of how to accomplish integrating them without explicit clarification on the structures and processes of writing and reading tasks in the mathematics classroom.

Case Study B: Science Teachers

In case study B, middle school science teachers discussed their attitudes toward literacy in their classrooms and the barriers they face in effectively integrating disciplinary literacy practices. Many interviewed believe that literacy plays a crucial role in helping students master their content. However, they also identified several challenges that limit students' ability to complete literacy tasks. In addition, participants in this study also expressed a need for more practical professional development focused on integrating literacy strategies into science instruction.

Literacy Building Scientific Understanding

Science teachers participating in both the focus group and subsequent individual interviews consistently communicated the importance of literacy practices in students' mastery of grade-level science standards. Several made statements about how content-area reading and writing are essential tools for students to engage with scientific concepts. In the focus group, one teacher reflected on the integral nature of literacy in supporting students' grasp of content when she explained how literacy helps students "organize their thoughts and engage with the content more deeply" by encouraging them to write explanations for their answers during assessments. She further emphasized that writing encourages a deeper engagement with the subject when she explained:

On every assessment, I try to include at least one question where students [must] explain something in writing. This requires them to think through the material and structure their responses, which helps them process the content. It helps me know exactly what they know.

This statement highlights the connection between literacy practices and true skill mastery by asserting that writing is not just a way to assess content knowledge but a tool for developing and solidifying understanding.

Another teacher responded by agreeing and explaining the importance of writing assignments in his science classroom, particularly during review sessions. He emphasized that students are expected to articulate their knowledge "in their own words," which helps reinforce their understanding and avoid the trap of simply regurgitating facts from textbooks or digital resources. He pointed out that "they have to write out definitions" and "give me answers" in a way that requires students to process the information in their own language. This approach evaluates factual recall and forces students to synthesize information and reframe it using original thinking.

Teachers did note that this process of building scientific understanding through disciplinary literacy practices is complicated by the high multilingual learner population that exists at the research site. One participant explained,

It is harder to incorporate reading and writing at this school compared to other places I've worked because so many kids are just building their ability read and write in English... it's like, to use those strategies, you have to be able to help them understand some of the

key parts of writing and reading and not just the science content you're covering. With such a high volume of these students, teachers must carefully think through what scaffolds are needed to ensure students are successful when literacy-rich tasks are implemented.

Despite these challenges, in a follow-up individual interview, that teacher explained that she still believes literacy practices support scientific inquiry skills. From her perspective, engaging students with texts and encouraging them to write evidence-based responses improves

their reading and writing skills and encourages their ability to think critically while reasoning through scientific questions. By teaching students how to differentiate between a claim and supporting evidence, the teacher aims to help her students develop inquiry-based skills that are central to the scientific method:

[It] it makes our students better scientists, not [simply better] readers and writers, but it helps them be successful in the problem-solving that is required in science. It helps them draw conclusions and ask questions. Some of those more inquiry-based skills that so much of our content relies upon to make sense of what we're learning so it's worth the added layer of teaching and understanding.

This approach illustrates that even though the process of including literacy practices in science classrooms is difficult, it pushes learning beyond just understanding content and helps students develop the very skills they need to approach and solve problems like a scientist.

Need for Practical Professional Development

Like the issues with professional development (PD) expressed by mathematics teachers, science teachers in the study felt the PD opportunities available to them were insufficient in helping them integrate literacy into their science instruction. There was a sense that existing PD opportunities did not provide the necessary guidance or actionable strategies for teachers to implement literacy practices effectively in their classrooms

One teacher noted that, while she had participated in the Read to Succeed program, the focus was on the importance of literacy rather than on practical strategies to apply in the classroom. She expressed frustration with PD sessions that emphasize why literacy is important but fail to provide teachers with concrete tools and techniques to implement it:

I felt like they were just trying to convince us more that it was important. That happens at a lot of [professional development] ... you know, read these articles about why it's important. We know it's important. But as far as here, try it out with your kids... I felt like we could use more of that instead of this is why it's important.

Another participant agreed stating:

That has been exactly my experience with other PD too... I don't need to be told why I should teach these skills but how I should be teaching these skills. I feel like at this point, we all know reading and writing in science classes is important, especially with how our standards are [written]. So, we throw an article in here and there and have them write answers to open-ended questions but... I just... I don't know...[I] want more... [and want to know] how to do this well.

These participants' sentiments reflect a common criticism of PD programs that focus too heavily on theory without offering the practical "how-to" knowledge that teachers need. In both focusgroup interviews and the individual interviews that followed, participants who teach science continually suggested that they understand the value of disciplinary literacy, they see it as a an important step to developing students of science but they would engage in this work more regularly and in deeper ways if they had access to professional development that was less philosophical in nature and instead, prepared them with practical strategies.

Case Study C: Social Studies Teachers

The final case in this study explores the perspectives of social studies teachers on the integration of literacy into their curriculum and focuses on their use of diverse texts, writing activities, and literacy strategies to engage students in meaningful learning experiences. Additionally, it reveals barriers to literacy instruction that social studies teachers face. Identified

barriers include the need for more targeted professional development to support their efforts in building students' literacy within their content area.

Literacy through Varied Texts

In the focus-group interview, the social studies teachers discussed the essential role literacy plays in their classrooms. Many expressed that they consider reading and writing skills as integral to mastering social studies content. They emphasized the importance of understanding historical facts while simultaneously engaging with distinct types of texts and their belief that these literacy practices help students build the skills needed to analyze and synthesize historical information.

Participants discussed the use of diverse texts to engage students and develop their literacy skills. A significant part of their instruction focused on primary documents, which they believed provided students with a deeper understanding of history by allowing them to engage directly with the past. One teacher shared that her class frequently uses primary documents and explained how reading and analyzing these documents helps students gather evidence and engage with the historical content more critically:

In my class this year, we do a lot of primary documents. Currently we're doing the Declaration of Independence. We spent a lot of time on the preamble and parts of the Constitution. We do the Articles of Confederation. So, they're reading at least excerpts of primary documents and secondary documents and learning how to gather evidence out of it.

She believes that these primary documents are used not only to teach history but also to develop students' reading and analytical skills, allowing them to engage directly with historical texts and use evidence to support their arguments. Another participant added,

Those are difficult documents that students are reading, and they do really struggle to find evidence in them because sometimes, the words are antiquated so if we can get them to understand what they're reading in those texts, it kind of... makes them better readers overall.

These thoughts suggest that the process of examining historical primary sources, a pillar of social studies instruction, relates to the literacy development of adolescent students.

Participants also noted that writing plays a crucial role in social studies instruction. Many teachers in the focus group emphasized the importance of writing activities, which allow students to process information in a more meaningful way. Writing tasks such as historical analyses, persuasive essays, and point-of-view exercises help students develop critical thinking and improve their ability to communicate complex ideas. In her subsequent individual interview, one teacher mentioned the use of CER (Claim, Evidence, Reasoning) exercises, where students are asked to formulate a claim, provide evidence, and justify their reasoning based on historical documents—a task that was uncovered during the document analysis portion of this study as a commonly used disciplinary literacy skill embedded in the district's curriculum maps (Camden County Schools, 2024b). The CER approach to responding to prompts reinforces both writing skills and critical thinking. She explained its incorporation in an upcoming lesson:

Tomorrow we're going to do a CER where they have a claim statement based on important documents like interviews and brochures from a historical event we're

studying. We've been gathering evidence and they're going to put it together tomorrow. These reading and writing tasks that have students engaging with varied texts encourage students to think like historians, asking them to support their conclusions with evidence and reason through materials, which is a central skill in both social studies and disciplinary literacy.
Need for Targeted Professional Development

Much like the responses to professional development questions posed in focus-group interviews with mathematics and science teachers, social studies teachers expressed a fervent desire for more targeted professional development (PD) focused specifically on how to integrate literacy practices into the social studies curriculum. One teacher stated:

I do think we integrate those things more than any other subject other than [English-Language Arts], but it feels like we always need to be doing more since we aren't [assessed] like they are. I would like to learn more doing those things while we learn about different religions or cultures... like, how can I use it with the lesson plans I have now to make them even better?

It's important to note that no social studies teachers who participated in the study had taken the Read to Succeed courses at the time of the focus-group interviews or individual interviews. While some teachers had received general literacy training on an elective basis, they felt that these sessions were not practical enough to address the unique challenges of teaching literacy in social studies. Two teachers who attended a conference together discussed their takeaways from a session on cross-curricular reading:

That conference we went to... had a session that really talked about this, and I remember wanting to do some of the stuff that she talked about, so we tried to create a graphic organizer out of what she was saying but it didn't feel like it really went with the articles and the texts we were using.

The other teacher agreed, "[Yes], it was a good idea, but we didn't have the time or the brain power to really make it work." This experience suggests that the desire to implement disciplinary literacy practices was present for these teachers, but the lack of directly applicable materials

provided created a barrier for their implementation of the philosophy long-term. In her individual interview, one of these participants again explained their desire for more specialized PD that provides actionable strategies and tools for improving literacy in their classrooms.

A different participant added to this conversation and shared that while she had participated in a book study on reading strategies, much of the professional development she had received in the past was not directly applicable to her role as a social studies teacher. This sentiment was echoed by another participant, who pointed out that the literacy course she took during her teacher preparation was too general to be useful in her content area.

I think the class that I took was just too general... it wasn't like... how can we use these skills in the social studies classroom... it was just general knowledge of how we apply literacy in the class, so it wasn't very helpful.

This discussion highlights the gap in PD offerings that focus on the practical application of literacy strategies within specific disciplines like social studies and supports the comments of mathematics and science teachers who expressed parallel experiences.

Summary

This chapter presented the results of a collective case study focused on the attitudes of non-ELA middle school teachers toward disciplinary literacy in mathematics, science, and social studies classrooms. The study identified three key themes: the role of curriculum design, the challenges of integrating literacy practices, and the impact of professional development. Curriculum maps from Camden County Schools and their framework for disciplinary literacy provided context to how they include these practices through incorporating strategies such as Claim-Evidence-Reasoning (CER) in science and social studies and the RAISE protocol in mathematics to promote critical thinking and effective communication.

In focus-group interviews specific to the identified disciplines researched in this study and subsequent individual interviews with teachers who elected to continue the conversation, participants acknowledged the value of literacy for enhancing problem-solving and content understanding. They also highlighted challenges such as limited time, the needs of multilingual learners, and the struggle to balance content instruction with literacy demands. Participants emphasized the lack of targeted professional development offering practical, discipline-specific strategies but noted that collaboration with colleagues, particularly between ELA and contentarea teachers, helped bridge the gap and support effective integration of literacy into instruction.

In chapter five, these findings are analyzed by exploring overall themes that emerged from a review of each case study instead of viewing each case study as siloed from one another. This chapter also explores recommendations for future practice and future research to strengthen disciplinary literacy practices, enhance professional learning opportunities, and encourage collaboration that improves student outcomes across content areas.

Chapter Five: Discussion and Conclusions

This study explored the attitudes of non-ELA (non-English Language Arts) middle school teachers toward disciplinary literacy instruction in mathematics, science, and social studies classrooms. Using a collective case study approach, the research investigated the factors influencing teachers' attitudes toward disciplinary literacy integration, the challenges and benefits they associate with these practices, and the role of professional development in shaping their instructional strategies. Data collection included focus-group interviews, individual teacher interviews, and a review of relevant documents to identify existing disciplinary literacy resources that may impact teacher attitudes.

This study is important to the evolving body of research on teacher attitudes towards specific curriculum initiatives because of its focus on disciplinary literacy, a critical yet often overlooked aspect of non-ELA instruction. Traditional literacy instruction emphasizes general reading and writing skills, whereas disciplinary literacy focuses on the specialized ways that experts in different fields, such as mathematics, science, and social studies, read, write, and communicate within their disciplines (Shanahan & Shanahan, 2008). Additional research by Shanahan and Shanahan (2011) further demonstrates that disciplinary experts apply distinct literacy practices which reinforce the need for tailored instructional strategies in each subject. As explored in the literature review, existing research suggests that many students operate at a basic literacy level, struggling to engage with subject-specific texts in meaningful ways, which can hinder their comprehension and problem-solving abilities (Fang, 2012). This issue is compounded by the lack of formal training for non-ELA teachers in how to integrate literacy strategies into their instruction (Ippolito et al., 2017). Fang (2014) emphasizes that teacher preparation programs must explicitly address the unique literacy demands of each discipline to

ensure preservice teachers are equipped for this challenge. As a result of little preparation for disciplinary literacy practices in preservice training and beyond, students may face barriers in both content mastery and the development of discipline-specific skills necessary for success in real-world application (Reed et al., 2017). By exploring the experiences of middle school teachers across mathematics, science, and social studies, this study highlights the need for targeted disciplinary literacy training and instructional support.

The purpose of this chapter is to synthesize and discuss the findings presented in chapter four by examining the commonalities across the three case studies. In doing so, this chapter provides a contextualized response to the primary research question: What factors influence non-ELA middle-level teachers' attitudes toward disciplinary literacy instruction in their classrooms? Through cross-case analysis, three overarching themes emerged that provide insight into these research questions: (a) teachers in non-ELA middle-level classrooms often struggle to balance the demands of their content requirements and with what is required to implement literacy instruction; (b) non-ELA middle-level teachers are consistently frustrated by professional development that focuses on the theoretical purpose of disciplinary literacy but offers minimal practical applications for the inclusion of reading and writing tasks in their subject area; and (c) many teachers in non-ELA middle-level classrooms have a profound understanding of disciplinary literacy's value, have utilized cross-curricular collaboration to engage in structured disciplinary literacy work, and desire a greater use of these concepts in their classrooms. These themes offer a framework for understanding teacher attitudes toward disciplinary literacy in non-ELA middle school classrooms. The next section of this chapter will provide a deeper analysis of the three overarching themes and explore their implications.

Following the analysis of these three themes, this chapter will present recommendations for future practice and future research to strengthen disciplinary literacy instruction in middlelevel classrooms. Additionally, the chapter includes a section on researcher reflections and concludes with a discussion on study limitations, addressing barriers encountered during the research process and any final discussions.

Negotiating a Middle Ground Between Varying Content Requirements

The tension that non-ELA teachers experience as they balance the literacy demands of their discipline with the core objectives of their subject area was consistent across an analysis of teacher responses in focus-group interviews and follow-up individual interviews from each of the cases included in this study. These participants acknowledged that while disciplinary literacy practices can enhance content mastery, they also introduce challenges, particularly when students struggle with comprehension or when instructional time is limited. This mirrors findings from Fang (2014), who noted the unique literacy demands of each discipline require educators to differentiate instruction—an expectation that can intensify workload and planning time for non-ELA teachers. Shanahan and Shanahan (2008) emphasized that disciplinary literacy requires subject-specific approaches distinct from general literacy, reinforcing teachers' concerns about how to integrate these strategies effectively without disrupting content instruction. Teachers of each non-ELA disciplines expressed concerns about the feasibility of embedding disciplinary literacy literacy practices without detracting from content-specific learning objectives.

Findings

In every case study included in this research, teachers acknowledged that while literacy activities can enrich student understanding and encourage deeper engagement, they also require additional instructional time and cognitive effort that can detract from content delivery. Teachers

consistently expressed concern over how these added priorities, though valuable in theory, often conflict with the practical needs of covering essential curriculum material. Moje (2015) argues that disciplinary literacy should be authentically embedded rather than treated as an add-on, a challenge that aligns with teachers' frustrations about balancing these practices with pacing requirements. Although findings from this study indicate that many non-ELA teachers struggle to balance disciplinary literacy practices and meeting core content objectives, all participants did not experience this challenge uniformly.

Mathematics teachers, for instance, frequently highlighted how disciplinary literacy skills needed to solve complex word problems are often competing with mathematical computation skills. One mathematics teacher described the situation by explaining that the extra focus on writing or reading skills that schools or academic specialists suggest tends to interrupt the flow of traditional problem-solving instruction in mathematics classes, making it harder to cover all necessary topics. Participants in this study expressed concerns that students who struggle with basic literacy skills are ill-prepared for those additional reading and writing tasks that the integration of disciplinary literacy practices presents, and therefore, face added struggles when learning mathematics standards. This sentiment reflects one of the unique challenges to non-ELA teachers, where the integration of disciplinary literacy practices might introduce an entirely different skillset to the learning process and thereby, extend and further complicated instruction.

Similarly, science teachers reported that incorporating literacy strategies, such as requiring students to articulate their scientific reasoning in written form, often resulted in the addition of several instructional strategies needed to teach students how to read and write—a concern that is particularly heightened by the significant volume of multilingual learners at the research site. Such reflections reveal that the benefits of disciplinary literacy integration in

science might tempered by practical concerns related to instructional time, content pacing, and student achievement. Social studies teachers, too, referred to this balancing act with incorporating disciplinary literacy tasks. They expressed how engaging students with primary source documents and historical texts significantly deepens analysis skills and historical understanding, but the high caliber of the academic language commonly found in primary sources proves difficult for students and historical thinking tasks, such as identifying evidence, are complicated.

Collectively, these findings illustrate that although teachers across disciplines value the role of literacy in enhancing content mastery, they must continuously negotiate a middle ground between the enrichment provided by disciplinary literacy practices and their ability to maintain rigorous, content-focused instruction. This balancing act requires thoughtful instructional planning, as teachers must determine when and how to integrate literacy strategies without detracting from essential subject matter. Without adequate support and structured implementation, literacy tasks may be perceived as an additional burden rather than a tool for deepening student learning within each discipline.

Recommendations for Future Practice

Because the challenge of balancing disciplinary literacy with content-specific instruction was a key theme in this study, it is recommended that school leaders take intentional steps to support non-ELA teachers in implementing literacy strategies without compromising their subject-matter instruction. Teachers in mathematics, science, and social studies consistently reported that while disciplinary literacy can deepen student understanding, it also adds instructional complexity, often requiring additional scaffolding and time that competes with core content. If teachers are expected to integrate disciplinary literacy effectively, they need

instructional support that is discipline-specific, practical, and seamlessly woven into their existing instructional framework. By crafting pacing guides and curriculum maps that include literacy-rich tasks, teachers can shift from working to determine how these strategies might be integrated in their instruction toward improving greater student mastery of these skills.

Recommendations for Future Research

Since this tension between content instruction and disciplinary literacy instruction existed across the various focus-groups interviewed for this study, future research should further explore the long-term impact of disciplinary literacy practices on student achievement across content areas. While this study revealed that teachers see value in integrating literacy but struggle with feasibility, additional research is needed to determine which specific disciplinary literacy strategies lead to measurable gains in both literacy development and content mastery. This research could track performance over time to assess whether intentional disciplinary literacy integration leads to improved student outcomes for non-ELA subject areas. Examining these relationships could provide greater clarity on how literacy skills contribute to content learning across subject areas and mitigate teacher concerns about time spent pursuing disciplinary literacy tasks.

Consistent Gaps in Professional Development

A critical challenge identified across all three case studies were the concerns of non-ELA teachers that professional learning opportunities related to disciplinary literacy were either too generalized or lacked practical applications for their specific subject areas. This echoes findings by Howell et al. (2021) who noted teachers were more receptive to disciplinary literacy when they could observe strategies modeled within their own content areas rather than relying on abstract, generalized approaches. Often, this felt like the most prominent indicator of a

participant's attitude toward disciplinary literacy. Many teachers indicated that professional development sessions focused more on justifying the importance of disciplinary literacy rather than providing actionable strategies for implementation—a move that runs counter to the existing research on disciplinary literacy-specific professional development which asserts that training for non-ELA teachers on this topic must be hands-on, accessible, and specific to the audience (Binkley et al., 2011; Koomen et al., 2016). The existing gap in professional development and training on disciplinary literacy left educators in this study feeling underprepared to integrate literacy practices effectively within their curriculum.

Findings

Teachers in every subject area in this study expressed overwhelming frustration with the professional development opportunities available to them regarding disciplinary literacy. They noted that much of the training they received was broad and theory-based, lacking clear guidance on how to implement literacy strategies within the unique structures of mathematics, science, and social studies classrooms. Many felt that professional development often emphasized the significance of literacy without offering practical strategies tailored to their instructional needs.

Mathematics teachers expressed specific frustrations that existing literacy training often failed to account for the distinct nature of their subject. They described struggling to find meaningful ways to incorporate reading and writing without disrupting the problem-solving structure of their lessons. Science and social studies teachers expressed similar concerns, noting that while literacy integration is valuable, professional development rarely addresses how to effectively align it with content delivery. In each case, teachers found it challenging to adapt general literacy strategies to fit the demands of their specific disciplines.

These concerns were heighted by several teachers reporting that their only professional development experiences related to disciplinary literacy involved sessions directed toward teachers of all content areas. In these scenarios, non-ELA teachers were left to distinguish amongst all ideas presented and find strategies that they could adapt and utilize their specific context. As a result, many educators felt overwhelmed by the breadth of information and uncertain about which strategies would be most effective for their subject areas. Without targeted support, teachers struggled to implement literacy practices that aligned with their discipline's unique demands. Teachers communicated that they need subject-specific guidance so that students do not experience inconsistent applications of disciplinary literacy across content areas. This gap in professional development hindered teachers' confidence in integrating disciplinary literacy strategies.

Recommendations for Future Practice

Because professional development on disciplinary literacy was perceived as too generalized and disconnected from daily instructional needs, it is recommended that school and district leaders design subject-specific professional learning opportunities that provide non-ELA teachers with concrete, actionable strategies tailored to their disciplines. Instead of philosophical seminars on the importance of disciplinary literacy, professional development should include content-focused modeling that demonstrates how literacy strategies can be integrated into subject-specific instruction.

Additionally, it was apparent throughout the focus-group interviews and individual interviews that the non-ELA teacher participants in this study were minimally impacted by many of the documents analyzed in the document review portion of this study. While participants discussed their use of artifacts related to disciplinary literacy from the curriculum maps provided

by the district, the use of the disciplinary literacy framework and the ELA standards that reference disciplinary literacy were not discussed by any of the teachers in this study. Future practices may benefit from increasing the visibility and accessibility of these guiding documents for non-ELA teachers, as well as providing targeted professional development that explicitly connects the disciplinary literacy framework and ELA standards to content-area instruction in science, math, and social studies.

Recommendations for Future Research

Future research should explore which types of professional development models are most effective in helping non-ELA teachers implement disciplinary literacy in ways that are both practical and sustainable. While this study identified broad dissatisfaction with existing training on disciplinary literacy practices, further investigation is needed to determine what type of Professional Development (PD) lead to improved teacher attitudes toward the implementation of disciplinary literacy practices. Through this research, instructional leaders might identify a path towards greater implementation success.

Further research on this topic could also include looking at the impact of specific professional development models on teacher attitudes toward specific instructional initiatives. While it is evident in this study that professional development experiences had a profound impact on teacher attitudes, determining if this impact is consistent with instructional strategies beyond just disciplinary literacy would glean insights for instructional leaders at large. This examination of the impact of various PD approaches on instructional practices and student outcomes could provide valuable insights for developing more effective training programs for teachers.

The Value of Structured Literacy Strategies and Interdisciplinary Collaboration

The responses of participants across both interview settings demonstrated that when provided with clear, structured, and discipline-specific literacy strategies, teachers recognize the benefits of incorporating these practices into their instruction. Mathematics, science, and social studies teachers who collaborated with ELA colleagues and utilized these more structured supports found greater success in integrating literacy into their classrooms. This suggests that interdisciplinary collaboration and the use of structured frameworks can help overcome some of the barriers associated with disciplinary literacy instruction and positively impact teacher attitudes on this topic.

Findings

Participants across all three cases in this study highlighted the value of structured literacy strategies in supporting student learning across disciplines. Since few non-ELA middle level teachers have formal training in literacy development, providing these educators with explicit instructional tools that they can use when engaging in disciplinary literacy tasks reduces the frustration that many experience. These structured strategies paired with strong collaboration with ELA teachers who are trained in teaching reading and writing to middle school students had an overwhelmingly positive impact on non-ELA teachers.

Mathematics teachers, for instance, found that structured problem-solving frameworks, such as the RAISE (Read, Analyze, Identify, Solve, Engage) protocol, guide students in breaking down literacy-rich problems and help them articulate their reasoning more effectively. Also, science educators observed that using strategies such as Claim-Evidence-Reasoning (CER) improved students' ability to construct and defend scientific arguments with its simple structure that provided students with a clear picture of what was expected when writing. Social studies

teachers discussed how their experience in a disciplinary literacy PD inspired them to use graphic organizers to track student thinking while exploring complex primary sources so that they had something to guide student reading and writing tasks. The addition of these studentfacing structured materials makes the work of disciplinary literacy feel more attainable for non-ELA teachers. These findings suggest that providing explicit literacy frameworks tailored to each content area can significantly aid in the implementation of disciplinary literacy.

Interdisciplinary collaboration also emerged as a key factor in supporting literacy integration. Teachers who collaborated with ELA colleagues or participated in cross-subject conversations reported feeling more prepared to embed literacy strategies in meaningful ways. In cases where collaboration was encouraged, teachers developed shared approaches to literacy instruction that aligned with their subject's demands. For example, mathematics teachers who collaborated with an ELA teacher on their hallway while using a specific writing response strategy found that students were better equipped for these literacy tasks.

Recommendations for Future Practice

To enhance the integration of disciplinary literacy, instructional leaders should prioritize the development and implementation of student-facing structured reading and writing tasks that have been designed in conjunction with the existing curriculum maps for each content area. This will provide non-ELA educators with applicable resources aligned to their objectives while modeling disciplinary practices specific to the content they are teaching. By embedding these resources in the pacing of the content that teachers must cover, instructional leaders will allow teachers to focus on the work of developing discipline-literate students instead of focusing on negotiating how these strategies might work in their classroom.

Instructional leaders should also consider how they might generate a culture of

interdisciplinary collaboration whereby ELA teachers regularly collaborate with teachers of other disciplines to offer support and guides. Schools can encourage cross-departmental partnerships by implementing shared planning time and providing opportunities for teachers to co-develop literacy strategies that align with their curriculum. When teachers work together to reinforce literacy skills in different contexts, non-ELA teachers are more likely to engage in disciplinary literacy work with their students.

Recommendations for Future Research

Future research should explore the long-term impact of structured literacy strategies on student achievement across disciplines. For example, a researcher might study how the use of disciplinary literacy improves science outcomes at the conclusion of a unit. While this study highlights the immediate benefits of these literacy frameworks for non-ELA teachers, further investigation is needed to assess how sustained use of these strategies influences student performance on content-specific assessments.

Additional future research could also explore how school leadership and organizational factors, such as common planning time, contribute to successful literacy integration across subjects. While teachers in this study expressed the importance of collaboration with ELA teachers, determining the impact of various subjects in a professional learning community together would provide instructional leaders with data to support scheduling decisions that might impact the use of disciplinary literacy practices. Investigating these aspects would provide a deeper understanding of how to create sustainable and effective cross-disciplinary literacy initiatives.

Researcher Reflections

As an educator, the researcher's background and firsthand experiences played a significant role in shaping the perspective on this study. Professional work in education, particularly in instructional coaching at the selected research site, influenced the understanding of disciplinary literacy and the challenges non-ELA teachers face when integrating literacy practices into their instruction. When this study began, there was a strong belief in the value of literacy across all content areas, viewing it as an essential tool for deepening student understanding. As the study progressed, particularly during the focus group with mathematics teachers, it became evident that the constraints teachers felt when asked to implement new strategies had been underestimated. Initially, the assumption was that teachers who struggled with disciplinary literacy integration simply needed more impactful training. It is now clear that this issue is far more complex and involves systemic changes that instructional leaders can implement to foster more positive teacher attitudes.

Study Limitations

The researcher's background in instructional coaching and prior beliefs about the importance of literacy integration may have influenced aspects of data collection and analysis. Also, the researcher's role as a staff member and instructional leader at the research site may have influenced interest in understanding what impacts teacher attitudes. While steps were taken to minimize bias, interpretations may have been shaped by the researcher's professional experiences in some capacity.

In addition to these personal reasons, the nature of case studies also contributes to study limitations. According to Yin's (2014) research, case study research is sometimes criticized for being too narrow in scope and some argue that it focuses too much on specific cases. Some

believe it provides limited evidence that can be used to draw generalization which raises concerns about its broader applicability (Yin, 2014). This critique means that the findings from this case study may not always transfer to other settings and teacher attitudes toward disciplinary literacy should be examined according to each specific context to ensure reliability.

Conclusion

Existing research highlights the critical role of disciplinary literacy in supporting student comprehension and engagement across all content areas. As research around teacher attitudes suggests, attitudes that educators hold toward disciplinary literacy initiatives are one of the most influential factors in the success of its implementation (Ajzen & Fishbein, 1977; Armitage & Christian, 2003). Understanding these attitudes and the elements that impact them is essential for fostering effective adoption of disciplinary literacy practices in non-ELA classrooms.

This study critically analyzed the key factors that shape teacher attitudes toward disciplinary literacy and their impact on the effectiveness of disciplinary literacy integration through qualitative data gathering methods such as document review, individual interviews, and focus-group interviews. Findings suggest that teachers' attitudes are influenced by both their prior experiences with literacy instruction, the level of support provided through professional development, and their access to related curriculum. Addressing these factors can help bridge the gap between theory and practice, enhancing student learning outcomes across disciplines.

The results of this collective case study indicate a need for ongoing professional learning opportunities and targeted support for educators in implementing disciplinary literacy. While instructional leaders play a key role in equipping teachers with the tools they need, systemic changes, such as targeted and discipline-specific professional development and the integration of

structured literacy strategies into curriculum development, are necessary to improve teacher attitudes toward disciplinary literacy.

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APPENDIX A: FOCUS-GROUP INTERVIEW CONSENT



INFORMED CONSENT FOR

Middle-Level Teachers' Attitudes on Disciplinary Literacy Instruction in the Non-ELA Classroom—Focus-Group Interviews

You are invited to participate in a research study to help us learn more about the attitudes of teachers in non-ELA classrooms, specifically math, science, and social studies, towards disciplinary literacy at the middle school level. This study poses no risks as it seeks only to gain insight into teacher perceptions through interviews.

The study is being conducted by Katherine Bowers, a doctoral student in the College of Education of Education at Anderson University and under the supervision of Dr. Jeremy Watts. You were selected as a possible participant because you are employed at the participating school and teach in one of the subjects focused on in the research.

If you decide to participate in these focus-group interviews, I will set up a time with you and others in your school who teach the same subject and have also agreed to be interviewed. These semi-structured focus-groups will take approximately 30 to 90 minutes.

Any information obtained in connection with this study and that can be identified with you will remain confidential. Interview recordings and transcriptions will be kept in a secure location and analyzed using coding. Though information collected through your participation will be used to fulfill an educational requirement, none of your identifiable information will be included. This information will be protected and all identifying codes will be destroyed at the completion of the study.

You may withdraw from participation at any time, without penalty, and withdraw any data which has been collected about yourself. Your decision whether or not to participate will not jeopardize your future relations with Anderson University or Camden County Schools.

If you have any questions I invite you to ask them now. If you have questions later, Katherine Bowers or Dr. Jeremy Watts will be happy to answer them. You may reach Katherine Bowers by phone or email at ______ Dr. Jeremy Watts is reachable at ______ You will be provided a copy of this form to keep.

For more information regarding your rights as a research participant you may contact the Chair of the Human Subjects Committee/Institutional Review Board by phone or e-mail at

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE.

Participant's signature	Date	Investigator's signature	Date
Print Name		Print Name	

APPENDIX B: INDIVIDUAL INTERVIEW CONSENT



INFORMED CONSENT FOR

Middle-Level Teachers' Attitudes on Disciplinary Literacy Instruction in the Non-ELA Classroom—Individual Interviews

You are invited to participate in a research study to help us learn more about the attitudes of teachers in non-ELA classrooms, specifically mathematics, science, and social studies, towards disciplinary literacy at the middle school level. This study poses no risks as it seeks only to gain insight into teacher perceptions through interviews.

The study is being conducted by Katherine Bowers, a doctoral student in the College of Education of Education at Anderson University and under the supervision of Dr. Jeremy Watts. You were selected as a possible participant because you are employed at the participating school, teach in one of the subjects focused on in the research, and have completed the focus-group interview process for this study.

If you decide to participate in this second phase of interviews, I will set up an individual interview time with you to discuss your answers from the focus-group in greater detail. The semi-structured interview will take approximately 30 to 60 minutes.

Any information obtained in connection with this study and that can be identified with you will remain confidential. Interview recordings and transcriptions will be kept in a secure location and analyzed using coding. Though information collected through your participation will be used to fulfill an educational requirement, none of your identifiable information will be included. This information will be protected and all identifying codes will be destroyed at the completion of the study.

You may withdraw from participation at any time, without penalty, and withdraw any data which has been collected about yourself. Your decision whether or not to participate will not jeopardize your future relations with Anderson University or Camden County Schools.

If you have any questions I invite you to ask them now. If you have questions later, Katherine Bowers or Dr. Jeremy Watts will be happy to answer them. You may reach Katherine Bowers by phone or email at _______. Dr. Jeremy Watts is reachable at _______You will be provided a copy of this form to keep. For more information regarding your rights as a research participant you may contact the Chair of the Human Subjects Committee/Institutional Review Board by phone or e-mail at

Date

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE.

Participant's	signature
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Investigator's signature Date

Print Name

Print Name

APPENDIX C: FOCUS-GROUP INTERVIEW PROTOCOL

Focus-Group Interview Protocol

- 1. Please tell me about yourself and your work.
- 2. How do you view the role of literacy instruction in your content area?
 - a. What type of texts do students read in your class?
 - b. How do you engage students in reading and writing activities related to your content area?
- 3. What impact does strong literacy skills have on student mastery in your specific content area?
- 4. What benefits do you perceive to the inclusion of literacy practices in your content area?
- 5. What barriers do you perceive to the inclusion of literacy practices in your content area?
 - a. Are there specific resources or support that could help mitigate these barriers?
- 6. What training did your preservice experiences provide to equip you for literacy instruction in your content area?
 - a. How has this shaped your beliefs on this literacy instruction?
 - b. Did you employ any literacy practices into the instruction of your content because of this experience?
- 7. What professional development opportunities focused on disciplinary literacy practices or the integration of literacy in your content-area have you experienced?
 - a. How has this shaped your beliefs on this literacy instruction?
 - b. Did you employ any literacy practices into the instruction of your content because of this experience?
- 8. What other experiences have impacted your attitude towards literacy instruction?

9. Is there anything else you would like to share or any additional insights you have regarding disciplinary literacy and its role in your teaching?

APPENDIX D: INDIVIDUAL-INTERVIEW PROTOCOL

Individual-Interview Protocol

- 1. Can you share some other specific examples of how your background and experiences have influenced the approach to literacy in your discipline?
- 2. Could you elaborate on any specific strategies or techniques you employ on literacy within your subject area? What does this look like in your own classroom?
 - a. What strategies worked well?
 - b. How has the use of these strategies impacted students?
 - c. Can you provide an example of a student whose mastery improved due to strong literacy skills?
- 3. What type of literacy is crucial for student success in your subject area?
- 4. Can you provide more details on the specific content, format, and impact of any professional development or preservice training experiences on literacy that you have attended?
 - a. What aspects of this training were most valuable?
 - b. How did this change literary instruction in your classroom?
- 5. How has your school or district facilitated the implementation of literacy practices in your subject area and how has this impacted your teaching?
 - a. How do you view the implementation of these practices and have they supported your work with students?
- 6. Are there any measurable impacts or changes in your teaching approach or student outcomes resulting from the professional development experiences you've had around literacy integration in your discipline?

- 7. What additional professional development do you believe those in your content area need to support literacy outcomes for students?
 - a. How might this change student mastery in your content area?
- 8. Is there anything else you would like to share or any additional insights you have regarding disciplinary literacy and its role in your teaching?

APPENDIX E: FOCUS-GROUP INTERVIEW INVITATION



INVITATION FOR

Middle-Level Teachers' Attitudes on Disciplinary Literacy Instruction in the Non-ELA Classroom—Focus Group Interviews

Dear [Participant's Name],

As someone well acquainted with the realities of literacy instruction, particularly in the face of South Carolina's Read to Succeed Act, I am the primary researcher spearheading the study on teacher attitudes toward disciplinary literacy instruction in non-ELA classrooms. Witnessing firsthand the profound impact that teachers can have on student achievement, my commitment to understanding the nuances of teacher attitudes toward disciplinary literacy is driven by a desire to contribute meaningful insights to the educational landscape. As we embark on this study, I am excited to engage with middle-level teachers, like yourself, to shed light on the factors shaping attitudes toward disciplinary literacy and ultimately inform policies that positively impact teaching practices.

Would you consider being part of my study by participating in a focus-group interview with you and 3-5 of your colleagues on attitudes toward disciplinary literacy in the [Specific Discipline] classroom? This focus-group interview will last 30-60 minutes during non-instructional time and will be conducted in a location convenient to you. Responses you provide will be analyzed and coded to protect your identity.

I appreciate your consideration in participating in this study, and I eagerly anticipate the valuable contributions your insights will bring to the research.

Sincerely,

Katherine E. Bowers Doctoral Candidate, Anderson University
APPENDIX F: INDIVIDUAL INTERVIEW INVITATION



INVITATION FOR

Middle-Level Teachers' Attitudes on Disciplinary Literacy Instruction in the Non-ELA Classroom—Individual Interviews

Dear [Participant's Name],

Thank you for your participation in the first phase of this study on attitudes of non-ELA teachers toward disciplinary literacy instruction. The information you provided is invaluable to helping me understand the nuances of teacher attitudes on this topic.

Would you consider being part of the next phase of my study by participating in an individual interview with me to provide further clarification on the attitudes toward disciplinary literacy in the [Specific Discipline] classroom? This individual interview will last 30-60 minutes during non-instructional time and will be conducted in a location convenient to you. Responses you provide will be analyzed and coded to protect your identity.

I appreciate your consideration in participating in this study, and I eagerly anticipate the valuable contributions your insights will bring to the research.

Sincerely,

Katherine E. Bowers Doctoral Candidate, Anderson University

APPENDIX G: ANDERSON UNIVERSITY IRB APPROVAL LETTER



Human Subjects Committee (HSC) Institutional Review Board (IRB)

Dear Katherine E. Bowers,

Proposal Title: Middle-Level Teachers' Attitudes on Disciplinary Literacy Instruction in the Non-ELA Classroom

Submission date: Sunday, December 10, 2023, 8:09 PM

The Human Subjects Committee (HSC) has received and reviewed the above-titled research proposal. I am happy to inform you that AU's IRB has voted to <u>APPROVE</u> your abovementioned proposal. Your approval number is Please, whenever you contact us about this proposal, use your IRB approval number.

Also, be reminded that if at any point during the research, the risk level to any human subjects involved changes, either physical harm or loss of anonymity, or should you find it necessary to make any adjustments to the study as approved, please contact the HSC/IRB Chair in advance of implementing such changes. This may require that you submit an IRB Modification form.

We wish you well in your research.

If you need clarification regarding the committee's decision, please contact IRB Chair, at

Sincerely,

1/8/2024

IRB Chair, Anderson University.

316 Boulevard | Anderson, SC 29621 | 864.231.2000 | andersonuniversity.edu