

RURAL TEACHERS' AND SCHOOL LEADERS' PERCEPTIONS OF SCHOOL CLIMATE  
AND STUDENT ACHIEVEMENT IN MATH AND READING: A MULTIPLE CASE STUDY

by

Matthew James Dolegowski

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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## ABSTRACT

The purpose of this multiple case study was to investigate teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools. The conceptual framework guiding this study was Bronfenbrenner's (1979) ecological systems theory intertwined with the U.S. Department of Education's School Climate Surveys (EDSCLS) (2019) school climate model to influence student academic achievement. Purposeful criterion sampling was used to select 13 teachers and school leaders from two rural schools in Western New York. Data was collected through a survey, teacher interviews, and school leader interviews. The data was triangulated and analyzed using open coding, categorical aggregation, and a cross-case synthesis to identify five themes relating to the research questions across multiple sources. The five themes included building strong relationships, social-emotional learning, empowering leadership, differentiation, and positive reinforcement. The results of the study revealed teachers and school leaders perceived school climate domains (engagement, safety, environment) affect student achievement in math and reading at rural schools.

*Keywords:* school climate, rural, education, perceptions, achievement

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## **Dedication**

This dissertation is dedicated to my grandfather, Norman Schwenk, who passed away during my doctoral journey. Your love, compassion, and diligence have served as an inspiration for me on all of life's challenges and endeavors. You stood by me on Earth as I pursued my dream of getting my doctoral degree, and now you get to look down from heaven as this dream comes to fruition. I love you, Grandpa.

Second, I dedicate this dissertation to my parents, Mark and Yvette, and my siblings, Danielle, Jason, and Bailey. You have supported me in every aspect of life and have been instrumental to my successes throughout my educational achievements and doctoral journey.

Last, I dedicate this dissertation to my students. You motivate me every day, and educating you is a tremendous joy. You will have a remarkable influence on the world as you have already had this influence on me. I learn just as much from you as you learn from me.

## Acknowledgments

Isaiah 41:10 states: “So do not fear, for I am with you; do not be dismayed, for I am your God. I will strengthen you and help you; I will uphold you with my righteous right hand.” This verse was posted above my desk as I wrote my dissertation. I could not have accomplished this without my Lord and Savior, Jesus Christ. I have dealt with tribulations and afflictions, as well as many victories and accomplishments throughout my doctoral studies and research. Christ has stood by my side every step of the way. Christ is King.

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**List of Abbreviations**

Institutional Review Board (IRB)

National Assessment of Educational Progress (NAEP)

National Center for Education Statistics (NCES)

New York State Education Department (NYSED)

Response to Intervention (RTI)

Social-Emotional Learning (SEL)

United States Department of Education (ED)

## CHAPTER ONE: INTRODUCTION

### Overview

There are numerous definitions of the term *school climate*. For the purposes of this study, the term *school climate* is defined as “the patterns of people’s experiences of school life; it reflects the norms, goals, values, interpersonal relationships, teaching, learning and leadership practices, and organizational structures that comprise school life” (NSCC, 2007, p. 2). Teacher perceptions of school climate are strongly linked with math and reading achievement in students (Bear et al., 2014; Brand et al., 2008; Collie et al., 2012; Coyne, 2012; Gentile, 1997; Johnson, 1998; Johnson Spears, 2018; Hollifield, 2019; Johnson & Stevens, 2006; Karadag et al., 2014; Maxwell et al., 2017; Robinson, 2015). Schools with a positive climate have remarkably higher academic achievement than institutions with a negative school climate (Voight & Hanson, 2017). Rural students underperform in math and reading achievement compared to their suburban peers (Clarke, 2014; Graham & Teague, 2011; Lavalley, 2018; Miller & Votruba-Drzal, 2013; NAEP, 2019; Rice et al., 2018; Robson et al., 2019), which is an indicator of a negative school climate. The problem was that rural teachers’ and school leaders’ perceptions of factors affecting school climate and student achievement in math and reading were not known. An investigation into teachers’ and school leaders’ perceptions of how school climate affects student achievement in math and reading at rural schools was beneficial. This multiple case study was an analysis and synthesis of the similarities, differences, and patterns of teachers’ and school leaders’ perceptions of how school climate affects academic achievement at rural schools (Goodrick, 2014).

The background section presents the historical, social, and theoretical contexts and why this qualitative study is important. The situation to self indicates why this issue is a passion for the writer, leading to the topic selection. The problem and purpose statements are in this chapter,

along with the significance of this study in making contributions to the field of education. The research questions will guide the study, with definitions provided as related to this research. The chapter concludes with a summary.

### **Background**

School climate and its relation to academic achievement and other educational outcomes have been a growing interest of educators, researchers, and educational policymakers over the past several decades (Bear et al., 2014). According to Bradley-Gray (2020), there has been an increased interest in research on school climate. Ethier (2017) reported that there has been a major focus of research into K-12 school climate by researchers because the importance of school climate has been increasingly acknowledged as a phenomenon related to student achievement.

School climate is an avenue to increase student achievement (Wang & Degol, 2016). Schools with more positive climates have higher academic achievement than schools with lower levels of positive climates (Voight & Hanson, 2017). Several authors (Maxwell et al., 2017; Mitchell et al., 2010) reported that school climate is a main component in student learning and is associated with improved academic achievement. Teachers have the most significant impact on student academic achievement of any school reform enterprise (Heck, 2000; Lindjord, 2003; Opper, 2019; Sanders & Rivers, 1996; Schacter & Thum, 2004) and their perceptions influence student academic achievement (Coyne, 2012; Hollifield, 2019; Robinson, 2015).

Rural education is an often-overlooked aspect of education (Aldrich, 2019; Lavalley, 2018; PSFNC, 2020; Showalter et al., 2019). Rural students are overlooked even though one-fifth of students, one-third of schools, and one-half of school districts are found in rural areas (NCES, 2016). The distinctive needs of rural students receive less attention than suburban peers

(Lavalley, 2018). Woefully, rural students underperform in math and reading compared to their suburban counterparts (Clarke, 2014; Graham & Teague, 2011; Lavalley, 2018; NAEP, 2019; Robson et al., 2019). Schools with a positive school climate have greater academic achievement than those with a negative school climate (Voight & Hanson, 2017). In addition, teacher perceptions of school climate are strongly linked with math and reading achievement (Bear et al., 2014; Brand et al., 2008; Collie et al., 2012; Coyne, 2012; Gentile, 1997; Johnson, 1998; Johnson Spears, 2018; Hollifield, 2019; Karadag et al., 2014; Maxwell et al., 2017; Johnson & Stevens, 2006; Robinson, 2015). However, little research has been specific to teacher perceptions of school climate and academic achievement in rural schools.

### **Historical Context of Rural Education**

Rural schools have progressed and changed throughout history. Small schools in the rural United States date back to the 1800s. One-room schoolhouses were common before the installation of roads and transportation (Bard et al., 2006). In the early 1900s, there were more than 200,000 one-room schoolhouses in the United States (Purcell & Shackelford, 2005). Most students attended formal school until eighth grade where they learned from an underperforming or underqualified instructor (Otto, 1995; Toch, 2003). Only 35% of American adolescents attended high school in 1910, and with just 4% persisting to college (Toch, 2003).

In the United States, rural schools generally have lower enrollment than urban and suburban schools. This disparity was especially evident in United States in the 1920s as some rural schools were still one-teacher schoolhouses (Haggerty, 1922). There were over 130,000 school districts in the United States in the 1930s (Lyson, 2002). Most public elementary and secondary schools saw decreasing enrollment in the 1970s and early 1980s, but rural schools, which served a smaller number of students, underwent the most significant percentage decrease

in enrollment (Salmon, 1990).

Through the second half of the 1980s, the declining rural student enrollment was significant enough to close or consolidate rural school districts and rural schools (NCES, 1997). Rural school enrollment percentages declined from 1986-1987 to 1993-1994, because one in nine small rural school districts closed (NCES, 1997). In 1993-1994, most rural schools were still small, with 80% of high schools having fewer than 100 students per grade, and 20% having less than one teacher per grade level (NCES, 1997). The United States went from over 130,000 school districts in the 1930s to 13,598 in the 2010s (NCES, 2017).

As the number of school districts fell by nearly 90%, the United States population more than doubled (Mackun & Wilson, 2011). Approximately one-third of schools and one fifth of students are found in rural areas (NCES, 2016). New York is known for the sprawling metropolis of New York City and other urban cities and suburbs, but 11.1% of students attend a rural public-school district in New York state (Showalter et al., 2019).

Although rural schools progressed from a single room to districts with more advanced curriculums and teacher certification requirements, rural schools often do not meet students' needs regarding education, resources, and funding. Speculation that rural communities do not value education has led to the perception of rural schools as deficient (Tieken, 2014). Policymakers and leaders in education tend to prioritize urban and suburban school districts over rural ones (Guenther & Weble, 1983; Lavalley, 2018; Sher, 1978; Walker, 2019). Despite decades-long efforts to reduce inequality in rural schools, there have been minimal changes (Christakis, 2017; Peltzman, 1993).

Funding continues to be an issue in rural schools because the population of rural regions has declined (Bernstein, 2019; Lyson, 2002). Rural schools receive 17% of state education

funding (Showalter et al., 2017), even though one in five students in the United States attends a rural school and half of schools are rural (Lavalley, 2018). Rural schools face challenges with low academic achievement in math and reading, high rates of poverty, high staff turnover, and growing numbers of English language learners, and are in desperate need of funds. In 2001, only 56% of rural schools offered at least one advanced placement course in any subject (Mann et al., 2017). Although that number has increased to 73%, it remains low compared to suburban school districts, 95% of which offer one or more advanced placement courses (Mann et al., 2017). Currently, hundreds of rural schools are in jeopardy of losing funding because of changes in bookkeeping at the United States Department of Education (Slisco, 2020). Although temporarily postponed, the plan to cut funding to rural schools could soon result in the loss of millions of dollars (Green, 2020).

Historically, students at rural schools have underperformed academically compared to their suburban counterparts (Clarke, 2014; Haggerty, 1922; Lavalley, 2018; McDermott, 1997; NAEP, 2015, 2019; NCES, 1991). During the 1920s, rural schools did not adequately teach students to read, with deficiencies apparent as early as elementary school (Haggerty, 1922). In the 1970s, students' education in rural schools was below the national average in every area, including math and reading (McDermott, 1997). In 1971, the reading scores were beneath the national average for each age group, including 9-, 13-, and 17-year-olds. Interestingly, in the mid-1980s, rural students scored equivalent to the national average in math and reading (NAEP, 1986), however, there is not a comparison between rural students and suburban students.

In the early 1990s rural students' academic achievement in math and reading fell short of the national average and behind their suburban peers (NCES, 1991). The disparities in academic achievement in math and reading persist (Clarke, 2014; Lavalley, 2018; NAEP, 2015, 2019).

Given the historical disparities in rural students' math and reading achievement, an investigation into teachers' perceptions on how school climate affects academic achievement in math and reading at rural schools was beneficial.

### **Historical Context of School Climate**

The construct of school climate emerged in 1908, as Perry was the first educator to explore the outcomes of school climate and its influence on student learning, and achievement (Cohen, 2009). In 1916, Dewey wrote about social climate, finding that connectivity contributed to preparing and molding individuals for their whole lives (McGiboney, 2016). In 1927, Dewey centered on schools' social elements and the significance of cultivating students' skills and ability.

Organizational climate research began in the 1950s, with scientific inquiry decades behind (Zullig et al., 2010). Argyis' (1958) case study of interpersonal relations in a bank and March and Simon's (1958) prodigious investigation of organization showed significant effects of organizational environment, including turnover, productivity, and employee morale. At the time, psychologists and educators were assessing the impact of personality characteristics on behavior, whereas business research centered on situational factors that affected behaviors (Schneider & Bartlett, 1968).

Scholars began analyzing classroom climates in the late 1960s (Anderson, 1982). Research in the 1960s and early 1970s involved rationalizing achievement by investigating variations in race and socioeconomics, with mixed success (Coleman et al., 1966; Hauser, 1970; McDill et al., 1967; Zullig et al., 2010). There was a push to connect school climate to student outcomes in the late 1970s (Zullig et al., 2010). For example, Brookeover et al. (1978) investigated stakeholders' perceptions of school climate and the average outcomes between

schools to identify the influences of perceptions on different factors in the educational setting. The researchers found a positive relationship with the difference in average outcomes between school climate and the difference in average outcomes between schools, even when adjusting for race, socioeconomic status, and other demographic factors.

In the 1990s, most research centered around individual classrooms and teachers (Griffith, 1995; Stockard & Mayberry, 1992). Stockard and Mayberry (1992) asserted that students were most affected by the environment in which they spent most of their time. From the 1990s to contemporary times, researchers have investigated and analyzed the phenomenon of school climate and its influences and elements in the school setting (Zullig et al., 2010). Several studies from the 1990s to the present have shown school climate linked to academic achievement (Dulay & Karadag, 2017; Esposito, 1999; Freiberg, 1999; Haynes et al., 1997; Hoy & Hannum, 1997; Jacobs, 2018; Reynolds et al., 2017; Voight et al., 2017; Wang & Degol, 2016) teacher quality (Gustafsson & Nilsen, 2016) and teacher turnover and retention (Dahlkamp et al., 2017; Rhoades et al., 2009). In recent decades, scholars have focused more on the K-12 setting, finding school climate an important phenomenon (Ethier, 2017). Current literature continues to focus on stakeholder perceptions of school climate (Croft et al., 2018; Dan & Ye, 2020; Fefer & Gordon, 2020; Mischel & Kitsantas, 2020; Reid & Smith, 2018), assessing school climate (Blitz et al., 2016; James et al., 2018; Macaluso, 2020), and improving school climate (Bear, 2020; Darling-Hammon & Cook-Harvey, 2018; Syahril & Hadiyanto, 2018; VanLone et al., 2019; Voight & Nation, 2016).

### **Social Context**

Residents of rural areas show great diversity across the United States and within various regions (Kastelein et al., 2018). Schools can be markedly different based on their local economy,

community, and geographic location (Buffington, 2019). However, there are commonalities from a social context because rural schools often serve as the nucleus of cultural, recreational, and social life in their local community (PSNFC, 2020).

Poverty is an ongoing problem among rural students. Rural areas have had higher poverty rates throughout history compared to urban areas (U.S. Department of Agriculture, 2019). The United States has 664 high-poverty counties and 78.9% of these counties are rural (USDA, 2020). These high-poverty counties represent one out of every four rural counties, while only one of every ten urban counties is high-poverty (USDA, 2020). Fifteen counties in the United States are considered extreme poverty areas and all 15 counties are in rural America (USDA, 2020). Rural areas have high child poverty rates. The child poverty rate for children under 18 years is 22.8% in rural regions compared to 17.7% in urban regions (USDA, 2019). Rural students are overwhelmingly more likely to be economically disadvantaged and the poverty rates in rural areas continue to climb (Lavalley, 2018; Schaefer et al., 2016; USDA, 2020). Poverty is associated with lower academic achievement and contributes to achievement gaps (Cedeño et al., 2016; Hanover Research, 2014; Hopson and Lee, 2011; Reardon & Portilla, 2016). Rural students often find themselves overlooked, despite their greater likelihood of living in poverty.

### **Theoretical Context**

Various models show attempts to theorize school climate in general, however, there is little research specific to rural school climate. Cohen et al. (2009) identified four elements that influence school climate: safety, teaching and learning, environmental structure, and relationships. Zullig et al. (2010) recognized five domains of school climate: order, safety and discipline, academic outcomes, social relationships, school facilities, and school connectedness. Jones and Shindler (2016) proposed the eight domains of school climate were appearance and

physical plant, faculty relations, student interactions, leadership/decision making, disciplined environment, learning environment, attitude and culture, and school-community relations.

The National School Climate Center (2007) identified safety, teaching and learning, interpersonal relationships, institutional environment, and staff relationships as school climate domains. Thapa et al. (2013) supported the National School Climate Center's five domains, adding a sixth domain involving the school improvement process. Interestingly, the National School Climate Center added social media to its list of school climate domains, further defining the staff component to include leadership and professional relationships. The U.S. Department of Education's School Climate Surveys (EDSCLS) (2019) model of school climate presented three wide-ranging domains: engagement (cultural and linguistic competence, relationships, school participation), safety (emotional safety, physical safety, bullying/cyberbullying, substance abuse, emergency readiness and management), and environment (physical environment, instructional environment, physical health, mental health, discipline). Once again, these models were means to describe school climate in general, as opposed to theorizing school climate specifically for rural schools. This study will center on the EDSCLS (2019) model of school climate in the rural school context to investigate teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools.

### **Situation to Self**

I have several motivations for conducting this study. The gap between rural and suburban student academic achievement is one that I would like to see closed. I grew up and currently live in a rural town in Western New York. My first year of teaching was at an underperforming school in rural West Virginia. Due to my educational experiences, I hold great compassion for rural students. I wanted to investigate teachers' and school leaders' perceptions of how school

climate affects student achievement in math and reading at rural schools to discover ways to improve rural schools. Inequality, in general is something I would like to see mitigated and advocating for these students can help decrease inequality.

### **Philosophical Assumptions**

Philosophical assumptions guide data collection and analysis, language, and arguments in a case study (Faraquar, 2012). The main philosophical assumptions are ontological, epistemological, axiological, rhetorical, and methodological (Creswell, 2006). Quality and credible qualitative research involves clarifying the philosophical assumptions that underpin the research (Creswell & Poth, 2018; Farquhar, 2012). Philosophical assumptions guided the framing of this study on teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools.

An ontological assumption that I hold is that we are all created in the image of God. I also believe that everyone has unique lived experiences and perspectives, many of them different from my own. Reality is distinct to each individual (Creswell, 2006), as this study's participants will show. I used "quotes and themes in words of participants and provide evidence of different perspectives" (Creswell, 2006, p. 17).

Epistemological considerations are frequently neglected yet must be considerations for advanced understanding of research results (Mills et al., 2010). Creswell and Poth (2018) noted that, in epistemological assumption, "Subjective evidence is obtained from participants and the researcher attempts to lessen the distance between himself or herself and that being researched" (p. 59). I interacted and spent time with participants to understand their perceptions (Creswell & Poth, 2018; Mertens, 1998). Interviews allowed interactions with the participants, allowing them to feel more comfortable sharing their perspectives. I explored the participants' perspectives and

recounted them accurately (Creswell & Poth, 2018).

Individuals have axiological biases and values (Creswell, 2013). I went to rural schools, taught in a rural school, and live in a rural area. I have experience attending, working in, and researching rural schools. I investigated a phenomenon that pertains to my lived experiences and perceptions. Bias in qualitative research is “individual preferences, predispositions, or predilections that prevent neutrality and objectivity” (Schwandt, 2015, p. 18). It can impact sampling, data collection, data interpretation, and findings (Given, 2008). Chapter Three presents several means to mitigate bias in this study.

The rhetorical assumption underscores the language of the research (Creswell, 2006). I wrote a narrative, which Creswell (2006) described as using personal voice and first-person pronouns, qualitative terms, and limited definitions. I accurately collected and transcribed data and presented it in narrative form that spotlighted the participants’ distinct perspectives (Creswell & Poth, 2018).

The methodological assumption underscores the research process (Creswell, 2006). The context of the study received a thorough description to address the methodological assumption. I addressed this assumption by using an emerging design of a multiple case study.

### **Research Paradigm**

A paradigm is a worldview or fundamental beliefs that guide the researcher’s investigation (Guba & Lincoln, 1994). I closely adhere to the social constructivism paradigm, which also directed the study. Researchers in this paradigm “seek understanding of the world in which they live and work” (Creswell & Poth, 2018, p. 8). Social constructivists rely as much as is feasible on the participants’ views of the phenomenon under study (Creswell & Creswell, 2018). The social constructivist paradigm is the impetus for this qualitative case study, an in-

depth investigation into a phenomenon in the participants' real-life settings (Crowe et al., 2011). The social constructivist paradigm aligned with this multiple case study on teachers' perspectives of how school climate influences academic achievement in math and reading at rural schools.

### **Problem Statement**

A fundamental indicator of school climate is academic achievement (Daily et al., 2019; Voight & Hanson, 2017). In turn, school climate is a primary component in student learning and academic achievement (Maxwell et al., 2017). Schools with a positive school climate have remarkably higher academic achievement than those with a negative school climate (Voight & Hanson, 2017). Increases in positive school climate coincide with improved academic achievement (Voight & Hanson, 2017; Mitchell et al., 2010). Unfortunately, rural students are being outperformed in math and reading achievement compared to their suburban peers (Clarke, 2014; Lavalley, 2018; NAEP, 2015, 2019), which is a symptom of a negative school climate.

Teacher perceptions of school climate are strongly linked with math and reading achievement (Bear et al., 2014; Brand et al., 2008; Collie et al., 2012; Coyne, 2012; Gentile, 1997; Johnson, 1998; Johnson Spears, 2018; Hollifield, 2019; Karadag et al., 2014; Maxwell et al., 2017; Johnson & Stevens, 2006; Robinson, 2015). Teachers have a greater influence on student academic achievement than any other school reform initiative (Oppen, 2019; Schacter & Thum, 2004). Likewise, school leaders are linked to school climate (Amedome, 2018; Epperson, 2018; Jennings, 2019; Simth et al., 2020). The problem was rural teachers' and school leaders' perceptions of factors affecting school climate and student achievement in math and reading were not known.

### **Purpose Statement**

The purpose of this multiple case study was to investigate teachers' and school leaders'

perceptions of how school climate affects student achievement in math and reading at rural schools. Specific to this study, teachers' and school leaders' perceptions were defined as insights into aspects of a school climate related to academic achievement in math and reading. The conceptual framework guiding this study was Bronfenbrenner's (1979) ecological systems theory intertwined with the U.S. Department of Education's School Climate Surveys (EDSCLS) (2019) school climate model to influence student academic achievement. The EDSCLS (2019) has three domains that outline school climate: engagement, safety, and environment, while Bronfenbrenner's (1979) ecological systems theory suggested that human development is a transactional process in which individuals' growth results from interactions with different aspects of their environment (Patel, 2011). Student-teacher interactions and school climate are aspects of the environment that influence student development and academic achievement (Maxwell et al., 2017; Mitchell et al., 2010; Opper, 2019; Voight & Hanson, 2017). To address the literature, I conducted a multiple case study to investigate teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading in rural schools.

### **Significance of the Study**

This study made significant contributions to the discipline of education. Rural students are underperforming compared to their suburban peers in math and reading (Clarke, 2014; Graham & Teague, 2011; Lavalley, 2018; NAEP, 2015, 2019; Robson et al., 2019). Rural students rate their school climate more negatively than suburban students (Cimorelli, 2017). Research indicated that school climate and teachers' perceptions thereof influence academic achievement (Brand et al., 2008; Johnson & Stevens, 2006; Maxwell et al., 2017; Reynolds et al., 2017).

This multiple case study was beneficial to the rural school leaders by providing an in-depth look at their teachers' perceptions regarding school climate and academic achievement. This study's findings gave other rural schools useful information to improve teacher and school leaders' perceptions, school climate, and academic achievement in math and reading. Other schools might also identify areas for intervention and improvement while accentuating success and triumph.

Theoretically, Bronfenbrenner's (1976) has served as the framework for many studies on teacher perceptions (Gates, 2020; Julienne, 2019; Moore, 2020) and studies on school climate (Hattrick, 2019; Palmer, 2019). However, the theory has not served as the framework for how teachers' perceptions of school climate influence academic achievement at rural schools. Bronfenbrenner's (1979) ecological systems theory captured a new understanding when applied to this research study.

There is little research into school climate in rural schools because most research is limited to non-rural schools (Robinson, 2017). Bosworth et al. (2011) recommended more research be conducted on the perceptions of teachers with the intent of equipping policy makers and educational leaders with insights. Maxwell et al. (2017) indicated the way perceptions of school climate impacts student achievement needs to be investigated further. Engelland-Schultz (2015) asserted that more research into the influence of school climate on student outcomes in rural communities is needed. Lipkin-Moore (2020) stated that future research should investigate associations between school climate and educational outcomes. This multiple case study helped fill this gap in the literature. To date, no researchers have investigated teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools in Western New York. This study provided insight for rural schools to improve

their school climate and academic achievement in math and reading. Identified areas of weakness could prompt school administrators to devote more resources to enhance school climate, simultaneously improving academic achievement in math and reading. Thus, investigating rural teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading indicated areas for intervention and improvement, and provided examples of success and triumph.

### **Research Questions**

A necessary aspect of designing a multiple case study is forming deep and rich research questions (Creswell, 2013). The research questions were created using the problem statement and purpose of the study. Given the purpose of this study is to understand teachers' and school leaders' perceptions of how school climate influences academic achievement in math and reading, the following questions framed this study:

#### **Central Research Question**

How do teachers and school leaders perceive the domains of the school climate model (engagement, safety, and environment) affect student achievement in math and reading at rural schools?

Teacher perceptions of school climate are associated with student achievement in math and reading (Bear et al., 2014; Brand et al., 2008; Collie et al., 2012; Coyne, 2012; Gentile, 1997; Johnson, 1998; Johnson Spears, 2018; Hollifield, 2019; Karadag et al., 2014; Maxwell et al., 2017; Johnson & Stevens, 2006; Robinson, 2015) and teachers have the most significant impact on student academic achievement out of any school reform enterprise (Oppen, 2019). School leaders influence school climate (Amedome, 2018; Epperson, 2018; Jennings, 2019; Smith et al., 2020) and academic achievement (Dhuey & Smith, 2014; Dufour & Mattos, 2013;

Gates et al., 2014; Rideaux, 2011; Schindler, 2012; Soehner & Ryan, 2011; Wahyuddin, 2017). Investigating the perceptions of teachers and school leaders on how school climate affects student achievement in math and reading at rural schools was beneficial.

### **Sub-Question One**

How do teachers and school leaders perceive how the school climate domain of engagement affects student achievement in math and reading at rural schools?

This question focused on teachers' and school leaders' perceptions of the engagement domain. Student engagement is a fundamental aspect of a positive climate, with extensive research connecting it to academic achievement (NCSSLE, 2020). Engagement involves cultural and linguistic competence, relationships, and school participation. Teacher cultural competence and student academic achievement are associated with each other through better teacher-student relationships (Brace, 2011). Strong relationships between students and teachers are correlated with academic performance and social competence (Alexander, 2014; Hamre & Pianta, 2001; Keating, 2019; Košir & Tement, 2014; Ma et al., 2018; Peisner-Feinberg et al., 2001; Pendarvis, 2019; Pianta et al., 1995). School participation influences academic achievement, student engagement, and student persistence (Dyer et al., 2017; Freeman, 2017; Kim et al., 2019; Sripan & Sujivorakul, 2020; Wretman, 2017; Yanik, 2018). Therefore, understanding teachers' and school leaders' perceptions of how the school climate domain of engagement affects academic achievement in math and reading at rural schools was necessary.

### **Sub-Question Two**

How do teachers and school leaders perceive how the school climate domain of safety affects student achievement in math and reading at rural schools?

This question focused on teachers' and school leaders' perceptions of the safety domain. Safety is necessary for student welfare and success (Croft et al., 2019). School safety is needed for effective academic achievement to occur (Mccryndle, 2017). The safety domain includes emotional safety, physical safety, bullying/cyberbullying, substance abuse, and emergency readiness and management. Emotional safety has a direct impact on task performance (Baer & Frese, 2003; Schaubroeck et al., 2011). Students in positive school climates report less physical, emotional, and cyberbullying behaviors (Acosta et al., 2019). Substance use for school-aged children and adolescents is concerning because it influences student success (Dunbar et al., 2019). A positive school climate can influence students' ability to avoid, react, and recuperate from emergencies by decreasing the prevalence of behaviors contributing to the crisis and engaging students in creating strong relationships with staff members and peers (ED, 2013). Therefore, it was important to understand teachers' and school leaders' perceptions of how the school climate domain of safety affects academic achievement in math and reading at rural schools.

### **Sub-Question Three**

How do teachers and school leaders perceive how the school climate domain of environment affects student achievement in math and reading at rural schools?

This question focused on teachers' and leaders' perceptions of the environment domain. The NCSSLE (2020) indicated that a positive school environment is associated with higher academic achievement. The environment domain includes physical environment, instructional environment, physical health, mental health, and discipline. The physical environment is linked with student achievement and behavior, as a well-kept setting promotes students' capacity to learn, achieve academically, and display proper behavior (Earthman et al., 1995; Schmis et al.,

2020). The instructional environment has a significant influence on math performance (Shamaki, 2015). The literature indicates that physical health is important for school success as physical activity is linked with student engagement and academic achievement (Alpkaya, 2019; Álvarez-Bueno et al., 2017; Donnelly et al., 2016; Ellner, 2019; Marques et al., 2017; Shook, 2016). Mental health issues raise the probability of repeating a grade, absenteeism, and dropping out (Schulte-Körne, 2016). Discipline referrals are much more likely to demonstrate lower math achievement than students with no referrals (Whisman & Hammer, 2014). Therefore, it was important to understand teachers' and school leaders' perceptions of how the environment domain of school climate influences academic achievement in math and reading at rural schools.

### **Definitions**

The following definitions are important terms that have been defined to clarify their meaning.

1. *Academic Achievement* – Academic achievement is the degree to which a school, teacher, or student has accomplished educational objectives (York, 2015).
2. *City – large* – Territory inside an urbanized area and inside a principal city with population of 250,000 or more (National Center for Education Statistics, 2007; Office of Management and Budget, 2000).
3. *City – midsize* – Territory inside an urbanized area and inside a principal city with population less than 250,000 and greater than or equal to 100,000 (National Center for Education Statistics, 2007; Office of Management and Budget, 2000).
4. *City – small* – Territory inside an urbanized area and inside a principal city with population less than 100,000 (National Center for Education Statistics, 2007; Office of Management and Budget, 2000).

5. *Differentiation* – Differentiation is learning experiences in which the approach or method of learning is adjusted to meet the needs of individual students, focusing on the ‘how’ of personalized learning (Culatta, 2016).
6. *Empowering leadership* – Empowering leadership is defined as sharing power with a view toward enhancing employees’ motivation and investment in their work (Zhang & Bartol, 2010).
7. *Perceptions*- Perceptions are a method to understand and interpret a concept or ideal (Morton et al., 2015).
8. *Positive Reinforcement* – Positive reinforcement means presenting or providing a stimulus following a behavior that increases the occurrence of that behavior in the future (Williams, 2021).
9. *Rural – distant* – Territory inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area (National Center for Education Statistics, 2007 Office of Management and Budget, 2000).
10. *Rural – fringe* – Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster (National Center for Education Statistics, 2007; Office of Management and Budget, 2000).
11. *Rural – remote* – Census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster (National Center for Education Statistics, 2007; Office of Management and Budget, 2000).
12. *School climate* – School climate is defined as the patterns of people’s experiences of school life; it reflects the norms, goals, values, interpersonal relationships, teaching,

- learning and leadership practices, and organizational structures that comprise school life (NSCC, 2007).
13. *School leader* – An individual that holds the job title of superintendent, principal, instructional coach, intervention coordinator, or school psychologist.
  14. *Social-emotional learning* – The process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions (Collaborative for Academic, Social, and Emotional Learning, 2015).
  15. *Suburb – midsize* – Territory outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000 (National Center for Education Statistics, 2007; Office of Management and Budget, 2000).
  16. *Suburb – large* – Territory outside a principal city and inside an urbanized area with population of 250,000 or more (National Center for Education Statistics, 2007; Office of Management and Budget, 2000).
  17. *Suburb – small* – Territory outside a principal city and inside an urbanized area with population less than 100,000 (National Center for Education Statistics, 2007; Office of Management and Budget, 2000).
  18. *Town – distant* – Territory inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area (National Center for Education Statistics, 2007; Office of Management and Budget, 2000).
  19. *Town – fringe* – Territory inside an urban cluster that is less than or equal to 10 miles from an urbanized area (National Center for Education Statistics, 2007; Office of

- Management and Budget, 2000).
20. *Town – remote* – Territory inside an urban cluster that is more than 35 miles from an urbanized area (National Center for Education Statistics, 2007 Office of Management and Budget, 2000).
21. *Western New York* – The Western New York Region is located in the western part of the State and includes the Buffalo-Niagara Metropolitan area, which is comprised of Erie and Niagara counties, and also includes Allegany, Cattaraugus, and Chautauqua counties (ESD New York State, 2019). The Western New York (WNY) region covers 4,974 square miles (ESD New York State, 2019). It is strategically located on lakes Erie and Ontario, and shares a border with Canada (ESD New York State, 2019).

### **Summary**

School climate is a main component in student learning and academic achievement (Maxwell et al., 2017). Likewise, teacher perceptions of school climate are strongly linked with math and reading achievement (Bear et al., 2014; Brand et al., 2008; Johnson & Stevens, 2006; Karadag et al., 2014; Maxwell et al., 2017). Unfortunately, rural students are outperformed in math and reading achievement compared to their suburban peers (Clarke, 2014; Lavalley, 2018; NAEP, 2015; NAEP, 2019). The problem was rural teachers' and school leaders' perceptions of factors affecting school climate and student achievement in math and reading were not known. The purpose of this case study was to investigate perceptions of teachers on how school climate affects student achievement in math and reading at rural schools.

## CHAPTER TWO: LITERATURE REVIEW

### Overview

Review of related literature shows that rural students underperform suburban students in math and reading achievement (Clarke, 2014; Graham & Teague, 2011; Lavalley, 2018; Miller & Votruba-Drzal, 2013; NAEP, 2015; 2019; Rice et al., 2018; Robson et al., 2019) and that school climate influences student academic achievement (Davis & Warner, 2015; Reynolds et al., 2017; Jacobs, 2018; Sulak, 2016; Voight & Hanson, 2017). Chapter Two begins with the presentation of the conceptual framework for this study, which is Bronfenbrenner's (1979) ecological systems theory and the U.S. Department of Education's EDSCLS (2019) model of school climate intertwined to influence academic achievement. Bronfenbrenner's (1979) theory is relevant to this study because he asserted child development is formed by interactions between the child and their environment. A positive school climate is a part of the environment that will enhance child development better than a negative one (Voight & Hanson, 2017). The EDSCLS (2019) model of school climate has three domains (engagement, safety, and environment) which form school climate. Improving school climate and academic achievement is particularly important in the rural school setting, which often falls short compared to the suburban school setting.

Next, the chapter has a synthesis of literature relevant to teachers' and school leader's perceptions on how school climate affects academic achievement in math and reading in rural schools, as will be the focus of this study. An overview of the rural education landscape appears, followed by an explanation of the gap between rural and suburban schools specific to academic achievement and other factors that influence academic achievement. All related literature pertaining to teacher perceptions, school leader perceptions, school climate, and academic

achievement is synthesized. Investigating teachers' and school leaders' perceptions on how school climate affects academic achievement in math and reading at rural schools could close a gap in the research. Following a review of literature, Chapter Two concludes with a summary.

### **Conceptual Framework**

Frey (2018) described a conceptual framework as “an organizing structure or scaffold that integrates related ideas, mental images, other research, and theories to provide focus and direction to the inquiry” (p. 2). In this multiple case study, Bronfenbrenner’s (1979) ecological systems theory and the U.S. Department of Education’s School Climate Surveys (EDSCLS) (2019) school climate model integrates to shape the conceptual framework through which the phenomenon is explored. Bronfenbrenner’s (1979) ecological systems theory facilitates the exploration of the effect of social environments on human development. The theory’s foundation is that the environment in which children grow up influences every aspect of their lives (Santa Clara University, n.d.), including academic achievement in math and reading. Bronfenbrenner’s theory is “closely related to factors affecting the social, psychological, and cognitive elements that provide a nuanced perspective on effects of school climate on student achievement” (Ismail et al., 2020, p. 8). The EDSCLS (2019) model of school climate consists of three domains: engagement, safety, and environment.

Bronfenbrenner’s (1979) ecological systems theory provides for the school as a microsystem that generates school climate through the integrated perceptions of its stakeholders (e.g., teachers, students, etc.) (Rudasill et al., 2018). Ecological systems theory focuses on the quality and context of the child’s environment (Paquette & Ryan, 2001), indicating how the setting helps or hinders development. Ecological systems theory involves the entire ecological system, presenting all school system variables as fundamental aspects of the organization that

influence student outcomes, including academic achievement (Anderson, 1982; La Salle, 2013). School is a part of a child's microsystem and the most influential system in Bronfenbrenner's (1979) ecological systems theory.

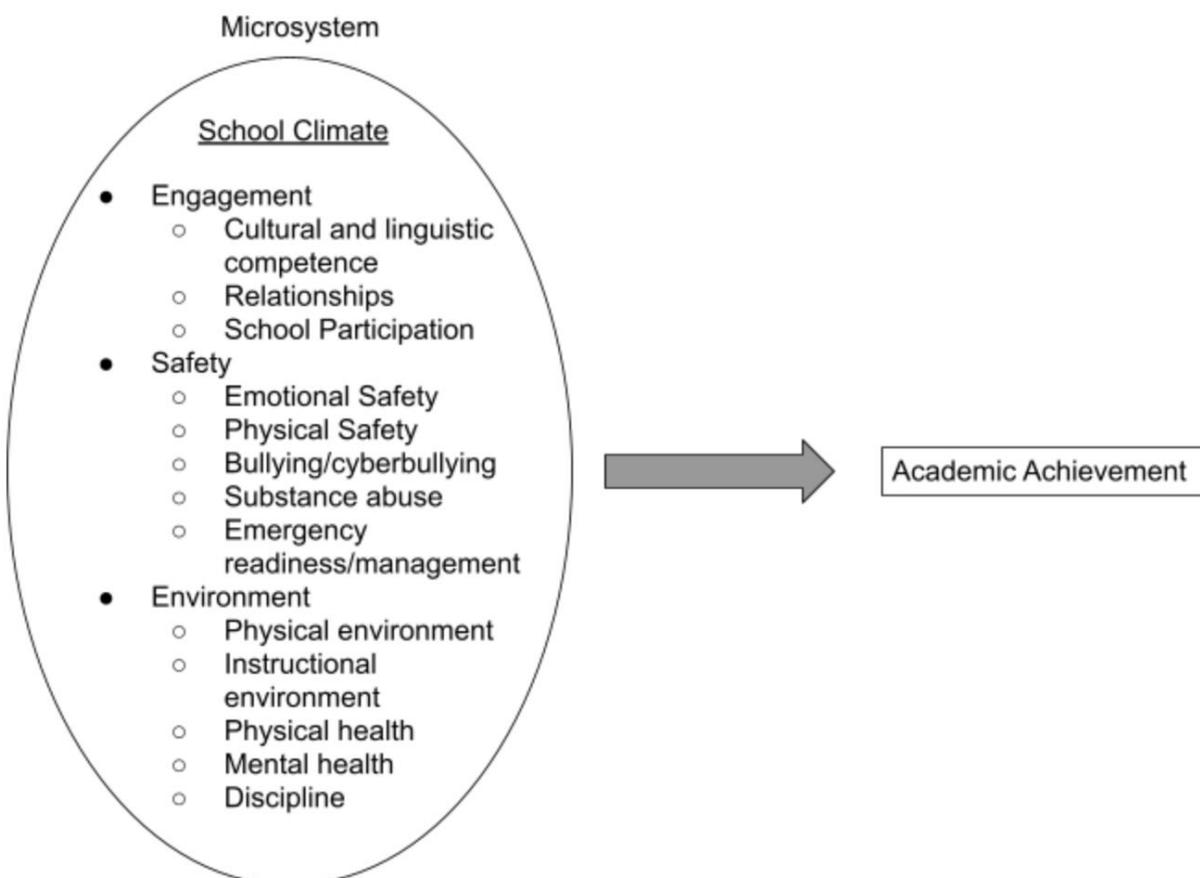
Bronfenbrenner's (1979) ecological systems theory indicates that school climate can positively or negatively affect a child's development, which pertains to academic achievement. Bronfenbrenner affirmed that human development occurs through complex interactions between active and developing organisms and the people and objects in their surrounding environment (Taylor & Gebre, 2016), including school climate. Bronfenbrenner asserted that interactions occur with caregivers or other individuals "with whom the child develops a strong mutual emotional attachment, and who is committed to the child's well-being and development" (Patell, 2011, p. 3) to effectively influence development (Belseky, 1993; Bronfenbrenner, 2005). Thus, the theory indicates that gaining teachers' perceptions of school climate and academic achievement would be beneficial to a child's development. Bronfenbrenner's ecological systems theory is appropriate for this study on teacher perceptions of school climate (microsystem) and academic achievement in math and reading (human development).

This study will center around the microsystem, the closest one to the child and the most influential to the child's development. Bronfenbrenner asserted that interactions between children and their environment must occur on a regular basis over an extended period to effectively influence development because these interactions are the central component of human development (Patell, 2011). Children become immersed in their school climate as they attend school and regularly interact with their teachers. Bronfenbrenner's ecological systems theory, along with the EDSCLS (2019) model of school climate will serve as the conceptual framework for this study on teachers' perceptions on how school climate affects academic achievement in

math and reading at rural schools.

The EDSCLS (2019) model of school climate consists of three overarching domains. The first domain is engagement, which incorporates cultural and linguistic competence, relationships, and school participation. The second domain, safety, includes emotional safety, physical safety, bullying and cyberbullying, substance abuse, and emergency readiness and management. Environment is the third domain, encompassing physical environment, instructional environment, physical health, mental health, and discipline. These school climate domains fit into Bronfenbrenner's microsystem, the closest and most influential layer to the child.

The EDSCLS (2019) model of school climate and Bronfenbrenner's (1979) ecological systems theory are inherently intertwined. For instance, a positive school climate that fulfills the domains of safety (emotional safety, physical safety, bullying and cyberbullying, substance abuse, and emergency readiness and management), engagement (cultural and linguistic competence, relationships, and school participation), and environment will improve the child's microsystem and academic achievement. Achieving a positive school climate by effectively fostering every domain of EDSCLS (2019) model of school climate will also improve the microsystem in Bronfenbrenner's ecological systems theory. A positive school climate can increase academic achievement in math and reading, which rural students need to close the achievement gaps in those subjects compared to their suburban counterparts. Schools with positive school climates have significantly higher academic performance than schools without positive school climates (Voight & Hanson, 2017). School climate is a central component in student learning and academic achievement (Maxwell et al., 2017; Mitchell et al., 2010).

**Figure 1***Conceptual Framework*

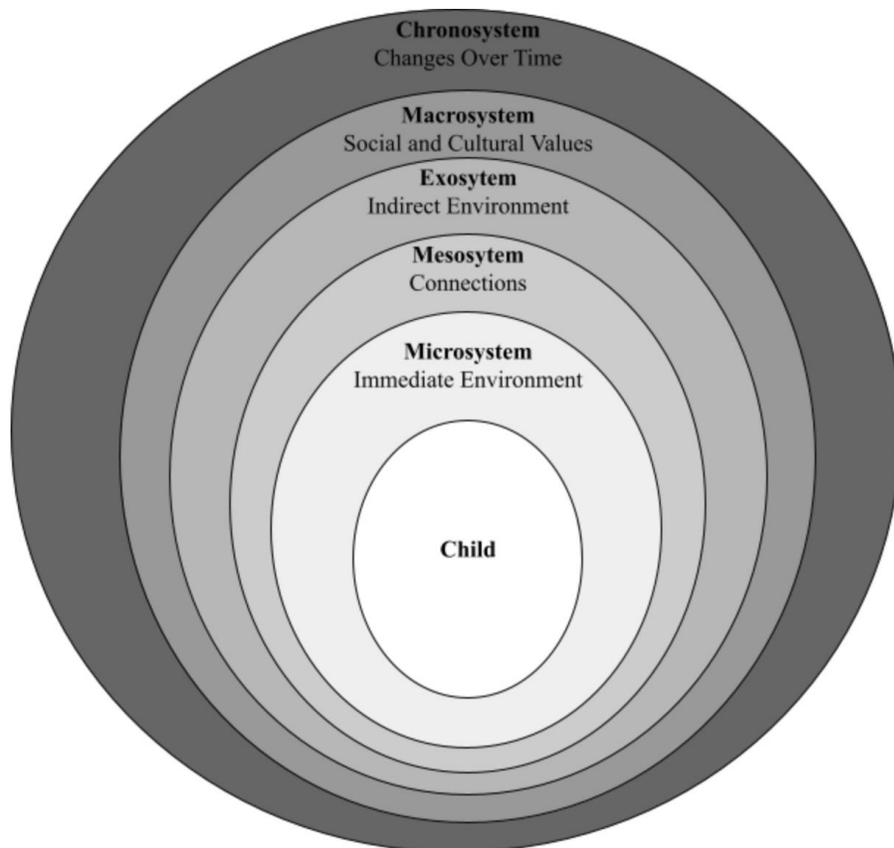
*Note.* The conceptual framework intertwines Bronfenbrenner's (1979) ecological systems theory and the EDSCLS (2019) model of school climate and how they influence academic achievement.

**Ecological Systems Theory**

Bronfenbrenner (1979) proposed the ecological systems theory based on a finding that interactions between children and their environment informed their development. The developmental path resulted from the influences of a child's relationships and environment, including school, family, and culture. The theory was a way to describe children's inherent qualities and the environmental attributes that affect how the child grows and develops

(Bronfenbrenner, 1974). Bronfenbrenner's ecological systems theory centered around the culture of environments and social processes that shape collective behaviors (Anderson, 1982).

Bronfenbrenner (1979) maintained that children's surrounding environments affected their development. The scholar frequently used the term *ecological* when referring to the environment, considered intrinsically connected to the child (Rosa & Tudge, 2013). Interactions between the individual child and the environment indicate an ecological approach to human development (Pintado, 2006). Bronfenbrenner (1974) stressed the significance of researching the child in different settings (ecological systems) to comprehend individual development. Five interwoven environmental systems comprise ecological systems theory, contributing to the child's development: the microsystem, mesosystem, exosystem, macrosystem, and chronosystem.

**Figure 2***Bronfenbrenner's Ecological Systems Theory*

*Note.* Bronfenbrenner's Ecological Systems Theory. Adapted from The Psychology Notes Headquarters, 2019, <https://www.psychologynoteshq.com/bronfenbrenner-ecological-theory/>. Adapted with permission (see Appendix D).

***Microsystem***

The microsystem is the immediate environment in which the child lives (Bronfenbrenner, 1974). Ecological systems theory's most basic unit of study is the microsystem, which Bronfenbrenner (1979) described as "a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting with particular physical and material characteristics" (p. 22). The microsystem is the everyday environment where the child makes

face-to-face contact (Hayes et al., 2017). This system is the closest to the individual and, thus, the most influential (Hand, 2019).

According to Bronfenbrenner's (1979) ecological systems theory, the school is a microsystem generated through its stakeholders' perceptions (e.g., teachers, students, etc.) (Rudasill et al., 2018). The magnitude of conflict and cooperation between teachers and students, perceived collaboration among instructors, and academic expectations all contribute to the school climate in the microsystem (Haynes et al., 1997; Juvonen, 2007). Interactions that are nurturing and supportive will enhance children's development (Bronfenbrenner, 1992). The microsystem can produce, prevent, promote, or hinder opportunities for intellectual and social development through complex interactions in the environment (Bronfenbrenner, 1989), thus influencing academic achievement. The microsystem has received the most research compared to the other four systems (Bronfenbrenner, 1993; Garbarino & Abramowitz, 1992).

### ***Mesosystem***

The mesosystem is the interaction between two or more microsystems, and it explains how each microsystem is intertwined and dependent on the other (Bronfenbrenner, 1979). The child is actively involved in the mesosystem (Rosa & Tudge, 2013). The interaction between the microsystem and mesosystem helps the child develop a sense of self (Bronfenbrenner, 1994). Each component of the microsystem interacts with and influences the others, and the mesosystem indirectly influences the student (Bronfenbrenner, 1989). An example of the mesosystem is a parent-teacher conference when the integrated messages from the teacher and family impact a student's engagement and performance on academic tasks (Galindo & Sheldon, 2012). Two microsystems may be jointly reinforcing the mesosystem, such as school staff and family having similar beliefs and expectations, however, two microsystems can be contradictory,

requiring the child to navigate between them (Spencer, 1999).

### ***Exosystem***

The exosystem encompasses the systems and environmental influences with which a student is not actively involved in, but still indirectly influence the child's growth and development (Bronfenbrenner, 1997; Gates, 2020; Petrogiannis, 2003). The exosystem consists of places and people which include the parents' workplaces, the larger neighborhood, and extended family members (Bronfenbrenner, 1994). Researchers recognized these three main exosystems that indirectly influence the development of the students through the school, family, and peer groups (Hand, 2019). The three exosystems are neighborhood and community groups (Pence, 1988), family social networks (Cochran et al., 1990), and the parent's workplace (Eckenrode & Gore, 1990). The student is not actively participating in the exosystem, however decisions made still influence the child's development (Hand, 2019).

### ***Macrosystem***

The macrosystem is the larger system that represents the culture in which the child lives (Bronfenbrenner, 1994). The macrosystem comprises the child's cultural beliefs, traditions, social and political values, economic structure, and political strategies that impact the operation of the other systems, and consequently the individual child (Berk et al., 2000; Bronfenbrenner, 1979; 1994; Hayes et al., 2017). Gauvain and Cole (1993) add that belief systems, bodies of knowledge, material resources, customs, lifestyles, opportunities, risks, and life options are embedded in the macrosystem. The influence of the principles in the macrosystem have rippling influence throughout the other layers of the child's ecological system (Hand, 2019; Paquette & Ryan, 2001). The macrosystem produces a cultural blueprint that affects the educational system, such as education policy, economics of the community, religious affiliations, and geographic

entity (Bronfenbrenner, 1994; Rudasill et al., 2018).

### ***Chronosystem***

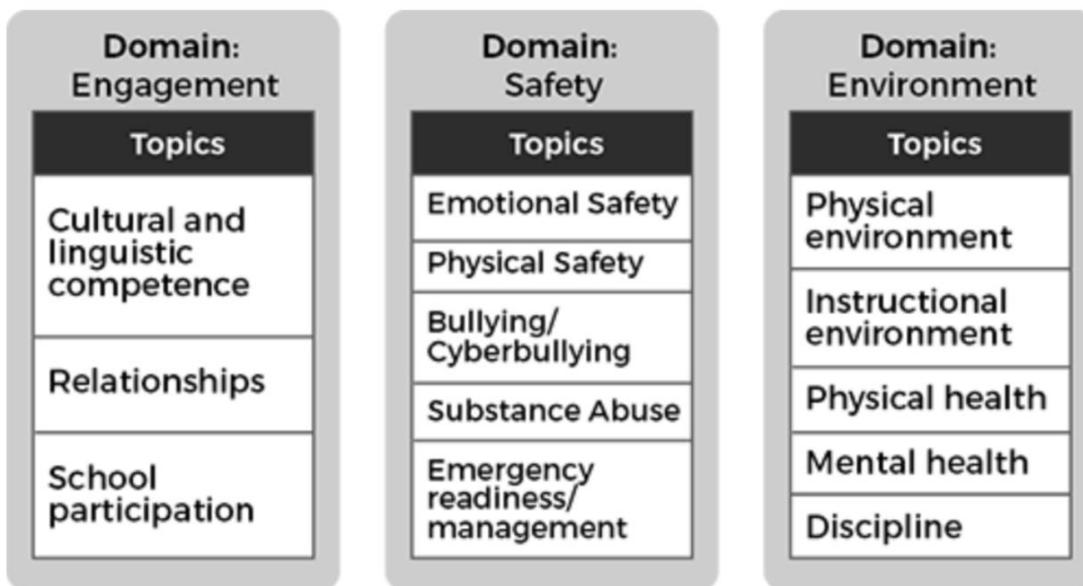
The chronosystem incorporates life experiences and environmental changes, transitions, history, and events (Bronfenbrenner, 1994). The chronosystem includes memorable experiences, biological maturation, and the timing of life events that influence the child's development and other system structures (Rosa & Tudge, 2013; Rudasill et al., 2018). Changes in society, economic cycles, family structure, parents' employment status, and neighborhood are aspects of the chronosystem that influence development (Bronfenbrenner, 1994). Children might react differently to fluctuations in their environments as they grow older, influencing the changes' impact (Shelton, 2019). Bronfenbrenner added the chronosystem to ecological systems theory, asserting that a child's biology and the environment are essential for growth, change, and perception as the child develops (Bronfenbrenner, 1993; Hand, 2019). The chronosystem presents genetics as an element of the child's ecological development (Hand, 2019).

### **U.S. Department of Education's School Climate Surveys (EDSCLS) (2019) Model of School Climate**

The U.S. Department of Education's EDSCLS (2019) model of school climate presents three comprehensive domains: engagement (cultural and linguistic competence, relationships, and school participation), safety (emotional safety, physical safety, bullying/cyberbullying, substance abuse, emergency readiness/management) and environment (physical environment, instructional environment, physical health, mental health, and discipline). The EDSCLS (2019) model of school climate "takes a panoramic approach in order to fully map the composition and influences of a school's climate" (p. 83). This study centered around the EDSCLS (2019) model of school climate.

**Figure 3**

*EDSCLS (2019) Model of School Climate*



*Note.* EDSCLS Model of School Climate. Reprinted from The United States Department of Education, 2019, <https://nces.ed.gov/surveys/edscls/questionnaires.asp>.

### **Related Literature**

The literature review and synthesis were specific to rural schools, teachers' perceptions, school climate, and academic achievement. More specifically, the review was an inquiry into the EDSCLS (2019) three domains of school climate (engagement, safety, and environment), how these domains fit into the rural context of education, and how they influence school climate (microsystem in Bronfenbrenner's (1979) Ecological Systems Theory) and student academic achievement.

### **Rural Students and Schools**

During the 2016–2017 school year, approximately 7.5 million students attended rural public-school districts (Showalter et al., 2019). There are approximately 9.3 million rural students when counting rural schools that are within districts classified as nonrural (Showalter et

al., 2019). Across the United States, roughly 19% of all students attend rural schools, however, in 13 states, the percentage exceeds 33% (Johnson et al., 2014; NCES, 2016). One in five U.S. students attend a rural school, a number higher than the student population at the 85 largest school districts in the country combined (Showalter et al., 2019). Most rural students comprise less than 25% of the public-school enrollment in their state (Showalter et al., 2019). Although the state of New York has the sixth-highest number of rural students in the country, only 11.1% of its students attend a rural school (Showalter et al., 2019). The reason for the high number of rural students and low percentage of rural students is the population of New York state is 19.53 million, while the population of New York City alone is 8.39 million (U.S. Census, 2018). Other urban cities and suburbs (Buffalo, Rochester, Niagara Falls, etc.) are the reason for the lower percentage of rural students even though the overall number of rural students is high.

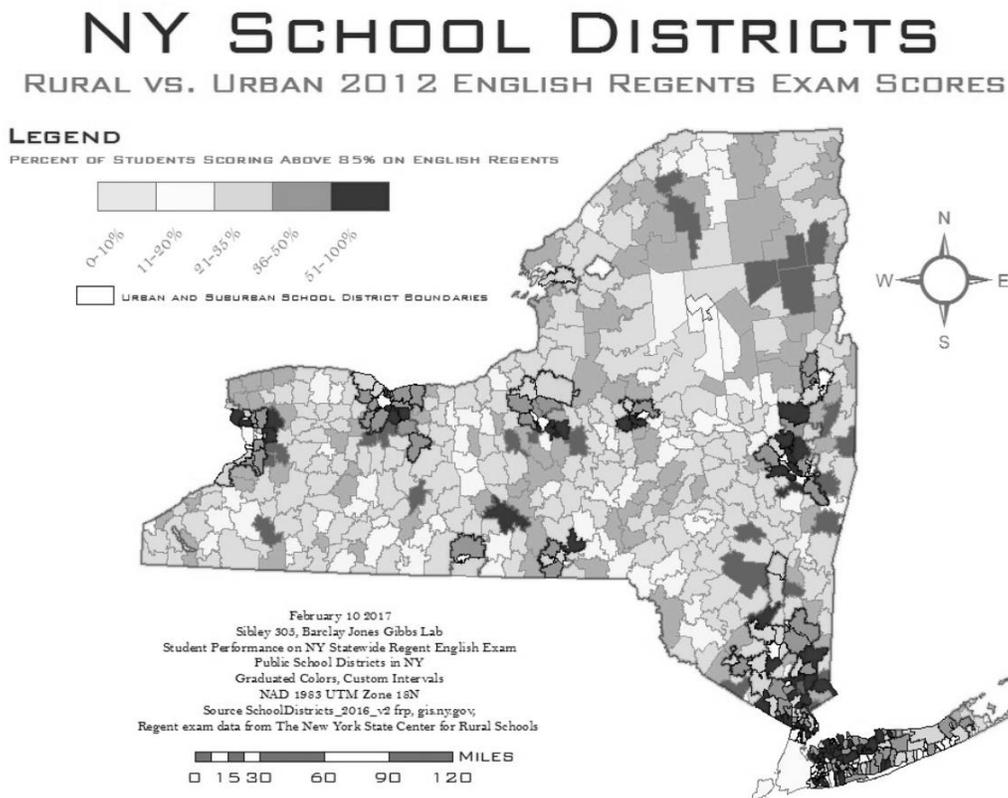
Poverty is an ongoing problem among rural students. Rural areas have had higher poverty rates throughout history compared to urban areas (USDA, 2019). The United States has 664 high-poverty counties and 78.9 percent of these counties are rural (USDA, 2020). These high-poverty counties represent one out of every four rural counties, while only one of every ten urban counties is high-poverty (USDA, 2020). Fifteen counties in the United States are considered extreme poverty areas and all 15 counties are in rural America (USDA, 2020). Rural areas have high child poverty rates. The child poverty rate for children under 18 years is 22.8 percent in rural regions compared to 17.7 percent in urban regions (USDA, 2019). Poverty is associated with lower academic achievement and contributes to achievement gaps (Cedeño et al., 2016; Hanover Research, 2014; Hopson and Lee, 2011; Reardon & Portilla, 2016). Rural students are often overlooked, despite their greater likelihood of living in poverty.

## **Rural Academic Achievement Gap**

There is a clear academic achievement gap between rural and suburban students, especially in math and reading (NAEP, 2019; Robson et al., 2019). New York state is the 20th worst in educational outcomes for rural students, with achievement scores falling in the critical range (Showalter et al., 2019). Rural students underperform on the New York State English Regents Exam compared to their suburban and urban peers (Hoffman et al., 2017). The reading achievement for rural students decreased slightly in 2019 as compared to NAEP scores from 2007 to 2017 (NAEP, 2019). A smaller percentage of students attending rural schools are proficient in English language arts and science compared to students in nonrural schools (Rice et al., 2018). Students attending rural schools are at an increased risk for poorly developed vocabularies (Collins et al., 2016).

**Figure 4**

*NY School Districts: Rural vs. Suburban/Urban English Regents Exam Scores*



*Note.* NY School Districts: Rural vs. Suburban/Urban English Regents Exam Scores. Reprinted from The Cornell Policy Review, by O. Hoffman, E. Chi, & R. Blandon, 2017, <https://cornellpolicyreview.com/GIS-Special-Edition/article.php?id=2>. Reprinted with permission. (Appendix D)

Students in rural schools are more likely to have lower literacy rates than their suburban peers (Lavalley, 2018). Unfortunately, the reading disparities for rural students begin at an early age. Rural preschool children visit the library less frequently than suburban preschool children (Clarke, 2014). Rural students start school with lower reading levels than suburban students (Clarke, 2014) and rural kindergartners score statistically significantly lower than suburban

kindergarteners in reading achievement (Graham & Teague, 2011).

Rural youth show smaller gains in reading over time compared to suburban students (Clarke, 2014). Rural students with poor reading achievement in kindergarten fall further behind their suburban peers by third grade, which may be caused by less educational opportunities and school resources (Graham & Teague, 2011). The average reading achievement of a rural third-grade student who was in the 10th percentile in kindergarten will be six to seven points lower than the average suburban third grader with a similar socioeconomic environment and kindergarten reading attainment (Graham & Teague, 2011). The average suburban third-grade student in the United States scores much higher in reading achievement than the average rural third-grade student (Graham & Teague, 2011). The achievement gap between rural and suburban students in math and reading extends through elementary school and middle school (Lavalley, 2018) to high school, as higher percentages of high school graduates from nonrural schools score an 18 or higher on the ACT than graduates from rural schools (Rice et al., 2018).

Rural schools have shown decreases in reading and math improvement. Rural schools NAEP scores have gotten worse because the Educational Outcomes Gauge for rural NAEP improvement in Grade 4 to Grade 8 math and reading was  $-5.6\%$  and  $-2.7\%$  (Showalter et al., 2019). Unfortunately, the proficiency rates in reading and mathematics decreased significantly from 2013 to 2015, a decline greater than that in suburban scores, such that only one third of eighth-grade rural students are proficient in reading and math (NAEP, 2015).

There is an academic performance gap between students in poverty and those not in poverty (Showalter et al., 2019). The NAEP poverty disadvantage for rural students was  $-55.9\%$  (Showalter et al., 2019). Graham and Teague (2011) did not find a rural-suburban achievement gap in reading scores when socioeconomic status is constant. However, Miller et al. (2019)

concluded that, after accounting for differences in child and family demographics and children's ability in kindergarten, impoverished children in rural areas had lower academic achievement than suburban students. Accounting for socioeconomic differences and demographics, rural children underperform in math and reading, have fewer stimulating experiences and resources, and their parents have lower expectations for academic achievement compared to suburban and urban children (Miller & Votruba-Drzal, 2013).

Rural students have shown high graduation rates, especially compared to urban students; however, they are less likely to attend and graduate from college (Chuong & Schiess, 2016; USDA, 2017; Hill, 2014). Rural high school graduation rates have decreased slightly since the 1980s (Jordan et al., 2012). Approximately one third of rural high school students enter college (Hill, 2014), with only 28% enrolled in a 4-year institution immediately following high school (NSCRC, 2013). Students from rural schools attend 2-year colleges at rates like those from suburban schools but fall behind at 4-year colleges (Robson et al., 2019).

### **Educational Resources in Rural Schools**

Students in rural schools are at a disadvantage compared to their suburban peers regarding educational resources, having less access to technology and high-quality coursework. The Internet broadband gap is one of the most significant academic obstacles for rural schools and communities, with repercussions for students and teachers (Fregni, 2020). Rural schools and communities often have deficient Internet coverage compared to nonrural schools (Howley et al., 2012). One in five rural schools still lacks access to the fiber optic cables necessary for high-speed Internet access (Harold et al., 2015). Rural students without high-speed Internet at home have lower academic achievement in math, reading, and science (KewalRamani et al., 2018). Brown et al. (2016) noted that broadband Internet “connects teachers to students, parents, and

educational resources and opportunities, and it expands course options, such as [Advanced Placement], online, and remedial courses” (p. 14).

Better education technology could improve professional development, instruction, and high-level content and personalize instruction for rural schools (AASA, 2017), leading to a better school climate and academic achievement (Hoge, 2016; Karamanos, 2020; Price, 2008).

Teachers with an understanding of and access to new technologies contribute to improved math and science achievement in rural schools (Albert et al., 2014). Conversely, inadequate technological infrastructure will cause rural schools and students to fall behind.

Rural students have less access to courses that correlate with persistence, including Advanced Placement (AP), world languages, honors, advanced science, technology, engineering, or mathematics (STEM), and stimulating electives (Gemlin et al., 2018). Only 81% of high schools offer Algebra II, 63% offer physics, and 50% offer calculus (ED, 2014). Rural students take Advanced Math, Calculus, and Algebra II less often than nonrural learners (Graham, 2009). Rice et al. (2018) found a smaller percentage of rural students enrolled in at least one advanced course compared to suburban students. Fewer unique advanced classes were accessible to rural high school students than students attending nonrural schools (Rice et al., 2018). A smaller percentage of rural students than suburban students were enrolled in at least one advanced course.

AP course success rates are lower in rural districts than suburban ones, even when accounting for socioeconomic status (Gagnon & Mattingly, 2015). Although just 5.4% of suburban school districts do not have AP courses, almost half (47.2%) of rural schools lack AP course offerings (Gagnon & Mattingly, 2015). Whereas 95% of suburban districts make available at least one AP course, only 73% of rural schools do (Mann et al., 2017). Just 62% of

rural schools offer at least one AP course in STEM compared to 93% of suburban districts (Mann et al., 2017). Larger rural districts located on the border of an urbanized region are 10 times more likely to offer an AP course than remote rural schools (Gagnon & Mattingly, 2015).

Fewer rural students take an AP exam following AP course completion, missing the opportunity to receive college credit while in high school (Mann et al., 2017). Students in rural schools score lower on AP exams compared to their suburban counterparts. AP test-takers from suburban school districts complete an average of 3.4 exams before they graduate from high school compared to 2.6 exams for students in rural districts. High-performing rural students rival their suburban peers in postsecondary success, with 92% of rural students scoring at least 3 out of 5 on any AP exam and later enrolling in a 2- or 4-year higher learning institution. The retention rate for these rural and suburban students was nearly identical, at 86% and 87%, respectively. Offering AP courses indicates a school district's devotion and capability to provide advanced coursework (Lavalley, 2018). A lack of rigorous high school coursework adversely impacts rural students' ability to construct an academic foundation necessary to persist through college (Chuong & Schiess, 2016).

### **Rural Teachers**

Another indication of the gap between rural and suburban schools is teacher turnover, recruitment, development, quality, and retention (Chaika, 2000; Desoff, 2010; Fowles et al., 2014; Guha et al., 2017; Ingersoll, 2001; Johnson et al., 2014; Miller, 2012; Ulferts, 2016; Zubrzycki, 2015). School climate is related to the quality and longevity of principals and teachers, and, ultimately, student well-being and performance (Barth et al., 2004; Shamaki, 2014). Higher rates of teacher turnover and inexperienced, less-effective hires have a negative influence on student learning (Podolsky et al., 2016). Difficulties with recruitment and retention

are creating teacher shortages across the United States, especially in rural schools (Guha et al., 2017). Teacher shortages are more common in rural areas due to smaller talent pools (Chaika, 2000; Croasmun et al., 2000; Miller, 2012). McHenry-Sorber (2019) identified a crucial concern in that rural schools have trouble recruiting and retaining teachers in early childhood settings. Rural schools are more likely to have vacancies in STEM teacher positions compared to nonrural schools (Player, 2015).

Teacher turnover significantly impacts rural schools (Ulferts, 2016). Following an analysis of teacher turnover rates in Colorado from 2014 to 2015, Zubrzycki (2015) found higher turnover in rural versus nonrural districts, with one rural county having an 80% rate of teacher departures in just one year. Rural schools in Alaska have shown teacher turnover rates upward of 40% each year (Dessoff, 2010). Rural schools with fewer than 300 students have the highest teacher turnover rates in the country (Ingersoll, 2001). Teacher turnover leads to staffing shortages. As a result, rural teachers may have to teach several subjects and grades, which increases the chances that they are not highly qualified to lead all the classes (Barley & Brigham, 2008). In Idaho, 58% of superintendents of rural schools indicated that they would be reluctant to fire an underperforming teacher because of the challenges of finding a suitable replacement, which results in rural students learning from low-quality teachers (Johnson et al., 2014). Several rural schools have resorted to hiring substitutes and teachers without certification, and many positions are left vacant (Hanford, 2017).

Another aspect of the disparity between rural schools and suburban schools is teacher quality, which is closely linked to school climate and student achievement. The percentage of inexperienced teachers is higher in rural areas, most notably in the smallest school districts (Player, 2015). The high teacher turnover rates of rural schools lead novice teachers to teach the

same students year after year, which negatively influences student performance (Huling, 1998). In the United States, rural teachers graduate from lower-ranked colleges compared to other locales (Player, 2015). Additionally, there is a 10-percentage point gap in obtaining a master's degree between suburban teachers and urban ones, with the probability of a teacher pursuing postgraduate education diminishing as the community's remoteness rises (Player, 2015).

Rural teachers are less likely to achieve a passing score on their state test of basic skills, Praxis core professional practice, and the Praxis II in their content areas (NCES, 2006). Highly qualified teachers tend to leave their rural school. For instance, rural teachers with better academic qualifications were less likely to work in rural schools (Fowles et al., 2014). Perhaps unsurprisingly, rural schools employ more inexperienced teachers than do suburban schools (Player, 2015). It is frequently challenging for rural schools to achieve the federal benchmarks that characterize highly qualified teachers because it is financially restrictive to staff members in all content areas for all grade levels pertaining to small schools (Eppley, 2009; Mollenkopf, 2009).

Professional development for teachers improves student academic achievement in math and reading (Brendefur et al., 2016; Didion et al., 2020; Hill et al., 2017; Woodland, 2019), which is an indication that relevant training helps produce high-quality teachers. Rural schools struggle to provide teachers with effective professional development opportunities because of limited resources, a lack of staff to support professional development efforts, and geographic location (Glover et al., 2016). Rural teachers take part in fewer professional development opportunities compared to suburban teachers (Player, 2015). Rural schools have difficulty implementing effective teacher professional development (Cadero-Smith, 2020). Only 27% of teachers in rural schools report active professional development programs in their schools, as

opposed to 40% of teachers in suburban schools (Marlow & Cooper, 2008). Teachers must take part in ongoing professional development to apply effective, quality instructional practices in the classroom (Darling-Hammond et al., 2017; Lin et al., 2015). Therefore, the lack of professional development opportunities for teachers in rural schools disadvantages teachers and students, preventing the school climate from improving.

Another reason for rural schools' struggles is lower teacher pay (Strange et al., 2012). Many rural school districts are unable to compete with larger ones in their annual teacher salaries (Showalter et al., 2019). After adjusting for geographic variation, the average national salary for rural teachers is \$69,797, compared to \$74,153 in suburban districts (Showalter et al., 2019).

### **School Climate**

School climate is a challenging concept to define (Jones & Schindler, 2016; O'Brennan & Bradshaw, 2013; Thapa et al., 2013). Hence, the terms lack a "universally agreed upon set of core domains or features" (O'Brennan & Bradshaw, 2013, p. 2). Researchers accept that school climate is important and distinctive to each school (Anderson, 1982). However, the variety of definitions complicates the concept's understanding. Simons-Morton and Crump (2003) defined school climate as "the unique culture or personality of a school formed through interaction among physical setting, organizational factors, and human relations at school" (p. 121). Osher et al. (2020) proposed that climate is "how people experience the school environment, including their interactions with and experience with each other in education settings...and how members of the school community experience school norms, culture, and structures, and feel that they belong at a school" (p. 23).

According to the U.S. Department of Education (2014), school climate is "the extent to which a school community creates and maintains a safe school campus; a supportive academic,

disciplinary, and physical environment; and respectful, trusting, and caring relationships throughout the school community.” Cohen (2009) described school climate as “the quality and character of school life...[that] reflects norms, goals, values, interpersonal relationships, teaching, learning, leadership practices, and organizational structures” (p. 100). Lastly, according to the National School Climate Council (2007), school climate is “the patterns of people’s experiences of school life; it reflects the norms, goals, values, interpersonal relationships, teaching, learning and leadership practices, and organizational structures that comprise school life” (p. 2). The National School Climate Council definition is the most accepted by researchers in the field (Cone, 2019). Table 1 contains these definitions of school climate and several other definitions used by researchers.

**Table 1**

*Definitions of School Climate*

<b>Source</b>	<b>Definition</b>
<b>Brookover &amp; Erickson (1975)</b>	School climate is the “composite of variables as defined and perceived by the members of [the] group” (p. 364).
<b>Cohen (2009)</b>	School climate is “the quality and character of school life...[that] reflects norms, goals, values, interpersonal relationships, teaching, learning, leadership practices, and organizational structures” (p. 100).
<b>Freiberg &amp; Stein (1999)</b>	School climate is “the heart and soul of the school...the quality of a school that helps each individual feel personal worth, dignity, and importance, while simultaneously helping to create a sense of belonging to something beyond ourselves” (p. 11).
<b>Hoy &amp; Clover (1986)</b>	School climate is “the set of internal characteristics that distinguish one school from another and influence the behavior of each school's members” (p. 198).  "School climate is the relatively enduring quality of the school environment that is experienced by participants, affects their behavior, and is based on their collective perceptions of behavior in schools" (p. 198).

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<b>Hoy &amp; Miskel (2008)</b>	School climate is “the set of internal characteristics that distinguish one school from another and influence the behavior of each school's members” (p. 198).  “School climate is the relatively enduring quality of the school environment that is experienced by participants, affects their behavior, and is based on their collective perceptions of behavior in schools” (p. 198).
<b>National School Climate Council (2007)</b>	School climate is “the patterns of people’s experiences of school life; it reflects the norms, goals, values, interpersonal relationships, teaching, learning and leadership practices, and organizational structures that comprise school life” (p. 2).
<b>Osher et al. (2020)</b>	School climate is “how people experience the school environment, including their interactions with and experience with each other in education settings...and how members of the school community experience school norms, culture, and structures, and feel that they belong at a school” (p. 23).
<b>Simons-Morton &amp; Crump (2003)</b>	School climate is “the unique culture or personality of a school formed through interaction among physical setting, organizational factors, and human relations at school” (p. 121).
<b>U.S. Department of Education (2014)</b>	School climate is “the extent to which a school community creates and maintains a safe school campus; a supportive academic, disciplinary, and physical environment; and respectful, trusting, and caring relationships throughout the school community.

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There are various school climate models that show the different domains and components. However, most models center around fostering a positive learning environment, healthy interpersonal relationships, and school safety (National Association of School Psychologists [NASP], n.d.). Cohen et al. (2009) identified four elements that influence school climate: safety, teaching and learning, environmental structure, and relationships. Zullig et al. (2010) asserted that the five domains of school climate were order, safety and discipline, academic outcomes, social relationships, school facilities, and school connectedness. Jones and Shindler (2016) professed the eight domains of school climate to be appearance and physical plant, faculty relations, student interactions, leadership/decision making, disciplined

environment, learning environment, attitude and culture, and school-community relations.

The domains identified by the National School Climate Center (2007) are safety, teaching and learning, interpersonal relationships, institutional environment, and staff relationships. The NSCC added social media to its list of school climate domains and further defined the staff component to include leadership and professional relationships (NSCC, 2019). Thapa et al. (2013) supported the NSCC's (2007) domains while adding a sixth domain involving the school improvement process. The conceptual framework for this study involved the United States Department of Education's (2019) EDSCLS model of school climate, which includes engagement, safety, and environment.

**Table 2**

*Models of School Climate*

<b>Source</b>	<b>School Climate Domains</b>
Cohen (2009)	1. Safety 2. Teaching and Learning 3. Environmental Structure 4. Relationships
Jones & Shindler (2016)	1. Appearance and Physical Plant 2. Faculty Relations 3. Student Interactions 4. Leadership/Decision Making 5. Disciplined Environment 6. Learning Environment 7. Attitude and Culture 8. School-Community Relations.
National School Climate Center (2019)	1. Safety 2. Teaching and Learning 3. Interpersonal 4. Relationships 5. Social Media 6. Institutional Environment
Thapa et al. (2013)	1. Safety 2. Relationships 3. Teaching and Learning 4. Institutional 5. Environment 6. The School Improvement Process
U.S. Department of Education's (2019) EDSCLS model of school climate	1. Engagement 2. Safety 3. Environment

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 Zullig et al. (2010)

 1. Order, Safety, and Discipline 2. Academic Outcomes 3. Social Relationships 4. School Facilities 5. School Connectedness
 

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## **Engagement**

The EDSCLS' (2019) first domain of school climate is engagement, which consists of cultural and linguistic competence, relationships, and school participation. Engagement is defined as “strong relationships between students, teachers, families, and schools, and strong connection between school and the broader community” (National Center on Safe Supportive Learning Environments [NCSSLE], 2020, para. 1). Student engagement is a fundamental aspect of a positive climate, with extensive research connecting it to academic achievement (NCSSLE, 2020).

### ***Cultural and Linguistic Competence***

Cultural and linguistic competence is a crucial component of the engagement domain of school culture. Teacher cultural competence and student academic achievement are associated with each other through better teacher-student relationships (Brace, 2011). Cultural and linguistic competence “is a set of congruent behaviors, attitudes, and policies that come together in a system, agency or among professionals and enable that system, agency or those professions to work effectively in cross-cultural situations” (NCSSLE, 2020, p. 1). Culturally competent organizations are those with tolerance and respect for diversity, ongoing self-reflection about culture, close attention to the dynamics of diversity, ongoing growth of cultural knowledge, and several service models to better serve minority groups (Cross et al., 1989). Organizations that are culturally competent hire unbiased employees, engage in consultations with minority groups, and determine what they can provide minority clients (Cross et al., 1989).

Several issues arise when cultural and linguistic competence are absent. For instance,

students at a higher risk of disconnectedness include those who are transgender, bisexual, gay, lesbian, or questioning their sexual orientation, as well as students with disabilities, who are homeless, and who are frequently truant (Centers for Disease Control and Prevention, 2009). Hispanic and African American students receive a disproportionate number of school suspensions from school compared to White and Asian students (Loveless, 2017). In addition, there are significant concerns about English language learners being both over- and under-identified as having learning disabilities (Artiles & Ortiz, 2002; Hamayan et al., 2007). In some school districts, English language learners receive special education evaluation referrals when they do not display the same academic growth as their peers (Zacarian, 2011). Improving cultural and linguistic competence can mitigate these issues.

The United States is becoming more culturally and linguistically diverse, which indicates the importance of cultural and linguistic competence. The nation's population is 60.1% non-Hispanic White, 18.5% Hispanic, 13.4% Black, 5.9% Asian, 2.8% two or more races, 1.3% Native American, and 0.2% Native Hawaiian or other Pacific Islander (U.S. Census Bureau, 2019). By 2050, predictions show the United States population to be 47% non-Hispanic White, 29% Hispanic, 13% Black, and 9% Asian (Passel & Cohn, 2008). More than 58 million people in the United States (roughly 20%) speak a language other than English at home, with over 24 million residents having limited English proficiency.

Rural areas are becoming more culturally and linguistically diverse (NCES, 2013). There was a 55% increase in the number minority students at rural schools from 1995 to 2004, with 23% percent of rural learners being minorities (National Education Association, 2008). Overall, rural areas are approximately 71% White, 13% Hispanic, 10% Black, two percent Asian/Pacific Islander, two percent American Indian/Alaska Native, and two percent two or more races

(NCES, 2013). The effects of cultural and linguistic competence, along with changing demographics in rural areas, indicate the need for cultural and linguistic competence to enhance engagement in the school culture.

### ***Relationships***

Relationships are a fundamental element of the engagement domain of school climate (EDSCLS, 2019). According to the NCSSE (2020), relationships are “the positive connections between students, adults and peers in the school setting that foster positive social interaction and establish a nurturing environment of trust and support” (para. 1). The relationships between students and school personnel are the centerpiece of school connectedness. Students who perceive their teachers and school leaders as generating a compassionate and systematic environment with high, understandable, and equitable expectations are more likely to feel connected to the school (Blum et al., 2005).

Strong relationships between students and teachers are correlated with academic performance, student achievement in math and reading, and social competence (Agyekum, 2019; Alexander, 2014; Eunoch & Asogwa, 2021; Hajovsky et al., 2019; Hamre & Pianta, 2001; Keating, 2019; Košir & Tement, 2014; Ma et al., 2018; Peisner-Feinberg et al., 2001; Pendarvis, 2019; Pianta et al., 1995; Tsai, 2017; Valiente et al., 2019; Zu & Qui, 2019). Through relationships with compassionate adults, students hold more favorable perceptions of themselves and relationships, leading to positive interactions with others and help in navigating the difficulties of new learning and development (Gallagher et al., 2013). Furthermore, students who perceive themselves as connected to the school have a greater chance of succeeding, as they stay in school longer, earn higher grades, have better attendance, and achieve higher test scores (Battin-Pearson et al., 2000; Klem & Connell, 2004; Korpershoek et al., 2020; Niehaus et al.,

2012; NCSSLE, 2020; Rosenfeld et al., 1998). In addition, students connected to their schools are less likely to participate in risky behaviors, such as substance abuse and early sexual encounters (Resnick et al., 1997; Niehaus et al., 2012; Weatherson et al., 2018).

Building relationships is crucial for students in jeopardy of developing behavioral issues (Sheridan et al., 2012). Fostering these relationships helps students and staff adopt positive attitudes, understand student needs and experiences, develop cultural and linguistic competence, and master the school environment (NCSSLE, 2020). Relationships are fundamental in rural schools and communities, and multiplex relationships (those stemming from several contexts of interaction in a rural school) are distinct to rural schools (Knutson & Del Carlo, 2018). Teachers' descriptions of experiences with students in the classroom are that multiplex relationships increase their capacity to aid students in being successful.

Student relationships with staff and teachers are undoubtedly paramount to fostering a positive school climate. However, parent relationships with teachers and the school are also essential. Parents' participation and collaboration in their student's education are positively associated with crucial student outcomes fundamental to educational success which include improved student academic performance and achievement, self-regulatory ability, fewer discipline problems, study habits, attitudes about school, and homework habits and work orientation, as well as more challenging educational objectives (Aeby et al., 1999; Gallo et al., 2018; Galloway & Sheridan, 1994; Grolnick & Słowiaczek, 1994; Ma, 1999; Masten & Coatsworth, 1999; Pham et al., 2018; Sadiku & Sylaj, 2019; Semke & Sheridan, 2012; Trusty, 1999). Additionally, strong relationships between schools and their communities help schools improve, fortify student learning, and reinforce families and the community (Stefanski et al., 2012).

Strongly influencing educational programming are school-community partnerships, family involvement, and family-school alliances (Sheridan et al., 2012). Family-school relationships expand the notion of family participation to acknowledge the significance of open communication, positive relationships, respect for diversity, and shared authority between schools and families (Henderson et al., 2007). Among disadvantaged and low-income students, parental participation is associated with decreased dropouts, grade retention, and fewer years in special education (Barnard, 2003; Domina, 2005; Miedel & Reynolds, 2000). Teachers report that parent-teacher relationships are significantly lower in rural schools compared to urban schools (Witte, 2015). "Quality relationships between home and school in rural settings and meaningful involvement of rural family members in educational decision making is often difficult to achieve" (Semke & Sheridan, 2012, p. 24).

Families in rural schools face difficulties building relationships with schools because of poverty, inexperienced staff, insufficient resources, low parental education, scheduling difficulty, and geographic separation (Brody et al., 1995; Kushman & Barnhardt, 2001; Weiss & Correa, 1996). Teachers in rural schools frequently expand their duties to meet the behavioral needs of their students (Roesner & Midgley, 1997). However, many of these teachers indicate they are not equipped to administer services to students with behavior or learning concerns (Monk, 2007). Parents are essential for ensuring that the needs of students in rural schools are met (Sheridan et al., 2012). Unfortunately, there is limited literature on family-school connections and relationships for rural schools (Prater et al., 1997). This lack restricts the understanding of family-school relationships in rural schools with distinct attributes (Semke & Sheridan, 2012).

### ***School Participation***

School participation is an essential component of the engagement domain of school

climate. Staff members, students, and their families are vital to building and maintaining a safe and encouraging learning environment (NSSLE, 2020). A powerful relationship between these stakeholders and the district produces a positive school climate, as exhibited by student participation in school activities, along with improving the community as a whole. School participation influences student persistence (Sripan & Sujivorakul, 2020). In-class participation influences academic achievement (Kim et al., 2019). School participation in unified arts (e.g., art, music, physical education, etc.) and extracurricular and afterschool programs can have beneficial effects on school climate. For instance, participating in school teams increases students' engagement in the classroom (Yanik, 2018). There is a positive relationship between engaging in a school-based arts program and school satisfaction (Geagea et al., 2017).

School music participation is associated with academic achievement in math, reading, and science (Guhn et al., 2020). Afterschool and summer programs can close the achievement and opportunity gaps between children from low-socioeconomic backgrounds and their middle-class peers (Farbman, 2015). School participation in extracurricular activities influences student academic achievement in math and reading and self-esteem (Dyer et al., 2017; Freeman, 2017; Meadows, 2018; Wretman, 2017). Unfortunately, rural schools typically offer fewer extracurricular and afterschool programs than suburban schools (Frey, 2015; Macintire & Plucker, 1996), placing rural students at a disadvantage. School participation is fundamental for students, improving the school environment, relationships, and health and wellness outcomes (John-Akinola & Nic-Gabhainn, 2014). Fostering an environment that prompts student participation in academic and extracurricular activities improves school relationships, well-being, and, ultimately, school climate.

## **Safety**

The EDSCLS (2019) second school climate domain is safety, which involves emotional safety, physical safety, bullying/cyberbullying, substance abuse, and emergency readiness/management. School safety is defined as “schools and school-related activities where students are safe from violence, bullying, harassment, and substance use” (NCSSLE, 2020, para. 1). School safety in high schools is needed for effective academic achievement to occur (McCryndle, 2017). In the National School Climate Center’s (2012) study of tens of thousands of schools across the United States, students indicated feeling unsafe in schools. This finding is alarming because concerns with school safety leads to lower academic achievement (Kim, 2020).

### ***Emotional Safety***

Emotional safety, also referred to as psychological safety, is a significant element of the second domain of school climate. The U.S. Department of Education’s National Center on Safe Supportive Learning Environments (2020) defined emotional safety as “an experience in which one feels safe to express emotions, security, and confidence to take risks and feel challenged and excited to try something new” (para. 1). The central components of efficiently designed, psychologically safe educational environments are teachers who have the appropriate professional and personal qualities, including high-normative behavior, emotional stability, sensitivity, low anxiety, creative thinking, introspection, and reflection (Kulikova & Maliy, 2017). Teachers with these professional and personal qualities will increase the psychological security of the educational environment. There is a strong and significant correlation between teacher personality, teacher voice, and psychological safety (Bas & Tabancali, 2020). Additionally, psychological safety has a direct impact on task performance (Baer & Frese, 2003; Schaubroeck et al., 2011). Creativity is a behavioral outcome that positively correlates with

psychological safety (Madjar & Ortiz-Walters, 2009). Psychological safety mitigates the possible negative consequences of taking initiatives or making errors (Edmondson, 1999).

### ***Physical Safety***

Physical safety is another essential element of the second domain of school climate (EDSCLS, 2019). Safety is necessary for student welfare and success (Croft et al., 2019). Although students are often concerned about school safety, most agree that their school is safe. Students who do not feel safe at school, whether physically or psychologically, cannot learn to the best of their ability (NASP, 2013). Many U.S. schools have installed metal detectors, security personnel, cameras, and other measures in attempts to keep schools safe and encourage academic success (Tanner-Smith & Fisher, 2015). Unfortunately, visible security measures do not have a significant effect on academic achievement, attendance, or college aspirations among middle and high school students in the United States. The percentage of rural schools with security personnel is lower than in suburban and urban schools (Croft et al., 2019). Likewise, more rural than urban students indicate that their schools are locked during the school day.

### ***Bullying/Cyberbullying***

Bullying/cyberbullying is another crucial element of the second domain of school climate (EDSCLS, 2019). Wolke and Lereya (2015) defined bullying as the “systematic abuse of power and is defined as aggressive behavior or intentional harm-doing by peers that is carried out repeatedly and involves an imbalance of power” (p. 8). At least once per year, 20-29% of students are involved in bullying (Marsh, 2018). The incidence of cyberbullying has increased among adolescents, with demeaning and disturbing information posted online or sent via e-mail, text message, or instant message with the purpose of mistreating an individual or group (Kowalski et al., 2012). Technological advances facilitate bullying behaviors, with no need for

physical proximity between perpetrator and victim (Patchin & Hinduja, 2010). Bullying poses threats to school safety and student depression, leading to decreased academic performance (Kim, 2020).

Students in positive school climates report less physical, emotional, and cyberbullying behaviors (Acosta et al., 2019). Empathy, assertiveness, peer attachment, and school connectedness were greater among students in a positive school environment, which influences the perceived school climate on bullying. Students are less likely to bully in schools with positive climates (Marsh, 2018). Student perceptions of school climate are significantly associated with maladaptive bullying role behaviors (e.g., traditional and cyberbullying, assisting in bullying, traditional and cyber victimization, and outsider behaviors) (Dorio et al., 2019). Students with more negative perceptions of school climate and higher moral disengagement committed further acts of bullying than students with more positive perceptions and less moral disengagement (Teng et al., 2020).

Bullying behavior is prominent in rural schools, involving aggressive behavior and proviolence attitudes (Patel et al., 2020; Stockdale et al., 2002). A positive school climate stemhealthy relationships among students, teachers, and administrators (Cohen & Freiberg, 2013). Minimizing bullying is possible by building inclusive, respectful school climates that clearly prohibit bullying, harassment, and other malicious behavior.

### ***Substance Abuse***

Substance abuse is another element of the school climate domain (EDSCLS, 2019). Substance abuse is a “harmful pattern of use of alcohol, tobacco products, and illicit drugs; this includes the presence of substance use and trade within school and campus environments and during school-related activities” (NCSSLE, 2020, para. 1). Rural areas have faced increasing

rates of marijuana, inhalant, and alcohol abuse, as well as prescription drug and methamphetamine abuse by at-risk populations, including adolescents and young adults (Lenardson et al., 2014). In the past, substance abuse rates were comparable between rural and urban regions, however, the use of methamphetamine, oxycodone, and alcohol among rural youth have exceeded that of urban youth (Lambert et al., 2008). Rural students are more likely to use smokeless tobacco and smoke cigarettes than their urban peers (Wiggins et al., 2020). Rural students use of nicotine vaping among rural youth is high (Owusu et al., 2017). The use of heroin is growing in rural areas (Cicero et al., 2014). In rural New York, 6.91% to 7.47% of rural New Yorkers aged 12 years and older abuse alcohol (Wright & Sathe, 2005). Alcohol abuse is higher than illicit drug abuse in the rural United States and is thus a significant problem for youth (Gundy, 2006).

The use of illicit drugs, tobacco, and alcohol subverts students' capacity to succeed academically, is linked to other damaging behaviors, and conflicts with a school climate that is respectful, safe, and supportive of learning (NCSSLE, 2020). Similarly, substance use for school-aged children and adolescents is concerning because it influences student success (Dunbar et al., 2019). School climate appears to account for the differences in skills where students and staff indicate higher versus lower levels of alcohol and drug use (Bosworth et al., 2011). School climates perceived as positive show reduced cigarette and marijuana initiation and a lower frequency of cigarette use (Sznitman & Romer, 2014). Moreover, school climate is a strong and negative predictor of the prevalence of binge drinking, marijuana use, and the use of other illicit drugs (Ryabov, 2015). Inadequate enforcement of school rules and unsafe places in and around the school building also influence adolescent drug use (Reid et al., 2006).

### ***Emergency Readiness and Management***

Emergency readiness and management is another component of the safety domain of school climate (EDSCLS, 2019). The expectation is for schools to keep children and youth safe from accidents, epidemics, crime, violence, and any other preventable emergency (NCSSLE, 2020). A positive school climate can influence students' ability to avoid, react, and recuperate from emergencies by decreasing the prevalence of behaviors contributing to the crisis and engaging students in creating strong relationships with staff members and peers (ED, 2013). Schools with positive climates instruct students in social and emotional competencies, including how to control their emotions during a crisis. Schools need successful management and planning to ensure the safety of learning (Netshitahame, 2002).

### **Environment**

The EDSCLS (2019) third school climate domain is environment, which involves the physical environment, instructional environment, physical health, mental health, and discipline. The environment of a school is "broadly characterized by its facilities, classrooms, school-based health supports, and disciplinary policies and practices" and it "sets the stage for the external factors that affect students" (NCSSLE, 2020, para. 1). The NCSSLE (2020) indicates that a positive school environment is associated with higher academic achievement.

### ***Physical Environment***

The physical environment includes the lighting, air quality, ambient noise, and temperature of the school building and location (NCSSLE, 2020). The physical environment of a school contributes to safe, clean, and pleasant surroundings, fostering a positive school climate. Also linked are the physical environment with student achievement and behavior, as a well-kept setting promotes students' capacity to learn, achieve academically, and display proper behavior

(Earthman et al., 1995; Schmis et al., 2020). Alternatively, a physical environment not well maintained can have adverse effects. Rundown school buildings can cause anguish and resentment in teachers, while renovation might lead to a revitalized sense of aspiration and devotion (Corcoran et al., 1988). Older buildings that are not well maintained can adversely impact the learning process, while well-kept schools amplify learning (Filardo et al., 2019; Lyons, 2001). School facilities that are poor quality lead to lower student academic achievement (Cheng et al., 2011; ED, 2014). Students who attend well-cared-for schools score higher on academic achievement tests compared to students at schools with substandard facilities (Maxwell, 2016).

### ***Instructional Environment***

The instructional environment is a crucial component of the environment domain of school climate (EDSCLS, 2019). The instructional environment “refers to the instructional, behavioral, and personal aspects of the classroom experience” (NSCLEE, 2020, para. 1). A substantial number of researchers have associated a positive academic environment with increased student achievement and graduation rates. In particular, the instructional environment has a significant influence on math performance (Shamaki, 2015). In comparison, lackluster instructional environments correlate with poorer academic focus, worse peer relations, and student aggression (Barth et al., 2004).

Teachers’ capacities to organize their classroom (instructional environment) and manage student behavior are crucial for positive educational outcomes (Oliver & Reschly, 2007). Highly effective instruction decreases behavior issues in class (Emmer & Stough, 2001; Martella & Marchand-Martella, 2015), actions that contribute significantly to teachers’ decisions to leave the profession (Ingersoll & Smith, 2003; Marinell & Coca, 2013; Pearman & Lafever-Davis, 2012).

The instructional environment and school culture are directly linked, as they both affect the development of student communication skills (Ahmad et al., 2019). Lastly, rural students are more satisfied with their instructional environment if they receive general praise, ability and effort feedback, and less negative teacher response (Burnett & Mandel, 2010).

### ***Physical Health***

Physical health is a crucial component of the environment domain of school climate (EDSCLS, 2019). Physical health is “the physical wellbeing of the school community and its members” (NSCLEE, 2020, para. 1). Environments that augment student learning attend to the physical health and safety needs of the school district and community. The literature indicates that physical health is important for school success, and a healthy school community is the building block for an extensive and high-quality education. Physical activity is linked with student engagement and academic achievement (Alpkaya, 2019; Álvarez-Bueno et al., 2017; Donnelly et al., 2016; Dwyer et al., 2001; Ellner, 2019; Marques et al., 2017; Scheuer & Mitchell, 2003; Shook, 2016). Physical education can increase students’ reading and math skills (Shook, 2016). Álvarez-Bueno et al.’s (2017) meta-analysis of 26 studies established that physical activity is linked to math and reading achievement. There is also a positive relationship between academic performance, physical activity, and self-esteem (Batista et al., 2016; Calik et al., 2018; Harris-Dawson, 1993; Howells & Bowen, 2016). “While children are physically moving, they are developing neurological foundations that assist with problem solving, language development, and creativity” (Stevens-Smith, 2016, p. 723).

Another aspect of physical health is the care students receive at school (NCSSLE, 2020). Approximately 20% of students enter school with a chronic health condition, such as diabetes, seizure disorder, or asthma (U.S. Health Resources and Services Administration, 2016).

Correspondingly, students often attribute school absences to health problems (Brundage et al., 2017). School nurses have the responsibility of caring for students, helping youth to stay in school. Pennington and Delaney (2008) found that students are more likely to return to class when seen by a school nurse, as opposed to a health professional without licensure.

Unfortunately, rural schools are less likely than their suburban and urban counterparts to have a school nurse (NCES, 2020).

### ***Mental Health***

Mental health is a pertinent element of the environment domain of school climate (EDSCLS, 2019). The psychological and emotional well-being of children encourages healthy development and the ability to live productive lives while working to achieve their full potential (NCSSLE, 2020). Mental health issues raise the probability of repeating a grade, absenteeism, and dropping out (Schulte-Körne, 2016). A crucial component of a strong school environment is encouraging the mental health of students and providing services to take care of those needs. Hofer (2017) asserts “the prevalence of mental health problems among children and youth in the United States is significant, as is the evidence that facing these problems early promotes student success and positive school climate” (p. 2).

School climate is associated with behavioral, health, educational, social-emotional, and mental health outcomes (Townsend et al., 2017). Aldridge and McChesney (2018) analyzed forty-eight primary studies from 2000-2017 and indicated that school climate is linked to student mental health. A positive school climate correlates with increased depression literacy (knowledge about depression as a psychiatric disorder) and more constructive perceptions among students, thus indicating the need to encourage depression recognition and treatment-seeking. A positive school climate encourages student well-being and suppresses rates of depression,

suicidal ideation, and victimization of all students (De Pedro, 2012). Mental health problems can be mitigated by changes in the school environments (Schulte-Körne, 2016). Research suggests a strong, positive association between feelings of safety and security at school and psychosocial wellness, therefore, proactive teachers could foster the well-being of students and enhance school climate and safety (Furlong, 2018). First-year teachers in rural schools experience various student mental health issues in the classroom, but feel incompetent to respond (Bayne, 2020). First year teachers do not receive adequate student mental health training in college teacher preparations programs or teacher professional development. This is unfortunate because rural students are more likely to have new and inexperienced teachers (Lavalley, 2018).

The school system is the primary provider of mental health services to school-aged children in the United States (Angold et al., 2002; Burns et al., 1994; CHDI, 2013; EAB, 2020; Robbins, 2020), especially in rural areas (NASP, 2016). School administrators indicate there is a major increase in time spent addressing mental health, especially in earlier grades (Teti, 2020). The World Health Organization asserts that schools are one of the most dependable and suitable locations to address health needs for children (Baltag et al., 2015). Students are more inclined to pursue counseling when services are available at their school (Juszczak et al., 2003). Unfortunately, students in rural schools are less likely than their suburban and urban counterparts to have such services available (Croft et al., 2019). As family income increases, so does access to mental health services (Croft et al., 2019), and rural students come from lower socioeconomic backgrounds (USDA, 2019). Children in rural areas with mental, behavioral, and developmental disorders often have more challenges surviving on their family's income compared to children with these disorders in urban areas (CDC, 2020).

Almost 20% of children and youth in the United States have an identified mental health

problem (CDC, 2016; Kessler et al., 2005; Kieling et al., 2011). There has been a 17% increase in anxiety disorders diagnosed in students aged 6-17 over the past 10 years (Child Mind Institute, 2018). There has been an 80% increase in the number of adolescents in the United States indicating they have had a major depressive episode each year from 2010-2018 (Bahrapour, 2019). The lifetime prevalence of mental disorders serious enough to create impairment in everyday functioning is approximately 20% for adolescents, however, most adolescents with mental health problems do not receive psychological care (Merikangas et al., 2010; Paternite, 2005). Only twenty percent of children with an anxiety disorder receive treatment (CMI, 2018). Unfortunately, mental health issues affect several aspects of students' lives, including academic achievement and social interactions (DeSocio & Hootman, 2004; Perou et al., 2013). Challenges with academic work can be a school-related sign of mental health problems or an emerging problem in children and adolescents (Blum et al., 2000; Masi et al., 2001). Other indications of an existing or emerging mental health problem in children and adolescents are trouble with behavior regulation, attention, concentration, adjustment to school, and social integration (DeSocio & Hootman, 2004).

Mental health is linked to academic achievement (LeBleu-Burns, 2020; Perou et al., 2013). Student mental health has been a roadblock to student academic achievement (Moon et al., 2017; Sörberg et al., 2019). Mental health is a significant predictor of future academic achievement (Murphy et al., 2015). Adolescents with better mental health have significantly higher academic achievement (Clark, 2020). Improved mental health is associated with improved academic achievement (Durlak et al., 2011). Students who have mental health problems in early childhood and adolescence are at a higher risk for poor academic achievement (Agnafors et al., 2021). Early detection of mental health issues is linked to less disruptions at school and better

academic achievement (Baskin et al., 2010), however rural areas have insufficient mental health services (CDC, 2018). “The impact of student mental health is evident in learning outcomes, traumatic childhood experiences, and the lack of resources, specifically the lack of resources in rural schools” (Bayne 2020, p. 3).

High school students with mental illness have a higher chance of failing a class across all academic areas. They are held back a grade level more frequently than students with disabilities overall (Wagner & Cameto, 2004). Students with more severe symptoms of depression have more challenges concentrating in class and finishing homework (Humensky et al., 2010). Most students with emotional and behavioral disorders score below their peers in math, reading, and writing (Nelson et al., 2004). Additionally, students with higher levels of psychosocial stress are more likely to view themselves as less academically capable (Masi et al., 2001). High school students with psychosocial dysfunction have absentee and tardy rates three times those of their peers without an identified psychosocial dysfunction (Gall et al., 2000). Less than a third of students with serious mental illness go on to attend college (USGAO, 2008).

The prevalence and symptoms of depression indicate the importance of providing mental health services to students. Childhood and adolescence are opportunities to build and maintain mental health and avert future psychological problems (Hofer, 2017). Students who do not have their behavioral, social, or emotional needs met are more likely to drop out of school, cope with troubled family relationships, abuse substance, enter the juvenile justice system, and struggle with learning (Schwarz, 2009).

Treating mental illness in students has shown to improve academic performance for a significant number of children and adolescents (Kang-Yi et al., 2013). The U.S. Department of Human Health and Services (2008) found that youth with mental illness who received care had a

significant improvement in attendance and a significant decrease in suspensions and expulsions. School-based health centers that offer mental health treatment have had a substantial effect on improving students' mental health. Students who use these services are twice as likely to stay in school compared to students who do not (Brown & Bolen, 2008). High school students showed significant reductions in absenteeism and tardiness after receiving school-based mental health services and counseling (Gall et al., 2000). Counseling and mental health services are thus an effective way to promote psychological wellness and improve academic performance. Similar positive findings emerged among students who participated in social-emotional learning led by teachers and other school staff. Social-emotional learning programs increase students' social-emotional skills, attitudes, behaviors, and academic achievement (Darlak et al., 2011; Payton et al., 2008).

### **Discipline**

Discipline is an important element of the environment domain of school climate (EDSCLS, 2019). According to the NCSSLE (2020), school discipline “refers to the rules and strategies applied in school to manage student behavior and practices used to encourage self-discipline and it addresses schoolwide, classroom, and individual student needs through broad prevention, targeted intervention, and development of self-discipline” and “approaches to school discipline range from positive (e.g., schoolwide school climate improvements, use of restorative practices) to punitive (e.g., suspension, expulsion, corporal punishment)” (para. 1). School discipline is directly related to school climate. School discipline is “the foundation of education and ensures a safe and peaceful environment in which to learn and work” (Pang, 1992, p. 1). The means of controlling school discipline has a significant influence on the learning environment.

Improving school climate and upgrading school discipline policies and procedures are

positive strides in increasing academic performance and bolstering student achievement (U.S. Department of Education, 2014). These improvements are important because school discipline can have positive or negative effects on school climate. Whisman and Hammer (2014) conducted a study in West Virginia, a state with a high percentage of rural students. Findings showed that students with discipline referrals were much more likely to demonstrate lower math achievement than students with no referrals (Whisman & Hammer, 2014). Similarly, the more discipline referrals a student had, the higher the chance of poor academic achievement. When students from low socioeconomic backgrounds received one discipline referral, they were more likely to score below proficiency than low-income students with no referrals. This finding is important because rural students are disproportionately from low-income households (Lavalley, 2018; USDA, 2019). When the disciplinary actions involve in- or out-of-school suspension, there was a decrease in achievement scores and an increase in proficiency gaps (Whisman & Hammer, 2014).

Disciplinary action is strongly related to low academic performance (Fabelo et al., 2011; Whisman & Hammer, 2014). The more severe the discipline, the more significant the negative influence on the student's capacity to achieve (Whisman & Hammer, 2014). The adverse impact on academic achievement was even higher when the discipline involved removal from the learning environment through suspension. School leaders must be aware that students receiving formal sanctions have the highest likelihood of dropout, indicating the significance of effective design and implementation of school discipline (Peguero & Bracy, 2015). Schools that use positive behavioral interventions and support frameworks have notably lower numbers of out-of-school suspensions (Noltemeyer et al., 2019).

## **School Climate and Academic Achievement**

School climate and academic achievement are strongly linked, with extensive research indicating the relationship between the two (Reynolds et al., 2017). The two factors benefit school climate in ways such as increased academic achievement, decreased chronic absenteeism, and a decline in discipline referrals (Jacobs, 2018). School climate has received recognition for its connection to greater academic, behavioral, and social-emotional outcomes for children (O'Malley et al., 2015). A supportive school climate can positively impact student academic achievements and potentially mitigate achievement gaps between students and schools of varying socioeconomic backgrounds (Berkowitz et al., 2016).

School climate has received recognition for its connection to advantageous academic, behavioral, and social-emotional outcomes for children (O'Malley et al., 2015). School climate is a central component in student learning and academic achievement (Maxwell et al., 2017; Mitchell et al., 2010). Schools with a positive climate have remarkably higher academic achievement than institutions with negative climates (Sulak, 2016; Voight & Hanson, 2017). Dulay and Karadag (2017) conducted a meta-analysis of 90 studies and found that school climate positively affected academic achievement. Davis and Warner (2015) concluded that school climate is strongly correlated with academic progress. School climate quality seems to be the most predictive component of any school's ability to improve academic achievement (Shindler et al., 2016). "When school climate is enhanced, student academic achievement can also be realized successfully because healthy and effective school climate can stimulate academic achievement of students" (Ismail et al., 2020, p. 15).

Positive school climate is linked to improved student academic achievement, graduation, and behavior outcome (Voight et al., 2013). Climate has been the focal point of many reform

initiatives, such as the Federal Safe and Supportive Schools Program (Voight et al., 2013). Maxwell et al. (2017) noted, “School climate is a leading factor in explaining student learning and achievement” (p. 1). School achievement highly correlates with the overall mean school climate (Shindler et al., 2016). A fundamental indicator of school climate is academic achievement (Daily et al., 2019; Voight & Hanson, 2017).

School climate incorporates students’ perspectives of the learning environment (Camilleri, 2019). Students with positive perceptions of school climate have higher grade point averages (GPAs) (O’Malley et al., 2015). Student perceptions of school climate are highly predictive of academic achievement in math and reading (Kwong & Davis, 2015). Student perception of school climate and environment is directly linked to learning outcomes of students (Schmis et al., 2020). Concentrating on evaluating and modifying students’ school climate perceptions could help enhance academic achievement, particularly for children in high-risk family structures (O’Malley et al., 2015).

Different schools exhibit various climates. Some schools are healthy and pleasant, whereas, others are tense, influencing student academic achievement (Fakunle & Ale, 2018). “The quality of the school climate can either have positive effects on students’ development, academic achievement, and learning or it can greatly inhibit these dimensions” (Herty, 2014, p. 3). There are higher academic achievement levels in schools with positive school climates than negative ones (Davis & Warner, 2015; Geleta, 2017; Ismail et al., 2020; Reynolds et al., 2017; Sulak, 2016; Voight & Hanson, 2017). High student academic achievement is challenging in schools with negative climates (Shindler et al., 2016).

School climate is an avenue to increase student achievement (Wang & Degol, 2016). Higher quality school climates lead to increased student academic achievement (Shindler et al.,

2016). Voight and Hanson (2017) investigated the relationship between school climate and academic achievement using data from almost 1,000 California middle schools. The findings showed that the more positive climate a school had, the higher the average academic achievement. Schools with positive climates have lower absenteeism, which leads to higher academic achievement on standardized tests (Maxwell et al., 2017). School climate is a predictor of student academic achievement in reading (Ning, 2020). School climate is associated with elementary school students' academic achievement in math and reading (Camilleri, 2019). Greenway (2017) identified a statistically significant, positive relationship between school climate and student academic achievement in middle schools. School climate is linked to rural middle school student achievement in math (Engelland-Schultz, 2015). School climate is linked to increased academic achievement in middle and high school (Daily et al., 2019; Konold et al., 2018). There is a relationship between school climate and student achievement in math and reading for grades 3-11 (Zamora & Hernandez, 2016).

Extensive research shows the relationship between school climate and student academic achievement (Brand et al., 2003, 2008; Brookover et al., 1978; Bulach, 1994; Bulach et al., 1995; Chen & Wiekart, 2008; Cohen & Geier, 2010; Cohen et al., 2009; Collins & Parson, 2010; Crosnoe et al., 2004; Doyal, 2009; Esposito, 1999; Freiberg, 1999; Haynes et al., 1997; Hoy & Hannum, 1997; Gottfredson & Gottfredson, 1989; Johnson & Stevens, 2006; Kober, 2001; Loukas & Robinson, 2004; Macneil et al., 2009; McEvoy & Welker, 2000; Ma & Klinger, 2000; Moos & Moos, 1978; National School Climate Council, 2007; Norton, 2008; Pallas, 1988; Pashiardis, 2000; Payne, 2008; Payne et al., 2003; Perkey & Smith, 1983; Price, 1991; Ross & Lowther, 2003; Ross et al., 2007; Shann, 1999; Sherblom et al., 2006; Shindler et al., 2004; Spence, 2003; Stewart, 2008; Sweetland & Hoy, 2000; Thapa et al., 2012; Thomasson, 2006;

Wang et al., 1997; Zins et al., 2004). The relationship between school climate and academic achievement persists (Fakunle & Ale, 2018; Fancera, 2018; Geleta, 2017; Hattie, 2013; Johnson, 2019; Kutsyuruba et al., 2015; Owens, 2019; Shindler et al., 2016; Zysberg & Schwabsky, 2020). Wang and Degol (2016) conducted a comprehensive literature review, concluding that academic achievement and school climate are linked.

Rural students underperform suburban students in math and reading achievement (Clarke, 2014; NAEP, 2019; Robson et al., 2019; Rice et al., 2018; Showalter et al., 2019) and suffer from high poverty (Housing Assistance Council, 2012; Lavalley, 2018; O'Hare, 2009; Public Broadcasting Service, 2017; Schaefer et al., 2016; USDA, 2020). Students experiencing poverty have lower academic achievement, but when disadvantaged students have a positive school climate, their grades are more in line with their peers from higher socioeconomic backgrounds (Hopson & Lee, 2011). School climate has garnered national attention because of its theorized potential to diminish the achievement gap and positively influence student academic achievement (Lipkin-Moore, 2020). Scholars should consider school climate as a fundamental aspect of the existing achievement gap (Johnson, 2019). Positive school climates may be effective for students and schools facing socioeconomic barriers to academic achievement (Voight, 2013). Robinson (2019) found that school climate is a statistically significant predictor of student academic achievement in a rural school. A positive school climate can be an intervention to improve academic achievement and student well-being (Daily et al., 2019), something advantageous to rural schools. School climate could be a crucial reason that some schools are more effective than others (Voight et al., 2013).

School climate can be beneficial for disadvantaged students (Reynolds et al., 2017). A positive school climate is one in which, “students feel a sense of safety and belonging and where

relational trust prevails, improves academic achievement, test scores, grades, and engagement and helps reduce the negative effects of poverty on academic achievement” (Darling-Hammon & DePaoli, 2020, p. 7). Low socioeconomic schools can achieve a positive school climate and exceptional academic achievement (Voight et al., 2013). Berkowitz et al. (2017) found that a positive school climate alleviates the negative impact of low socioeconomic status on academic achievement. Students in rural schools are underperforming in math and reading (Clarke, 2014; NAEP, 2019; Robson et al., 2019; Rice et al., 2018; Showalter et al., 2019), and experience poverty (Lavalley, 2018; Schaefer et al., 2016; USDA, 2020). Improving school climate could be a way to close the academic achievement gap in rural schools. Investigating teachers’ and school leaders’ perceptions of how school climate affects academic achievement in math and reading at rural schools was beneficial.

### **Teacher Turnover, School Climate, and Academic Achievement**

Rural schools suffer from high teacher turnover (Ingersoll, 2001; Dessoff, 2010; Ulferts, 2016; Zubrzycki, 2015). Teachers have a positive effect on student academic achievement (Chetty et al., 2014; Hanushek & Rivken, 2006; Lee, 2018; Opper, 2019), and teacher turnover negatively influences school climate and student academic achievement (Adnot et al., 2016; Benitez-Mackintosh, 2018; Garcia & Weiss, 2019; Kraft et al., 2016). School climate influences teachers’ choice to stay or leave their teaching position (Walker, 2019), and higher teacher turnover rates can negatively influence school climate (Guin, 2004). Teachers who leave their positions are more likely to depart schools with negative school climate indicators (Garcia & Weiss, 2019). School climate contributes to the teacher shortage, particularly in lower socioeconomic schools (Garcia & Weiss, 2019), which are more likely to be rural (Schaefer et al., 2016). School climate is pliable and teacher turnover decreases as school climate improves

(Kraft et al., 2016). Improvement in school climate leads to lower teacher turnover and higher student academic achievement. Conversely, school climate improves as teacher turnover decreases and academic achievement increases.

Zajac (2016) indicated there is abundant qualitative and quantitative research assessing the influence of teacher turnover on student achievement. Teacher quality can affect student success. Teacher turnover negatively impacts academic achievement when turnover among superior teachers results in replacement with less-effective instructors (Mingo, 2019). Teacher turnover has adverse effects on school quality measured by student academic performance (Adnot et al., 2016). Students who suffer from higher teacher turnover have lower math and reading achievement (Benitez-Mackintosh, 2018; Sorensen & Ladd, 2018), an effect more pronounced in low-performing schools (Ronfeldt et al., 2012). New-to-school teachers can also have adverse effects on student achievement (Atteberry et al., 2017). Students improve 57% to 67% as much in math achievement in their years with new teachers or new-to-school teachers compared to years taught by a returning teacher (Graff, 2019).

Teacher turnover has a more significant impact on academic achievement than teacher quality (Brummet et al., 2017). High teacher turnover rates can lead to lower standardized test scores (Guin, 2004). Teacher turnover has a negative effect on student progress in math and reading (Simon & Johnson, 2015). Students perform worse in years with high teacher turnover rates than years with lower teacher turnover (Miller, 2013). On the contrary, school climate improvements simultaneously reduce teacher turnover and increase student academic achievement in math (Kraft, 2016). High turnover rates can harm the quality of instruction (Hanushek et al., 2016), which has a subsequent adverse effect on student learning (Zajac, 2016).

## **Teachers and Academic Achievement**

Teachers are a fundamental component of academic achievement in math and reading. Scholars acknowledge that teachers are one of the most vital school-based resources in shaping students' future academic achievement and life outcomes (Burroughs et al., 2019). Teachers have a considerable impact on the academic and life-long success of their students (Blazar & Kraft, 2017). Teacher expectations, teacher-student relationships, and classroom discipline are strongly linked to academic achievement gains (Lin, 2016). Teachers are more important to student academic achievement than any other school component (Oppen, 2019). The quality of teacher-student relationships influences student academic achievement (McCormick & O'Connor, 2015; Roorda et al., 2011). Forming positive relationships with teachers is essential to the student learning process (Taylor, 2020). Students need purposeful relationships with teachers to achieve school connectedness and academic success (Shepard et al., 2012). There is a positive relationship between teacher engagement and academic achievement (Tyson-White, 2019).

Teachers play a pertinent role in supporting students' interests and promoting their well-being (Wang & Neihart, 2015). The relationship between teachers and students is one of the most important aspects of school because students flourish when they feel connected to peers and adults whom they perceive care about them (Thapa et al., 2013). Teachers whom students deem to be positive role models positively influence the self-esteem, resilience, and academic achievement of their students (Rich & Schacter, 2012). Teachers' cognitive ability, knowledge, licensure, and behavior influence teacher quality and student achievement (Fong-Yee & Normore, 2013).

Students who experience support and engagement from teacher-student relationships have higher academic achievement (Wang & Neihart, 2015). A student's self-esteem and grade

point average (academic achievement) flourish when teacher-student relationships are positive (Thapa et al., 2012). An outcome of teacher support is higher grades (Strøm et al., 2013).

Negative student-teacher relationships adversely affect student academic achievement and hinder academic growth because students feel disengaged and alienated by the weaker social bonds formed with their teachers (Gehlbach, 2012). Teachers can motivate students to pursue purposeful relationships with their teachers and actively engage in class (Sapp, 2012).

Teacher motivational strategy has a significant and positive relationship with high school students' academic achievement (Lawrence & Hanitha, 2016). The quality of teachers' instructional behavior influences student academic motivation (Maulana et al., 2016). The ways teachers manage their classrooms strongly affect their students' motivation for learning (Adedigba & Sulaiman, 2020) and academic achievement (Amrai et al., 2011; Gbollie & Keamu, 2017; Oz, 2016; Sivrikaya, 2019; Steinmayr et al., 2019). Teachers with high expectations can help meet students' educational and social needs of students attending schools in high-poverty regions (King, 2018), which are disproportionately rural (Schaefer et al., 2016; Lavalley, 2018; USDA, 2020).

The quality of teacher-student relationships affects academic achievement in math and reading (Hajovsky et al., 2017). There is a positive relationship between teachers' instructional quality and mathematics and reading achievement (Nortvedt et al., 2016). Teachers have a two to three times greater effect on student academic achievement in math and reading than any other school-related factor (Opper, 2019). Teacher-student collaboration positively impacts student academic achievement in reading and English Language Arts (Lucillo-Carillo, 2017). A close teacher relationship predicts girls' math scores and boys' reading in early elementary school (Valiente et al., 2019). There is a significant positive relationship between student perceptions of

instructional quality and math achievement (Toropova et al., 2019).

Decades of research has solidified that teachers influence student academic achievement (Hanushek & Rivkin, 2010; Heck, 2000; Lindjork, 2003; Sanders & Rivers, 1996; Schacter & Thum, 2004; Todd & Wolpin, 2003), especially on math and reading achievement (Bhai & Horoi, 2019; Rockoff, 2004). The quality of teachers' instruction affects classroom engagement, which aligns with high math and reading achievement levels in elementary school students (Bryce et al., 2019). Upper-elementary school teachers greatly influence their students' attitudes, behavior, and academic achievement (Blazar & Kraft, 2017). Teachers also affect the educational attainment of secondary school students (Kimani et al., 2013).

Effective student-teacher relationships contribute to positive academic achievement and emotional outcomes because students who feel supported by their teacher earn higher grades (Gehlbach et al., 2012). Teachers influence student engagement, which is connected to academic achievement (Roybal et al., 2014). Students taught by high-quality teachers in success had more positive relationships with short- and long-term academic achievement (Lee, 2018). Teachers have the most significant influence on student academic achievement compared to any other aspect of school (Opper, 2019). Therefore, exploring rural teachers' and school leaders' perceptions of factors affecting school climate and student achievement in math and reading indicated areas for intervention and improvement and provided examples of success and triumph.

### **Teacher Perceptions of School Climate and Academic Achievement**

Teacher perceptions of school climate are linked with student achievement (Collie et al., 2012; Gentile, 1997; Johnson, 1998; Johnson Spears, 2018; Johnson & Stevens, 2006; Karadag et al., 2014). The way teachers view the school climate has a medium to high effect on academic achievement (Hollifield, 2019). In a study in urban schools, Robinson (2015) found that teacher

perceptions of school climate predicted students' academic achievement. Coyne (2012) identified a significant correlation between teacher and faculty perceptions of school climate and educational attainment. Teacher and faculty perceptions of school climate highly influence academic achievement in reading, writing, and math (Maxwell et al., 2017). In a quantitative study of more than 5,000 teachers, Bear et al. (2014) found teacher and faculty perceptions positively correlated with academic achievement.

Brand et al. (2008) investigated the influence of teacher and faculty perceptions of school climate on students' academic achievement. Although the study is older, the findings significantly contribute to the literature on how teacher perceptions of school climate influence student academic achievement. Brand et al. found a strong link between teachers' perceptions of school climate and middle school students' math and reading scores. Another finding was that teachers' perceptions of school climate strongly predicted other signs of student achievement, including GPA and educational efficacy. Teachers' perceptions of school climate can change over time (Wang & Dehol, 2015). Therefore, investigating teachers' views of how school climate affects academic achievement in math and reading at rural schools was beneficial.

### **Leadership and School Climate**

There is a link between school leaders' leadership and school climate (Amedome, 2018; Epperson, 2018; Jennings, 2019; Smith et al., 2020). Dixon (2014) noted, "Leadership plays an important and critical role in the establishment and sustainability of school climate" (p. 32). Improving the leadership of a school leader produces a positive school climate, while worsening school leadership leads to a more negative climate (Amedome, 2018). Robinson (2010) asserted, "A positive school climate rarely occurs by chance but is shaped, primarily, by the building

principal” (p. 30). Watson (2021) found that principal leadership style predicted school climate, even after controlling for class size and teacher experience.

School leadership behavior influences school climate. Perkins (2020) stated, “The transformational leadership style tends to have the qualities most conducive to developing and nurturing a positive school climate” (p. 14). There is a positive relationship between transformational leadership and school climate (Allen et al., 2015; Quin et al., 2015). Hauserman and Stick (2013) found that teachers have positive perceptions of principals’ transformational leadership behaviors. A school leader who engages stakeholders using shared leadership positively influences school climate (Hughes & Pickeral, 2013). Eranil and Özbilen (2017) found a strong relationship between the ethical leadership of school principals and positive climate practices, whereas Black (2010) identified a robust link between servant leadership and school climate.

Decades of research have shown school leadership linked to school climate (Bailey, 1988; Bancroft, 1986; Barr, 2006; Bossert et al., 1982; Gaines, 2011; Hawkins, 2002; Nichols, 2007; Pepper & Thomas, 2002; Rideaux, 2011; Rubio, 1999). Pepper and Thomas (2002) asserted, “The principal’s role as a leader of the school has a profound effect on school climate” (p. 156). Özgenel (2020) recommended that school leaders and teachers improve school climate to increase school effectiveness.

### **Leadership and Academic Achievement**

Researchers have proven school leadership to be a strong and pertinent element for improving educational attainment (Miller, 2020). Gittens (2018) reported, “Empirical literature suggests that leadership is an essential element to promoting student achievement and equity” (p. 8). Effective school leaders can provide a foundation to impact student and staff achievement

(Balyer, 2012). Leithwood et al. (2004) observed, “Leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school” (p. 3). Schools rely on leadership to increase academic achievement (Davis et al., 2005).

School leadership is linked to student learning and achievement (Dhuey & Smith, 2014; Dufour & Mattos, 2013; Gates et al., 2014; Rideaux, 2011; Schindler, 2012; Soehner & Ryan, 2011; Wahyuddin, 2017). Principals directly influence teachers, who, in turn, have a direct influence on students (Bledsoe, 2016). Uysal and Sarier (2018) conducted a meta-analysis to examine the effects of school leadership on student achievement, finding school leadership positively associated with student achievement. There is a strong link between principal leadership and math growth, as well as ELA proficiency (Watson, 2021). Prescott Cousins (2019) also identified a significant relationship between leadership and growth in math achievement. Principal leadership behaviors are positively linked to reading achievement (Rhoden, 2012). Bednar (2018) found a link between student achievement and effective leader scores for elementary school principals in suburban counties surrounding Chicago. Decades of research indicate a connection between school leadership and academic achievement (Andrews & Soder, 1987; Felton, 2010; Gawerecki, 2003; Goddard et al., 2010; Kythreotis et al., 2010; Rigell, 1999; Suskavcevic & Blake, 1999; Waters et al., 2004).

Various types of leadership behavior influence student academic achievement. Shared leadership used by principals has a strong relationship with ELA achievement (Prescott Cousins, 2019). Mendez-Keegan’s (2019) study in an urban elementary school setting showed that the more a school leader used the transformational leadership style, the higher the student achievement levels in math and ELA. Distributive leadership has a positive influence on student academic achievement (Jambo & Hongde, 2020). Guinta (2020) asserted that transformational

leadership in a high school setting could produce a positive school climate with elevated teacher morale. The transformational leadership style directly influences school climate and indirectly affects student achievement (Chisum, 2018). Rodriguez's (2019) study in Title 1 middle schools indicated many positive relationships between transformational leaders and achievement in math, reading, and social studies.

### **Leadership, School Climate, and Academic Achievement**

There is an association between leadership, school climate, and academic achievement (Robinson, 2010; Simpson, 2016; Williams, 2009). Leadership style can foster a school climate that encourages academic achievement (Brvenik-Estrella, 2013). Perkins (2020) noted, "Educational leaders have the power and responsibility to impact school climate as well as student achievement" (p. 3). Math and reading achievement are associated with leadership style and school climate (Robinson, 2010). Rhoden's (2012) study involving urban high school principals showed partial positive correlations between leadership, school climate, and student achievement. Rideaux (2011) examined 38 school campuses in Texas, finding that principals affect school climate, which subsequently impacts academic achievement. Norton (2002) noted, "Studies on school effectiveness, school climate, and student achievement reveal one commonality, the fact that good happenings in schools depend to a great extent on the quality of school leadership" (p. 2). Liebowitz and Porter's (2019) meta-analysis of 51 studies suggested an association between principal behaviors and student achievement and school climate. The researchers called attention to the significance of principal behavior as a potential avenue to increase student achievement.

## **Teacher Perceptions of Leadership**

Teachers perceive that leaders at high-performing schools are honest, trustworthy, reliable, and transparent (Apollo, 2020). Teachers' perceptions of principal leadership behaviors and their perceptions of school climate are linked (Pulleyn, 2012). Teachers suggest that effective leadership has a positive impact on school climate (Ross & Cozzens, 2016). Roy's (2019) study in Title 1 high schools indicated a correlation between teachers' perceptions of excellent leadership practices and school climate. Teacher perceptions of school leaders can positively or negatively influence school climate and teachers' work (Britton, 2018). Teachers who view their principal negatively perceived a negative school climate, notwithstanding socioeconomic status (Paul, 2015). Watson (2021) found that teacher perceptions of principal leadership style (transformational, transactional, and passive-avoidant) were predictors of school climate.

Teacher perception of principal leadership style is a statistically significant predictor of student achievement (Hardman, 2011). There is a correlation between teachers' perceptions of principal leadership and academic achievement (Floyd, 2011). McCown's (2018) study in rural middle schools showed that teachers and principals believe that principals directly or indirectly impact student achievement. Sutton's (2019) mixed-methods study indicated that teachers and principals perceive that leadership behaviors influence student academic achievement. Mendez-Keegan (2019) conducted a study in an urban elementary school setting, finding that the better a teacher perceived a principal used transformational leadership, the higher the student achievement in math and ELA. Wilson (2017) explored teachers' perceptions of leadership in rural secondary schools, finding that teachers thought distributed leadership led to better student results. Older research showed that perceptions of principal leadership are related to school

climate and academic achievement (Haymon, 1990; O'Donnell & White, 2005).

### **Summary**

The review of the related literature provided background information for this study on teachers' perceptions of school climate in rural schools. Research indicated that rural students are at a disadvantage compared to suburban students leading to a gap in academic achievement in math and reading. Also evident was that a positive school climate improves student and teacher outcomes, whereas a negative climate does the opposite. The disadvantages that rural students face are largely related to school climate. There was a gap in the research, as no scholars have investigated teachers' and school leaders' perceptions of how school climate affects academic achievement in math and reading at rural schools in Western New York. Most studies on teacher perceptions are quantitative and thus do not provide the in-depth analysis possible with a qualitative case study regarding individuals' thoughts, experiences, perspectives, and points of view.

The positive advantages of school climate have not been converted into effective educational practice (Ismail et al., 2020). Exploring teachers' and school leaders' perceptions of school climate can contribute to the development of more effective policies to support high-performing schools and improve low-performing ones (Thapa et al., 2013). All the components regarding student and teacher outcomes indicate the disparities faced in rural schools, especially academic achievement in math and reading. Developing school climate is a crucial component of school and student improvement (Wegner & Hall, 1998). Gaining the perception of teachers and school leaders of how school climate affects academic achievement in math and reading at rural schools could help improve unsuccessful schools and support successful ones.

## **CHAPTER THREE: METHODS**

### **Overview**

The purpose of this multiple case study was to investigate teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools. Chapter Three presents the methods and design of the qualitative study. This chapter includes the setting, participants, role of the researcher, approaches used for data collection and analysis, trustworthiness, and ethical considerations.

### **Design**

The design selected for this study was a qualitative multiple case study. Case studies center around a modern situation (Yin, 2018). A case study design permits the researcher to gain an in-depth understanding of the phenomenon when the borders between the studied phenomenon and the context are indistinct. A multiple case study researcher analyzes the context and features of two or more cases of certain phenomena (Mills et al., 2010). A multiple case study is a means to synthesize differences, similarities, and patterns across several cases that have a common objective or focus, producing more generalizable knowledge (Goodrick, 2014). The multiple-case study design was fitting for the study because the study focused on a contemporary phenomenon and answered how and why questions (Yin, 2018).

Comparing two cases produces strong, compelling evidence (Yin, 2018). The findings from a multiple case study are more transferable as a repeated phenomenon, while the findings from a sequestered incident cannot be transferred (Small, 2015). This multiple-case study used two instrumental bound cases, which allowed for a more thorough understanding of the phenomena than a single case by providing an in-depth description and explanation of the phenomenon or problem (Mills et al., 2010). The cases were bound by time, place, and focus

(Creswell, 2002). This multiple case study occurred in a real-life setting of teachers and school leaders at rural elementary schools in Western New York (Neptune Elementary School and Venus Primary School). Data was collected within a two-month span and focused on perceptions of school climate and student achievement. The two cases had similar demographics, staff qualifications, and expenditures.

Case studies that are effective use multiple sources of data collection that are deep and varied (Yin, 2018). Data collection in this study was through a survey, teacher interviews, and school leader interviews followed by open coding, categorical aggregation, and a cross-case synthesis which permitted an in-depth narrative and naturalistic generalizations. Naturalistic generalization is a process where insight can be attained by reflecting on the descriptions exhibited in case studies (Mills et al., 2010). Practical insights from the narrative descriptions evolved naturally in this multiple case study and can be generalized to analogous situations (Mills et al., 2010).

### **Research Questions**

The following research questions were used to guide this multiple case study:

#### **Central Research Question**

How do teachers and school leaders perceive the domains of the school climate model (engagement, safety, and environment) affect student achievement in math and reading at rural schools?

#### **Sub-Question One**

How do teachers and school leaders perceive the school climate domain of engagement affects student achievement in math and reading at rural schools?

### Sub-Question Two

How do teachers and school leaders perceive the school climate domain of safety affects student achievement in math and reading at rural schools?

### Sub-Question Three

How do teachers and school leaders perceive the school climate domain of environment affects student achievement in math and reading at rural schools?

### Setting

The two study sites were rural schools in Western New York. One of the rural schools was Neptune Elementary School (NES) and the other rural school was Venus Primary School (VPS). The school names are pseudonyms to protect the schools' and participants' privacy.

### Figure 5

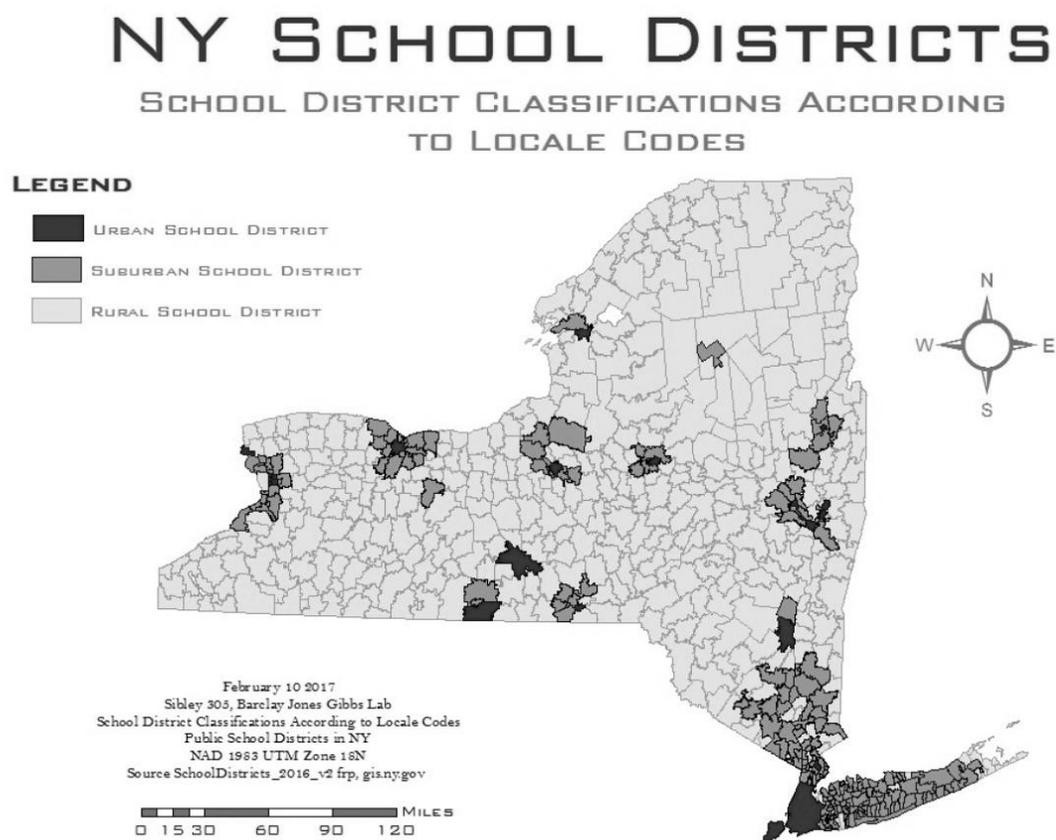
*Map of the Various Regions of New York State*



*Note.* Map of the various regions of New York State. Reprinted from Empire State Development, 2019, from <https://esd.ny.gov/regionaloverviews/westernny/insideregion.html>. Reprinted with permission (see Appendix D).

## Figure 6

*Map of School District Classifications in New York State*



*Note.* Map of School District Classifications in New York State. Reprinted from The Cornell Policy Review, by O. Hoffman, E. Chi, & R. Blandon, 2017, <https://cornellpolicyreview.com/GIS-Special-Edition/article.php?id=2>. Reprinted with permission (see Appendix D).

**Venus Primary School**

VPS is a Title I school that serves roughly 230 students in Grades K–5 and is classified as rural: fringe. The demographic makeup of VPS is over 90% White with small percentages of Hispanic, Asian, and multiracial students. More than 30% of VPS students are economically disadvantaged. Per-pupil expenditure is below the New York State average.

The staff qualifications at VPS exceed the statewide average. The percent of instructors teaching outside their subject or field of certification is below the state average. Also, the number of inexperienced teachers and principals at VPS is below the statewide average. VPS has a lower teacher-to-student ratio than the statewide average. According to 2018–2019 New York State ELA and math assessments, VPS had a lower proficiency percentage in ELA and a higher proficiency rating in math than the statewide average.

**Neptune Elementary School**

Also classified as rural: fringe, NES is a Title I school that serves roughly 230 students in Grades K–5. The demographic makeup of NES is over 95% White, with small percentages of students who are Asian, American Indian, and multiracial. Over 30% of students at NES are economically disadvantaged. Per-pupil expenditure is below the statewide average.

The staff qualifications at NES exceed the statewide average. The percent of instructors teaching outside their subject or field of certification is below the state average, as is the number of inexperienced teachers. NES has a lower teacher-to-student ratio than VPS and the statewide average. According to 2018–2019 New York State assessment data, NES students have a slightly lower proficiency percentage in ELA and a slightly higher proficiency percentage in math compared to the statewide average.

## **Venus Primary School and Neptune Elementary School**

Rural schools underperform suburban schools in math and reading achievement (Clarke, 2014; Lavalley, 2018; NAEP, 2019). VPS and NES overperform the statewide average in math while underperforming in reading. Scholars have identified academic achievement as directly related to school climate (Daily et al., 2019; Dulay & Karadag, 2017; Ismail et al., 2020; Maxwell et al., 2017; Shindler et al., 2016; Voight & Hanson, 2017).

NES and VPS have similar academic achievement, territorial classification, enrollment, per-pupil expenditure, staff qualifications, and demographics. Both schools are in good standing, which indicates success in all performance goals. The selection of NES and VPS for this multiple case study was due to their similarities and qualifications. An investigation of teachers' perceptions on how school climate affects academic achievement in math and reading at rural schools filled a gap in the literature.

### **Participants**

The participants in this study were purposefully selected teachers and school leaders at two rural schools in Western New York. Purposeful sampling in qualitative research is a way to identify and select information-rich cases related to the phenomenon (Palinkas et al., 2015). Purposeful sampling follows some discernment or arbitrary idea of the researcher trying to find a representative sample (Vehovar et al., 2016). The selection method was purposeful criterion sampling, which requires the researcher to choose cases that achieve a predetermined criterion of significance (Patton, 2001). The predetermined participation criteria was teachers and school leaders working at a specific rural school in Western New York for at least 3 years.

There were 13 participants chosen for this research study. There were five teachers from VPS, four teachers from NES, and four school leaders (two from each school) chosen for this

study. There are no specific rules or guidelines that substantiate sample size in qualitative research (Gall et al., 2007). A sample of one participant can be legitimate (Boddy, 2016). Comparatively, the largest qualitative sample sizes do not appear to surpass 200 participants (Emmel, 2013; Wolfe, 1996). Guest et al. (2006) indicated that 12 participants should be sufficient to understand the perceptions and experience of a group that is relatively homogenous, while Kuzel (1999) asserts that a sample size of 6-8 for a homogenous sample is appropriate. Teachers and school leaders working in rural schools are a relatively homogeneous group to provide their perceptions on how school climate affects academic achievement in math and reading. Therefore, selecting 13 participants using the aforementioned criteria was adequate to reach data saturation.

Data saturation occurs when the ability to acquire new information has passed, more coding is not possible, and there is sufficient information to reproduce the study (Bowen, 2008; Fusch & Ness, 2015; Kerr, 2010; Moser & Korstjens, 2018). Failure to achieve data saturation threatens the validity of the research (Fusch & Ness, 2015). Thirteen participants were sufficient to achieve data saturation in this study.

All teacher and school leader participants in the study were White. Participants were White because of the general population demographics and the location of the schools. Two of the teacher participants (Douglas and Howard) were male, while the rest of the participants were female. All participants had over three years experience working in a rural school setting. The school leader and teacher participants had diverse roles in their rural elementary school (see Table 3).

**Table 3***Teacher and School Leader Participants*

<b>Participant Name</b>	<b>School</b>	<b>Role</b>
<b>Cynthia</b>	Venus Primary School	Principal
<b>Margaret</b>	Venus Primary School	School Psychologist
<b>Joyce</b>	Venus Primary School	Second Grade Teacher
<b>Douglas</b>	Venus Primary School	Physical Education Teacher
<b>Wanda</b>	Venus Primary School	Special Education Teacher
<b>Vicki</b>	Venus Primary School	Music Teacher
<b>Alice</b>	Venus Primary School	Special Education Teacher
<b>Beth</b>	Neptune Elementary School	Principal
<b>Tina</b>	Neptune Elementary School	School Psychologist
<b>Stephanie</b>	Neptune Elementary School	RTI Teacher
<b>Joann</b>	Neptune Elementary School	Third Grade Teacher
<b>Helen</b>	Neptune Elementary School	First Grade Teacher
<b>Howard</b>	Neptune Elementary School	Second Grade Teacher

**Procedures**

The initial step was to obtain approval from the Liberty University Institutional Review Board (IRB) (Appendix A). Next, I sent the IRB approval to the rural schools in Western New York and began participant selection after procuring both districts' IRB approval. Human resources personnel at the selected schools helped with the identification of potential participants. I sent the recruitment letter (Appendix E) to the potential participants (rural teachers and school leaders with at least 3 years of experience) using their school district e-mail address.

I secured four to five teachers and two school leaders from each rural school (13 total participants). The participating rural teachers and school leaders submitted the informed consent form (Appendix B). The teacher consent form detailed the teacher participants' obligation to complete the survey and interview, while the school leader consent form detailed the school leader participants' obligation to complete an interview. I sent out the form and survey via Survey Monkey and scheduled dates and times for one-on-one interviews. The participants chose whether they preferred to do the interview face-to-face, over the phone, written response, or via videoconferencing on Google Meet, FaceTime, Microsoft Teams, or Zoom. I analyzed the data collected through the survey, teacher interviews and school leader interviews and looked for common themes and patterns in the data.

### **The Researcher's Role**

My primary role in this qualitative research study was to be a human instrument (Lincoln & Guba, 1985), as I collected data from several sources (survey, teacher interviews and school leader interviews), examined the data for emerging themes and patterns, and depicted the findings in a beneficial way (Creswell, 2013). Specifically, I described the teachers' and school leaders' perceptions of how school climate affects academic achievement in math and reading at rural schools in Western New York. I have developed collegial relationships with some participants in the study but have taken specific measures to mitigate bias.

I grew up in a rural town in Western New York and taught special education in a rural school in the Eastern Panhandle of West Virginia. Both experiences helped shape my view of school climate in rural schools. My involvement as a teacher in urban, suburban, and rural settings has shown me the differences in school climate in each location. My Master's degree in educational administration, educational administrative internships at two urban charter schools in

Western New York, and an administrative position at the Boys and Girls Club of the Eastern Panhandle of West Virginia provided leadership and school climate experience from an administrative perspective. Rural students are often left out of discussions on inequality. An exploration of teachers' and school leaders' perceptions of how school climate affects academic achievement in math and reading at rural schools helped close the gap in the literature and elucidate rural inequality.

Bias can occur at any point in research, including design, data collection, and data analysis (Pannucci & Wilkins, 2010). Personal history and experiences shape all individuals, including researchers (Pollock, 2020). I drew upon current literature to design the study, interview questions, and procedures to mitigate my bias such that it did not hinder the integrity of the study (Yin, 2018).

### **Data Collection**

Data triangulation is a process whereby “researchers make use of multiple and different sources, methods, investigators, and theories to provide corroborating evidence” (Creswell, 2013, p. 251). Feldman et al. (2008) indicated that triangulation provides a more in-depth and balanced illustration of the situation. The three data sources are a survey, teacher interviews, and school leader interviews, as described in the following sections.

### **EDSCLS (2019) Instructional Staff Survey**

The first data source is the ED School Climate Surveys: Instructional Staff Survey, which is a comprehensive measure of school climate (Bradshaw et al., 2014). This study is qualitative but using a survey helped establish teachers' perceptions of school climate. The EDSCLS (2019) Instructional Staff Survey (see Tables 5-8) was administered via Survey Monkey. Case study research can include limited quantitative data (Yin, 2018). Triangulation within qualitative

research is achieved by amalgamating qualitative and quantitative methods (Patton, 2015). The survey data will contribute to a more in-depth qualitative analysis.

The EDSCLS (2019) model of school climate, in conjunction with Bronfenbrenner's (1979) ecological systems theory, served as the conceptual framework for this study. It was, therefore, fitting to use the EDSCLS Instructional Staff Survey to gauge rural teachers' perceptions of school climate.

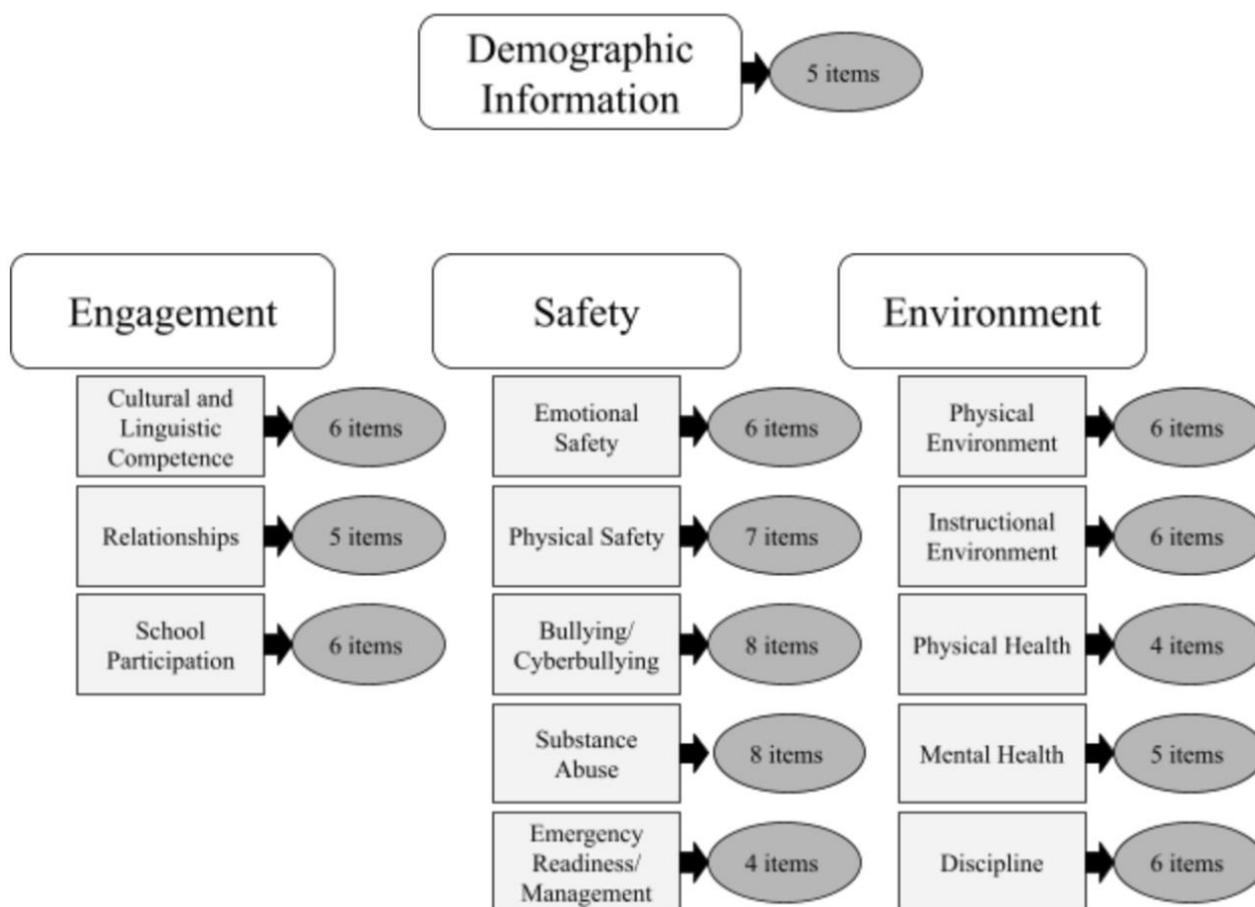
The survey measured teachers' perceptions of the three domains and the 13 subtopics: engagement (cultural and linguistic competence, relationships, school participation), safety (emotional safety, physical safety, bullying/cyberbullying, substance abuse, emergency readiness/management), and environment (physical environment, instructional environment, physical health, mental health, discipline). The EDSCLS (2019) takes a "panoramic approach in order to fully map the composition and influences of a school's climate" (p. 84).

The first five survey questions were means to collect demographic information, including sex, race, and teaching experience. The rest of the survey questions used a Likert scale with four options: *strongly agree*, *agree*, *disagree*, or *strongly disagree*. Questions 6 to 22 gauged the perceptions of teachers regarding the school climate domain of engagement, with the subtopics of cultural and linguistic competence (6–11), relationships (12–16), and school participation (17–22). Questions 23 through 55 were means to measure teachers' perceptions regarding the school climate domain of safety with the subtopics of emotional safety (23–28), physical safety (29–35), bullying/cyberbullying (36–43), substance abuse (44–51), and emergency readiness/management (52–55). Questions 56 to 82 allowed me to gauge teachers' perceptions on the school climate domain of environment, which encompasses the subtopics of physical environment (56–61), instructional environment (62–67), physical health (68–71), mental health (72–76), and

discipline (77–82). Figure 7 illustrates how each the EDSCLS items apply to the three domains of school climate and their subdomains, while Table 3 shows the alignment between the research questions and survey questions.

**Figure 7**

*Diagram of EDSCLS Instructional Staff Survey*



**Table 4***Research Questions – Survey Questions Alignment*

<b>Research Question</b>	<b>Survey Questions</b>
Sub-Question 1	Survey Questions 6-22
Sub-Question 2	Survey Questions 23-55
Sub-Question 3	Survey Question 56-82

**Teacher Interviews**

Case study research usually entails data collection methods that focus on interviews (Creswell, 2013). Kelly (2010) indicated that qualitative interviews are means to build “an understanding of how participants view, experience, or conceptualize an aspect of social life” (p. 3). Qualitative interviews are appropriate to answer research questions involving a phenomenon or meaning of events. Interviews with rural teachers helped build an understanding of how they view, experience, and conceptualize how school climate affects student academic achievement in math and reading at rural schools. Yin (2018) asserted that interviews are the main data collection instrument in a case study. Interviews are “ideal when used to document participants’ accounts, perceptions of, or stories about attitudes toward and responses to certain situations or phenomena” (Paradis et al., 2016, p. 263). This research study incorporated open-ended interview questions, which allowed me to explore and chronicle a specific phenomenon from the real world (Yin, 2018).

I conducted interviews with teachers from rural elementary schools (NES and VPS). The teachers selected the time and setting for their interviews, with the choice of interviewing over the phone, videoconferencing, or written response if they were unable to set up a face-to-face

interview or felt uncomfortable meeting in person because of COVID-19. I received permission from each participant to audio-record each interview. A high-quality recording provides the best record of an interview, as reconstructing an interview from notes tends to suffer from interviewer-recall bias (Kelly, 2010). I took notes on voice intonation, pauses, and facial expressions to guide me with transcription and analysis during the study's later phases (Creswell, 2013). The following were the carefully worded, open-ended interview questions posed to rural teachers at NES and VPS:

1. Please tell me about yourself (your name, your age, your family, things you like to do, education, experience as a teacher, etc.). (Biographical)
2. What motivated you to become a teacher? (Biographical)
3. How did you come to teach at this school? (Biographical)
4. How does your school foster cultural and linguistic competence? (SQ1)
5. How does cultural and linguistic competence affect student academic achievement in math and reading? (SQ1)
6. How does your school foster teacher-student relationships? (SQ1)
7. How do teacher-student relationships affect student academic achievement in math and reading? (SQ1)
8. How does your school encourage participation in school activities and governance? (SQ1)
9. How does participation affect student academic achievement in math and reading? (SQ1)
10. How does your school foster emotional safety? (SQ2)
11. How does emotional safety affect academic achievement in math and reading? (SQ2)

12. How does your school foster physical safety? (SQ2)
13. How does physical safety affect student academic achievement in math and reading?  
(SQ2)
14. How does your school prevent and respond to bullying/cyberbullying? (SQ2)
15. How does bullying/cyberbullying affect student academic achievement in math and  
reading? (SQ2)
16. How does your school prevent and respond to substance abuse? (SQ2)
17. How does substance abuse affect student academic achievement in math and reading?  
(SQ2)
18. How does your school respond to emergency readiness/management? (SQ2)
19. How does emergency readiness/management affect student academic achievement in  
math and reading? (SQ2)
20. How does your school foster an effective physical environment? (SQ3)
21. How does the physical environment affect student academic achievement in math and  
reading? (SQ3)
22. How does your school foster a positive instructional environment? (SQ3)
23. How does the instructional environment affect student academic achievement in math  
and reading?
24. How does your school promote physical health? (SQ3)
25. How does physical health affect student academic achievement in math reading?  
(SQ3)
26. How does your school promote mental health? (SQ3)
27. How does mental health affect student academic achievement in math and reading?

(SQ3)

28. How does your school use discipline to manage student behavior? (SQ3)

29. How does discipline affect student academic achievement in math and reading?

(SQ3)

30. How does leadership affect school climate? (SQ1, SQ2, SQ3)

31. How does leadership affect student academic achievement in math and reading?

(SQ1, SQ2, SQ3)

Participants answering the same open-ended interview questions can raise the comparability of their answers, decrease interviewer bias, and help with organization and data analysis (Patton, 2002). Interview questions one through three allowed me to familiarize myself with the participants and gain essential perspectives into their backgrounds and experiences. Interview questions four through nine involve the engagement domain of the EDSCLS (2019) school climate model. The questions were means to explore the perspectives of the teachers at rural schools on cultural and linguistic competence, relationships, and participation and how these components of engagement affect student academic achievement in math and reading. Engagement (cultural and linguistic competence, relationships, and participation) influences school climate and academic achievement (Adiku & Sylaj, 2019; Alexander, 2014; Brace, 2011; Dyer et al., 2017; Freeman, 2017; Gallo et al., 2018; Guhn et al., 2020; Keating, 2019; Košir & Tement, 2014; Ma et al., 2018; Pendarvis, 2019; Pham et al., 2018; Wretman, 2017).

Interview questions ten through 19 involve the safety domain of the EDSCLS (2019) school climate model. The questions were a way to explore rural teachers' perspectives of the safety domain (emotional safety, physical safety, bullying/cyberbullying, substance abuse, and emergency readiness/management) and how these elements affect academic achievement in math

and reading. The safety domain affects school climate and student academic achievement in math and reading (Acosta et al., 2019; Croft et al., 2019; ED, 2013; Kim, 2020; Mccryndle, 2017; NCSSLE, 2020; Sznitman & Romer, 2014; Teng et al., 2020).

Interview questions 20 through 29 facilitated the exploration of rural teachers' perspectives of the environment domain of the EDSCLS (2019) model of school climate and how it affects student achievement in math and reading. The domain of environment (physical environment, instructional environment, physical health, mental health, and discipline) affects school climate and student academic achievement in math and reading (Alpkaya, 2019; Álvarez-Bueno et al., 2017; Fabelo et al., 2011; Filardo et al., 2019; LeBleu-Burns, 2020; Maxwell, 2016; NCSSLE, 2020; Oliver & Reschly, 2007; Schmis et al., 2020; Schulte-Körne, 2016; Shamaki, 2015; Townsend et al., 2017; Whisman & Hammer, 2014).

Interview questions 30 and 31 explored rural teachers' perceptions of how leadership affects school climate and student academic achievement in math and reading. The EDSCLS model of school climate intertwined with Bronfenbrenner's (1979) ecological systems theory served as the conceptual framework for these interview questions. The interviews provided data on teachers' perceptions of how school climate affects student achievement in math and reading at rural schools.

### **School Leader Interviews**

School leader interviews were the third form of data collection. Interviews are distinctly helpful for getting the story behind a participant's experiences and allow the interview to acquire in-depth thorough information about the topic (McNamara, 1999). School leaders have different experiences than teachers, even when they work within the same building. Interviews with school leaders provided their perspective of school climate and academic achievement at rural

schools through a leadership lens.

I audio recorded the interviews with the participants' permission. It was intended that themes from the EDSCLS Instructional Staff Survey and teacher interviews would inform the school leader interview questions. However, it was decided that keeping the school leader interview questions similar to the teacher interview questions would achieve uniformity and data saturation between the different stakeholders. The following carefully worded, open-ended questions are interview questions that were posed to the school leaders:

1. Please tell me about yourself (your name, your age, your family, things you like to do, education, experience as a teacher, etc.). (Biographical)
2. What motivated you to become a school leader? (Biographical)
3. How did you come to lead at this school? (Biographical)
4. How does your school foster cultural and linguistic competence? (SQ1)
5. How does cultural and linguistic competence affect student academic achievement in math and reading? (SQ1)
6. How does your school foster teacher-student relationships? (SQ1)
7. How do teacher-student relationships affect student academic achievement in math and reading? (SQ1)
8. How does your school encourage participation in school activities and governance? (SQ1)
9. How does participation affect student academic achievement in math and reading? (SQ1)
10. How does your school foster emotional safety? (SQ2)
11. How does emotional safety affect academic achievement in math and reading? (SQ2)

12. How does your school foster physical safety? (SQ2)
13. How does physical safety affect student academic achievement in math and reading?  
(SQ2)
14. How does your school prevent and respond to bullying/cyberbullying? (SQ2)
15. How does bullying/cyberbullying affect student academic achievement in math and reading? (SQ2)
16. How does your school prevent and respond to substance abuse? (SQ2)
17. How does substance abuse affect student academic achievement in math and reading?  
(SQ2)
18. How does your school respond to emergency readiness/management? (SQ2)
19. How does emergency readiness/management affect student academic achievement in math and reading? (SQ2)
20. How does your school foster an effective physical environment? (SQ3)
21. How does the physical environment affect student academic achievement in math and reading? (SQ3)
22. How does your school foster a positive instructional environment? (SQ3)
23. How does the instructional environment affect student academic achievement in math and reading? (SQ3)
24. How does your school promote physical health? (SQ3)
25. How does physical health affect student academic achievement in math reading?  
(SQ3)
26. How does your school promote mental health? (SQ3)
27. How does mental health affect student academic achievement in math and reading?

(SQ3)

28. How does your school use discipline to manage student behavior? (SQ3)

29. How does discipline affect student academic achievement in math and reading?

(SQ3)

30. How does leadership affect school climate? (SQ1, SQ2, SQ3)

31. How does leadership affect student academic achievement in math and reading?

(SQ1, SQ2, SQ3)

Familiarity, essential perspectives, and experiences were gained through interview questions one to three. Interview question four through nine pertain to the engagement domain of the EDSCLS (2019) school climate model and helped answer Sub-Question 1. The questions were a way to investigate rural school leaders' perspectives on cultural and linguistic competence, relationships, and participation and how these components of engagement affect student academic achievement in math and reading. An abundance of literature connects engagement (cultural and linguistic competence, relationships, and participation) to school climate and academic achievement (Adiku & Sylaj, 2019; Alexander, 2014; Brace, 2011; Dyer et al., 2017; Freeman, 2017; Gallo et al., 2018; Guhn et al., 2020; Keating, 2019; Košir & Tement, 2014; Ma et al., 2018; Pendarvis, 2019; Pham et al., 2018; Wretman, 2017).

The interview questions pertaining to the safety domain of the EDSCLS (2019) school climate model and helped answer Sub-Question 2 were questions ten through 19. The questions facilitated the investigation of rural school leaders' perspectives of the safety domain (emotional safety, physical safety, bullying/cyberbullying, substance abuse, and emergency readiness/management) and how these factors influence academic achievement in math and reading. Research shows the safety domain affects school climate and student achievement in

math and reading (Acosta et al., 2019; Croft et al., 2019; ED, 2013; Kim, 2020; Mccryndle, 2017; NCSSLE, 2020; Sznitman & Romer, 2014; Teng et al., 2020).

The interview questions involving the environment domain of the EDSCLS (2019) school climate model and helped answer Sub-Question 3 were questions 20 through 29. The questions were a means to explore the perspectives of leaders at rural schools of the environment domain and how it affects student achievement in math and reading. The environment domain (physical environment, instructional environment, physical health, mental health, and discipline) affects school climate and student academic achievement in math and reading (Alpkaya, 2019; Álvarez-Bueno et al., 2017; Fabelo et al., 2011; Filardo et al., 2019; LeBleu-Burns, 2020; Maxwell, 2016; NCSSLE, 2020; Oliver & Reschly, 2007; Schmis et al., 2020; Schulte-Körne, 2016; Shamaki, 2015; Townsend et al., 2017; Whisman & Hammer, 2014).

The interview questions that investigated rural school leaders' perceptions of how leadership affects school climate and student academic achievement in math and reading were questions 30 and 31. Research shows that leadership influences school climate (Amedome, 2018; Epperson, 2018; Jennings, 2019; Smith et al., 2020) and student achievement (Dhuey & Smith, 2014; Dufour & Mattos, 2013; Gates et al., 2014; Rideaux, 2011; Schindler, 2012; Soehner & Ryan, 2011; Uysal & Sarier, 2018; Wahyuddin, 2017; Watson, 2021). The EDSCLS model of school climate intertwined with Bronfenbrenner's (1979) ecological systems theory served as the conceptual framework for these interview questions. The interviews provided data on rural school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools.

### **Data Analysis**

Qualitative case study data analysis includes creating a detailed description of the case

and its setting (Creswell & Poth, 2018). Stake (1995) identified no one correct approach to analyze qualitative data, rather, each researcher must determine which method works best to answer the research questions. I collected the data from the survey, teacher interviews and school leader interviews, and transcribed the audio recordings verbatim into text documents. Transcripts are a means to ensure accuracy (Creswell & Poth, 2018).

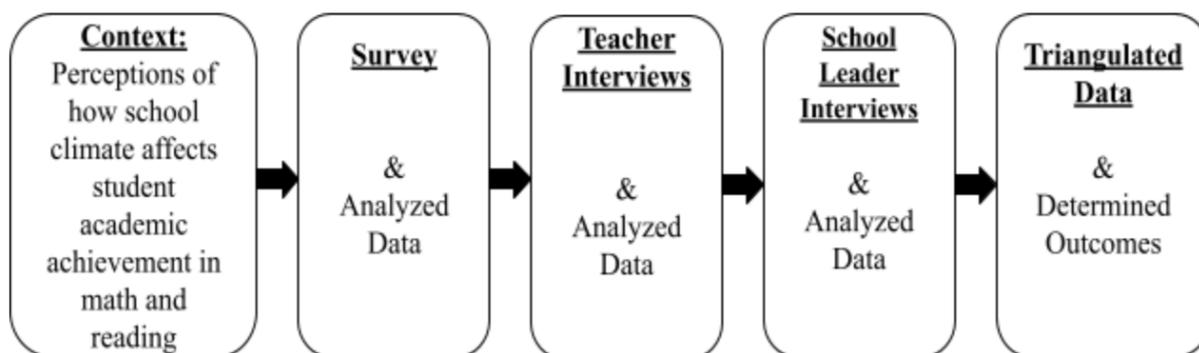
Next, I started the process of open coding. I searched for concepts, insights, or patterns in the data to prioritize what I wanted to analyze and why (Yin, 2018). Open coding is a means to interpret raw research data by analyzing and categorizing the data (Mills et al., 2010). Open coding permits a researcher to put the data into themes for data to be more relevant and meaningful (Creswell & Poth, 2018). I used categorical aggregation as a data analysis technique by pursuing a collection of examples from the data and finding meanings that pertain to the phenomenon (see Appendix H) (Creswell & Poth, 2018). I segmented the data, placing them in various categories to ascertain the themes and patterns that arise pertaining to teachers' and school leaders' perceptions on how school climate affects student academic achievement in math and reading.

This study of two cases entailed a cross-case synthesis, which Yin (2018) proposed as an analytic technique when the researcher is studying more than one case. A cross-case synthesis transpired where I compared and contrasted the various cases, interpreted the data, and put the data into patterns. I used a Microsoft Word table to showcase information from the individual cases following a uniform framework (see Table 9 and Appendix H) (Miles et al., 2014; Miles & Huberman, 1994; Yin, 2018). A table allowed me to display the data from each of the two cases, which I examined to find similarities and differences in the cases and identify common themes (Creswell & Poth, 2018; Mills et al., 2010). Next, I created naturalistic generalizations from

closely analyzing the data. As Creswell (2013) noted, I triangulated the data with other data for validity and wrote an in-depth narrative.

## Figure 8

### *Data Collection*



*Note.* Data collection. Adapted from *Case Study Research: Design and Methods, 4th Ed.* (p. 157), by R.K. Yin, 2009, SAGE Publications. Reprinted with permission. (Appendix D)

## Trustworthiness

There were several precautions taken throughout this multiple case study to ensure trustworthiness. Trustworthiness concerns the level of trust or confidence in data, interpretation, and methods utilized to ensure that the research is of high quality (Polit & Beck, 2014). The chief components of trustworthiness are credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985).

## Credibility

The credibility of a study, otherwise known as belief in the truth of the study and its findings, is of utmost importance (Polit & Beck, 2014). Credibility designates the degree to which a research account is credible, with specific reference to the degree of agreement between the participants and the researcher (Mills et al., 2010). Qualitative researchers use member checks as a technique to strengthen the validity or trustworthiness of their research (Frey, 2018).

Member checking indicates credibility by showing that the findings are believable to the participants and will occur after transcripts are recorded.

Credibility improves when there are chances for auditors, external consultants, and peers to scrutinize and substantiate the evidence (Mills et al., 2010). The dissertation chair and a doctoral committee member will review the findings of this study to increase its credibility. Prolonged engagement consists of spending an extended period with participants in their environments to garner an in-depth understanding of values, behavior, and relationships in a social context (Given, 2008). When researchers immerse themselves into their participants' culture, congenial relationships form between the researcher and members of the participants' community. I will be engaged with the rural teacher and school leader participants in the study for months, which will increase credibility. Data triangulation can strengthen credibility in a research study (Salkind, 2010). This study used multiple sources of data (survey, teacher interviews, school leader interviews) for triangulation.

### **Dependability and Confirmability**

Guba and Lincoln (1989) indicated that dependability and confirmability apply to the consistency of a research study. Researchers should conduct their studies such that another researcher could replicate the process and achieve the same results (Yin, 2018). I corroborated this study's dependability by maintaining a detailed, descriptive record of all steps and components. I documented the participants, setting, data collection, and data analysis procedures in an audit trail. This multiple case study used triangulation of sources—surveys, teacher interviews, and school leader interviews—to ensure dependability and confirmability. Triangulation can increase trust in research data, produce inventive ways of comprehending a phenomenon, divulge distinct findings, and give a direct understanding of the issue (Jick, 1979).

Another benefit of triangulation is that it draws upon a significant amount of data for interpretation, ensuring dependability and confirmability (Banik, 1993). One means to augment confirmability is by digitally recording and transcribing interviews (Yin, 2018), as I did in this study. An auditor inspected the findings, interpretations, and conclusions to determine their support by the data, improving dependability and confirmability (Lincoln & Guba, 1985). The auditor had a background in qualitative research, a doctoral degree in education, and decades of experience in the field of education. The auditor was neutral and unaffiliated with the study. I maintained a reflexive journal about what Mruck and Breur (2003) called “presuppositions, choices, experiences, and actions during the research process” (p. 3). Reflexive journals can build research process transparency (Ortlipp, 2008) and increase dependability and confirmability (Glasser & Strauss, 1967; Patton, 2015).

### **Transferability**

Researchers can increase the transferability of findings by providing a thick description of the participants, research design, and context (Given, 2008). I included a complete description of all study components to increase transferability. Purposeful sampling can benefit transferability because the chosen participants constitute the research design, limitations, and delimitations of the study (Given, 2008). Purposeful sampling was used to seek maximum variation in participants (subject area, age, gender, ethnicity, experience, grade level, etc.). Purposeful sampling enhanced transferability for this multiple case study on teachers’ and school leaders’ perceptions on how school climate affects academic achievement in math and reading at rural schools.

## **Ethical Considerations**

Creswell (2013) reported the significance of maintaining ethical considerations at the center of the research process, something I aimed to do from the study's beginning to its completion. There are several ethical considerations applicable throughout the multiple case study. For instance, exploring the cultural group of rural teachers, students, and schools could stereotype or misrepresent the rural community. Another ethical consideration is maintaining the confidentiality of participants' identities, which I did by providing pseudonyms for the schools and teachers. Data collection and participant treatment was in accordance with the Liberty University IRB, with an application submitted to and approved by the IRB before sampling. All participants gave informed consent before providing any data (Yin, 2018). I will save all online data on a password-protected, web-based file storage system and all hardcopy data in a locked filing cabinet for 3 years, after which I will delete or destroy all files.

## **Summary**

The purpose of this multiple case study was to investigate teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools. This chapter presented the methodology and design of this multiple case study on teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools, along with the research questions, setting, participants, procedures, and the researcher's role. There were descriptions of data collection, which will consist of a survey, teacher interviews and school leader interviews, and data analysis. The chapter ended with the ethical considerations.

## **CHAPTER FOUR: FINDINGS**

### **Overview**

The goal of this multiple case study was to explore teachers' and school leaders' perceptions of the effect of school climate on student achievement in math and reading at rural schools. The cases were two rural elementary schools in Western New York: Venus Primary School and Neptune Elementary School. Data collection was via surveys, teacher interviews, and school leader interviews; subsequently, data analysis consisted of open coding, categorical aggregation, and a cross-case synthesis of the themes and patterns related to the phenomenon. This chapter presents the backgrounds and current roles of the teacher and school leader participants who received pseudonyms to protect their identities. Chapter Four also presents theme development and the data collection methods used to address the research questions. The chapter ends with a summary.

### **Participants**

The study included two cases: Venus Primary School and Neptune Elementary School. The study included 13 participants: two school leaders and five teachers from VPS and two school leaders and four teachers from NES. Each participant fit the criteria presented in the previous chapter. All participants identified as White, with 11 identifying as female and two identifying as male. The participants of the study were White because of the location of the schools and the general population demographics. Each participant that responded to the recruitment letter was White. All the participants had worked at their rural schools for more than 3 years, and some had worked in the same rural schools for more than 30 years. Each participant had a master's degree and teaching or school building leader certification. All teacher participants completed the U.S. Department of Education's School Climate Surveys (EDSCLS)

Instructional Staff Survey and teacher interviews, and all school leader participants completed school leader interviews. Following are descriptions of the teacher and school leader participants.

### **Cynthia**

Cynthia was a White woman in her late 40s. She had over 3 years of experience in her current position as the principal of VPS. She also had several years of experience as a school leader and in different roles at various schools, including staff development specialist, and assistant principal. She had previously served as a teacher at a different rural school for several years. Cynthia attended kindergarten–12th grade, graduated high school, and received her bachelor's degree in a neighboring state. She then earned several graduate degrees and certifications from a university in Western New York. In her free time, she loved to cook, read, and spend time with family.

### **Margaret**

Margaret was a White woman in her late 20s with over 3 years of experience in her current position as the school psychologist of VPS. She grew up in a rural town and graduated from a rural school district in Western New York. She received her bachelor's and master's degrees at public and private universities in Western New York. Having grown up in a family of educators, Margaret decided to follow her relatives' career paths. She enjoyed hiking, kayaking, reading, and spending time with family.

### **Joyce**

Joyce was a White woman in her late 20s who taught second grade at VPS and had 7 years of teaching experience. She grew up in a neighboring rural town and graduated from a rural school district in Western New York. She attended public universities in Western New York, where she received bachelor's and master's degrees in childhood education and

curriculum and instruction. Joyce felt inspired to pursue teaching as a career because of her teachers growing up, particularly her high school social studies teacher. Joyce originally went to college for adolescent education in history but became more interested in the psychology of younger children; thus, she switched her focus to elementary education. Joyce had always lived in the rural region and wanted to become a teacher.

### **Douglas**

Douglas was a White man in his early 40s. He was a physical education teacher at VPS with 16 years of experience in the role. His teaching goal was to make his lessons fun and enjoyable for all his students. He was married and had four children of his own. Douglas was motivated to become a teacher because his aunts, uncles, and cousins had chosen and enjoyed the teaching profession. He enjoyed sports, coaching, and spending time with his family.

### **Wanda**

Wanda was a White woman in her early 50s. She had over 30 years of experience teaching rural students at VPS. She was a special education teacher in a self-contained classroom and had experience with integrated co-teaching classrooms. Her children graduated from the district in which she worked. Wanda originally went to college for business but switched to education after working with special needs students over the summer during her undergraduate studies. During that time, she fell in love with working with students with special needs. Wanda received her bachelor's and master's degrees from public universities in New York. She enjoyed doing puzzles, walking, reading, playing cards, boating, and spending time with friends.

### **Vicki**

Vicki was a White woman in her early 40s. She was a music teacher with almost 20 years of experience. She began teaching in a suburban school but had spent most of her career teaching

rural students at VPS. She had bachelor's and master's degrees in music education from a private university in New York. She felt motivated to pursue teaching as a career because many of her family members were educators. Vicki enjoyed reading, taking pictures, and practicing karate.

### **Alice**

Alice was a White woman in her mid-30s who worked as a self-contained special education teacher in an early elementary education classroom. At the time of the study, Alice had returned to graduate school to finish an education administration degree program. Despite starting her career as a speech therapist, Alice spent a lot of time in schools in pre-K programs and returned to school for general and special education. She felt inspired to pursue a career in education due to her experiences in school, the relationships she built with her teachers, and how they guided her through school. She loved being outside, exploring, spending time with family, and watching football.

### **Beth**

Beth was a White woman in her early 50s. She was the principal of NES and had almost 30 years of experience in education, including certifications in elementary education. She also had master's degrees in early childhood education and elementary mathematics and educational administration. Beth lived in a suburban school district where her children attended school, and she had experience serving as a school leader in urban and rural schools and elementary and high school students. At the time of the study, she had worked as a principal at NES for 5 years.

### **Tina**

Tina was a White woman in her early 40s who worked as the school psychologist at NES. She completed her undergraduate work in psychology and chose to pursue school psychology for her master's degree because she considered it a great fit and had always enjoyed working with

children and students. She received her master's degree and certificate of advanced study from a private university in Western New York. Tina enjoyed hiking outdoors and reading.

### **Stephanie**

Stephanie was a White woman in her 50s. She worked as the response to intervention (RTI) teacher at NES but had previously taught the second and fourth grades. She began her teaching career at a private Catholic school before coming to NES and had over 20 years of experience in education. She took a short hiatus from teaching to raise her children before resuming teaching when her youngest child began kindergarten. Stephanie felt motivated to get into teaching because she struggled in high school but had an impactful teacher who believed in and inspired her. She wanted to emulate this teacher and enjoyed working with struggling learners to feel confident in themselves and their positive attributes.

### **Joann**

Joann was a White woman in her late 40s. She worked as a third-grade teacher at NES and had over 20 years of experience teaching at various elementary grade levels. She had always wanted to be a teacher and played school as a child. She loved children and helping them learn. Joann enjoyed biking, walking, and swimming in her free time.

### **Helen**

Helen was a White woman in her early 50s who taught first grade at NES. She had 30 years of teaching experience in the same rural school district and had taught kindergarten and the second and fifth grades. She had children of her own studying to be teachers or desiring to be teachers in adulthood. She loved her job and students and felt blessed to have a career that she loved. Helen had always wanted to be a teacher growing up, and she had a teacher who inspired her to enter the field of education.

## **Howard**

Howard was a White man in his late 40s. He was a second-grade teacher at NES with over 15 years of teaching experience in the same rural school district. He taught second grade at the time of the study and had experience teaching first grade, third grade, and RTI reading and math. Teaching was Howard's second career. He had initially received an undergraduate degree in business but decided to return to school for a master's degree in education and a teaching certification. Howard felt inspired to enter the field of education due to his experiences as a foster parent and his desire to do more to help children in foster care.

## **Results**

This section presents the results of the data analysis organized by themes and broken down by the research questions. The themes presented are across both cases. Additionally, the section includes rural teachers' and school leaders' perceptions of the effect of school climate on student achievement in math and reading and strategies for effectively fostering the school climate domains.

## **Theme Development**

The purpose of this multiple case study was to investigate teachers' and school leaders' perceptions of the effect of school climate on student achievement in math and reading at rural schools. The teacher participants completed the EDSCLS Instructional Staff Survey via SurveyMonkey. Teacher interviews and school leader interviews occurred via various mediums chosen by the participants. After data collection, the data analysis commenced per the procedures indicated in Chapter Three. The first step of data analysis was open coding, which consisted of looking at the survey data and reading the transcripts of the teacher and school leader interviews. Open coding allows for sorting the data into themes to present relevant and meaningful

information (Creswell & Poth, 2018). The open coding process entailed segmenting and placing the data into various categories to find the emergent themes and patterns related to teachers' and school leaders' perceptions of the effect of school climate on students' achievement in math and reading.

Next, a cross-case synthesis (see Table 9) occurred to compare and contrast the cases, interpret the data, and put the data into patterns (see Miles et al., 2014; Miles & Huberman, 1994; Yin, 2018). The table presents the data from both the cases, as well as the similarities and differences between the cases and common themes (see Creswell & Poth, 2018; Mills et al., 2010). Naturalistic generalizations occurred after close analysis of the data. Data triangulation elicited in-depth narratives.

**Table 5**

*Engagement Domain Survey Results*

Survey Question Number and Statement	Strongly Agree		Agree		Disagree		Strongly Disagree	
	VPS	NES	VPS	NES	VPS	NES	VPS	NES
6. At this school, all students are treated equally, regardless of whether their parents are rich or poor.	80.0%	100%	20.0%					
7. This school encourages students to take challenging classes no matter their race, ethnicity, nationality, and/or cultural background (e.g., honor level courses, gifted courses, AP or IB courses).	40.0%	25.0%	60.0%	75.0%				
8. This school provides instructional materials (e.g., textbooks, handouts) that reflect students' cultural background, ethnicity and identity.	20.0%		80.0%	50.0%	50.0%			

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9. This school emphasizes showing respect for all students' cultural beliefs and practices.	40.0%	75%	60.0%	25.0%		
10. This school provides effective resources and training for teaching students with Individualized Education Programs (IEPs) across different languages and cultures.	40.0%	25.0%	40.0%	25.0%	20.0%	50.0%
11. This school provides effective supports for students needing alternative modes of communication (e.g., manual signs, communication boards, computer-based devices, picture exchange systems, Braille).	60.0%	50.0%	40.0%	50.0%		
12. Staff do a good job helping parents to support their children's learning at home.	40.0%	25.0%	60.0%	75.0%		
13. Staff do a good job helping parents understand when their child needs to learn social, emotional, and character skills.	60.0%	25.0%	40.0%	75.0%		
14. If a student has done something well or makes improvement, staff contact his/her parents.	20.0%		80.0%	75.0%		25.0%
15. This school asks families to volunteer at the school.	40.0%	50.0%	60.0%	25.0%		25.0%
16. This school communicates with parents in a timely and ongoing basis.	60.0%	100%	40.0%			

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17. My level of involvement in decision making at this school is fine with me.	80.0%	25.0%	20.0%	50.0%		25.0%
18. Staff at this school have many informal opportunities to influence what happens within the school.	40.0%	25.0%	60.0%	50.0%		25.0%
19. At this school, students are given the opportunity to take part in decision making.	20.0%		60.0%	25%	20.0%	75.0%
20. Administrators involve staff in decision-making.	20.0%	25.0%	80.0%	50.0%		25.0%
21. This school provides students with opportunities to take a lead role in organizing programs and activities.	20.0%		40.0%	25.0%	40.0%	75.0%
22. Students are encouraged to get involved in extra-curricular activities.	40.0%	25%	60.0%			75%

### Key Survey Findings for the Engagement Domain

Overall, teachers had positive perceptions of the engagement domain of their schools. The subdomain of cultural and linguistic competence elicited mixed responses from both NES and VPS participants. All teachers strongly agreed/agreed that “all students are treated equally, regardless of whether their parents are rich or poor.” Likewise, all teachers strongly agreed/agreed that their school “encourages students to take challenging classes no matter their race, ethnicity, nationality, and/or cultural background,” “emphasizes showing respect for all students’ cultural beliefs and practices,” and “provides effective supports for students needing alternative modes of communication.” However, there were mixed responses regarding other survey questions in this subdomain. All VPS teachers strongly agreed that their school “provides instructional materials that reflect students’ cultural background, ethnicity, and identity,” a

statement with which 50% of NES teachers agreed and 50% disagreed. There were varying perceptions at both VPS and NES regarding their school’s effectiveness for providing “resources and training for teaching students with IEPs across different languages and cultures.”

All VPS teachers and most NES teachers had positive perceptions of the relationship subdomain at their school (Questions 12–16). Most teachers viewed the school participation subdomain positively; however, some questions elicited mixed perceptions. Most teachers perceived that “administrators involve staff in decision-making.” However, 80% of teachers at VPS and 25% of teachers at NES thought their school gives students “the opportunity to take part in decision making,” whereas the remaining participants disagreed.

**Table 6**

*Safety Domain Survey Results*

Survey Question Number and Statement	Strongly Agree		Agree		Disagree		Strongly Disagree	
	VPS	NES	VPS	NES	VPS	NES	VPS	NES
23. I feel like I belong.	100.0%	50.0%		50.0%				
24. I feel satisfied with the recognition I get for doing a good job.	80.0%	50.0%	20.0%	25.0%		25.0%		
25. I feel comfortable discussing feelings, worries, and frustrations with my supervisor.	100.0%	50.0%		25.0%				25.0%
26. This school inspires me to do the very best at my job.	80.0%	25.0%	20.0%	50.0%		25.0%		
27. People at this school care about me as a person.	100.0%	25.0%		50.0%				25.0%
28. I can manage almost any student behavior problem.	40.0%		40.0%	75.0%	20.0%	25.0%		

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29. I feel safe at this school.	100.0%	75.0%	25.0%		
30. The following types of problems occur at this school often: physical conflicts among students.			80.0%	20.0%	100%
31. The following types of problems occur at this school often: robbery or theft.				100%	100%
32. The following types of problems occur at this school often: vandalism.			20.0%	80.0%	100%
33. The following types of problems occur at this school often: student possession of weapons.				100%	100%
34. The following types of problems occur at this school often: physical abuse of teachers.		20.0%	40.0%	40.0%	100%
35. The following types of problems occur at this school often: student verbal abuse of teachers.			80.0%	20.0%	100%
36. I think that bullying is a frequent problem at this school.			60.0%	50.0%	40.0%
37. I think that cyberbullying is a frequent problem among students at this school.			40.0%	75%	60.0%
38. Students at this school would feel comfortable reporting a bullying incident to a teacher or other staff.	60.0%	50.0%	40.0%	50.0%	
39. Staff at this school always stop bullying when they see it.	80.0%	50.0%	20.0%	50.0%	

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40. Staff at this school are teased or picked on about their race or ethnicity.				20.0%	25.0%	80.0%	75.0%
41. Staff at this school are teased or picked on about their cultural background or religion.				20.0%	25.0%	80.0%	75.0%
42. Staff at this school are teased or picked on about their physical or mental disability.				20.0%	25.0%	80.0%	75.0%
43. Staff at this school are teased or picked on about their sexuality.				20.0%	25.0%	80.0%	75.0%
48. This school collaborates well with community organizations to help address youth substance use problems.	40.0%		40.0%	75.0%	20.0%	25.0%	
49. This school has adequate resources to address substance use prevention.	40.0%		60.0%	75.0%		25.0%	
50. This school provides effective confidential support and referral services for students needing help because of substance abuse (e.g., a Student Assistance Program).	60.0%		40.0%	75.0%		25.0%	
51. This school has programs that address substance use among students.	40.0%		40.0%	50.0%	20.0%	50.0%	
52. I know what to do if there is an emergency, natural disaster (tornado, flood) or a dangerous	80.0%	50.0%	20.0%	50.0%			

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situation (e.g., violent person on campus) during the school day.					
53. This school has a written plan that describes procedures to be performed in shootings.	80.0%	25.0%	20.0%	75.0%	
54. This school has a written plan that clearly describes procedures to be performed in natural disasters (e.g., earthquakes or tornadoes).	60.0%		40.0%	25.0%	75.0%
55. This school or school district provides effective training in safety procedures to staff (e.g., lockdown training or fire drills).	80.0%	50.0%	20.0%	50.0%	

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**Table 7****Substance Abuse Survey Results**

Survey Question Number and Statement	Not a Problem		Small Problem		Somewhat a Problem		Large Problem	
	VPS	NES	VPS	NES	VPS	NES	VPS	NES
46. At this school, how much of a problem is student drug use?	100%	100%						
47. At this school, how much of a problem is student use of electronic cigarettes?	100%	100%						
48. At this school, how much of a problem is student use of tobacco (e.g., cigarettes, chew, cigars)?	100%	100%						
49. At this school, how much of a problem is student alcohol use?	100%	100%						

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*Note.* These substance abuse survey questions are part of the school climate domain of safety.

### **Key Survey Findings for the Safety Domain**

Overall, teachers at NES and VPS perceived that their school positively fosters the school climate domain of safety. The responses to the emotional safety subdomain questions were intriguing. All nine teachers strongly agreed/agreed that they feel like they belong at their school. Interestingly, 100% of VPS teachers strongly agreed they “feel comfortable discussing feelings, worries, and frustrations with [their] supervisor.” Among NES teachers, 50% strongly agreed, 25% agreed, and 25% strongly disagreed. Participants’ perceptions about the physical safety domain were positive. One hundred percent of teachers strongly agreed/agreed that they feel safe at their school. Also, all nine teachers strongly disagreed/disagreed that “physical conflicts among students,” “robbery or theft,” “vandalism,” “student possession of weapons,” and “student verbal abuse” occur at their schools often.

The teachers had a very positive perception of the bullying/cyberbullying subdomain at their school (Questions 36–43). Every teacher strongly disagreed/disagreed that bullying and cyberbullying were problems at their school. All nine teachers indicated that substance abuse is “not a problem” at their school (see Table 7). An interesting finding regarding the emergency readiness/management subdomain was that all teachers strongly agreed/agreed that their school “has a written plan that describes procedures to be performed in shootings.” However, all VPS teachers strongly agreed/agreed that their school “has a written plan that clearly describes procedures to be performed in natural disasters.” In contrast, 75% of NES teachers disagreed with this statement.

**Table 8***Environment Domain Survey Results*

Survey Question Number and Statement	Strongly Agree		Agree		Disagree		Strongly Disagree	
	VPS	NES	VPS	NES	VPS	NES	VPS	NES
56. This school looks clean and pleasant.	100%	75.0%		25.0%				
57. This school is an inviting work environment.	60.0%	75.0%	40.0%	25.0%				
58. My teaching is hindered by poor heating, cooling, and/or lighting systems at this school.					40.0%	50.0%	60.0%	50.0%
59. My teaching is hindered by a lack of instructional space (e.g., classrooms) at this school.					40.0%	25.0%	60.0%	75.0%
60. My teaching is hindered by a lack of textbooks and basic supplies at this school.					60.0%	50.0%	40.0%	50.0%
61. My teaching is hindered by inadequate or outdated equipment or facilities at this school.			20.0%		20.0%	25.0%	60.0%	75.0%
62. The students in my class(es) come to class prepared with the appropriate supplies and books.	20.0%	75.0%	60.0%	25.0%	20.0%			
63. Once we start a new program at this school, we follow up to make sure that it's working.			100%	75.0%		25.0%		
64. The programs and resources at this school are adequate to support students' learning.	40.0%	25.0%	60.0%	50.0%		25.0%		

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65. Teachers at this school feel responsible to help each other do their best.	80.0%	25.0%	20.0%	50.0%	25.0%
66. Teachers at this school feel that it is a part of their job to prepare students to succeed in college.	20.0%	25.0%	80.0%	75.0%	
67. The programs and resources at this school are adequate to support students with special needs or disabilities.	40.0%	25.0%	60.0%	75.0%	
68. This school provides the materials, resources, and training necessary for me to support students' physical health and nutrition.	40.0%	25.0%	60.0%	50.0%	25.0%
69. This school places a priority on making healthy food choices.	40.0%	25.0%	60.0%	50.0%	25.0%
70. This school places a priority on students' health needs.	60.0%	25.0%	40.0%	75.0%	
71. This school places a priority on students' physical activity.	80.0%	25.0%	20.0%	75.0%	
72. This school provides quality counseling or other services to help students with social or emotional needs.	100%			75.0%	25.0%
73. This school provides the materials, resources, and training necessary for me to support students' social or emotional needs.	60.0%		40.0%	75.0%	25.0%
74. This school places a priority on addressing students' mental health needs.	100%			100%	

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75. This school places a priority on teaching students strategies to manage their stress levels.	80.0%		20.0%	75.0%	25.0%
76. This school places a priority on helping students with their social, emotional, and behavioral problems.	100%			75.0%	25.0%
77. Staff at this school are clearly informed about school policies and procedures.	80.0%		20.0%	100%	
78. Staff at this school recognize students for positive behavior.	80.0%	25.0%	20.0%	75.0%	
79. School rules are applied equally to all students.	80.0%	25.0%	20.0%	75.0%	
80. Discipline is fair.	60.0%	50.0%	40.0%	50.0%	
81. This school effectively handles student discipline and behavior problems.	60.0%	25.0%	40.0%	75.0%	
82. Staff at this school work together to ensure an orderly environment.	80.0%	75.0%	20.0%	25.0%	

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### **Key Survey Findings for the Environment Domain**

Teachers at VPS and NES had positive overall perceptions of the school climate domain of environment domain at their schools. The perceptions regarding their schools' physical environment were overwhelmingly positive. Every teacher strongly agreed/agreed that their school "looks clean and pleasant" and "is an inviting work environment." All teachers strongly disagreed/disagreed that their "teaching is hindered by poor heating, cooling, and/or lighting

systems,” “a lack of instructional space,” and “a lack of textbooks and basic school supplies.” Eight of the nine teachers had positive perceptions of their school’s instructional environment. All VPS teachers and all but one NES teacher strongly agreed/agreed that “once we start a new program, we follow up to make sure it’s working,” “the programs and resources at this school are adequate to support students’ learning,” and “teachers at this school feel responsible to help each other do their best.” Teachers at both schools had positive perceptions of the physical health subdomain in their schools. All nine participants strongly agreed/agreed their school places a priority on “students’ health needs” and “students’ physical activity.” The mental health subdomain was viewed positively by teachers at VPS and NES. One hundred percent of teachers at both schools strongly agreed that their school “places a priority on addressing students’ mental health needs.” Perceptions of the subdomain of discipline were positive, as every teacher strongly agreed/agreed with the discipline survey questions (Questions 77–82), including that “discipline is fair” and “school rules are applied equally to all students.”

### **Overview of the Themes**

Building strong relationships, social-emotional learning, empowering leadership, differentiation, and positive reinforcement were the themes identified across both instrumental bound cases by teachers and school leaders. The cross-case synthesis presented the themes across both cases (see Table 9). The following in-depth narratives emerged from data triangulation.

**Table 9***Cross-Case Synthesis*

Themes	Neptune Elementary School							Venus Primary School					
	NES School Leaders		NES Teachers					VPS School Leaders			VPS Teachers		
	Cynthia	Margaret	Joyce	Douglas	Wanda	Vicki	Alice	Beth	Tina	Stephanie	Joann	Helen	Howard
Building Strong Relationships	X	X	X	X	X	X	X	X	X	X	X	X	X
Social-Emotional Learning	X	X	X	X	X	X	X	X	X	X	X	X	X
Empowering Leadership	X	X	X	X	X	X	X	X	X	X	X	X	X
Differentiation	X	X	X		X	X	X	X	X	X	X	X	X
Positive Reinforcement	X	X	X	X	X	X		X	X	X	X		X

**Building Strong Relationships**

Building strong relationships was a common theme identified by the participating school leaders and teachers at VPS and NES. Some of the survey and interview questions related to relationships; however, building strong relationships was a naturally and frequently occurring topic. The participants described how their schools focused on strong relationships and the influence of relationships on the domains and subdomains of school climate and academic achievement. Helen said, “I feel like it’s super important to have those personal relationships [and] knowing your students, knowing their families, [and] knowing where they come from.” Beth succinctly stated, “Everything starts with relationships.”

The participants from both schools reported building relationships via different strategies and social-emotional learning (SEL). According to Helen, such strategies included standing outside the classrooms and saying “Good morning” to students, calling the students by name, and asking students about their home lives to “relate positively with students.” She emphasized the

importance of fostering and encouraging students to build positive teacher–student relationships. Stephanie said the teachers at NES did a great job of knowing their students “simply from interactions day in and day out” and “knowing [students’] families, knowing where they live, [and] knowing their hobbies.”

Relationships were a subdomain of the engagement domain of the EDSCLS (2019) school climate model. The participating teachers provided positive responses to the questions related to relationships (Questions 12–16) on the school climate survey (see Table 5). In the school leader and teacher interviews, the participants frequently voiced the importance of relationships for school climate and how this subdomain of school climate improved other subdomains and domains of school climate. Cynthia described relationships as a means of improving the school climate domain of engagement, saying, “If we can build positive relationships, I think students are more willing to engage with their teachers and do the things their teachers are asking them to do.”

All the participants posited that relationships have an influence on emotional safety. Vicki stated, “I would argue those strong [teacher–student] relationships are the basis for feelings of emotional safety.” Beth said, “The kids learn that their teacher is a trusted adult and feel safe and secure with them.” Helen said that teachers who related well with and had good relationships with their students better identified their social-emotional needs. Joyce noted the staff at VPS encouraged students experiencing struggles, helping them advocate for themselves, supporting them, and validating and taking them seriously. Joyce described using relationships to foster emotional safety, as students who felt comfortable were more likely to take risks. According to Joyce, positive teacher–student relationships at the school enabled accurate data collection for effective differentiated instruction:

I think that if students feel comfortable with their teacher and that they can take risks in the classroom, they're more likely to be able to pay attention and offer information. And when they feel comfortable offering genuine information and taking risks and okay with getting things wrong, I think that teachers are able to get a more accurate assessment of how their students are doing and tailor instruction based on that. I think that building that trust and relationship with students is so important to getting that accurate information and data so you can move forward and land instruction accordingly.

Alice shared how teacher–student relationships at the school enabled students to take academic risks (an important aspect of emotional safety). According to Alice, the relationships enabled the teachers to understand students' needs and provide guidance:

Without [teacher–student] relationships, kids may not be willing to take as big of risks when it comes to their academics. I think they won't be as willing to try harder things without having built those relationships. I think the relationship is key when you are looking at a kiddo who might be struggling in some areas. If you have already built that relationship with that kiddo, then you can definitely help them on a different level than if you hadn't taken the time to build that relationship.

Wanda also described the importance of fostering relationships with students to support their social-emotional needs (emotional safety):

[Teachers] really are encouraged to get involved with the kids, [to] get to know our students, spend some time, talk with them individually, [and] be real good active listeners. [Teachers should] know what's going on in [their] students' lives outside of school, showing interest [and] keeping open communication with the family. I feel that all of that helps support the social-emotional piece of it.

Similarly, Stephanie described teacher–student relationships as having a positive influence on students’ mental health: “Connection with the teacher is really what helps kids with their social and emotional, their mental health.” Vicki also discussed building relationships to improve student behavior (discipline) and prevent bullying.

The participants perceived those relationships had both direct and indirect influences on academic achievement in math and reading at their schools. According to the participants, the relationships had a positive influence on students’ effort, perseverance, behavior, and other subdomains of school climate, which, in turn, contributed to academic achievement. Helen said, “All research shows that if you can relate to students effectively, their scores in math, reading, writing, [and] their achievement will increase.” Wanda also described the correlation between teacher–student relationships and achievement, saying, “I would definitely say [teacher–student relationships] have a positive effect [on academic achievement in math and reading]. The better your relationship is with the child, the more successful they are.” Tina posited that improved teacher–student relationships correlated with improved academic achievement in math and reading:

My perception [is], the better the student–teacher relationship, the more successful a child is academically and at everything. If you feel your teacher is someone you want to work with and work for, you’re certainly going to put more work into the subject areas. So, the better the relationship, the better the academic success.

Joyce expressed that learning (and thus academic achievement) did not occur without positive teacher–student relationships: “Students really need to be able to talk to their teacher and build those relationships to feel comfortable and trust—that’s really the only way that learning’s going to occur.” Similarly, Howard suggested teacher–student relationships influence academic

achievement because students must respect and trust their teachers to learn from them.

Douglas stressed the importance of improving academic achievement through positive teacher–student relationships and increased effort. He said, “If you have a good relationship with your teacher, you try extra hard. If you’re trying a little bit more, you’re going to do better in the class.” Vicki also reported that strong relationships resulted in better student behavior, motivation, and perseverance at school:

I see student behavior improving [with relationships]. I also see kids who are more able to turn their focus to learning, as well as kids more willing to persevere through learning difficulties because they have good relationships with their teachers. These things, in turn, help academic achievement.

Margaret echoed these perceptions, saying, “The student wants to please the teacher and give their best effort, and “the best learning takes place when there are relationships.”

Cynthia also noted that positive relationships correlated with increased effort and academic achievement:

If we have those positive relationships and we know each other well, and we trust each other, we’re willing to work hard for each other. Through those relationships, we build that level of care that leads us to want everyone to be successful and do what we can to help them to be successful. So therefore, that impacts student achievement.

Stephanie shared that the students felt motivated to accomplish their tasks and finish their work by building relationships and fostering connections with their teachers. Vicki affirmed that teacher–student relationships influenced academic achievement and resulted in improved discipline and student behavior. She said, “Kids who are more able to turn their focus to learning, as well as kids more willing to persevere through learning difficulties because they

have a good relationship with their teacher [have better] academic achievement.”

Alice described building strong relationships to indirectly improve academic achievement through emotional safety:

I think it kind of goes back again to that relationship piece and [students] having their needs met. If [students] are not able to be vulnerable and open in the classroom, then it kind of can have a hindrance on their willingness to tackle harder things and accomplish higher academic skills. I think [strong relationships are] a big piece.

Likewise, Joann said, “If the students feel safe in their classroom with a compassionate teacher, they will be more successful academically.”

### **Social-Emotional Learning (SEL)**

Social-emotional learning is “the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions” (CASEL, 2015, p. 5). SEL was a theme that emerged from all participants’ responses. The participants reported using SEL in their schools and fostering social-emotional development to positively influence the school climate domains and academic achievement. Eight of the nine teachers who responded to the survey agreed to the response, “This school provides the materials, resources, and training necessary for me to support students’ social or emotional needs.” School leaders and teachers from both schools reported their schools had the following SEL practices: dedicated SEL time, restorative justice practices, circles, check-ins, a growth mindset, character education, social-emotional curriculum, modeling, and counseling.

NES School Principal Beth stated every teacher used SEL time to allow the students to

share stories and facts about themselves and build respect between teachers and students.

Similarly, Joann described daily SEL as a way to foster teacher–student relationships. Howard reported focusing on SEL and considered professional development in SEL useful for “learning [the] importance [of] building relationships. It starts with relationships.”

VPS school leaders Cynthia and Margaret described focusing on SEL and wellness and frequently using restorative practices, such as morning check-ins and restorative justice circles. The leaders perceived these practices helpful for improving relationships (engagement domain) because they required dialogue. Margaret said, “The more that students and teachers are talking to each other and learning about each other, they’re building those relationships.” She continued, “The best learning takes place when there are relationships,” noting that social-emotional development via circles and check-ins was a way to foster teacher–student relationships. She said, “Teachers have a sense of any challenges the student is experiencing.”

The teachers at VPS shared similar sentiments. Wanda described using SEL circles to foster teacher–student relationships and “get to another level with the kids and bring that bonding in.” Joyce attended an SEL professional development training on circles and learned: Students really need to be able to talk to their teacher and build those relationships in order to feel comfortable and trustful, and that’s really the only way that learning’s going to occur. So I do circles every morning. We’re strongly encouraged to do that.

Vicki noted school counselors and restorative SEL practices had a positive influence on relationships:

Our school counselor is very active in the classrooms and very good at what she does.

She has a variety of proven strategies based on restorative justice that have really made a difference in these relationships since she’s been here at the school.

The participants stated that social-emotional practices, including SEL and restorative justice circles, were part of the cultures of both VPS and NES. Additionally, the teachers perceived SEL as a way to foster strong teacher–student relationships.

According to the participants, SEL was a common practice for ensuring and improving emotional safety at VPS and NES. VPS school leaders Margaret and Cynthia described using social-emotional practices to promote emotional safety. Cynthia discussed using SEL through circles:

[SEL] builds an emotional safety, so students understand that, through the circle experiences and the dialogue that their teacher’s engaged them in regularly in their classrooms, that [the circle] is a safe space to have conversations, share your emotions, and talk about things that you’re bringing to school with you.

The VPS teachers also focused on meeting students’ social-emotional needs via SEL learning. Alice stated,

VPS is big on circles and doing them daily as a preventative measure to get kids comfortable in their classroom and get them comfortable expressing their emotions and taking the time to see their classmates in a vulnerable state, as well as themselves.

Along with other participants, Alice described the school counselor as a resource for promoting SEL and emotional safety by fostering “a sense of safety and security in the school.”

The NES participants noted using daily social-emotional check-ins and counselors to foster emotional safety at the school. Tina reported the daily social-emotional check-ins as “safe for kids to express how they’re feeling and have a chance to talk about that.” She elaborated that the school counselor worked with children requiring more SEL support. Howard also underscored the importance of using the school counselor as a resource for fostering emotional

safety.

Stephanie, Joann, and Howard referred to their social-emotional curriculum as the key component in fostering emotional safety. Stephanie described the SEL curriculum as “real direct, systematic instruction on boundaries and advocating for yourself and all of those things.”

Howard said, “Once you start teaching the social-emotional curriculum, you realize how important it is.” Stephanie explained that the teachers set the tone of SEL in the classroom and sought to model positive attributes so the students could pick up on their teachers’ behaviors.

Helen said that SEL had become a much bigger focus than in years past and that she had additional books and resources that she could share with parents to help with their emotional needs.

The school leader and teacher participants from both schools perceived SEL as a strategy for mitigating bullying. Cynthia explained that schools supportive of social-emotional development enable everyone to have an “understanding of what has happened and how we’re going to resolve it and move forward in a better way.” Margaret and Alice described the benefits of using the social-emotional practice of circles to resolve student problems and bullying. Margaret said that “students can talk through a problem/incident” using restorative justice circles. Similarly, Alice said,

I think the circles [have] a big impact on the bullying piece. By taking part in the circles, the kids can kind of see that there [are] other kids in the room [who] are similar to them and [whom] they may not have known that otherwise. Just by having those conversations and having that open dialogue, it seems that the kiddos can kind of see each other in a different light than they may have in the past. I think that helps keep the bullying situation at bay, and when things do arise, having that connection with the counselor and

with the principal and tackling those [issues] in a more restorative way has been beneficial.

Tina suggested that “social-emotional work and learning” is a way to prevent bullying. Her NES colleagues expressed similar sentiments. Beth, Tina, Joann, and Howard emphasized the importance of using the social-emotional curriculum to prevent or resolve problems, such as bullying and violence. Similar to Margaret, Beth and Tina considered the social-emotional work of the school counselor effective for preventing or resolving bullying.

The participants affirmed they used social-emotional learning to promote the positive mental health of their students. Cynthia said the social-emotional practice of character education “really closely connects to promoting positive mental health and well-being that we do together as a school community every morning.” Douglas said the dedicated social-emotional time in school was “a big part of promoting mental health here and identifying a kid who might be struggling with their mental health.”

The NES school leaders and teachers brought up how the social-emotional curriculum was a way to foster positive mental health. Helen reported using the SEL curriculum to promote positive mental health, noting that teachers used the SEL curriculum to plan what they “needed to implement in terms of social and emotional health.” Tina also brought up the SEL curriculum and the school counselor when asked how NES focused on positive mental health:

That social-emotional learning curriculum that they do, [like] checking in with the kids [and] how are they doing, is the foundational piece of [promoting mental health]. Also, our school counselor is someone who’s visible. [The counselor is] not someone who’s mysterious to the kids—they go into all the classrooms teaching lessons, and they’re someone that’s available. [Students] know there’s someone available [if] they need

further support.

The participants also reported using the school staff as an SEL avenue to promote mental health. Joann described teachers promoting mental health at NES through “social-emotional learning [and] compassionate teachers and leaders the kids [can] come to.” Like his colleagues, Howard succinctly stated, “Counselors can help with mental health.” VPS teacher Vicki described the school counselor as an important SEL resource for “proactively creating community and supporting students’ (and staff’s) mental health.” According to Vicki, the school counselor “keeps tabs on kids who seem to be struggling and learns as much as she can about family situations and needs in order to support students’ mental health.”

The participants used SEL to foster physical safety and positive instructional environments. Tina described the social-emotional curriculum as an avenue for fostering physical safety at NES: “We’re working on respecting each other, treating each other kindly, [acting with] responsibility, [and] all those pieces that go toward reducing measures of violence.” Cynthia said SEL and restorative practices “help students understand how their actions make somebody else feel and promote physical safety.” Vicki considered SEL a way to foster positive instructional environments where adults “consciously model positivity and teach positive responses, as well as kindness, above all when dealing with others.”

The participants from both schools considered SEL fundamental for helping students achieve academically. Joyce eloquently expressed a sentiment similar to most of the participants’ perspectives of SEL and academic achievement:

If a child does not feel emotionally sound or cared for, they’re just not going [to succeed]. The first thing on their mind is not going to be reading or math, right? [Feeling cared for] comes first. If [students are] afraid or worried, they’re really not going to be completely

focused on learning. I think that's where those social-emotional skills come in, and we teach [those skills] explicitly.

VPS school leader Margaret voiced a similar sentiment and said, "Students can't focus on academics when they have social-emotional or behavioral concerns going on in their lives." NES teacher Helen stated, "I definitely think that if they're not ready, if they're not there [at school] ready to learn, [and] if they're not socially [or] emotionally ready, they are not going to achieve." Howard stressed the importance of SEL and said, "If you're worried about something else, that's taking your eyes off academics."

### **Empowering Leadership**

Empowering leadership involves "sharing power with a view toward enhancing employees' motivation and investment in their work" (Zhang & Bartol, 2010, p. 107). Empowering leadership was a common theme that emerged from the perspectives of both schools' participants. The trickle-down effect is an aspect of empowering leadership (Byun et al., 2020). In this study, the participants said school leaders set the tone for school climate and that their leadership had a trickle-down effect influential and empowering to teachers and other staff. In turn, the trickle-down effect influenced school climate and academic achievement in math and reading.

VPS school leader Margaret stated, "Administration sets the school climate, and it trickles down from there. [The] leadership sets expectations and building processes [so] everyone [is] on the same page." NES school leader Beth suggested school climate starts with leadership and that school leaders should set the tone for the climate and empower teachers and students:

[Leadership] is everything. The leader will set the tone for the climate in the school. It's

how a leader carries themselves; it's their mindset. Even on our hardest and worst days, [we leaders] still have to come in and be the cheerleader and optimistic [and say], "We can do this." [Leaders should] have no tolerance for nonsense [or] negativity. [They should] empower teachers to be leaders among one another and empower kids to be in control of themselves. It really starts with the style of the leader—that will set the tone for the building.

Tina also described school climate as starting with the leadership and trickling down to the teachers and e students. She discussed teachers feeling supported and empowered by leadership:

I think leadership is really [the] key to school climate. That's where it starts. [Leadership] trickles down to the teachers and [indicates if] the teachers feel supported by their administration. Do [the teachers] feel like [the school is] a safe place for them to go and discuss concerns that they might have? [Then], if the teachers feel positively about their working environment, that's going to trickle down to the kids as well.

The teachers described how their school leaders influenced the school climate via empowering leadership and the trickle-down effect. Joyce suggested school leaders could empower others by remaining open to their thoughts and ideas. She indicated the support teachers received from school leaders trickled down to her students:

I think that leaders, whether you're talking about school building [leaders] or people on committees, if they're open-minded and open to people's opinions and new ideas and hearing each other out [and] if you keep the same goal in mind—what's best for students, what's best for the school as a community—that's what's really going to keep students achieving what they need to be achieving. If the teachers feel supported, then so will students. It kind of carries over.

Suitably, all VPS teachers agreed (20% strongly agreed, 80% agreed) that “administrators involve staff in decision making,” while 25% of NES teachers strongly agreed, 50% agreed, and 25% disagreed. Douglas described great leadership as school leaders supporting teachers “with whatever [they] need as far as materials or advice or whatever it might be.” Wanda perceived leadership as having an influence on the school climate through the adults and children (trickle-down effect), interpersonal relationships, and community connections (aspects of empowering leadership). Wanda said,

[Leadership] absolutely has a definite effect on school climate. The leaders [are] not just the principals. I mean, there [are] many people in the building who are considered leaders. How those people approach issues in the building, approach interpersonal relationships in the building, [and] promote connections with the community give the building a particular atmosphere [or] environment that affects adults [and] children. You want [the school] to be a welcoming place that people want to come to work at.

Similarly, Vicki said, “Leadership might be the most important factor in overall school climate.” According to Vicki, the leader sets the school climate of the building. She illustrated the trickle-down effect of leadership, saying, “The tone of the leader and the example that person sets for the rest of the building through their words and actions.” Vicki suggested that leaders influence the school climate, which, in turn, influences academic achievement, stating, “The leader intentionally [should have] a vision for and develop a school climate that is conducive to academic achievement.” She elaborated on empowering leadership and the influence of leaders on the school climate by saying, “The leader empowers staff and students to be involved in the creation and maintenance of school climate.”

Alice also perceived that leadership “definitely affect[s] school climate.” She suggested

authoritative leaders with leadership styles antithetical to empowering leadership could adversely affect school climate:

If you have a leader [who] is authoritative and negative and unwilling to be a team player, I think that really can have an effect on how teachers feel in the building and how willing they are to go above and beyond, which we frequently see teachers doing anyways.

Alice also described the trickle-down effect of leadership when she said, “When there’s a lack of good leadership, that really is kind of a domino effect, starting with the teachers and staff feeling the climate change [first].”

The teachers at VPS further supported the theme of empowering leadership and the trickle-down effect. Joann said, “The administrator sets the mood for the building.” Stephanie also described the trickle-down effect of empowering leadership on school climate and teachers’ perceptions:

Leadership influences [school climate] a lot. I’m going to say leadership does affect [school climate] because it directly affects the teachers. If there’s unclear messaging [and] confusion, [the] same thing [occurs in] the classroom. [The leader is] managing us, and we [teachers are] managing [the students]. If we [teachers are] confused and taxed and stressed, that trickles down to us [and] to our students.

If we are well-run, well-organized, [and] well-managed [and] given positive reinforcement [and] things are humming along, that trickles down, [and] we [teachers] feel great. We know what we’re doing. We have goals. We feel good about the direction in ourselves as teachers, and that bleeds down into the classroom.

Helen also discussed the influence of leadership on school climate:

A good leader gives you the opportunity to explore things [and allows you] to teach to the best of your ability and how you see fit. But then, [a good leader is] also who you can go to and ask for help when you need it without feeling threatened. A [good] leader is approachable and allows you the freedom to teach and explore and continue to change without feeling threatened.

The attributes Helen described aligned with the principles of empowering leadership.

Noteworthy, eight of the nine teachers from both schools strongly agreed or agreed to the statement, “I feel comfortable discussing feelings, worries, and frustrations with my supervisor.”

Howard also said that school climate “starts with a leader.” He spoke about his personal experience of the effects of leadership on school climate by describing the aspects of empowering leadership and the trickle-down effect. Howard reported going to his school leaders for support and stressed the need for building relationships with school leaders because he wanted to go to them if he had issues, needed help, or wanted feedback. He listed respect and trust as necessary elements of leadership for giving and receiving ideas between leaders and teachers, stressing that leadership starts at the top and trickles down.

The school leader and teacher participants perceived empowering leadership and the trickle-down effect as influencing academic achievement in math and reading. VPS Principal Cynthia said,

I think leadership affects student academic achievement in math and reading. I know from my own experiences and reading research that my impact is greatest through teachers, right? The more I can empower teachers to be the best they can be, the more impact I’m going to have on student achievement in math and reading. Just like teachers, my expectation is that [teachers are] looking at students as individuals and knowing the

strengths of their students. I'm empowering them in the classroom and want them to feel supported so they can empower their students and make sure their students feel supported.

Margaret described the trickle down-effect when she said school leaders affect "expectations and building processes [and], therefore, affect things such as interventions, referrals, and progress monitoring, [which] help student achievement in math and reading." Tina also discussed the trickle-down effect from leadership to school climate to academic achievement in math and reading:

I think probably that same trickle-down effect [influences academic achievement in math and reading]. If [the school is] a positive place to be because the administration has created and fostered that positive climate, that's going to come across [to] the teachers, and that is going to come across [to the students] from the [teachers]. A positive place to be is just going to promote better learning.

The VPS teachers' responses showed the theme of empowering leadership and the trickle-down effect regarding school leaders and academic achievement. Douglas believed that the school leader can positively influence academic achievement by empowering and supporting the teacher and meeting their needs regarding "discipline, management, materials, and curriculum." Joyce explained how school leaders influence academic achievement via empowering leadership and the trickle-down effect:

If teachers feel supported, students feel supported, those positive things are reinforced [and] encouraged, and you just feel like someone has your back, then I think that students are going to feel the same way, and the learning is going to be great. I think a lot of learning will occur, and yeah. I think it just kind of all affects each other.

The NES teachers also noted the impact of empowering leadership and the trickle-down effect on academic achievement. Stephanie and Howard asserted that school leaders affected academic achievement via the trickle-down effect because they selected the teachers' curricula, textbooks, and programming. In discussing how school leaders affect academic achievement via empowering leadership, Howard described a situation when his principal listened to and helped him support a student for whom he advocated. According to Howard, his school leaders influenced academic achievement through the trickle-down effect by supporting the teachers. He said, "The programs and the conversations we have, the professional development, the [work] they put out, and their support [for] us definitely has [had] an impact on what we're putting in front of the kids and to what degree [it] is successful."

Helen reported fostering increased achievement in math and reading through several attributes of empowering leadership: permission, encouragement, freedom, and safety. She said, "I think if you're given the permission [and] encouragement to stay up-to-date on the newest research and the newest things that are happening in education, I think student achievement definitely is higher than if you are not encouraged or don't feel safe enough to explore new research and new methods and new trends."

Joann also described the trickle-down effect by saying, "Teachers who feel valued will create better learning environments for their students." Similarly, Margaret said, "Happy staff makes for happier students [who are] better ready to learn."

Vicki and Tina further explained the interconnected nature of leadership, school climate, and academic achievement: leaders influence school climate, which, in turn, influences academic achievement. Tina noted the results of "the same trickle-down effect" of school leaders influencing school climate and academic achievement. She said,

If [the school is] a positive place to be because the administration has created and fostered that positive climate, that's going to come across for the teachers, and that is going to come across [to the students] from the [teachers]. A positive place to be is just going to promote better learning.

Vicki also suggested leaders can indirectly influence academic achievement in math and reading. She described leadership as fundamental to school climate, as leaders set the tone and empower staff and students, so the "school climate is conducive to academic achievement."

### **Differentiation**

Differentiation was another theme that emerged from the participants' responses about school climate and academic achievement. The participants considered effective differentiation an effective way to improve school climate and academic achievement. Culatta (2016) defined differentiation as "learning experiences in which the approach or method of learning is adjusted to meet the needs of individual students, focusing on the 'how' of personalized learning" (para. 10). In this study, the participants from both schools reported using differentiation to meet the needs of culturally or linguistically diverse students. When asked about cultural and linguistic competence, Beth explained the importance of using differentiation to meet students' needs by saying,

You, [as a teacher], really have to get to know the student and [do] a lot of small group [and] focused instruction to figure out where the challenges lie. [Instruction should be] really differentiated and individualized [and] tailored to the [student's] need. How proficient are the families? How proficient is the student? What needs to be translated? What needs to be adopted? What is the goal?

Joyce also discussed cultural and linguistic competence and suggested using differentiation to

meet students' needs on their level:

I think that if students are struggling [and] if there's a barrier—any barrier, whether it's social, emotional, familial, or linguistic—I think they're going to struggle.

[Differentiation] is just meeting the child [and] meeting their needs where they are [in] their hierarchy of needs so they can access the learning. I think that when teachers collaborate, work together, and seek out experts in that field, that's the best way to go about [differentiation] so that [the] child can have access to the material and learn at an equal level.

Helen stressed the importance of differentiation and discussed using read-alouds and libraries to expose students to “all sorts of different cultures.” Accordingly, 100% of VPS teachers strongly agreed/agreed their school “provides instructional materials (e.g., textbooks, handouts) that reflect students' cultural background, ethnicity and identity,” while 50% of NES teachers agreed and 50% disagreed. Cynthia voiced the importance of using differentiation to meet students' needs to foster a positive instructional environment. The participants considered a positive instructional environment an important part of academic achievement. Cynthia said,

I think that [differentiation] probably goes back to looking at our students as individuals.

We need to understand for each of our students, “What are their strengths? What are their areas of growth? What are their areas of need?”

When discussing the school climate subdomain of instructional environment, Alice detailed how her school provided teachers with resources to use, as well as “the freedom to know our students best and what's going to work best with our students.” Alice described a time when she wanted to use a more tactile math program with her students, and her suggestions “was very well received by administration, and they supported it,” allowing her “to utilize [the] programs” the

most beneficial for her students. She elaborated on the influence of instructional environment and differentiation on academic achievement in reading:

I think [differentiation] allows you to have the opportunity to cater to the students you have in your classroom. You don't need to fit everyone in the same box. Having the ability to kind of cater to those students can affect their academics in a more positive way than just [a mentality of] teaching [something] because we were told we have to teach [it].

Howard reported having several students in his classroom with "heavy academic needs" and provided an example of differentiating instruction to meet the needs of one particular student. Initially, he and the classroom aide had tried "to problem-solve and figure out what [we] were going to do to get this student to be successful." The principal came into the classroom to observe this student several times after Howard expressed his concern. Howard described collaborating with the principal, teacher aide, school psychologist, and special education teachers to differentiate and meet the academic needs of this student. Correspondingly, eight of the nine teachers in this study strongly agreed or agreed to the statement, "Teachers at this school feel responsible to help each other do their best."

Wanda also reported how the school staff differentiated instruction to meet the needs of students, whether they need extra help and support or show signs of giftedness:

The classroom teachers and our counselor are all very good at knowing which students need that encouragement [and] that extra support, or [need support] due to deficits, or those students who need to be challenged and pushed in a particular direction [by] giving them more responsibility or getting them involved in activities for enrichment and gifted areas.

Joyce also discussed the impact of participation on student academic achievement in math and reading. She explained the importance of using differentiation to meet students' needs to improve participation by saying,

If [students] are not so engaged, then it's hard for the teacher to assess what they need. That's when the teacher jumps in and differentiates and modifies what they're doing so [the] child feels like they can engage and can participate in the lesson.

Vicki stressed the importance of using differentiation to meet students' needs regarding the school climate domain of discipline:

Discipline is as needed and tailored to each individual situation and student. We try to prevent issues of discipline with strong classroom management in every room in the building. Discipline is private and involves families to the extent possible, and action plans are created and followed up on.

Tina also discussed fostering emotional safety using SEL check-ins and the school counselor. However, she also used differentiation to meet the needs of students in need of additional social-emotional help. Tina said, "If the child needs more attention, in that they need [to go see] somebody individually or work on certain things, that support is there."

Alice explained the importance of differentiating instruction and meeting students' needs regarding the domains of cultural and linguistic competence and emotional safety. She described the influence of differentiating instruction and meeting students' needs on academic achievement:

I'm a firm believer [that] kids won't do well in school unless their basic needs [are] met, and I think that a basic need [is] feeling heard, feeling a part of the group, [and] feeling like they're a part of the bigger picture. I think without that, you maybe see some lack of

achievement if you don't have those basic needs met. I think it's important to have those needs met so kiddos can achieve at the highest level that they're able to.

### **Positive Reinforcement**

Positive reinforcement “means presenting or providing a stimulus following a behavior that increases the occurrence of that behavior in the future” (Williams, 2021, para. 4). The theme of positive reinforcement emerged from the data. The participants from NES and VPS considered positive reinforcement an important means of maintaining a positive school climate and academic achievement. All the teachers strongly agreed or agreed to the survey item, “Staff at this school recognize students for positive behavior.” Joyce noted the effectiveness of positive reinforcement when explaining the influence of leadership on academic achievement.

Douglas discussed using positive reinforcement to foster a positive instructional environment at VPS, where the staff “[do] a good job with giving praise to kids who improve or have done a great job.” Similarly, Joyce asserted the staff at her school engaged in “lots of positive reinforcement” to foster a positive instructional environment. Joyce used Class Dojo in her classroom so students could earn prizes, and she chose a “champ of the week” among the students. According to Joyce, VPS provided school-wide positive office referrals for students and staff who made the school a “great place to live and learn.” She said the principal surprised the students or staff with positive referrals:

[The principal and staff make] a great big deal out of [receiving a positive office referral]. It's a lot of fun, and then we also announce [the referrals] at the celebration each month as well. There's a lot of positive reinforcement, [and] I think that really takes attention off of the negative stuff [so] you start to see more of that positive stuff, which is great.

Wanda discussed a positive instructional environment through positive reinforcement by

describing a school-wide celebration:

We have a monthly celebration where we celebrate achievement in behavior, as well as academics. Teachers can submit students' names for academic achievements and positive office referrals. I think everyone's always looking for an opportunity to praise the students and celebrate their academic achievements. I feel that between recognition, verbal recognition, [and] just somebody stopping in and saying, "Hey, I heard you did a great job," I think that that's highly encouraged. We also have times when [students are] recognized through the whole school.

Joyce also brought up the school-wide celebration used to foster participation:

We do a celebration every month [to] celebrate students. It's virtual this year, but [the celebration is] kind of like a pep rally where we celebrate students' achievements each month and give a lot of rewards out for just being good students, being good citizens, and all of that. It really is a family feel.

Douglas described the school celebrations as a means of fostering teacher–student relationships at VPS, as the staff “give out awards to kids who have done a good job throughout the month.”

Vicki also considered the positive office referrals and the school-wide celebration as strategies for fostering teacher–student relationships. According to Vicki, the principal encouraged teachers “to submit positive office referrals, [and the school] holds whole-school celebrations of achievement and community good news.” VPS Principal Cynthia also mentioned providing positive reinforcement and fostering teacher–student relationships via the school-wide celebration:

We do what's called a SAILEbration. I call it a big pep rally. Once a month, we celebrate the learning and accomplishments and things that are happening in our building.

Everybody's involved in those [celebrations] because it's just another way of learning about each other.

The participants at NES also described using school-wide celebrations as positive reinforcement. Joann described "school-wide celebrations" as the strategy used at NES to foster teacher–student relationships. Helen described fostering teacher–student relationships "to relate to kids [by] giving them praise for three positive behaviors for [every] corrective behavior." When discussing the impact of teacher–student relationships on academic achievement in math and reading, Howard described "positive behavioral intervention [PBIS]" as a way "to build relationships with kids [and] be proactive and prevent behaviors as opposed to reacting to behaviors." Tina also added that the staff at NES used positive reinforcement to foster strong teacher–student relationships.

Several school leaders and teachers from both schools discussed positive reinforcement when talking about the school climate domain of discipline. Joyce stated the staff at NES used a "lot of positive reinforcement" to manage student behavior. Douglas described "a behavior plan where kids get rewarded at school if they had positive behaviors throughout either a class or a day" as an effective way to use discipline to manage student behavior at NES. Similarly, VPS school leader Tina stated,

Our teachers try to [use positive reinforcement] from a discipline perspective. I think it's not so much of a punishment aspect as guidance and making sure the students know what the expectations are ahead of time so they understand where there will be, what's expected from them, [and] the positive things [the staff] want them to do [so they] hopefully engage in more positive behaviors.

Joann said she addressed "90% of [her] discipline with positive reinforcement" and often called

“home with positive feedback.”

Stephanie also said the staff at NES used positive reinforcement to manage discipline and student behaviors:

We try to go on the positive reinforcement system. Most teachers have some sort of positive reinforcement system, if not several. [The students get] paper clips if they get a compliment from another teacher in the hall, [or they get] cotton balls in a jar if everybody’s on task.

Stephanie also reported using a variety of positive reinforcement to manage discipline and student behaviors, including a point chart and lunch in the classroom with the teacher. Howard used PBIS to focus “on positive behaviors and catch kids being good before there [is] a problem, as he tried to “build up success to prevent problems.” Howard said,

Most of us [staff] are trying to build up [students]. [I’m] doing everything I can to build up success [and] to prevent problems. Most of us [teachers] don’t have a visual disciplinary system. We don’t have cards turning. We don’t have a physical disciplinary card you turn or a closed pin you move or something that way. [Discipline] is mostly handled, again, [by] trying to be positive and prevent problems.

Similarly, Beth detailed how the staff at NES used positive reinforcement to foster emotional safety through a “coins of gratitude contest, where the class that raised the most coins got to silly string a teacher.”

### **School Climate and Themes**

The EDSCLS (2019) school climate model contains three domains and 13 subdomains: engagement (cultural and linguistic competence, relationships, school participation), safety (emotional safety, physical safety, bullying/cyberbullying, substance abuse, emergency

readiness/management), and environment (physical environment, instructional environment, physical health, mental health, discipline). The participants perceived the school climate domains and subdomains to affect student achievement in math and reading. The rural teachers and school leaders identified the themes (building strong relationships, social-emotional learning, empowering leadership, differentiation, positive reinforcement) as avenues to effectively foster the domains and subdomains of school climate and student achievement.

### **Engagement**

The school climate domain of engagement consists of cultural and linguistic competence, relationships, and school participation. The participants in this study perceived the school climate domain of engagement as having an influence on student achievement in math and reading. The following presents the school climate domain of engagement, organized by subdomain.

#### **Cultural and Linguistic Competence.**

The participants perceived cultural and linguistic competence as having an influence on academic achievement in math and reading. All nine teachers from both schools strongly agreed or agreed to the following survey items about their schools: “emphasizes showing respect for all students’ cultural beliefs and practices” and “all students are treated equally, regardless of whether their parents are rich or poor.” Tina captured the perceptions of many of her colleagues when she noted cultural and linguistic competence “could definitely have an impact on their success if [students] aren’t able to access the language adequately, [which] could definitely reduce some of their academic performance.”

The participants also considered cultural and linguistic competence a “hurdle” or a “barrier;” therefore, they emphasized the importance of meeting the needs of culturally and linguistically diverse students. Wanda stated,

I would say [cultural and linguistic competence] has a huge effect. It definitely is a hurdle that you have to get over, and the child has to get over. But I definitely feel that [the] communication piece [of] just getting to feel comfortable and at home in the classroom and making friends [are things] the language barrier and cultural barrier definitely negatively impacts in most cases.

Similarly, Joyce said, “If there’s a barrier, any barrier, whether it’s social, emotional, or familial or linguistic, I think they’re going to struggle.” Alice firmly believed students could not succeed in school “unless their basic needs [were] met” and described cultural and linguistic competence as a basic need. She said, “It’s important to have those needs met so kiddos can achieve at the highest level that they’re able to. According to Alice, a “lack of achievement” can occur if students’ cultural and linguistic needs remain unmet.

Stephanie also highlighted the importance of cultural and linguistic competence and how it could be a barrier to academic achievement. She stated, “If the kids come in with limited vocabulary and experience to tie things to, then when they read a book, it’s really hard for them to tie whatever they’re reading to their experiences.” Similarly, Helen emphasized the need for cultural and linguistic competence by saying, “In order to be an effective educator, you have to understand. I definitely think you are not aware of or do not take into account different cultures [without cultural and linguistic competence].”

The theme of using differentiation to meet students’ needs frequently emerged in the participants’ responses about the subdomain of cultural and linguistic competence. VPS Principal Cynthia captured the sentiment of many of the participants when she said,

I don’t think it matters if we’re talking culture or linguistics—whatever it is, if we [staff] constantly have a pulse on where [all] our students are [and] their strengths [and] areas of

growth, and we're meeting those needs, then hopefully that [can] have a positive effect on their achievement in math and reading.

NES Principal Beth further highlighted the theme of differentiation when she discussed the influence of cultural and linguistic competence on academic achievement in math and reading:

The classroom teacher can [use differentiation to ask], "Is the student progressing as they should? Is there acquisition of the language? Are they understanding the concepts that need to be taught? If there's a concern, is it because of the language barrier, or is there truly something else going on?" It's really a fine line, and you really have to get to know the student and [do] a lot of small group [and] focused instruction to figure out where the challenges lie.

Building relationships was another emergent theme that aligned with the subdomain of cultural and linguistic competence. Helen stressed the necessity of teachers building relationships with students to foster academic achievement in math and reading under the cultural and linguistic competence domain. According to Helen, the more she understood about students' cultures, the more the students could relate to her. Helen said, "If you can relate to students effectively, their scores in math, reading, [and] writing [and] their achievement will increase."

### **Relationships**

All the participants in this study perceived relationships as having an effect on students' achievement in math and reading. The participants' responses to the survey questions on the subdomain of relationships (Questions 12–16; see Table 5) showed relationships were a positive subdomain at both schools. The theme of building effective relationships also aligned with the subdomain of school climate. All the participants described fostering strong relationships with students as a way to positively affect academic achievement in math and reading. As Tina said,

“My perception [is] that the better the student–teacher relationship, the more successful a child is academically and at everything.”

Another common perception among the participants was that building effective relationships with students correlated with increased motivation, effort, and perseverance. Margaret said, “With a good relationship, the student wants to please the teacher and give their best effort.” Similarly, Beth described students with strong relationships as “willing to sit and try and persevere.” Douglas said the increased effort produced by strong relationships correlated with improved academic achievement.

The participants also said relationships, specifically strong relationships, enabled the students to feel comfortable with taking risks in the classroom. Joyce suggested that effective relationships allow students to take risks, resulting in increased engagement for “tailor[ed] instruction.” Thus, the theme of relationships is connected to the theme of differentiation. Alice emphasized the role of effective relationships in taking risks and academic achievement by saying, “Without those relationships, kids may not be willing to take as big of risks when it comes to their academics. I think they won’t be as willing to try harder things without having built those relationships.” Wanda shared the other participants’ views about relationships and academic achievement in math and reading when she said, “I would definitely say [relationships] have a positive effect. The better your relationship with the child, the more successful they are.”

The theme of SEL also emerged from the participants’ responses to the interview questions about relationships. The teacher participants perceived SEL as a way to foster the school climate domain of relationships, which, in turn, could influence student achievement in math and reading. Margaret said, “The best learning takes place when there are relationships.” According to Margaret, social-emotional development through circles and check-ins is a way to

foster teacher–student relationships. Each participant considered SEL useful for fostering strong relationships.

The participants also reported building strong leader-teacher relationships with empowering leadership. Several teacher participants emphasized the importance of having great relationships with school leaders. The participants discussed the significance of leaders who empowered and built relationships with them to feel comfortable going to leadership for guidance. In turn, the effective relationships due to empowered leadership “trickled down” to the school climate and academic achievement.

### **School Participation**

Most of the participants confidently asserted that school participation had an influence on academic achievement in math and reading. However, the participants provided mixed responses about school participation at their schools on the survey (see Table 5). Wanda described the influence of school participation on student achievement in her interview:

I feel [school participation] definitely [has] a positive impact on [students’] success. I think the more they’re involved in things at school, the more they take pride in their school, [and] the more they take responsibility for their actions, [the] more willing [students] are to kind of push themselves through that academic piece.

Joyce also discussed the influence of participation in the classroom on students’ achievement in math and reading in the theme of differentiation:

[For the] students who are actively engaged in the instruction, whether that’s [by] raising their hand and verbally answering or using [the] whiteboard and writing it down or just communicating in a small group, the teacher [is] observing if they’re engaged. [If they’re engaged], they’re going to be learning. If they’re not so engaged, then it’s hard for the

teacher to assess what they need. That's when the teacher jumps in and differentiates and modifies what they're doing so the child feels like they can engage and can participate in the lesson.

Similarly, Joann said, "Students who feel confident participating will comprehend and acquire knowledge more quickly than a passive learner." Helen also discussed the importance of participating in extracurricular activities, as "participation in extracurriculars definitely encourages higher achievements." The theme of positive reinforcement also emerged in Joyce's description of fostering participation via monthly school-wide celebrations at her school. According to Joyce, the goal of the celebrations was to "celebrate student's achievement each month and give a lot of rewards out for just being good students [and] being good citizens and all of that."

The theme of building effective relationships was apparent in Cynthia's response when she described school activities as "another way of building relationships [with] the staff members who are hosting that activity and also with the other students who are participating in it [and] with parents." She further noted that, at VPS, effective relationships fostered through participation in school activities could "lead to a positive school culture and a positive learning environment, [which] certainly impacts the learning." Margaret discussed the influence of participation on academic achievement in math and reading, saying, "Participation grows friendships and relationships with adults. Also, family events allow the parents to become more involved in the student's education—and this boosts performance!" Beth noted that students who participate "are willing to try their best and be engaged, and they feel a sense of connectedness that this is their school and they belong."

Tina also described participation as a means of fostering connectedness at school,

“especially for kiddos who might academically struggle.” She noted participation in school events and activities could “help [students] continue to put in the effort toward their academics [and] view school as something that is fun overall because they have those types of events linked to it.” However, some VPS teacher participants felt unsure about the influence of participation on academic achievement. For example, Vicki said,

I don’t know that [participation] does [have an effect on academics], other than improving the way kids feel about being in school in general. As much as positive feelings about school impact achievement, there might be a small bump in achievement due to participation in these activities.

The school climate domain of safety consists of emotional safety, physical safety, bullying/cyberbullying, substance abuse, and emergency readiness/management. The participants in this study perceived the school climate domain of safety as influencing students’ achievement in math and reading. The theme of SEL correlated the most with the school climate domain of safety. Vicki’s perception is a summary of the participants’ answers to this research question: “If students are safe in school, they are better able to learn. Simple as that.”

### **Safety**

The school climate domain of safety consists of emotional safety, physical safety, bullying/cyberbullying, substance abuse, and emergency readiness/management. The participants in this study perceived the school climate domain of safety as influencing students’ achievement in math and reading. The theme of social-emotional learning correlated the most with the school climate domain of safety. Vicki’s perception is a summary of the participants’ answers to this research question: “If students are safe in school, they are better able to learn. Simple as that.”

### *Emotional Safety*

All the participants perceived emotional safety as having an influence on academic achievement in math and reading. Most of the teachers perceived the emotional safety in their schools as effective; eight strongly agreed or agreed they felt “comfortable discussing feelings, worries, and frustrations with [their supervisor],” and their “school inspired [them] to do the very best at [their] job.” SEL was a theme often related to the participants’ responses regarding emotional safety. The participants reported using the SEL practices of dedicated SEL time, restorative justice practices, circles, check-ins, a growth mindset, character education, a social-emotional curriculum, modeling, and counseling to foster the students’ emotional safety. The participants described fostering emotional safety as positively affecting academic achievement in math and reading. According to the participants, their students could not focus on learning and academics without feeling emotionally safe. Tina stated,

[Emotional safety] is definitely key [to academic achievement]. If a child does not feel safe in the classroom, it’s hard to take a chance in answering and participating with questions in the class [and] really putting themselves out there for that. The safer the [students] feel, the greater the participation.

Vicki stressed the importance of students “feeling safe to take risks with their learning [to achieve] academic success.” Helen witnessed students “achieve things even they themselves never thought that they could achieve” because they felt emotionally safe. Wanda also described the relationship between emotional safety and academic achievement:

I would say the more emotionally stable [students] are, the higher their academic achievement. The more, shall we say, baggage they’re coming in with—that just gets in the way and, definitely, learning is just not their priority. They’re in survival mode at that

point, and the academic piece kind of gets put [on] the backburner.

Cynthia said emotional safety “frees up the child to focus on learning, which affects academic achievement.” Likewise, Howard said feelings of emotionally unsafety “[don’t] free up your brain or anything to focus on what you need to do.” Stephanie also considered emotional safety influential for academic achievement in math and reading, as “kids have to be willing to put themselves out there and participate, engage, [and] share.” Similar to the other participants, Margaret said, “Students can’t focus on academics when they have social-emotional or behavioral concerns going on in their lives.”

The participants described SEL as a way to foster emotional safety and improve academic achievement. Joyce discussed the influence of emotional safety on academic achievement in math and reading. According to Joyce, SEL is a fundamental part of the relationship between emotional safety and academic achievement. She asserted that students could not focus on math or reading without feeling emotionally safe. Joyce further described SEL as a way to help students destress and “deescalate themselves” so they “are able to learn.” Beth said the staff at her school used SEL to ensure the students felt “supported and able to take risks.” Alice also touched on the theme of building strong relationships to meet students’ emotional safety needs. According to Alice, without emotional safety, students “are not able to be vulnerable and open in the classroom.” Alice described a lack of vulnerability and openness as barriers to the “willingness [of students] to tackle harder things and accomplish higher academic skills.”

### ***Physical Safety***

Most of the participants perceived physical safety as having an influence on academic achievement in math and reading. All nine teachers strongly agreed or agreed to the survey item,

“I feel safe at this school.” The staff at VPS and NES fostered physical safety by locking all the doors in the building, monitoring the front door, and requiring photo identification to enter the building.

The participants found that students who did not feel physically safe could not concentrate on academic achievement. Douglas said students “[who] don’t feel physically safe [are] not going to pay attention to whatever the teacher is trying to teach in that lesson.” Helen said student achievement in math and reading “boils down to kids feeling safe. If they don’t feel safe, they’re not going to mentally attend.” Similarly, Howard said, “Safety is a primary concern,” and students could not “focus on academics” without feeling physically safe. Joann said, “The safer the [students] feel, the more likely they [are to] focus on learning.” Likewise, Joyce stated, “Students need to feel safe in order to be able to learn.”

Alice also discussed the impact of physical safety on academic achievement in math and reading, saying,

I think if kids don’t feel safe in their surroundings, they’re not going to be able to focus on the academic piece. Having that sense of security provides them with the opportunity to focus on academics versus focusing on whether or not they’re safe.

Beth said, “If students don’t feel safe [or] feel threatened, their mind is going to be elsewhere, [and] they’re not going to pay attention to their studies.” Tina summarized the impact of physical safety on academic achievement in math and reading:

I think just the perception of safety—the perception of being in a safe place—is foundational before we can really even focus on our learning. If a student feels safe, that’s going to foster their ability to learn and perform.

Cynthia also noted the inability of students to focus without feeling safe. She explained that

students “understand, if for some reason, [they] don’t feel safe, there’s going to be a prompt response to that to fix that and make [them] feel safe [so their] focus is on the learning.” In contrast, Wanda believed elementary students do not “really think too much about” physical safety and felt that physical safety did not have “much of an impact.”

The themes of SEL and empowering leadership emerged in this domain. Tina described the social-emotional curriculum as an avenue used at NES to foster physical safety. She said, “We’re working on respecting each other, treating each other kindly, [acting with] responsibility, [and] all those pieces that go toward reducing measures of violence.” Cynthia reported using SEL and restorative practices to “help students understand how their actions make somebody else feel and promote physical safety.”

### ***Bullying/Cyberbullying***

Most of the participants perceived bullying and cyberbullying as having an influence on academic achievement in math and reading. The teacher responses to the survey for the subdomain of bullying/cyberbullying (Questions 36–43) showed bullying was not a problem at either school (see Table 6). The themes of SEL and building strong relationships emerged throughout the participants’ responses for the subdomain of school climate.

The participants perceived bullying as having a negative effect on academic achievement in math and reading. Joann said, “Kids can’t learn if they are focused on being the target of a bully.” Douglas noted that bullying could adversely affect achievement because a student experiencing bullying could feel “preoccupied.” Beth stated, “Bullying is very distracting; you can’t tend to your academics if you feel threatened by somebody in the classroom.” Similarly, Vicki stated, “Bullying would interfere with student achievement.” Wanda also described the impact of bullying on both the victim and the perpetrator:

I would say that [bullying/cyberbullying] has a negative impact. If a child is being bullied, they've just got that on their mind, and they're definitely distracted by that. And if *they* are the bully, then that's distracting them from their studies as well.

Tina noted that bullying caused students to feel less safe or distracted “from their academic work [because] they're focusing on how they're being treated by others.” Tina also said, “The greater degree to which we can reduce that and prevent that from happening, the more successful students are set up to be academically.” Margaret said that, because of bullying, “students can become fixated on peers or events that have happened to them, [and] it decreases their attention, work completion, and self-confidence.” Alice noted how bullying prevention enabled students to “come to school, feel safe, and know they can take risks without the fear they're going to be bullied for it.” Joyce also discussed the adverse effects of bullying on academic achievement in math and reading and said,

If there is bullying going on, it would negatively affect the child because that's their security, and their safety is at risk there. I think that because we [school staff] respond so well to that, I think that that definitely helps learning [about bullying prevention]. But, if [students] are being bullied and they're not able to get the help, it definitely affects their learning negatively.

The participants perceived SEL as a way to prevent and mitigate the effects of bullying on student achievement. Tina said “social-emotional work and learning” was a way to prevent bullying. Cynthia considered SEL a means of giving all the parties in the altercation a voice, supporting the victim, understanding what occurred, and guiding other students to be upstanders instead of bystanders. The participants frequently mentioned the restorative practice of circles as an approach to preventing or mitigating bullying. Vicki perceived building strong relationships

as a way to prevent bullying.

### **Substance Abuse**

All the participants indicated in their interviews that student substance abuse did not occur with their students. On the survey, all nine teachers reported student substance abuse as “not a problem.” However, the participants suggested the substance abuse of a student or a student’s family could have a negative effect on student achievement in math and reading. Howard stated that substance abuse adversely influences everything from students’ SEL to academic achievement.

Cynthia said, “[Substance abuse] is going to have a detrimental effect on student achievement if a child is experiencing some kind of substance abuse [or] if somebody in their home is experiencing [substance abuse].” Beth provided an in-depth response on the effect of how substance abuse on student achievement:

If [students are] under the influence and are addicted, their mindset about math and reading is [that school is] low on the priority list—it’s not relative to them and relevant. A lot of times, we see kids who don’t understand why they have to learn this or that. When you’re under the influence, it doesn’t help you have a clear mind to make better decisions for yourself and your future. The kids who seem to be under the influence or do drugs [and] alcohol and are starting to become addicted—those chemical changes in their brain happen [and] they can’t make clear decisions for themselves. They’re focused on the moment and not the future.

Helen believed that achievement could not occur if students were “using or abusing any kind of drug.” Similarly, Joyce and Vicki felt substance use could “negatively affect [students’] learning” and “achievement.” Douglas considered “the fact you might be up late abusing drugs

or alcohol and can't wake up for class the next day or pay attention in class" a negative effect of substance abuse. Alice also hypothesized that substance abuse could cause students not to come to school, and if they do come to school, not "get the education [they] need because [they're] not in the right state of mind." Stephanie compared substance abuse to a hunger for something students could not keep their minds off of, which could "impede learning."

Many participants stated that substance abuse at home could negatively influence a student's achievement at school. Tina discussed how substance abuse at home "comes down to a basic sense of safety. If home is unstable and [students are] struggling with that environment, they're probably happy to come to school but maybe not as able to focus on their academic work." Wanda said, "If there's substance abuse going on in [a student's] family, it's going to definitely have a negative impact." Margaret also shared that substance abuse during pregnancy may negatively "impact [students'] learning, development, mental health, and attention." The participants frequently mentioned health classes and substance abuse prevention programs as useful for preventing substance abuse.

### **Emergency Readiness/Management**

Most teachers and school leaders perceived emergency readiness and management as having an effect on student achievement in math and reading; however, some did not. All the teachers strongly agreed or agreed to the survey item, "This school or school district provides effective training in safety procedures to staff (e.g., lockdown training or fire drills)." According to the participants, VPS and NES staff prepared for emergencies by conducting various drills required by New York State, such as fire drills and lockdown drills. Several of the participants also mentioned hybrid learning and virtual learning due to COVID-19.

Joann said, "[If] kids feel prepared [for emergencies], they will be less nervous." Joyce

stated, “Being prepared for an emergency takes that stressor away from [students], and maybe that could affect learning in a positive way [because] they’re less stressed about that.” Several teacher participants indicated that emergency readiness and management could provide students with a sense of safety and enable them to achieve academically. Douglas believed emergency readiness and management contributed to achievement “because the students know what to do in case something happened at the school [and] feel safer that way.” Vicki reasserted that emergency readiness and management could affect achievement because when “students are safe in school, they are better able to learn.”

Helen also suggested emergency readiness and management could influence achievement because students “are not going to be very attentive to reading and writing lessons if they’re nervous about their safety; if they don’t feel safe, they’re not going to achieve.” Alice expressed that this subdomain could be a way to focus on safety, so students feel “comfortable with what to do when a situation arises [and] have that peace of mind they don’t have to be overly worried about [safety] when they’re [at school].”

However, some participants had different perceptions about the influence of emergency readiness and management on student achievement in math and reading. For example, Wanda believed this subdomain did not have a significant influence on achievement:

I don’t think [emergency readiness and management] does [impact achievement], especially [at the] elementary level. I don’t think the kids are even concerned about that piece of it—it doesn’t even cross their mind. I don’t think that [subdomain] really is impacting their focus for the day or what they retain or what they are able to [do or] what concepts they can learn. I would say [the subdomain does] not [have] much of an impact.

Similarly, Stephanie said, “I don’t think [the subdomain] does have a correlation [with

achievement].”

The NES school leaders appeared unsure about the influence of the emergency readiness and management subdomain on achievement. Beth did not know if emergency readiness or management affected student achievement at the elementary level. Tina had a similar perception and added that preparing for emergencies via drills could be a distraction to learning:

I’m not sure honestly if [emergency readiness/management] at the primary level really sinks in [for students] as something they’re thinking of that really impacts their achievement. At times, it’s an important thing we have to do, but, sometimes, it distracts a little bit from teaching in lessons if you’re in the middle of something and we’ve got to go outside now and have our fire drill. We kind of have to get back on track, but I don’t know that [emergency readiness and management] have a huge overall impact.

Helen also noted that preparing for emergencies via drills could sometimes have a detrimental effect, as students might feel “very nervous and [not] very safe after we have a drill because they fear it’s going to happen.”

Howard, too, appeared unsure about the impact of this subdomain on achievement. According to Howard, NES was in a safe rural area where natural disasters rarely occurred. He noted that his students rarely worried or thought about emergency readiness and management:

I don’t know if [emergency readiness and management] would have that much of a huge impact on achievement. Maybe that’s because of the area we live in, hopefully. We live in a rural-ish area, so we’re not having lockdowns. Not that [emergencies] couldn’t happen, but we don’t experience huge weather events in our area, knock on wood—that’s not part of our everyday life. I think we drill from that forum, and that gives me peace of mind.

## Physical Environment

All the participants perceived physical environment as having an influence on academic achievement in math and reading. The VPS and NES teachers had positive perceptions of the physical environment in their schools. All nine teachers strongly agreed or agreed to the survey items, “This school looks clean and pleasant” and “This school is an inviting work environment.” Vicki described the physical environment as affecting academic achievement in math and reading because “it’s an indirect benefit based on improving the way students feel about school and learning.” Tina said, “[For students], just knowing they have a safe and pleasant physical environment is important.”

Stephanie said issues with the physical environment could “impede learning.” She explained, “If [the class is] too crowded, if there [are] too many people in a room, too many coats in the room, [or] there’s no room, it feels crowded and loud. I think that that would impede learning.” Helen said, “Students definitely [are] not going to learn if the environment is not conducive to learning, such as] if it’s cold, if it’s dark, et cetera.” Wanda asserted the physical environment “definitely has an impact, whether negative or positive.” Wanda worked with students with sensory needs and reported that temperature, light, or noise “definitely had an impact” on achievement.

Beth provided an in-depth response on the effect of the physical environment on achievement in math and reading:

The lights have to be working, and equipment and furniture need to be in good working order. I think having a well-kept, looked-after building lends itself to the culture you want to have. This would be more on the classroom teacher, too, [to have] classrooms that are neat and orderly, not cluttered. [Neat classrooms] allow kids to focus on the task at hand.

I think if kids are in rooms where there's a lot going on—when I say that, I mean piles of stuff and no real good flow to move—subconsciously, that's distracting. That's where that could impede their performance.

Predictable things in the room, such as the schedule always posted in a certain place [where] it's easy to see, [are important]. When kids are sitting at their desks, they [should] have an easy view of the proximity of the teacher [so they] can see and hear. We have SoundField systems in the classroom to amplify the teacher's voice, so kids are able to access their learning.

The participants emphasized that students must feel comfortable for learning to occur. Cynthia stated,

I think when you are comfortable, you're more open to the learning that teachers are trying to engage you in. If you're sitting there thinking about how cold you are, [and] we can do something to adjust the temperature or make you more comfortable, you're [more] open to the learning. Whatever the comfort is you're looking for, [we staff think] just how we can keep everybody comfortable so their focus can be on the learning.

Joann said, "Creating a safe and comfortable classroom allows students to focus on learning."

Howard emphasized that students who feel uncomfortable in the physical environment could struggle to learn. According to Howard, a temperature too hot or too cold or too much background noise could impact students' ability to learn and focus. Similarly, Douglas noted that issues with the physical environment could adversely affect achievement and said, "If a kid's freezing and shivering, they're not going to be paying attention to whatever's happening or their assignments; they'll be too worried about staying warm."

Joyce believed an organized classroom was a way to help students "be more relaxed and

more in control and be more successful.” Alice summarized the importance of the physical environment when she said:

Knowing that they don’t have to sit in a classroom that is going to be freezing all day or a classroom that’s going to have a spill on the floor all day because nobody’s willing to clean it up makes it easier [for students to] carry on with their day when those things do happen.

### **Instructional Environment**

All the participants perceived the instructional environment as having an influence on academic achievement in math and reading. The VPS and NES teachers had positive perceptions of the instructional environment in their schools. All nine teachers strongly agreed or agreed to the survey item, “The programs and resources at this school are adequate to support students with special needs or disabilities,” a finding fundamental for the theme of differentiation. Eight of the nine teachers strongly agreed or agreed to the survey item, “The programs and resources at this school are adequate to support students’ learning.” The themes of differentiation, positive reinforcement, and empowering leadership emerged from the participants’ responses regarding the instructional environment and its influence on student achievement in math and reading.

Vicki said, “The instructional environment generally is supportive and encouraging, which can only positively affect academic achievement.” Stephanie described the instructional environment as “key” to student achievement in math and reading. Stephanie considered organization, direct instruction, time for student practice, structure, and a teacher’s behavior management system as “key to an optimal learning environment.” Douglas perceived the instructional environment could influence achievement in math and reading “in a positive way.” Similarly, Wanda felt the instructional environment “does have an impact” on achievement.

Joann emphasized the need for teachers to prepare to “teach effective lessons” to influence achievement via the instructional environment. Howard perceived the instructional environment as influential for student achievement in math and reading. He suggested students could benefit academically from project-based learning, work with leadership, colleagues, partnerships with other grade levels, and reflections on practice to improve teaching.

Beth also considered the instructional environment as influential for student achievement and emphasized the importance of having an orderly classroom to mitigate distraction and disruption to benefit students. Tina perceived a positive instructional environment as “really important.” According to Tina, “The more positively the student feels about [the instructional environment], the greater [the] degree they’re likely to participate.” Joyce emphasized the importance of resources in the instructional environment, including supplies, books of various genres, and technological assets, as “with all of those resources at their fingertips, that learning is really positively affected by that.”

Alice also stated the importance of differentiation in meeting students’ needs for a positive instructional environment to positively influence academic achievement:

[The instructional environment] allows you to have the opportunity to cater to the students you have in your classroom, and you don’t need to fit everyone in the same box. By having the ability to kind of cater to those students, it can affect their academics in a more positive way than just [a mentality of] we’re teaching this because we were told we have to teach this.

Helen also described differentiating instruction and meeting students’ needs as essential for the instructional environment and academic achievement. According to Helen, students need to “have things that enable them to work and learn to be able to achieve.” Helen noted that students

with unmet needs “are certainly not going to feel like they can do what they need to do in order to be successful.”

Howard and Wanda also discussed the importance of differentiating the instructional environment to meet students’ academic needs. Cynthia suggested differentiating instruction and meeting students’ needs to foster a positive instructional environment by “looking at our students as individuals [as well as their] strengths, areas of growth, [and] areas of need.” She described SEL as a way to promote a positive instructional environment and foster a growth mindset by “recognizing that failure is part of the learning process.”

The theme of positive reinforcement emerged from the participants’ responses about the instructional environment. Several participants described positive reinforcement as an avenue for improving the instructional environment and achievement in math and reading. Joyce also used positive reinforcement to foster an effective instructional environment via Class Dojo and positive office referrals. Similarly, Douglas and Wanda engaged in positive reinforcement to foster an effective instructional environment.

Empowering leadership aligned with the impact of instructional environment on student achievement in math and reading. Joann considered empowering leadership and the trickle-down effect influential in fostering the instructional environment and student achievement. According to Joann, “Teachers who feel valued will create better learning environments for their students.” Douglas, Stephanie, and Howard reported that school leaders select the curricula, textbooks, and programming to which the teachers must adhere. Therefore, school leaders can affect academic achievement through empowering leadership and the trickle-down effect. Most of the participants suggested that via empowering leadership and the trickle-down effect, school leaders influence teachers, who, in turn, influence students in their instructional environment. Vicki

claimed SEL was an effective way to foster a positive instructional environment, as “adults are consciously modeling positivity [and teachers] explicitly teach positive responses.”

### **Physical Health**

All the participants perceived physical health as having an effect on student achievement in math and reading. On the survey, all the teacher participants strongly agreed or agreed to the item, “This school places a priority on students’ physical activity.” Eight of the nine teachers strongly agreed or agreed to the item, “This school places a priority on making healthy food choices.” The theme of meeting students’ needs emerged throughout the participant’s responses related to physical health and student achievement.

Cynthia shared a response about physical health and student achievement similar to the other participants by saying, “If you are physically healthy, the better you feel [and] the more open you’re going to be to learning.” Tina described physical health as “a prerequisite to being able to perform academically; foundationally, we have to be healthy in order to learn adequately.” Douglas stated physical health had an effect on student achievement “in a positive way for sure [because] if you feel healthy and are healthy, you’re going to do better in whatever it is you’re trying to do.”

Wanda suggested physical health “definitely has an effect” on student achievement in math and reading. She said,

When kids aren’t feeling well, they’re not going to do well at all. Whether they’re overtired or fighting off some kind of an illness, or they’re emotionally not feeling well that day, [health] definitely has an impact [and can have] a negative impact.

Similarly, Vicki said, “A healthier student can learn better and reproduce what they have learned more effectively.” Joanna considered physical health important for student achievement in math

and reading because “healthy kids can focus on learning.” Joyce said, “If students are healthy, then they are able to access learning.” Joyce emphasized the importance of meeting students’ physical health needs, “whether that’s going to the nurse or the doctor or whatever so they can learn.” Stephanie suggested that physical health and sleep deprivation could negatively affect student achievement. She noted that students experiencing sleep deprivation feel “exhausted” and “struggle to pay attention.”

Alice considered fostering physical health fundamental to student achievement in math and reading. Alice discussed how exercise and movement result in better physical health:

If you’re not feeling healthy, then you are not going to be able to do your best. [We] just promote [physical health], and a lot of our kids need movement throughout the day as well. They’re kids—they need to be up and out of their seats and moving. [Movement] kind of gets them to reset for the next part of their day. Having [movement] available is key [for] keeping kiddos kind of on track for the day.

Helen also asserted the importance of exercise and movement for physical health and achievement, suggesting students receive breaks for “the output of their energy, which will allow them to sit and focus a little bit more than if they had all that pent-up energy and no place for it to escape.” Similarly, Howard said the movement “breaks up the monotony of the day and helps focus.” He further stated, “If you’re feeling healthy physically and mentally, you’re going to be more ready to learn [and] more able to learn.” Beth also indicated the importance of movement and other aspects of maintaining physical health to sustain learning:

If you don’t feel well, again, you’re not going to [be able to] focus or be ready to learn. Even if you’re there [in class], you might not mentally be there, and you’re just not right. It’s really important that kids are healthy and not sick when they’re in school. [Students

need] that time to let off that energy by running around and playing and having some social interaction and downtime so that when they do come and have to sit for things that maybe are more cognitive and sustained, they aren't wired—they're ready to settle and learn.

Cynthia said, "If you're engaging in physical activity and practices that keep you physically healthy, you're going to come to school feeling good [and] you're going to come to school awake and alert and ready to learn." Margaret stated, "Physical health provides energy to the body and brain for learning, [and] activities in school allow for breaks [so] students come back ready to learn, especially after getting their energy out."

### **Mental Health**

All the participants perceived mental health as having an effect on academic achievement in math and reading. All nine teachers strongly agreed or agreed to the survey item, "This school places a priority on addressing students' mental health needs." Douglas described mental health as affecting student achievement in math and reading "in a huge way." He said, "If [a student's] mental health is not there, then things like math and reading might not seem that important to the child." Similarly, Joann said, "If they are having mental health concerns, they cannot focus on learning."

Tina described mental health as a "key, foundational piece" to student achievement in math and reading. She considered mental health "a prerequisite to learning." Tina further stated that struggles with mental health "can be a great stressor that's really taking the mind away from learning." Stephanie said, "Mental [health] issues [are] going to impede learning [because students] can't attend to something if they're having a mental [health] issue or a stressor." Helen stated, "If [students are] not able to be there mentally, they are not going to achieve for sure."

Margaret said, “Mental health and associated behaviors are one of the biggest obstacles to learning, [and] they can also be disruptive to the other students in the classroom.” Joyce shared her perception of the influence of mental health on student achievement in math and reading:

If students are mentally healthy, they’re able to learn, they’re excited about learning, and [they] like to be in school, [and] they’re able to [form] relationships with their friends. If they are not mentally healthy, they really struggle to learn and do their best work. That’s when it’s crucial for us [staff] to get them the help they need.

Wanda stated that mental health “definitely has an impact” on student achievement in math and reading. She continued,

Some kids just have way too much going on in their little brains, and they’re in survival mode. There’s no way you’re going to be able to teach them any kind of new concepts when they’re worried about just getting through the day.

Alice explained the importance of student and teacher mental health and said,

If our kiddos and our teachers are not feeling mentally well or mentally stable, then there won’t be any learning happening. It’s important because we need to make sure that mental health is taken care of in order to get any type of academics in.

The theme of building strong relationships emerged in the subdomain of mental health. Several participants considered building strong relationships with teachers, school counselors, and other staff fundamental to fostering mental health. Cynthia emphasized the need for students to have “a positive relationship with their teacher [and be] connected to the school counselor, [or even the nurse or principal]” She said working through mental health struggles “in a supported way hopefully lessens the impact on learning as we [teachers] work with them and arm them with those tools that get them back to that place of positive mental health and well-being.”

SEL was another prevalent theme in this domain. Several participants described teaching their students strategies and how to seek help from school counselors and teachers. Eight of the nine teachers strongly agreed or agreed to the survey item, “This school places a priority on helping students with their social, emotional, and behavioral problems.” Beth emphasized the importance of SEL and teaching students strategies for addressing mental health:

We have some kids who are anxious about things. I guess we use the term “emotionally fragile” [for when] things that shouldn’t be a big deal are. So, [we] teach them strategies, [like] how to put themselves back in control and control those emotions, [as well as] that they’re okay and safe, so they can stop crying and get back to their learning.

Cynthia said, “When students are in a positive place with their mental health and well-being, they’re open to learning,” Additionally, she believed students “can be open to learning even when they’re not in a positive place if we’ve armed them with the right tools.” She also stated, “If [students] know they might be struggling with their mental health or well-being but [are] connected with the right people in their school community and have the right conversations, they’re being supported.” Cynthia also perpetuated the social-emotional practice of character education, which “really closely connects to promoting [the] positive mental health and well-being we do together as a school community every morning.”

Helen, Tina, and Howard described promoting positive student mental health through the social-emotional curriculum. The participants mentioned building relationships with teachers, school counselors, and other staff members to foster mental health. Additionally, many participants considered these adult school stakeholders valuable contributors to SEL and positive mental health. The participants found the dedicated social-emotional time-block helpful for students’ mental health. Douglas shared a response indicative of many of the participants’

perceptions when he said, “[The social-emotional time-block] is a big part of promoting mental health here and identifying [who] that might be struggling with their mental health.” Stephanie also believed building strong relationships via teacher–student relationships was helpful for positively influencing student mental health. She said, “Connection with the teacher is really what helps kids with their social and emotional [and] mental health.”

### **Discipline**

The participants perceived discipline as having an effect on academic achievement in math and reading. All nine teachers strongly agreed or agreed to the survey items, “Discipline is fair” and “This school effectively handles student discipline and behavior problems.” The participants identified discipline as fundamental to student achievement in math and reading, as it is a way to limit disruptions and distractions in the classroom. Beth shared her perception of the influence of discipline on school climate and student achievement in math and reading:

[Discipline] just plays to the whole overall culture. If there’s a safe, orderly environment, that makes everything conducive to learning. Kids aren’t distracted by disruptive behavior or unruly kids in the hallway, or an unsafe environment when they’re playing outside.

Douglas stated, “If the class is undisciplined, it’s going to be hard for anybody to learn.

Discipline is a huge part of having kids being able to learn math or reading.”

Stephanie perceived discipline as having a “large effect” on student achievement in math and reading because “if you don’t have an orderly classroom [and] if it’s disruptive, you’re stealing from everybody’s learning, not just the kids being disruptive.” She further said, “If you can’t manage your class, it’s going to impede everybody.” Vicki also shared her perception of

the effect of discipline on student achievement in math and reading:

A classroom with disruptions isn't functioning as effectively as it could, and it may be more difficult for students to achieve. Preventing disruptions is key to the achievement of a student who might disrupt the class, as well. It is important to discover all [students'] needs and plan ahead for them as much as possible.

Wanda indicated discipline "definitely has an impact" on student achievement in math and reading. This participant taught "a class of behavioral students," so when a student acted out, or she was "in a physical hold with a child, the other kids are definitely distracted by that behavior." Wanda also identified "the child [who] is in trouble is missing out on instruction as well." Therefore, according to Wanda, distracting behaviors "definitely have a negative impact."

Similarly, Alice said,

When you have kids [who] are acting out, causing issues, [and] needing to be constantly disciplined, it's definitely a distraction to the other students in the room [who] are trying to learn. When you don't have that much of an issue, as far as discipline goes, then it kind of doesn't take away from the academics and the learning that's going on.

Joann eloquently stated, "You can't teach without behavior management in place."

The participants also described discipline as a means of enabling students to feel safe at school and focus on learning. Helen stated, "If kids are not being disciplined [and] there are issues going on, then [the]m kids are not feeling safe. Having a good discipline policy needs to be in place in order for kids to feel safe, for sure." In a similar statement, Joyce said,

I think if students know they're going to be held accountable for behaviors in school and know they're responsible for not only keeping themselves safe, but their actions are responsible for keeping others safe and learning, that positively affects their learning all

the way around.

Cynthia stressed the importance of using discipline to set clear expectations to benefit students, teachers, and everyone in the learning community and create a physically and emotionally safe learning environment with “a positive impact on [students’] learning.”

Tina also specified the importance of discipline and expectations:

If [discipline] is enacted well [and] if we have good boundaries out there for what our expectations are for kids, kids are going to do better behaviorally and, therefore, not have that distraction take away from their learning. If [students] aren’t behaviorally successful, the learning isn’t going to be successful. [Discipline] is definitely a key important piece to have in place.

Margaret described discipline as having less of an effect on student achievement in math and reading as other subdomains of school climate, as “some students are motivated by discipline.” However, Margaret stated, “Many are not interested in earning anything or losing anything. The lack of motivators makes behaviors difficult.”

The theme of positive reinforcement aligned with the subdomain of school climate. All nine teacher respondents agreed to the survey item, “Staff at this school recognize students for positive behavior.” Tina, Stephanie, Joann, Douglas, Joyce, and Howard reported that the staff at their schools used positive reinforcement for disciplining and managing student behavior.

Howard said he used PBIS and “focus[ed] on positive behaviors and catching kids being good before there was a problem and trying to build up [and] doing everything I [can] to build up success [and] prevent problems.” Vicki’s response also related to the theme of differentiation, as she differentiated instruction to meet students’ discipline needs:

Discipline is as-needed and tailored to each individual situation and student. We try to

prevent issues of discipline with strong classroom management in every room in the building. Discipline is private and involves families to the extent possible, and action plans are created and followed up on.

The theme of empowered leadership emerged in this domain. Douglas perceived that school leaders could positively influence academic achievement by empowering and supporting the teachers and meeting their needs regarding discipline.

Regarding building strong relationships and discipline, Vicki described teacher–student relationships as influential for academic achievement. Vicki considered relationships a means of improving discipline and student behaviors. She said, “[Being] able to turn their focus to learning, as well as more willing[ness] to persevere through learning difficulties because they have a good relationship with their teacher—these things, in turn, help academic achievement.”

### **Research Question Responses**

This section addresses the research questions related to the phenomenon. The data from the survey, teacher interviews, and school leader interviews were the means used to address the research questions. The answers presented below include the responses to the EDSCLS Instructional Staff Survey and the responses and direct quotes from the participants used to address the research questions. These responses provided thorough answers to the research questions.

#### **Central Research Question**

How do teachers and school leaders perceive the domains of the school climate model (engagement, safety, and environment) affect student achievement in math and reading at rural schools?

The purpose of this research question was to understand how the teachers and school

leaders perceived the effect of the domains of the school climate model on student achievement in math and reading at rural schools. The participants perceived the school climate model (engagement, safety, and environment) as having an effect on student achievement in math and reading. The participants shared their perceptions of the phenomenon during individual interviews. The EDSCLS Instructional Staff Survey was the instrument used to capture the teachers' perspectives of school climate (see Tables 5, 6, 7, and 8). The themes of building strong relationships, social emotional learning, empowering leadership, differentiation, and positive reinforcement emerged from the data on the phenomenon. The participants perceived these themes as ways to foster the domains of school climate and academic achievement in math and reading.

### **Sub-Question 1**

How do teachers and school leaders perceive the school climate domain of engagement affects student achievement in math and reading at rural schools?

The school climate domain of engagement consists of cultural and linguistic competence, relationships, and participation. The themes addressed the research question across the two instrumental bound cases. Study participants perceived all the subdomains of engagement as having an effect on student achievement. The teacher participants believed their schools had sufficient cultural and linguistic competence. One hundred percent strongly agreed/agreed that their school “emphasizes showing respect for all students’ cultural beliefs and practices,” and 40% of VPS teachers and 75% of NES teachers strongly agreed. However, the participants identified cultural and linguistic competence as an obstacle to student achievement. Therefore, it is pertinent to meet the needs of culturally and linguistically diverse students. Participants found that differentiation is an effective way to foster cultural and linguistic competence. Teachers and

school leaders perceived relationships as having an effect on student achievement in math and reading. Tina said, “My perception [is] that the better the student–teacher relationship, the more successful a child is academically and at everything.” The theme of building strong relationships significantly connects to effectively fostering this subdomain.

In addition, the participants perceived school participation as affecting student achievement in math and reading. The participants considered participation in school to be a constructive way to promote increased academic achievement. Wanda explained,

I feel [school participation] definitely [has] a positive impact on [students’] success. I think the more they’re involved in things at school, the more they take pride in their school, [and] the more they take responsibility for their actions, [the] more willing [students] are to kind of push themselves through that academic piece.

## **Sub-Question 2**

How do teachers and school leaders perceive the school climate domain of safety affects student achievement in math and reading at rural schools?

The school climate domain of safety consists of emotional safety, physical safety, bullying and cyberbullying, substance abuse, and emergency readiness and management. Teachers and school leaders perceived these subdomains as having an effect on student achievement in math and reading. The participants described emotional safety as essential to achievement, indicating that if students do not feel emotionally safe at school, they will be unable to concentrate on academics. Likewise, they recognized physical safety as a predominant concern, acknowledging students cannot focus on learning without feeling physically safe.

Survey data indicate that all teachers perceived that bullying and cyberbullying were infrequent in their schools (Questions 36 and 37; see Table 6). The participants perceived

bullying as an obstacle to student achievement in math and reading because it distracts students, shifting their focus to bullying instead of learning. Furthermore, the participants described substance abuse as negatively influencing student achievement in math and reading, asserting that students cannot prioritize math and reading while abusing substances. The participants also saw emergency readiness and management as influencing student achievement and suggested emergency preparedness as a way to decrease feelings of nervousness or stress.

### **Sub-Question 3**

How do teachers and school leaders perceive the school climate domain of environment affects student achievement in math and reading at rural schools?

The school climate domain of safety consists of emotional safety, physical safety, bullying/cyberbullying, substance abuse, and emergency readiness and management. The participants in this study identified all the subdomains of environment as having an effect on student achievement. According to the participants, the physical environment correlates with student achievement in math and reading. One hundred percent of teachers at both schools had positive perceptions of their schools' physical environment regarding appearance, temperature, and instructional space (see Table 8). However, the participants described issues with the physical environment (e.g., lighting, temperature, and noise) as barriers to learning. However, they perceived a supportive and effective instructional environment as the "key to an optimal learning environment" (Stephanie).

Moreover, the participants reported differentiation, positive reinforcement, and empowering leadership as effective strategies for fostering a successful instructional environment. Regarding positive reinforcement, 100% of teachers at both schools strongly agreed or agreed that "staff at this school recognize students for positive behavior," with 80% of

VPS teachers and 25% of NES teachers strongly agreeing. The participants perceived physical health as influencing student achievement, as they considered a focus on physical health crucial for enhancing learning. Likewise, the participants suggested mental health complications could negatively affect student achievement in math and reading. The participants also described discipline as affecting student achievement, identifying undisciplined classrooms as burdensome for fostering all students' learning.

### **Summary**

This chapter presented the themes and answers to the research questions. The purpose of this multiple case study was to investigate teachers' and school leaders' perceptions of the effect of school climate on student achievement in math and reading at rural schools. The data from the survey and teacher and school leader interviews underwent analysis as indicated in Chapter Three. Five themes emerged from the data: building strong relationships, SEL, empowering leadership, differentiation, and positive reinforcement. The data were the means to answer the research questions related to the phenomenon. The study's findings showed that the rural teachers and school leaders perceived the school climate domains of engagement, safety, and environment as having an effect on student achievement in math and reading.

## **CHAPTER FIVE: CONCLUSION**

### **Overview**

The purpose of this multiple case study was to investigate teachers' and school leaders' perceptions of the effect of school climate on student achievement in math and reading at rural schools. Chapter Five includes a summary and discussion of the findings and the study's implications, delimitations and limitations, recommendations for future research, and a chapter summary. The summary presents the findings based on the research questions. The discussion section addresses the study's findings and how they relate to the empirical and theoretical literature in the second chapter of this study. The implications section provides the theoretical, empirical, and practical implications of this study and distinct recommendations for various stakeholders. Next, the chapter presents the choices made to define the study's boundaries, the rationale behind these decisions, and the potential deficiencies of this study over which I had no control. After several recommendations for future research, Chapter Five concludes with a summary of the most important information of this study.

### **Summary of Findings**

A multiple case study involving Neptune Elementary School and Venus Primary School (pseudonyms) occurred to answer the research questions of this study. The participants included four teachers and two school leaders from NES, and five teachers and two school leaders from VPS. The multiple case study design produced abundant data for analysis via a survey, teacher interviews, and school leader interviews. The organization of the summary of the study's findings is based on the research questions. This section presents each research question, followed by the findings related to the question from the participants' responses. The findings included the participants' perceptions of the influence of school climate on academic

achievement in math and reading at rural schools. The themes that emerged during the data analysis that addressed the research questions were building strong relationships, SEL, empowering leadership, differentiation, and positive reinforcement.

### **Central Research Question**

How do teachers and school leaders perceive the domains of the school climate model (engagement, safety, and environment) affect student achievement in math and reading at rural schools?

The EDSCLS (2019) model of school climate consists of engagement, safety, and environment. Strong relationships, social-emotional learning, empowering leadership, differentiation, and positive reinforcement emerged as the themes across all three domains of the school climate model. The findings showed the effect of the themes on student achievement in math and reading at rural schools. The participants perceived these themes as fostering an effective school climate and improving academic achievement in math and reading at rural schools.

### **Sub-Question 1**

How do teachers and school leaders perceive the school climate domain of engagement affects student achievement in math and reading at rural schools?

The school climate domain of engagement consists of cultural and linguistic competence, relationships, and participation. The themes addressed the research question across the two cases. The participants perceived cultural and linguistic competence, relationships, and participation as having an effect on student achievement. According to the participants, cultural and linguistic competence can be a “hurdle” or a “barrier”; thus, there is a vital need to meet the needs of culturally and linguistically diverse students. The participants also perceived relationships as

having an effect on student achievement in math and reading. Additionally, the participants perceived school participation as having an influence on achievement in math and reading. The participants considered participation in school effective for encouraging higher academic achievement, with Joann saying, “Students who feel confident participating will comprehend and acquire knowledge more quickly than a passive learner.”

### **Sub-Question 2**

How do teachers and school leaders perceive the school climate domain of safety affects student achievement in math and reading at rural schools?

The school climate domain of safety consists of emotional safety, physical safety, bullying and cyberbullying, substance abuse, and emergency readiness and management. In this study, the participants perceived all the subdomains of safety as having an effect on student achievement. The participants described emotional safety as fundamental to achievement, suggesting that students cannot prioritize learning if they feel emotionally unsafe at school. Similarly, they recognized physical safety as a primary concern, indicating that without feeling physically safe, students cannot focus on learning.

One hundred percent of teachers at both schools strongly agreed/agreed that “staff at this school always stop bullying when they see it,” with 80% of VPS teachers and 50% NES teachers strongly agreeing. The participants perceived bullying as a distraction that causes students to feel preoccupied; thus, bullying can be a barrier to student achievement. Additionally, the participants described substance abuse as negatively influencing student achievement in math and reading, positing that students cannot prioritize math and reading while abusing substances. The participants also saw emergency readiness and management as influencing student

achievement and suggested emergency preparedness as a way to help students feel less nervous or stressed.

### **Sub-Question 3**

How do teachers and school leaders perceive the school climate domain of environment affects student achievement in math and reading at rural schools?

The school climate domain of safety consists of emotional safety, physical safety, bullying/cyberbullying, substance abuse, and emergency readiness and management. The participants in this study reported all the subdomains of environment as having an effect on student achievement. According to the participants, the physical environment correlates with student achievement in math and reading. One hundred percent of teachers at both schools had positive perceptions of their school's physical environment regarding appearance, temperature, instructional space (see Table 8). However, the participants described issues with the physical environment (e.g., lighting, temperature, and noise) as barriers to learning. Overall, they perceived a supportive and effective instructional environment as the "key to an optimal learning environment" (Stephanie).

Additionally, the participants reported differentiation, positive reinforcement, and empowering leadership as successful strategies for fostering a successful instructional environment. Regarding positive reinforcement, 100% of teachers at both schools strongly agreed or agreed that "staff at this school recognize students for positive behavior" with 80% of VPS teachers and 25% of NES teachers strongly agreeing. The participants perceived physical health as having an effect on student achievement, as they considered a focus on physical health necessary for optimizing learning. Similarly, the participants suggested mental health struggles could have an adverse effect on student learning. The participants also described discipline as

having an influence on student achievement in math and reading, reporting undisciplined classrooms as challenging for fostering the learning of all students.

### **Discussion**

The purpose of this multiple case study was to investigate teachers' and school leaders' perceptions of the effect of school climate on student achievement in math and reading at rural schools. Via the conceptual framework, this multiple case study consisted of investigating the perceptions of 13 teachers and school leaders who actively worked in the rural school setting. The findings of this study contributed to the previous research on teachers' and school leaders' perceptions of school climate, leadership, and academic achievement. The following discussion indicates how the findings aligned with the extant empirical and theoretical literature related to the phenomenon.

#### **Theoretical Discussion**

In this multiple case study, Bronfenbrenner's (1979) ecological systems theory and the United States Department of Education School Climate Surveys (EDSCLS) (2019) school climate model were the theories chosen for the conceptual framework used to explore the phenomenon. The EDSCLS school climate model was the microsystem used to explore the influence of the subdomains on academic achievement in math and reading. The following section presents how each domain of the EDSCLS school climate model the empirical literature compared to the study's findings.

Bronfenbrenner's (1979) ecological systems theory focuses on the effect of social environments on human development. Bronfenbrenner (1994, 2001) surmised that stable environments produce better outcomes for individuals, whereas unstable environments obstruct these positive outcomes. In this study, the participants' perceptions aligned with

Bronfenbrenner's (1979) ecological systems theory and showed the connection between a stable environment and positive individual outcomes. The teacher participants viewed fostering the microsystem of school and school climate as essential for achieving positive individual outcomes. Specifically, the results suggest that fostering the school climate domains of engagement, safety, and environment in the school setting could result in improved student achievement in math and reading.

Bronfenbrenner (1979) asserted that various factors impact a child's development and that a bidirectional relationship exists between the child and the environment (Lin & Bates, 2010). In this study, the participants described fostering SEL as a useful strategy for improving students' relationships with their environments and giving them the tools and understanding they need to succeed in the microsystem. Bronfenbrenner (1994) stated, "It is within the immediate environment of the microsystem that proximal processes operate to produce and sustain development" (p. 39). Academic achievement in math and reading are crucial components of development. This study contributed to the research on the theory, as it focused on teachers' and school leaders' perceptions of the influence of the school climate (microsystem) on academic achievement in math and reading (development).

### **Empirical Discussion**

The purpose of this multiple case study was to investigate teachers' and school leaders' perceptions of the influence of the school climate model domains of engagement, safety, and environment on academic achievement in math and reading in rural schools. This study aligned with much of the empirical literature related to this topic and filled the gap in the empirical literature. The extant literature (Camilleri, 2019; Greenway, 2017; Ning, 2020; Zamora & Hernandez, 2016) and this study indicate that school climate does have an influence on student

achievement in math and reading. In this study, the teachers and school leaders discussed the influence of school climate on academic achievement. The themes that emerged across the cases presented the teachers' and school leaders' perceptions of how to foster school climate and academic achievement. The following sections show how this study and its findings confirmed, diverged from, and extended the existing literature.

### **Engagement**

The engagement domain of school climate consists of cultural and linguistic competence, relationships, and school participation. According to the literature, cultural and linguistic barriers have a negative influence on academic achievement (ED, 2020; United Nations Educational, Scientific and Cultural Organization, 2008). The UNESCO's (2008) study found most students who dropped out of school did not speak the language in which they received instruction, and English language learners had a high school graduation rate of 31% in New York (ED, 2020). This study's participants aligned with the United Nations finding, as they perceived cultural and linguistic barriers could result in reduced student achievement. The participants suggested that reduced student achievement could occur if students "aren't able to access the language adequately." Therefore, the findings indicate that a high dropout rate, low graduation rate, and a system of struggling academic achievement could result from cultural and linguistic barriers.

In this study, the participants perceived relationships as a factor that significantly affected student achievement in math and reading, a finding that aligned with the literature. Tina said, "The better the student-teacher relationship, the more successful a child is academically." Similarly, Valiente et al. (2019) found that strong teacher-student relationships positively impacted elementary students' achievement in reading. Thus, teacher-student relationships can have a positive influence on and be effective predictors of student achievement in math (Xu &

Qi, 2019).

The participants in this study perceived school participation as having a positive influence on student achievement in math and reading. One participant said,

The more [students are] involved in things at school, the more they take pride in their school, the more they take responsibility for their actions, and the more willing they are to kind of push themselves through that academic piece.

This perception aligned with prior research, as a Harris Poll (VB, 2014) found 92% of principals perceived that school spirit correlated with high student achievement. Additionally, this study's participants considered participation in school events and extracurricular activities a positive influence on student achievement. This perception also aligned with the extant literature (Freeman, 2017; Meadows, 2018; Wretman, 2017), which has indicated that participation in extracurricular activities can have a positive influence on student achievement.

In this study, the participants also perceived that participation in the classroom correlated with improved academic achievement. Joann said, "Students who feel confident participating will comprehend and acquire knowledge more quickly than a passive learner." The perception of classroom participation resulting in increased student achievement aligned with the literature (Kim et al., 2019; Kumaraswamy, 2019).

## **Safety**

The safety domain of school climate includes emotional safety, physical safety, bullying and cyberbullying, substance abuse, and emergency readiness and management. Students who do not feel supported and psychologically safe at school cannot learn to their fullest potential (NASP, 2013). The participants in this study emphasized the importance of safety for academic achievement. This multiple case study was a means of extending the research on emotional

safety because it found that fostering emotional safety positively affected academic achievement in math and reading. The findings suggest that students cannot focus on learning and academics if they feel emotionally unsafe. In this study, the participants reported fostering emotional safety as a vital means of enabling students to take risks, engage, and participate, thus improving achievement.

Students who do not feel physically safe at school cannot achieve their full capability (NASP, 2013). The perceptions of the participants in this study aligned with this finding. According to the participants, students who do not feel physically safe cannot concentrate on academic achievement. One participant said, “The perception of being in a safe place is foundational before we can really even focus on our learning. If a student feels safe, that’s going to foster their ability to learn and perform.”

Tiauzon and Malquisto (2018) found that frequent bullying correlated with lower academic achievement in middle school students. This multiple case study was a means of extending the study of Tiauzon and Malquisto, as this study’s findings suggest that bullying has a negative effect on student achievement in math and reading. The participants in this study described bullying as a distraction to student learning. This study’s findings suggest students cannot focus on learning when they feel threatened by other students. In turn, this can adversely affect their achievement.

All the participants in this study reported that substance abuse was not a problem at their elementary schools, a finding potentially divergent from the literature. Although substance abuse occurs less in elementary school and more in middle and high school, the RFTC (2019) indicated,

Children in the upper grades of elementary school are feeling the emotional pressures that can lead to substance abuse, and each successive study has estimated the percentage of 12- and 13-year-olds who have tried drugs, alcohol, or tobacco at a higher level. (para. 2)

In this multiple case study, the teacher participants perceived substance abuse as having a negative effect on academic achievement. The findings of this study suggest that students experiencing substance abuse cannot focus on academics. Instead, they focus on the abused substance. These findings aligned with Silins et al. (2015), who found that substance abuse negatively affected adolescents' educational attainment.

There is little research on the impact of emergency readiness and management on academic achievement in math and reading. Therefore, this multiple case study filled this gap and contributed to the literature in this area. Most of this study's participants described emergency preparedness as providing students with peace of mind and the ability to focus on academics. This study aligned with Datu (2017), who found "peace of mind had an indirect influence on academic achievement through the mediating effects of autonomous motivation" (p. 1).

## **Environment**

The environment domain of school climate consists of the physical environment, instructional environment, physical health, mental health, and discipline. The participants in this study discussed the adverse effects of a physical environment "not conducive to learning." According to the participants, issues with temperature, lighting, organization, and space could "impede student learning" and academic achievement in math and reading. This multiple case study aligned with Maxwell's (2016) study, who found that students with substandard facilities scored lower on academic achievement tests than students at well-taken-care-of schools.

Shamaki (2015) also found that the instructional environment had an influence on math performance. This multiple case study aligned with Shamaki, as all the participants perceived instructional environment as having an influence on student achievement in math and reading. The participants indicated a supportive and encouraging instructional environment as a way to positively influence student achievement and teach effective lessons.

All the participants in this study described physical health as having an effect on student achievement in math and reading. This finding aligned with Spornak et al. (2006), who suggested that student health affects academic achievement, independent of family risk factors. The participants in this multiple case study considered a focus on student health necessary for helping students focus in school and achieve academically.

Additionally, all thirteen participants perceived mental health as having an effect on student achievement in math and reading. The participants described mental health struggles as barriers to the learning process. The findings suggest that students struggling with mental health cannot focus on learning, which could negatively influence academic achievement in math and reading. The perceptions of the participants in this study aligned with Agnafors et al. (2021), who found that issues with mental health correlated with increased student risk for academic achievement.

Blank and Shavit (2016) found that disruptive behavior negatively correlated with academic achievement. According to Blank and Shavit, “A disruptive classroom climate can hinder the learning process and lower the achievement of the entire class, regardless of the conduct of any particular student” (p. 1). The participants’ perceptions in this study aligned with the finding of Blank and Shavit. The participants described the adverse effects of a disruptive classroom on all students’ learning and achievement.

## **Leadership and School Climate**

There is a great deal of research focusing on leadership and school climate (Amedome, 2018; Epperson, 2018; Jennings, 2019; Smith et al., 2020); however, little research is specific to rural teachers' and school leaders' perceptions of how rural leadership affects school climate. A novel finding of this multiple case study is rural teachers and school leaders perceived that leadership influences the school climate domains of engagement, safety, and environment. Participants believed school leaders could positively affect school climate by empowering teachers and being open to their thoughts and ideas. All participants perceived leadership to influence the school climate domains, with some describing school leadership as the most significant influence on the school climate domains.

Murray (2021) noted that elementary teachers reflected principals' commitment to a team environment with school climate. This multiple case study aligned with Murray's finding, as the participants felt that being a team player and supporting teachers strongly influenced school climate. The participants also believed their school leaders set the tone for the school climate.

## **Leadership and Academic Achievement**

The participants in this study perceived school leaders as affecting student achievement in math and reading through the trickle-down effect. This study suggests that principals affect teachers and school climate, factors with a significant influence on student achievement in math and reading. Other scholars have indicated that school leaders indirectly affect student achievement by influencing teachers and school climate (Dutta & Sahney, 2016; Hallinger & Heck, 2010; Özdemir, 2019; Ross & Gray, 2006; Ten Bruggencate et al., 2012). McCown (2018) focused on rural middle schools, with teachers and principals believing that principals directly or indirectly impacted student achievement. This study aligned with McCown, as it also found that

teachers and school leaders at rural elementary schools believed school leaders indirectly influenced student achievement in math and reading.

### **Building Strong Relationships**

The participants in this study perceived strong teacher–student relationships to improve student motivation and achievement in math and reading. A participant said, “With a good relationship, the student wants to please the teacher and give their best effort.” This finding aligned with Scales et al. (2020), who found that relationships were indirect predictors of student achievement through motivation. The participants in this study perceived building strong relationships as a way to overcome cultural and linguistic barriers. This finding aligned with Brace (2011), who found a link between teachers’ cultural competence and students’ academic achievement via improved relationships with students in urban elementary schools. Similarly, Cohen and Freiberg (2013) stated that a positive school climate resulted from healthy relationships among students, teachers, and administrators.

This multiple case study showed that building strong relationships had a positive effect on school climate. The participants described the association between strong relationships and improved academic achievement. One participant said, “The better the relationship, the better the academic success.” This study aligned with the findings of several scholars indicating the positive influence of teacher–student relationships on student achievement in math and reading (Hajovksy et al., 2017; Keating, 2019; Lucillo-Carillo, 2017; Ma et al., 2018; Pendarvis, 2019; Valiente et al., 2019; Xu & Qi, 2019).

### **Social-Emotional Learning**

The participants described social-emotional learning as a valuable strategy for improving school climate and academic achievement. This study aligned with Panayiotou et al. (2019), who

found a direct link between social-emotional competence and academic attainment. The participants in this study used SEL to prevent bullying and improve relationships, emotional safety, mental health, and other aspects of school climate. This finding aligned with several research studies. Caldarella et al. 2019 noted that SEL was a way to improve mental health. Labelle (2019) stated that SEL resulted in “a reduction of problem behaviors, an increase in academic achievement among children and youth, and increased resilience in students” (p. 1). Ashdown and Bernard (2012) found SEL correlated with improved reading achievement, fewer problem behaviors, and improved social-emotional competence and well-being. In this multiple case study, the participants used the social-emotional practice of character education to improve their schools’ climate; in turn, the improved school climate correlated with improved student achievement. This finding aligned with Sherblom et al. (2006), who asserted character education programs positively affect school climate, which, in turn, correlates with improved learning and academic achievement.

### **Empowering Leadership**

Byun et al. (2020) found that empowering leadership trickles down from high-level leaders to the hierarchy of an organization; thus, the leaders indirectly improve the employees’ performance. This study extended Byun et al.’s findings to the school setting. In this study, the teachers described empowering leadership as trickling down through the organization from school leaders to teachers to students for improved school climate and student achievement in math and reading. This multiple case study aligned with Hughes and Pickeral (2013), who presented empowerment as an essential factor in a positive school climate and a significant mediator of learning. However, this study produced findings divergent from Short and Rinehart (1993), who found that increased teacher empowerment resulted in increased organizational

conflict and a worse school climate. In contrast, Atik and Celik (2020) reported that principals who used empowering leadership were significant predictors of teacher job satisfaction, psychological empowerment, and teacher trust in the principal. The findings of this multiple case study aligned with Atik and Celik, as the teachers described empowerment, freedom, trust, and comfortability as important aspects of the empowering leadership of school leaders.

### **Differentiation**

This study's participants discussed the importance of using differentiation to meet students' cultural and linguistic needs. The participants' perceptions aligned with Kotob and Abadi (2019), who found that differentiating instruction resulted in improved academic achievement among struggling students. In this study, the participants considered differentiation an avenue for improving several subdomains of school climate. The participants perceived all the school climate domains as influencing academic achievement in math and reading. Therefore, this study aligned with several studies indicating that differentiation improves academic achievement (Altıntaş & Özdemir, 2015; Bal, 2016; Smale-Jacobse et al., 2019).

### **Positive Reinforcement**

The participants in this study described positive reinforcement as a means of maintaining a positive school climate and academic achievement. Specifically, the participants used positive reinforcement to foster positive teacher–student relationships. These perceptions aligned with Agyekum (2019), who found that positive reinforcement led to improved student–teacher relationships. According to Agyekum, “Teachers who emphasize positive aspect[s] of students rather than negative aspect[s] help the students to be more forthcoming with positive behavior,” whereas “an overemphasized negative students’ attitude rather than praise leads to bad relation between instructors and students” (p. 121). This multiple case study found positive reinforcement

to be an effective way to handle discipline and manage the classroom. The participants in this study also perceived discipline as having an influence on student achievement in math and reading. This study aligned with Bradshaw et al. (2012), who stated that positive reinforcement via positive behavioral intervention was a way to improve behavior, effective emotion regulation, and prosocial behavior. Additionally, Simonsen et al. (2011) indicated that positive reinforcement correlates with improved student achievement in math and social outcomes.

### **Implications**

This section presents theoretical, empirical, practical, and policy implications related to rural schools, school climate, and student achievement in math and reading.

#### **Theoretical Implications**

The study's conceptual framework consisted of Bronfenbrenner's (1979) ecological systems theory and the EDSCLS (2019) school climate model. The EDSCLS school climate model indicates that the microsystem has an impact on the outcomes of academic achievement in math and reading. Bronfenbrenner (1994, 2001) surmised that stable environments produce better outcomes for individuals, while unstable environments obstruct these positive outcomes. Additionally, there is a bidirectional relationship between the child and the environment (Lin & Bates, 2010).

A theoretical implication of this study is that, for the microsystem of school climate, teachers can use SEL to better teach students how to interact with the relationship between themselves and the environment. Students who can interact in their environments and contribute to the stability of their environments might experience more development. The study's findings suggest SEL is a way to improve the EDSCLS (2019) school climate subdomains of relationships, emotional safety, the prevention and mitigation of bullying, mental health, and the

microsystem of physical safety and instructional environment. Therefore, SEL could be a way to improve child development (academic achievement in math and reading).

Another theoretical implication of this research study is that the domains of the EDSCLS (2019) model of school climate influence academic achievement in not only math and reading but also each other. The participants perceived the subdomain of relationships as having an influence on the subdomain of emotional safety. The final theoretical implication is that the findings suggest that the inadequacy of even one subdomain of the EDSCLS school climate model (microsystem) could be a significant hindrance to academic achievement in math and reading (child development).

### **Empirical Implications**

This study has noteworthy empirical implications for the achievement gap in math and reading between suburban and rural students. Little to no research has focused on rural teachers' and school leaders' perceptions of the influence of school climate on student achievement in math and reading. This study filled the gap in the literature on this phenomenon and provided insight into how to foster school climate and student achievement. One implication of this study is that the participants perceived all the domains of school climate (engagement, safety, environment) as having an effect on student achievement in math and reading. Additionally, the participants perceived the subdomains as having an influence on student achievement. The findings suggest that the inadequacy of even one subdomain of school climate could hurt student achievement. For example, participants perceived that student achievement in math and reading would suffer if the mental health subdomain were deficient.

Another implication is that the participants perceived improving the subdomains of school climate as a way to positively influence the other subdomains of school climate. For

example, fostering the relationship domain of school climate could be a way to simultaneously improve the subdomains of emotional safety, mental health, bullying and cyberbullying, and discipline. The findings suggest that improving the school climate subdomains could have a compounding effect on other subdomains due to their interrelated nature.

One last implication is that the participants considered strong relationships, social-emotional learning, empowering leadership, differentiation, and positive reinforcement valuable for improving the domains of school climate and student achievement in math and reading. The findings indicate that teachers, school leaders, and school climate influence student achievement in math and reading. The knowledgeable and experienced teachers and school leaders in the field of education shared their perceptions of how their rural school staff fostered the school climate domains to improve student achievement. Therefore, rural school staff could use the findings of this study to improve rural schools in these regards.

### **Practical Implications**

A practical implication is that school leaders should administer the EDSCLS (2019) instructional staff survey to their teachers to gauge their perceptions of school climate and improve any inadequate domains of school climate. The inadequacy of even one subdomain could have a negative effect on student achievement in math and reading. Therefore, improving gaps in school climate could help to improve student achievement in math and reading and close the rural–suburban achievement gap.

Another practical implication for school leaders is to use empowering leadership to lead their schools. Lorinkova and Perry (2018) identified four leader behaviors of empowering leadership: “highlighting the significance of employee work, allowing employee participation in decision-making, emphasizing employee strengths, and removing bureaucratic constraints” (pp.

2–3). School leaders should use empowering leadership behaviors to improve school climate and student achievement. Similarly, it is recommended that school leaders enhance their empowering leadership skills through professional development: collaboration with experienced empowered leaders, book study, workshop, or seminar. Moreover, a practical implication for school leaders, in conjunction with teachers and parents, is to select a character education program that best fits their school. Participants in this multiple case study used the social-emotional learning practice of character education to improve their schools' climate and student achievement.

School leaders should offer professional development on SEL, differentiation, and positive reinforcement for school faculty to attend. This multiple case study found that rural teachers and school leaders perceived these themes to positively influence school climate and student achievement. Regular and consistent opportunities for professional development during staff development days, after school, or outside coursework would ensure teachers and other staff members are best equipped to foster an effective school climate and improve student achievement. The implication for teachers is to seek how best to implement these educational pillars in the classroom to improve school climate and student achievement in math and reading.

The schools in this study had a dedicated time slot for teachers' social-emotional learning practices, which participants asserted positively influences school climate. I recommend that school leaders give their teachers a brief time slot at the beginning of each school for daily check-ins, circles, and various other SEL practices to foster the domains of school climate and student achievement.

### **Policy Implications**

The results of the study showed that teachers and school leaders perceived school climate domains (engagement, safety, environment) affect student achievement in math and reading at

rural schools. A policy implication of this study is that state education departments, universities, and other governing bodies should provide resources and recommendations for fostering school climate for improved student achievement in math and reading. Specifically, it is recommended that state education departments work with university professors and K–12 teachers to provide accessible documents and hold webinars on fostering the school climate domains (i.e., engagement, safety, environment) through building strong relationships, social-emotional learning, empowering leadership, differentiation, and positive reinforcement. Experienced rural teachers and school leaders perceived these themes to positively affect student achievement in math and reading. However, whether rural or urban, each school is unique. However, each school, whether rural or urban, is unique. Ultimately, decisions for fostering school climate should come from local school leaders, teachers, parents, and students.

Participants in this study explained that school counselors effectively foster social-emotional learning and several subdomains of school climate (e.g., relationships, mental health, etc.). The American School Counselor Association (2021) recommends one school counselor for every 250 students. New York has a 350-to-1 school counselor-to-student ratio, with many states having even higher ratios. Therefore, an additional recommendation is that policymakers require schools to staff rural and other schools with at-risk students according to the American School Counselor Association's recommendation of a 250-to-1 school counselor-to-student ratio.

Because the population of rural regions has declined, funding in rural schools continues to be a problem (Bernstein, 2019; Lyson, 2002). Even though one in five students in the United States attends a rural school and half of all schools are rural (Lavalley, 2018), rural schools receive 17% of state education funding (Showalter et al., 2017). Rural students underperform suburban students in math and reading (Collins et al., 2016; Hoffman et al., 2017; NAEP, 2019;

Rice et al., 2018; Robson et al., 2019). Increases in school funding are correlated with improved student achievement in math and reading (Baker, 2017; Baron, 2022; Kreisman & Steinberg, 2019). Additionally, several implications of this study (i.e., character education programs, professional development in social-emotional learning, empowering leadership, differentiation, positive reinforcement, and school counselor salary) could be financially prohibitive. Thus, a policy implication is to ensure that rural schools receive adequate funding to effectively foster school climate and student achievement in math and reading.

### **Delimitations and Limitations**

The delimitations of a study are purposely set limitations, while limitations are restrictions out of the researcher's control (Theofanidis & Fountouki, 2018). Theofanidis and Fountouki (2018) noted, "Delimitations are mainly concerned with the study's theoretical background, objectives, research questions, variables under study and study sample," while limitations are "closely associated with the chosen research design, statistical model constraints, funding constraints, or other factors" (pp. 156–157). In this study, the delimitations were the decisions made to create boundaries and limits for this multiple case study. As the researcher, I had no control over the limitations.

#### **Delimitations**

A delimitation of the study was the recruitment of teachers and school leaders with at least 3 years of experience working in their rural schools. The reason for this delimitation was to ensure the participants had adequate experience working in rural schools so they could provide accurate perceptions about the research questions. Another reason for this delimitation was that teaching and school leadership are challenging positions. A minimum of 3 years of experience at rural schools was appropriate to ensure the study included teachers and school leaders

experienced and knowledgeable of their positions and the field of education, particularly rural education.

Another delimitation was the limited number of participants. This research was a multiple case study with a qualitative design. The intent was to conduct an in-depth study focused on a small number of cases to gain a deep understanding of the phenomenon and collected data. The choice to saturate in the perceptions of the teachers and school leaders at the two schools under study resulted in a reduced number of participants. However, the small number of participants provided the opportunity to answer the research questions and acquire a deep and rich understanding of the two cases.

### **Limitations**

A limitation of this study is that it occurred during the COVID-19 pandemic. The participants reported an increased focus on certain subdomains of school climate since the beginning of the COVID-19 pandemic. At the time of the study, Western New York schools had mask and social distancing requirements. The risk of social desirability bias is another limitation. Bergen and Labonté (2019) explained, “Social desirability bias refers to the tendency to present oneself and one’s social context in a way that is perceived to be socially acceptable, but not wholly reflective of one’s reality” (p. 783). Another limitation is I had limited control over the demographics of my study participants. Because of the location of the schools and the general population demographics the participants in the study were White. Each participant that responded to the recruitment letter was also White. Thus, there is a strong representation of White participants in the sample. This homogenous could influence the transferability of results of the study as the perceptions of rural teachers and school leaders are limited to one race. Accordingly, the perceptions of the rural participants may not be generalized to various

demographics of teachers and school leaders.

### **Recommendations for Future Research**

Little to no research has focused on rural teachers' and school leaders' perceptions of the factors affecting school climate and student achievement in math and reading. Therefore, this study filled the gap in the literature. Rural schools vary across regions of the United States in culture, school size, socioeconomic background, and achievement. Thus, more research is needed on teachers' and school leaders' perceptions of school climate to generalize the results. Therefore, a recommendation is to conduct a similar study at rural schools in different U.S. schools and regions with more diverse samples.

This study included the perceptions of a variety of stakeholders involved in the education of elementary students. However, further research could include the perceptions of parents and other school employees, including teacher aides, school nurses, bus drivers, and custodial staff. Future research could also focus on the influence of school climate on academic achievement in other subject areas, such as science or social studies.

Because this study occurred during the COVID-19 pandemic, the pandemic could have influenced the teachers' perceptions of the school climate domains. Thus, scholars should conduct a similar study after the pandemic. Future research could include a comparative case study on teachers' and school leaders' perceptions of the influence of school climate on student achievement in high-performing rural, suburban, and urban schools. Another recommendation is to conduct a mixed methods study on the phenomenon. In such a study, a researcher could use the results of the EDSCLS (2019) Instructional Staff Survey to conduct a quantitative analysis and use interviews and other forms of qualitative data collection to conduct a qualitative analysis and benefit the field of education. Several other research topics could stem from this multiple

case study. Future studies could also focus on the effect of this study's themes of strong relationships, SEL, empowering leadership, differentiation, and positive reinforcement on school climate and academic achievement.

### **Summary**

Rural students underperform compared to their suburban peers in math and reading (Collins et al., 2016; Hoffman et al., 2017; NAEP, 2019; Rice et al., 2018; Robson et al., 2019). The purpose of this multiple case study was to explore teachers' and school leaders' perceptions of the effect of school climate on student achievement in math and reading at rural schools. The exploration of this phenomenon filled the gap in the research and could contribute to the closure of the rural-suburban achievement gap in math and reading. In this study, the rural teachers and school leaders perceived the school climate domains (engagement, safety, environment) as having an effect on student achievement in math and reading. The participants suggested fostering the subdomains of school climate (cultural and linguistic competence, relationships, school participation, emotional safety, physical safety, bullying/cyberbullying, substance abuse, emergency readiness and management, physical environment, instructional environment, physical health, mental health, discipline) to positively influence other subdomains of school climate. Additionally, the participants perceived strong relationships, social-emotional learning, empowering leadership, differentiation, and positive reinforcement as means of effectively fostering the domains of school climate and student achievement in math and reading.

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**APPENDIX A: IRB Approval****LIBERTY UNIVERSITY.**  
INSTITUTIONAL REVIEW BOARD

August 6, 2021

Matthew Dolegowski  
Judy Shoemaker

Re: IRB Exemption - IRB-FY20-21-992 Rural Teachers' and School Leaders' Perceptions of School Climate and Student Achievement in Math and Reading: A Multiple Case Study

Dear Matthew Dolegowski, Judy Shoemaker,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(iii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met: The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

**Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB.** Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible

modifications to your protocol would change your exemption status, please email us at [irb@liberty.edu](mailto:irb@liberty.edu).

Sincerely,

**G. Michele Baker, MA, CIP**

*Administrative Chair of Institutional Research*

**Research Ethics Office**

## APPENDIX B: Consent Forms

### School Leader Consent Form

**Title of the Project:** Rural Teachers' and School Leaders' Perceptions of School Climate and Student Achievement in Math and Reading: A Multiple Case Study

**Principal Investigator:** Matthew J. Dolegowski, Doctoral Student, Liberty University

#### Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be 18 years of age or older, a school leader (e.g., a superintendent, principal, assistant principal, instructional coach, intervention coordinator, or school psychologist) with three years of experience at your current school, and work at a rural school site. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

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

The purpose of this study is to investigate teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools.

#### What will happen if you take part in this study?

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

1. Participate in an interview. The interview could be conducted face-to-face, over a video-conferencing application, over the phone, or via written response. If the interview is conducted via written response, I would ask you to return it to me via email. If the interview is conducted face-to-face, through video-conferencing, or over the phone, I would audio record it to accurately transcribe your answers. The interview should last between 30-60 minutes.
2. Review the interview transcript for accuracy. The transcript will be emailed to you after interview is completed.

#### How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society may include offering recommendations to improve school climate and academic achievement.

#### What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

Liberty University IRB-FY20-21-992 Approved on 8-6-2021
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#### How will personal information be protected?

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records. Data collected from you may be shared for use in future research studies or with other researchers. If data collected from you is shared, any information that could identify you, if applicable, will be removed before the data is shared.

- Participant responses will be kept confidential through the use of pseudonyms. Interviews will be conducted in a location where others will not easily overhear the conversation.
- Electronic data will be stored on a password-locked, web-based storage system and hardcopy data will be stored in a locked filing cabinet. Data may be used in future presentations. After three years, all electronic records will be deleted and hardcopy data will be destroyed.
- Interviews will be recorded and transcribed. Recordings will be stored on a recording device for three years and then erased. Only the researcher will have access to these recordings.

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

Participants will be compensated for participating in this study. Participants will be emailed a \$20 e-gift card for Target. The e-gift card will be emailed to the participant after all procedures have been completed.

#### Is study participation voluntary?

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

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

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

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

The researcher conducting this study is Matthew Dolegowski. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at [REDACTED] or [REDACTED]. You may also contact the researcher's faculty sponsor, Dr. Judy Shoemaker, at [REDACTED].

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

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

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

**Your Consent**

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

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

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

\_\_\_\_\_  
Printed Subject Name

\_\_\_\_\_  
Signature & Date

Liberty University IRB-FY20-21-992 Approved on 8-6-2021
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**APPENDIX C: EDSCLS Instructional Staff Survey****ED School Climate Surveys****INSTRUCTIONAL STAFF SURVEY**

U.S. Department of Education  
National Center for Education Statistics

1. Are you male or female? Mark one response.

- Male
- Female

2. Are you of Hispanic or Latino origin? Mark one response.

- Yes
- No

3. What is your race? You may mark one or more races.

- White
- Black or African-American
- Asian
- American Indian or Alaska Native
- Native Hawaiian or Pacific Islander

4. Is your **main assignment/responsibility** at this school to provide instruction or other support services to any of these types of students - Special Education, English Language Learners, Gifted and Talented Education students, and Migrant Education? Mark one response

- Yes
- No

5. How many years have you been working at this school? Mark one response.

- 1-3 years
- 4-9 years
- 10-19 years
- 20 or more years

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response.**

*Throughout the survey, "This school" means activities happening in school buildings, on school grounds, on school buses, and at places that hold school-sponsored events or activities. Unless otherwise specified, this refers to normal school hours or to times when school activities/events were in session.*

6. At this school, all students are treated equally, regardless of whether their parents are rich or poor.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

7. This school encourages students to take challenging classes no matter their race, ethnicity, nationality, and/or cultural background (e.g., honor level courses, gifted courses, AP or IB courses).

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

8. This school provides instructional materials (e.g., textbooks, handouts) that reflect students' cultural background, ethnicity and identity.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

9. This school emphasizes showing respect for all students' cultural beliefs and practices.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

10. This school provides effective resources and training for teaching students with Individualized Education Programs (IEPs) across different languages and cultures.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

11. This school provides effective supports for students needing alternative modes of communication (e.g., manual signs, communication boards, computer-based devices, picture exchange systems, Braille).

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

12. Staff do a good job helping parents to support their children's learning at home.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

13. Staff do a good job helping parents understand when their child needs to learn social, emotional, and character skills.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

14. If a student has done something well or makes improvement, staff contact his/her parents.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

15. This school asks families to volunteer at the school.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

16. This school communicates with parents in a timely and ongoing basis.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

17. My level of involvement in decision making at this school is fine with me.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

18. Staff at this school have many informal opportunities to influence what happens within the school.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?**

**Mark One Response**

19. At this school, students are given the opportunity to take part in decision making.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

20. Administrators involve staff in decision-making.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

21. This school provides students with opportunities to take a lead role in organizing programs and activities.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

22. Students are encouraged to get involved in extra-curricular activities.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

23. I feel like I belong.

- Strongly Agree

- Agree
- Disagree
- Strongly Disagree

24. I feel satisfied with the recognition I get for doing a good job.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

25. I feel comfortable discussing feelings, worries, and frustrations with my supervisor.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

26. This school inspires me to do the very best at my job.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

27. People at this school care about me as a person.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

28. I can manage almost any student behavior problem.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

29. I feel safe at this school.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

30. The following types of problems occur at this school often: physical conflicts among students.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

31. The following types of problems occur at this school often: robbery or theft.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

32. The following types of problems occur at this school often: vandalism.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

33. The following types of problems occur at this school often: student possession of weapons.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

34. The following types of problems occur at this school often: physical abuse of teachers.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

35. The following types of problems occur at this school often: student verbal abuse of teachers.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?**

**Mark One Response**

*This question is about bullying. Bullying happens when one or more students tease, threaten, spread rumors about, hit, shove or hurt another student. It is not bullying when students of about the same strength or power argue or fight or tease each other in a friendly way. Bullies are usually stronger, or have more friends or more money, or some other power over the student being bullied. Usually, bullying happens over and over, or the student being bullied thinks it might happen over and over.*

36. I think that bullying is a frequent problem at this school.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

*This question is about cyberbullying. Cyberbullying is bullying that takes place using electronic technology. Examples of cyberbullying include mean text messages or emails, rumors sent by email or posted on social networking sites, and embarrassing pictures, videos, websites, or fake profiles.*

37. I think that cyberbullying is a frequent problem among students at this school.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

38. Students at this school would feel comfortable reporting a bullying incident to a teacher or other staff.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

39. Staff at this school always stop bullying when they see it.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?**

**Mark One Response**

40. Staff at this school are teased or picked on about their race or ethnicity.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

41. Staff at this school are teased or picked on about their cultural background or religion.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

42. Staff at this school are teased or picked on about their physical or mental disability.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

43. Staff at this school are teased or picked on about their sexuality.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How much of a problem are the following at this school? Mark One Response**

*Drugs means any substance, including those used to get “high” or increase performance in school or sports. Examples of drugs include marijuana, illegal drugs, inhalants, synthetic drugs used to get high (K-2, bath salts, white lightning), or over-the-counter medicine. This does not include medications prescribed by doctor or nurse for the person, but includes prescription drugs that are NOT prescribed to the person by his/her doctor.*

44. At this school, how much of a problem is student drug use? Isafsub83

- Not a Problem
- Small Problem
- Somewhat a Problem
- Large Problem

**How much of a problem are the following at this school? Mark One Response**

45. At this school, how much of a problem is student use of electronic cigarettes?

- Not a Problem
- Small Problem

- Somewhat a Problem
- Large Problem

46. At this school, how much of a problem is student use of tobacco (e.g., cigarettes, chew, cigars)?

- Not a Problem
- Small Problem
- Somewhat a Problem
- Large Problem

*“Alcohol” means a full or part of a drink of alcohol. Examples include beer, wine, mixed drink, shot of liquor, or any combination of these alcoholic drinks. This does not include alcohol that you may drink for religious purposes.*

47. At this school, how much of a problem is student alcohol use?

- Not a Problem
- Small Problem
- Somewhat a Problem
- Large Problem

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

48. This school collaborates well with community organizations to help address youth substance use problems.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

49. This school has adequate resources to address substance use prevention.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

50. This school provides effective confidential support and referral services for students needing help because of substance abuse (e.g., a Student Assistance Program).

- Strongly Agree
- Agree

- Disagree
- Strongly Disagree

51. This school has programs that address substance use among students. Isafsub91

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

52. I know what to do if there is an emergency, natural disaster (tornado, flood) or a dangerous situation (e.g., violent person on campus) during the school day.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

53. This school has a written plan that describes procedures to be performed in shootings.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

54. This school has a written plan that clearly describes procedures to be performed in natural disasters (e.g., earthquakes or tornadoes).

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

55. This school or school district provides effective training in safety procedures to staff (e.g., lockdown training or fire drills).

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?**

**Mark One Response**

56. This school looks clean and pleasant.

- Strongly Agree
- Agree
- Disagree

Strongly Disagree

57. This school is an inviting work environment.

Strongly Agree

Agree

Disagree

Strongly Disagree

58. My teaching is hindered by poor heating, cooling, and/or lighting systems at this school.

Strongly Agree

Agree

Disagree

Strongly Disagree

59. My teaching is hindered by a lack of instructional space (e.g., classrooms) at this school.

Strongly Agree

Agree

Disagree

Strongly Disagree

60. My teaching is hindered by a lack of textbooks and basic supplies at this school.

Strongly Agree

Agree

Disagree

Strongly Disagree

61. My teaching is hindered by inadequate or outdated equipment or facilities at this school.

Strongly Agree

Agree

Disagree

Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

62. The students in my class(es) come to class prepared with the appropriate supplies and books.

Strongly Agree

Agree

Disagree

Strongly Disagree

63. Once we start a new program at this school, we follow up to make sure that it's working.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

64. The programs and resources at this school are adequate to support students' learning.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

65. Teachers at this school feel responsible to help each other do their best.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

66. Teachers at this school feel that it is a part of their job to prepare students to succeed in college.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

67. The programs and resources at this school are adequate to support students with special needs or disabilities.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

68. This school provides the materials, resources, and training necessary for me to support students' physical health and nutrition.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

69. This school places a priority on making healthy food choices.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

70. This school places a priority on students' health needs.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

71. This school places a priority on students' physical activity.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

72. This school provides quality counseling or other services to help students with social or emotional needs.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

73. This school provides the materials, resources, and training necessary for me to support students' social or emotional needs.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

74. This school places a priority on addressing students' mental health needs.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

75. This school places a priority on teaching students strategies to manage their stress levels.

- Strongly Agree

- Agree
- Disagree
- Strongly Disagree

76. This school places a priority on helping students with their social, emotional, and behavioral problems.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

77. Staff at this school are clearly informed about school policies and procedures.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

78. Staff at this school recognize students for positive behavior.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

79. School rules are applied equally to all students.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**How strongly do you agree or disagree with the following statements about this school?  
Mark One Response**

80. Discipline is fair.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

81. This school effectively handles student discipline and behavior problems. Ienvdis135

- Strongly Agree
- Agree
- Disagree

Strongly Disagree

82. Staff at this school work together to ensure an orderly environment.

Strongly Agree

Agree

Disagree

Strongly Disagree

## APPENDIX D: Permission to Reproduce or Adapt Images

### Permission to Adapt and Publish Figure 8, Page 108



Craig Myles <permissions@sagepub.com>

Mon 3/15/2021 12:06 PM



To: Dolegowski, Matthew

[ EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content. ]

Reply above this line.

Craig Myles commented:

Dear Matthew Dolegowski,

Thank you for your request. I am pleased to report we can grant your request to reuse the adapted version of Figure 5.5 from '*Case Study Research: Design and Methods, 4th Ed.*' without a fee as part of your dissertation.

**Please accept this email as permission for your request as detailed above. Permission is granted for the life of the dissertation on a non-exclusive basis, in the English language, throughout the world in all formats provided full citation is made to the original SAGE publication. Permission does not include any third-party material found within the work.**

**Please contact us for any further usage of the material.**

If you have any questions, or if we may be of further assistance, please let us know.

Best regards,

Craig Myles

*Senior Rights Coordinator*

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Dolegowski, Matthew

Sun 3/27/2022 8:16 AM



To: rights.permissions@sagepub.com

Mr. Myles,

I plan on publishing my dissertation on ProQuest Dissertations & Thesis Global and potentially other places. I have your "permission to use," but I was wondering if I also had your "permission to publish."

Thank you!

Matthew



Craig Myles <permissions@sagepub.com>

Mon 3/28/2022 11:48 AM

To: Dolegowski, Matthew



[ EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content. ]

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Reply above this line.

Craig Myles commented:

Hello Matthew,

Thank you for your question. Given the adapted nature of your work, you are welcome to include the figure on ProQuest Dissertations & Thesis Global, as well as to publish the figure at no cost. We ask that a full citation to the original source please be included.

If I can be of further assistance, please let me know.

Kind regards,

Craig Myles

## Permission To Adapt and Publish Figure 2, Page 37

**T** The Psychology Notes HQ <sandra.w.chan@gmail.com>  
 Sun 4/11/2021 9:46 PM  
 To: Dolegowski, Matthew

[ EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content. ]

---

Hi Matthew,

Thanks for reaching out. As long as you cite our website as your source, you have our permission to use the diagram.

Regards,  
 Alex

On Apr 12, 2021, 8:08 AM +0800, Dolegowski, Matthew <mdolegowski@liberty.edu>, wrote:

Good evening,

My name is Matthew Dolegowski and I am a PhD student at Liberty University. I was wondering if I could have your permission to use an adapted version of your diagram of Bronfenbrenner's (1979) ecological systems theory in my dissertation (<https://www.psychologynoteshq.com/bronfenbrenner-ecological-theory/>). The figure can be seen below.

**DM** Dolegowski, Matthew  
 Sun 3/27/2022 8:16 AM  
 To: The Psychology Notes HQ <sandra.w.chan@gmail.com>

Good morning,

I plan on publishing my dissertation on ProQuest Dissertations & Thesis Global and potentially other places. I have your "permission to use," but I was wondering if I also had your "permission to publish."

Thank you!  
 Matthew

**T** The Psychology Notes HQ <sandra.w.chan@gmail.com>  
 Tue 4/5/2022 8:05 AM  
 To: Dolegowski, Matthew

Hello,

Sorry for the late reply. As long as you cite our website as your source, you have our permission to publish.

Regards,  
 Alexandra

## Permission to Reprint and Publish Figure 5, Page 92

DM

Dolegowski, Matthew

Fri 4/30/2021 3:07 PM

To: nys-westernny@esd.ny.gov



Good afternoon,

My name is Matthew Dolegowski and I am PhD student at Liberty University. I was wondering if I could have permission to use the following map in my dissertation. My dissertation is on teachers' perceptions of how school climate influences academic achievement in math and reading. The study will take place in Western New York.

Thank you and best regards,  
Matthew



E

esd.sm.nys-westernny &lt;nys-wny-redc@esd.ny.gov&gt;

Mon 5/3/2021 11:51 AM

To: Dolegowski, Matthew; esd.sm.nys-westernny &lt;nys-wny-redc@esd.ny.gov&gt;



[ EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content. ]

You have permission to use the map.

Best,  
Empire State Development

DM

Dolegowski, Matthew

Sun 4/3/2022 8:43 AM

To: esd.sm.nys-westernny &lt;nys-wny-redc@esd.ny.gov&gt;



Thank you! I'd like to publish my dissertation. Do I have your "permission to publish"?

...



Lent, Pamm (ESD) <Pamm.Lent@esd.ny.gov>

Mon 4/4/2022 2:36 PM

To: Dolegowski, Matthew



You are OK to use the map with the following credit:

NYS Empire State Development

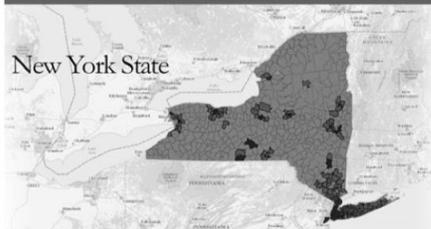
Sincerely, Pamm Lent

Permission to Reprint and Publish Figure 4, Page 44 and Figure 6, Page 93

  **Olivia Hoffmann**  
Active 24m ago  

MAR 17, 11:14 PM

Good evening Ms. Hoffman,  
My name is Matthew  
Dolegowski and I am a PhD  
student at Liberty University. I  
was wondering if I could have  
your permission to use the  
infographics from your article  
in my dissertation: [http://  
cornellpolicyreview.com/GIS-  
Special-Edition/article.php?  
id=2](http://cornellpolicyreview.com/GIS-Special-Edition/article.php?id=2)



**Analyzing Funding and  
Achievement Gaps in New York  
State Education Using GIS**

cornellpolic  w.com

It would be greatly  
appreciated. Thank you so  
much!

MAR 18, 12:56 PM

 Hi - sure, go ahead! I would be  
interested in reading your  
dissertation once it is  
complete. What is the topic?

MAR 27, 8:18 AM

My dissertation manuscript has been approved! I'll send it to you when it is posted. I asked for your "permission to use," but can I also have your "permission to publish" please? Thank you!

MAR 28, 10:30 AM



Sure go ahead!



**Elizabeth Chi**

Active 11m ago



MAR 17, 11:13 PM

Hey Ms. Chi, My name is Matthew Dolegowski and I am a PhD student at Liberty University. I was wondering if I could have your permission to use the infographics from your article in my dissertation:  
<http://cornellpolicyreview.com/GIS-Special-Edition/article.php?id=2>



**Analyzing Funding and Achievement Gaps in New York State Education Using GIS**

cornellpolicyreview.com

It would be greatly appreciated! Thank you so much for your time!

MAR 18, 12:41 AM

Hi Matthew,

Sure thing! Good luck with your dissertation!



< 1 **Raquel Blandon** Active 7h ago

Hey Ms. Blandon, My name is Matthew Dolegowski and I am a PhD student at Liberty University. I was wondering if I could have your permission to use the infographics from your article in my dissertation:  
<http://cornellpolicyreview.com/GIS-Special-Edition/article.php?id=2>



**Analyzing Funding and Achievement Gaps in New York State Education Using GIS**  
cornellpolicyreview.com

It would be greatly appreciated. Thank you so much for your time!



Hello! My former teammate messaged me about this. If she hasn't said so already, pls go ahead! Good luck!

## APPENDIX E: Recruitment Letters

[Insert Date]

Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctor of Philosophy degree. The purpose of this study is to investigate teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools. I am emailing to invite you to participate in my study.

If you are 18 years of age or older, either a school leader or teacher at a rural school, and have at least 3 years of experience at your current school, you will be asked to participate in my study. School leaders can include superintendents, principals, assistant principals, instructional coaches, intervention coordinators, and school psychologists. Both teachers and school leaders will be asked to participate. You, as a teacher, will be asked to complete a survey and an interview. The survey will be conducted online, and it will take approximately 20 to 30 minutes to complete. The interview will be conducted either in-person, online, over the phone, or via written response and it will take approximately 30 to 60 minutes to complete. I will ask you to email your written responses to me if you choose to complete the interview through a written response. If the interview is conducted online, over the phone, or in-person, it will be audio-recorded. The interview transcript will be emailed to you to review for accuracy. Your name and other demographic information will be requested as part of your participation, but the information will remain confidential.

To participate in this study, please contact me at [REDACTED]. Once I receive your email, I will email you a link to the consent form and survey. I will work with you to set up a time to conduct an interview.

A consent document is provided as the first page of the survey. The consent document contains additional information about my research. After you have read the consent form, please sign the consent document by typing your name and the date to proceed to the survey. Doing so will indicate that you have read the consent information and would like to take part in the study. If you choose to participate, you will receive a \$30 e-gift card to Target as a token of gratitude for participating in the study via email.

Sincerely, Matthew Dolegowski  
PhD Candidate  
Liberty University

[Insert Date]

Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctor of Philosophy degree. The purpose of this study is to investigate teachers' and school leaders' perceptions of how school climate affects student achievement in math and reading at rural schools. I am emailing to invite you to participate in my study.

If you are 18 years of age or older, either a school leader or teacher at a rural school, and have at least 3 years of experience at your current school, you will be asked to participate in my study. School leaders can include superintendents, principals, assistant principals, instructional coaches, intervention coordinators, and school psychologists. Both teachers and school leaders will be asked to participate. You, as a school leader, will be asked to participate in an interview. The interview will be conducted either in-person, online, over the phone, or via written response. I will ask you to email your written responses to me if you choose to complete the interview through a written response. If the interview is conducted online, over the phone, or in-person, it will be audio-recorded. It should take approximately 30-60 minutes of your time for you to complete the interview. The interview transcript will be emailed to you to review for accuracy via email after interviews are completed. Your name and other demographic information will be requested as part of your participation, but the information will remain confidential.

To participate in this study, please contact me at [REDACTED]. Once I receive your email, I will email you a link to the consent form via Survey Monkey. I will work with you to set up a time to conduct an interview. A consent document is provided after you clicked the link. The consent document contains additional information about my research. After you have read the consent form, please sign the consent document by typing your name and the date on the consent form. Doing so will indicate that you have read the consent information and would like to take part in the study.

If you choose to participate, you will receive a \$20 e-gift card to Target as a token of gratitude for participating in the study via email.

Sincerely,  
Matthew Dolegowski  
PhD Candidate  
Liberty University

## APPENDIX F: Interview Transcript Sample

**Interviewer:** The first question is: *Please tell me about yourself (your name, your age, your family, things you like to do, education, experience as a teacher, etc.).*

**Participant:** My name is [REDACTED] and I am [REDACTED] I teach second grade at [REDACTED] [REDACTED] and I went to [REDACTED] for my undergrad in childhood education and then [REDACTED] for my graduate degree in early childhood, childhood curriculum and instruction. And I grew up in [REDACTED]. I live in [REDACTED]. So yeah, I've always been from this area and always wanted to be a teacher, something I'm passionate about.

**Interviewer:** Great, fantastic. *What motivated you to become a teacher?*

**Participant:** So that would be my teachers growing up in school. I really looked up to them and because I thought it looked like the greatest job ever. So I had some particular, one of my social studies teachers in high school. I really liked her a lot. She was a role model for me, and that really inspired me to get into teaching. And originally I was going for adolescent education for history and kind of decided after some field experiences and all of that, that I was more into the psychology side of it with the younger kids, learning about learning and all of that, rather than the content, history stuff. So I switched over to elementary ed, and then I was able to do that [REDACTED], where for my senior year I was student teaching all year in the [REDACTED]. So I was at [REDACTED] in third grade, I was at [REDACTED] in fifth grade, and I was at [REDACTED] in second grade. So that was a really great experience.

**Interviewer:** Great, fantastic. *How did you come to teach at this school?*

**Participant:** So I started my career junior year, or there was a long term regular sub position open. And then... But that was only for one year. So it wasn't a permanent probationary position. So then I kind of was thrown back into the interviewing pool and applied all over the area for

jobs, but I really wanted to be in [REDACTED] because I felt comfortable there. I had gotten to know some of the administrators, some of the other teachers, and started forming those professional relationships. And I really, the families and the students are wonderful to work with. So I really wanted to be in [REDACTED]. And so I kept applying for any position that opened up in [REDACTED] and last minute, it was a week before school started, there was an opening for first grade that I got interviewed and I got hired for, and that was a probationary position. So from there I was permanent, and then I ended up moving from first to second grade because I was a bubble teacher, so that one of the spaces got cut from the bubble and then one teacher actually moved to a different building. So I was able to stay at [REDACTED]

**Interviewer:** Great. *How does your school foster cultural and linguistic competence?*

**Participant:** Yeah, absolutely. So I think that... I know that there is an ENL teacher in the district. So if there were, I have not personally had any ENL students in my career yet so I have not worked with her, but I've met her. It used to be [REDACTED] I think? I'm not quite sure if it's still her or not, but she was wonderful, and I know that she's worked with those students quite a bit and you would collaborate with her on modifying materials and just kind of working with her. Not from personal experience, but I know from colleagues that have worked with ENL's, not only was the ENL teacher resource, but I think they were sent to special training for it over the summer, and that's really all I got for you.

**Interviewer:** You're doing great. *How does cultural and linguistic competence affect student academic achievement in math and reading?*

**Participant:** Well, I think that if students are struggling, if there's a barrier, any barrier, whether it's social-emotional, or familial or linguistic, I think they're going to struggle. So it's just meeting the child, meeting their needs where they are, their hierarchy of needs, so that they can access the

learning. So I think that when teachers collaborate, work together, and seek out experts in that field, I think that's the best way to go about that so that that child can have access to the material and learn at an equal level.

**Interviewer:** Great. *How does your school foster teacher-student relationships?*

**Participant:** Yes. So we, so it's been, we were, I took a training on the community justice circles. So where they really strongly encourage us to do these morning circles and I took a trauma-based instruction course. I can't remember the name of it, but, and it just kind of described how students really need to be able to talk to their teacher and build those relationships in order to feel comfortable and trust, and that's really the only way that learning's going to occur. So I do circles every morning. We're strongly encouraged to do that. The social worker at our school is a great resource. We're encouraged to reach out to her. She gets to help us with any of those things. If a child, we know the warning signs if a child's in need of social-emotional support that I can't give. We have the warm handoff that we'll do to an administrator or social worker. So I feel that we're really well supported in that area and that it is a huge priority at our school.

**Interviewer:** Great. *How do teacher-student relationships affect student academic achievement in math and reading?*

**Participant:** So I think that if students feel comfortable with their teacher and they feel that they can take risks in the classroom, I think they're more likely to be able to pay attention and to offer information. And when they feel comfortable offering genuine information and taking risks and they're okay with getting things wrong, I think that teachers are able to get a more accurate assessment of how their students are doing, and then tailor instruction based on that. So I think

that building that trust and relationship with students is so important to getting that accurate information and data so that you can move forward and land instruction accordingly.

**Interviewer:** Awesome. *How does your school encourage participation in school activities and governance?*

**Participant:** So we do a lot of outside seasonal activities. So we've been doing, they have, we have a fall fest. The PTA kind of helps organize that, and students are encouraged to come over, things like that, and teachers are encouraged to come and volunteer. So I went to a couple of those this fall. We did a trick or treat thing, and it just really brings the school community together and it's fun to get to know the parents outside of a formal classroom setting. And it really makes conferences and things like that a little bit more comfortable, and if you have to do a parent phone call for support at home I think it really helps in that regard as well. And it just kind of gives it a family feel. We do a celebration every month, celebrate students. It's virtual this year, but it's kind of like a pep rally where we celebrate student's achievements each month and give a lot of rewards out for just being good students, being good citizens and all of that. So it really is a family feel.

**Interviewer:** Awesome. *How does participation affect student academic achievement in math and reading?*

**Participant:** So I think that students who are actively engaged in the instruction, so whether that's raising their hand and verbally answering or using whiteboard and writing it down, or just communicating in a small group, and the teacher observing if they're engaged they're going to be learning, if they're not so engaged, and then it's hard for the teacher to assess what they need. So that's when the teacher would jump in and differentiate and modify what they're doing so that that child feels like they can engage and they can participate in the lesson.

**Interviewer:** Great. *How does your school foster emotional safety?*

**Participant:** Yeah. So in, so most students and staff, there's a very... You feel like you can trust the people around you. So I know that if I'm having a hard time, I can trust the colleagues that I'm close with, I can confide in them and really be supported and it feels like it's a family, and I think that that kind of carries over into feeling supported just in general as a teacher and into instruction. And with kids, we do the same thing. We encourage them if they're having a hard time, advocate for yourselves, that we're here to support you and feeling they're validated and they're taken seriously. So from what I've experienced, it's got a very supportive environment.

**Interviewer:** Great. *How does emotional safety affect student academic achievement in math and reading?*

**Participant:** So if a child does not feel emotionally sound or cared for, they're just not going... The first thing on their mind is not going to be reading or math, right? That comes first. So if they're afraid or if they're worried, they're just really not going to be completely focused on learning. So I think that's where those social-emotional skills come in and we do teach explicitly those skills to help them deescalate themselves, or if they are feeling stressed, breathing exercises and all of that has kind of infiltrated into the curriculum. Learning how to express feelings, ask for help and when they need help. So those are all things that we try to teach them so that they are able to learn and they're able to get those things addressed.

**Interviewer:** Awesome. *How does your school foster physical safety?*

**Participant:** So it's locked. So I feel when I'm there, I feel like it's very... You have to show your ID to get in, all of that. So there's not random people walking around the building. I know that people that come in have to be invited by a staff member. So I feel very safe in that regard all the

time. I feel like, I don't think there's any student behaviors that would be a threat or anything. Everything's managed very well. So I feel very safe where I am.

**Interviewer:** Great. *How does physical safety affect student academic achievement in math and reading?*

**Participant:** So students need to feel safe in order to be able to learn. So I think, if at my school particularly, I feel like they feel safe and every morning we go over what are our rules and why do we have them, and one of the reasons we have them is to stay safe. So they're learning that. Even with the COVID things, putting your, having your nose and mouth in your mask and washing hands. And so safety is a huge priority. I don't think in, just in my classroom, but everywhere in the school. So that they can learn.

**Interviewer:** Awesome. *How does your school prevent and respond to bullying/cyber bullying?*

**Participant:** Yeah. So if a child says that there's an issue going on, I reach out to [REDACTED], my administrator, right away to let her know, and then [REDACTED] kind of takes it from there, whether I need to contact the social worker or whether she needs to contact somebody or parents. So it's really well managed and there's a plan in place for when it happens so that I'm not left alone with it. It's a team effort so that we can make sure we get the students the support they need.

**Interviewer:** Great. *How does bullying/cyber bullying affect student academic achievement in math and reading?*

**Participant:** So if there is bullying going on, it would negatively affect the child because that's their security and their safety is at risk there. So I think that because we respond so well to that, I think that that helps definitely learning. But if they are being bullied and they're not able to get the help it will definitely affect their learning negatively.

**Interviewer:** Awesome. Great. *How does your school prevent and respond to substance abuse?*

**Participant:** So I teach second grade. So we don't really have that issue that I know of. But yeah, that's, I don't really know.

**Interviewer:** You're fine. *How does substance abuse affect student academic achievement in math and reading?*

**Participant:** Well, I don't have, I really don't think that they use substances in second grade. But I would imagine if they were to, it'd negatively affect their learning.

**Interviewer:** Great. *How does your school respond to emergency readiness/management?*

**Participant:** So there's always a plan in place for safety. So there's the safety protocols for fire drills, things like that. For COVID safety we have the COVID plan and everything, and it's carried out very meticulously every building to ensure everybody's safety. So, and if, they're very transparent so if you have questions or concerns about it, you're, you feel comfortable to be able to ask those and get an answer. And natural disasters, if they're... There was a storm one year and [REDACTED] kind of told us exactly what to do, and it ended up being no big deal. But it just, it kept everybody's safe and calm during that storm. So yeah, I think that there's definitely a plan in place for all of that. We do our safety training annually, so we have to know what to do in those cases, but yeah.

**Interviewer:** Awesome. *How does emergency readiness/management affect student academic achievement in math and reading?*

**Participant:** I think, I know I'm just thinking of drills. We do the lockdown drills and fire drills and all of that. I would assume that it would help students feel safe and that they have agency. They know what to do. They know that there's a plan in place, there's a protocol if something

were to happen, if your teacher's not there, assign the nearest adult to get help kind of thing. So I think that kind of takes that stressor away from them maybe, that would affect learning in a positive way. They're less stressed about that.

**Interviewer:** Great. *How does your school foster an effective physical environment?*

**Participant:** Yeah. So, I mean the lighting's very good, and if it gets a little too bright we can turn the lights off. So it can be adjusted if needed, and it's very clean. It's organized. I just got one of those cool, new smart TV's in my room, so we're having fun like that. We have those one-to-one devices now, which is nice, and the microphones in the classroom. That's really nice too, to help with children to hear the sounds throughout the room. So yeah, I think it's good. Furniture's good. We have enough of that. So I think it's a very pleasant environment to be in.

**Interviewer:** Awesome. *How does the physical environment affect student academic achievement in math and reading?*

**Participant:** So I think if they feel welcome in the classroom and there's a spot for all of their supplies and everything, there's a procedure in place and everything's organized and they know what to expect when they come in each day, they'll feel more relaxed and more in control and they'll be more successful.

**Interviewer:** Great. *How does your school foster a positive instructional environment?*

**Participant:** Yeah. So lots of positive reinforcement at [REDACTED]. So I personally do Dojo points, and just for all the wonderful things they do, and then they earn like a prize. They reach, their the Dojo champ of the week. We also do, school-wide we do positive office referrals. So making [REDACTED] a great place to live and learn, and that's not only for students, but for staff too, and that's handed in and then [REDACTED] will come to them in the middle of the day. It'd be a great big deal out of it. It's a lot of fun, and then we also, that would be announced at the

celebration each month as well. So there's a lot of positive reinforcement, and yeah. So it's, I think that that really takes away from that attention off of the negative stuff, and then you start to see more of that positive stuff, which is great. So...

**Interviewer:** Great. *How does the instructional environment affect student academic achievement in math and reading?*

**Participant:** So I think that because students have what they need, they have enough supplies, if they're on route, they're able, they know the procedures to get more. There's lots of books available, various different genres of books. There are technologies available to them. So I think that with all of those resources at their fingertips, that learning is really positively affected by that.

**Interviewer:** Awesome. *How does your school promote physical health?*

**Participant:** Yeah. So we do, obviously during class, but we're strongly encouraged to get our students outside and moving, and physical movement is encouraged throughout the day. So we do a lot of brain breaks, dance breaks, taking walks. We have a new nature trail at [REDACTED] So I know that some classes take advantage of that. Lots of playground time every day, they want us out there for recess. So, and then we do that Play 60 challenge with them. So each month we, I think November was get enough sleep at night. So it was teaching them healthy habits each month and of keeping track of all of that, you get a little prize for that. So, yeah.

**Interviewer:** Great. *How does physical health affect student academic achievement in math and reading?*

**Participant:** If students are healthy, then they are able to access learning, and if they aren't, then they need to get the supports that they need, whether that's going to the nurse or the doctor or whatever, so that they can learn.

**Interviewer:** Awesome. *How does your school promote mental health?*

**Participant:** So we do a lot of social-emotional learning, and just talking about different skills to de-stress. I know teachers do circles in the morning. So just a five check in, how are you feeling, actually learning about feelings and what they are and how that feels in your body and being able to express that. And then, so not only is that good for themselves, but those interpersonal skills are then fostered through that. So we teach them how to get along with others. We do a lot, like I just did “I” statements with my kids the other day. So just a lot of literature surrounding those social-emotional learning activities that go with them, and then just really just checking in with them every day, building those relationships with them, with their families, so that they do feel supported at school.

**Interviewer:** Awesome. *How does mental health affect student academic achievement in math and reading?*

**Participant:** So if students are mentally healthy, then they're able to learn, they're excited about learning, and like to be in school. They're able to make those relationships with their friends, and if they are not mentally healthy then they really struggle to learn and do their best work. So then that's when it's crucial for us to get them the help that they need.

**Interviewer:** Thank you. *How does your school use discipline to manage student behavior?*

**Participant:** Yeah. So, like I said, with a lot of positive reinforcement. If there is a discipline issue like there has been in my classroom in the past, I work closely with the principal and we kind of brainstorm how we think it should be handled, make sure we're on the same page with it. I have used those circles for discipline issues in the past, just talking about how it affects the group as a whole, how everyone is affected by it and feels, and sometimes that's good enough to kind of eliminate the behavior. But if it's not, then sometimes things need to be taken away or

monitored more closely. So it's just kind of done in that way. A lot of times family gets involved. So we have a meeting with the family and it's really coming from a stance of what does the child need? What can, what does, what do we need to give the child so that they can feel safe in school so that they don't have to be doing this behavior that's negatively affecting them and others?

**Interviewer:** *How does discipline affect student academic achievement in math and reading?*

**Participant:** Well, I think that if students know that they're going to be held accountable for those behaviors in school and they know that they're responsible for not only keeping themselves safe, but their actions are responsible for keeping others safe and learning, I think that that will positively affect their learning all the way around.

**Interviewer:** Thank you. *How does leadership affect school climate?*

**Participant:** Yeah. So I think that leaders, whether you're talking about school building or people on committee, if they're open-minded and open to people's opinions and new ideas and hearing each other out, I think that if you keep the same goal in mind, what's best for students, what's best for the school as a community, I think that that's what's really going to keep students achieving what they need to be achieving. If the teachers feel supported, then so will students. It kind of carries over.

**Interviewer:** Great. Thank you, and one question left. *How does leadership affect student academic achievement in math and reading?*

**Participant:** So if teachers feel supported, students feel supported, those positive things are reinforced, encouraged, and you just feel like someone has your back, then I think that students are going to feel the same way and the learning is going to be great. I think a lot of learning will occur, and yeah. I think it just kind of all affects each other, so...

**Interviewer:** Great. Fantastic. That's all the questions I got. I just want to say thank you so much for doing this. I know there's probably a million and one other things you want to be doing on a Monday night. So thank you for taking time to do it.

**Participant:** That's okay. Thank you for the opportunity. I appreciate it.

**Interviewer:** Oh, thank you so much. Have a good day and let me know if you ever need anything.

**Participant:** Thank you.

**Interviewer:** Thanks.

**Participant:** Okay. Bye bye.

**Interviewer:** Bye bye.

**APPENDIX G: Reflexive Journal Excerpt**

November 22, 2021

I finished my interview with Cynthia that began at 4:00pm. She is clearly knowledgeable in the field of education and thoroughly answered each interview question. I reviewed the interview questions several times before calling. I reminded myself that I was investigating her perspective on the phenomenon and that I should not speak about the topic in any way that would influence her interview responses.

Even though Cynthia already consented for the interview to be recorded I still made sure to ask again if it was okay to record the interview to ensure accurate transcription. I asked her the school leader interview questions verbatim, and she gave in-depth responses. I was impressed with her leadership experience and her background working with rural students. I also found it interesting that she grew up and attended K-12 schooling in a different state.

I was a little nervous to conduct the interview because it was my first interview for this research study. However, when the interview began I gained a sense of confidence and was intrigued with Cynthia's perspective on how school climate affects student achievement in math and reading.

**APPENDIX H: Data Analysis Table Sample**

Theme	In Vivo Codes
Building Strong Relationships	<p align="center"><u>VPS School Leaders</u></p> <p>"If we can build positive relationships I think that students are more willing to engage with their teachers and to do the things that their teachers are asking them to do."</p> <p>"If we have those positive relationships and we know each other well and we trust each other, then we're willing to work hard for each other."</p> <p>"So through those relationships we build that level of care that leads us to want everyone to be successful and do what we can to help them to be successful. So therefore, that would impact student achievement."</p> <p>"I think when you look at those school activities that happen like above and beyond what we need to do at school or what's expected of us at school, I think that's another way of building relationships. So building a relationship with the people, the staff members who are hosting that activity and also with the other students who are participating in it."</p> <p>"The best learning takes place when there are relationships."</p> <p>"With a good relationship, the student wants to please the teacher and give their best effort."</p> <p align="center"><u>VPS Teachers</u></p> <p>"So I think that if students feel comfortable with their teacher and they feel that they can take risks in the classroom, I think they're more likely to be able to pay attention and to offer information. And when they feel comfortable offering genuine information and taking risks and they're okay with getting things wrong, I think that teachers are able to get a more accurate assessment of how their students are doing, and then tailor instruction based on that. So I think that building that trust and relationship with students is so important to getting that accurate information and data so that you can move forward and land instruction accordingly."</p> <p>"And with kids, we do the same thing. We encourage them if they're having a hard time, advocate for yourselves, that we're here to support you and feeling they're validated and they're taken seriously."</p>

“Well I think like any school if you have a good relationship with your teacher, you try extra hard. So, if you're trying a little bit more, you're going to do better in the class.”

“I would definitely say it has a positive effect [on academic achievement in math and reading]. The better your relationship is with the child, the more successful they are.”

“The best way that I can answer this is I see student behavior improving. I also see kids who are more able to turn their focus to learning, as well as kids more willing to persevere through learning difficulties because they have a good relationship with their teacher. These things in turn help academic achievement.”

“In the same way we work on student-teacher relationships. I would argue those strong relationships are the basis for feelings of emotional safety.”

“[Bullying] Prevention is done through the relationships.”

“Our school counselor is very active in the classrooms and very good at what she does. She has a variety of proven strategies based in restorative justice that have really made a difference in these relationships since she's been here at the school. Some of our younger classroom teachers have also brought a focus on relationships (classroom community, etc.). Our principal also encourages us to submit “positive office referrals” and holds whole-school celebrations of achievements and community “good news”, large and small.”

“Our counselor does a wonderful job (as mentioned above under “teacher-student relationships”) in proactively creating community and supporting students' (and staff's) mental health. She also keeps tabs on kids who seem to be struggling and learns as much as she can about family situations and needs in order to support students' mental health.”

“So I think that's definitely big here. We're lucky to have kind of some smaller classes, at the younger grade levels. So teachers are really able to have, the one on one connections with their students, and that goes up throughout. Another area, we have a really great support staff as far as like

therapists and our school counselor and our psychologists, they all really work together to know the kids as best as they can, making sure that they're greeting kids in the hallway, they see kids that they knew in past years and they are touching base with them. So really just kind of making those one on one connections with kiddos.”

“I think that's a huge piece. Without those relationships, kids may not be willing to take as big of risks when it comes to their academics. I think they won't be as willing to try harder things without having built those relationships. And I think the relationship is key when you are looking at a kiddo that might be struggling in some areas, and if you have already built that relationship with that kiddo, then you can definitely help them on a different level than could help them if you hadn't taken the time to build that relationship.”

“So I don't know if the participation in it affects the academics in math and reading as much as it's just another layer of trying to build that connection with kids. So I think it goes back to again that relationship building piece and that that building that comfortable community piece, that would have affect on their achievement.”

“I think it kind of goes back again to that relationship piece and that having their needs met. If they are not able to be vulnerable and open in the classroom, then it kind of can have a hindrance on their willingness to tackle harder things and accomplishing higher academic skills. So I think it has a big piece.”

#### NES School Leaders

"Everything starts with relationships. When kids know that their teachers care about them, even when they're young, they're willing to sit and try and persevere."

"The kids learn that they're teacher is a trusted adult and feel safe and secure with them."

“My perception of that would be that the better the student teacher relationship, the more successful a child is academically and at everything. But if you feel that your teacher is someone that you want to work with and work for, you're certainly going to put more work into the subject areas. And so the better the relationship, the better the academic success.”

NES Teachers

“I think our teachers do an amazing job of really knowing their students. And that simply comes from interaction day in and day out. Especially our level. Like knowing their families, knowing where they live, knowing their hobbies, knowing... I could tell you who does dance. I couldn't remember a little girl's strength in reading, but I can tell you the year I had at her, she lost her dog. They never found it. It was very traumatic. And I'm only giving you this example, I met her dad a week ago and I was like, oh yeah, I remember [REDACTED]... You make these connections to kids through their stories and caring about... You can see they're a little down today, like, what's going on? So, I guess just those verbal interactions and trying to learn more about your students as a person and making those connections. Just asking them about themselves and how they're feeling. When they think you care, and they know you care, they get on board. Really the first two weeks just really you have to win them over. And you win them over by knowing them and caring about them. And they feel that.”

“I just think every teacher will do something different that lends itself to their personality. So, if you're not sarcastic and jokey, trying to do that would be fake. I think every single teacher, whether they're soft and endearing and warm... And that makes the connection with the kid.”

“I believe that if the students feel safe in their classroom with a compassionate teacher, they will be more successful academically.”

“SEL, compassionate teachers and leaders for the kids to come to when they needed.”

“In order to be an effective educator, you have to understand, and I definitely think that if you are not aware of, or if you do not take into account different cultures.....I taught in order to make the kids feel that I understood more about their culture and they could relate to me. Because all research shows that if you can relate to students effectively, that their scores, both in math, reading, writing, their achievement will increase.”

“We're also doing, through this foundations training, there's a list of 42 different ways that you can relate positively to

students. And so we're doing one of those a week and just... It could be as simple as, in the morning, stand outside your door and say, "Good morning," and call each child by name that you know. Or throughout the day, make sure that you ask one of your students about somebody that's at home. So just fostering those kinds of relationships and encouraging us to remember to do that kind of thing, I think is important. After 30 years you know it's good, but gentle reminders throughout definitely help you to say, "Oh yeah, I know that's good and I need to incorporate that back into my everyday repertoire.""

"Yeah, going back to what I said before, I think if you relate well with your students, if you have a good relationship with them, if you can... You know that Sally is having a bad morning, and you know that because you can tell by the way she looks, by some of the words she says, then your ability to interact with her and give her a break on a day when she might be struggling. Maybe if you didn't have any relationship with her, then you might have a more adverse effect and be like, "Oh, the heck with you. You're just lazy. You're just whatever." And yeah, I feel like it's super important to have those personal relationships, knowing your students, knowing their families, knowing where they come from."

"I totally buy into all that I think that if the kids don't respect me, it's going to be, and trust me and feel safe in here. They're not going to be able to learn from me. So I think it's really important. ....So that's the impact of looking at how we interact with kids and build relationships with kids and trying to be proactive and prevent behaviors as opposed to reacting to behaviors."

"I do a ton of small group work. And that's another way that I try to build relationships, not only with them, but amongst each other and have them work on communicating between each other and building on each other's thoughts and ideas."