THE RELATIONSHIP BETWEEN ACADEMIC GROWTH PERCENTILES AND STUDENT
PERCEPTIONS OF SCHOOL CLIMATE AMONG SIXTH GRADE STUDENTS

by

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Liberty University

A Dissertation Presented in Partial Fulfillment
Of the Requirements for the Degree

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ABSTRACT

This quantitative, correlational design seeks to determine if students’ academic growth during the sixth-grade transition can be predicted by school climate and school climate dimensions. The results of the study will allow leaders to provide targeted support in the areas of school climate that have the greatest impact. The study consists of 150 middle schools in the state of Georgia. The Georgia Student Health Survey was used to determine sixth-grade student perceptions of the school’s climate. The Georgia Department of Education determined student academic growth through the Georgia Student Growth Model in the area of language arts at each middle school. Results indicated that there was a statistically significant predictive relationship between student perceptions of school climate and students’ academic growth during the sixth-grade transition year. Moreover, there is a statistically significant predictive relationship between the combination of the six dimensions of school climate and students’ academic growth. However, the study found no individual dimension of school climate significantly predict students’ academic growth during sixth-grade.

Keywords: school climate, student growth, discipline, adult support, cultural acceptance, social/civic learning, physical environment, school connectedness
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List of Abbreviations

College and Career Ready Performance Index (CCRPI)
Every Student Succeeds Act (ESSA)
Georgia Department of Education (GADOE)
Institutional Review Board (IRB)
Leader Keys Effectiveness System (LKES)
Positive Behavior Interventions and Supports (PBIS)
School-Wide Positive Behavior Interventions and Supports (SWPBIS)
Teacher Keys Effectiveness System (TKES)
Variance Inflation Factors (VIF)
CHAPTER ONE: INTRODUCTION

Overview

Life presents new experiences influenced by change, emotions, and relationships. From the perspective of an adolescent child, these experiences happen rapidly and impact the quality of education a student receives (Longobardi, Prino, Marengo, & Settanni, 2016). The climate of a school shapes those experiences into lasting positive memories or dreaded thoughts that cause emotional and academic stress (Wang & Degol, 2016). As students leave elementary school to begin the transition to middle school, physical changes within the body and environmental changes in the educational surroundings can create a challenge (Coelho, Marchante, & Jimerson, 2017). This chapter provides information concerning the background of school climate and the need for educators to utilize school climate as a tool to create positive experiences during the transition through sixth grade. The information is followed by the problem sixth graders face, the purpose of the study, and the significance of this research. The chapter finishes with the research questions and important definitions.

Background

One influential element that every school possesses is the climate. School climate represents a phenomenon that students, parents, and educators often take for granted until things go bad. The attention to school climate has increased since the 2015 reauthorization of the Elementary and Secondary Education Act, also referred to as the Every Student Succeeds Act (ESSA), which recommended school climate as a non-academic measure that state education agencies include in new school accountability systems. Research into school climate is very broad in nature due to the lack of a shared definition or understanding (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013; Wang & Degol, 2016). Regardless of the interpretation of school
climate, substantial research suggests school climate has a positive impact on student achievement (Shindler, Jones, Williams, Taylor, & Cardenas, 2016; Smith & Shouppe, 2018; Thapa et al., 2013; Wang & Degol, 2016). School climate can encompass many aspects of the school environment. Understanding what parts, if any, of school climate can predict students’ academic growth at the end of the transition to middle school can increase student success in the new environment.

**Historical**

Studies into how stakeholders feel about a school and the impact of those feelings are not new to educational research. Arthur Perry’s book, *The Management of a City School*, is considered to be the first study on school climate (Zullig, Koopman, Patton, & Ubbes, 2010). Perry (1909) established the importance of a positive climate in school and benefits such as improved operations and productivity. Perry’s work did not spark extensive research into school climate. Most of the related research during the first half of the 20th century was business related and focused on how organizational climate could improve production (Zullig et al., 2010). During the second half of the 20th century, school was viewed as an organization, and school climate research focused on relationships, processes, and structures. As school climate research evolved, more studies began to focus on the relationship between school climate and academic achievement (Chirkina & Khavenson, 2018). Organizational concerns such as grade configuration and transitions still impact student success, but the climate of a school can mediate the negative impacts.

The issue of grade configuration and how to group students in a way that provides an effective and efficient education have been debated topics among educational leaders (Akos, Rose, & Orthner, 2015). The middle school model, which serves Grades 6 through 8, provides
the most popular model in Georgia (Georgia Department of Education, 2019). The middle school concept evolved from the junior high model which began in the 1940s to aid in the transition from the self-contained elementary school structure to a departmentalized high school structure (Bedard & Chau, 2005). Approximately 40 years later, researchers realized the same transition problems that high schools experienced were now found in junior high (Lounsbury, 2009). School districts began adapting to the middle school philosophy to improve the transition from elementary to secondary education settings. The middle school philosophy focuses on supporting the needs and interest of students through teacher teaming, student-centered learning, and understanding the whole child (Yoon, Malu, Schaefer, Reyes, & Brinegar, 2015).

Despite the emphasis educators have placed on successfully transitioning students from elementary to high school, the change to middle school has continued to stunt academic growth. Schwerdt and West (2013) analyzed achievement and grade configurations in Florida from 2000 to 2009. The research found students entering sixth grade experienced a significant drop in student achievement compared to peers of the same age that do not make the transition to middle school. Akos et al. (2015) examined growth trajectories for students in North Carolina that experienced a transition year in sixth grade. The study concluded there was academic growth; however, the amount of expected growth compared to other years was low in reading and math. Targeted transition programs are often associated with increased financial support and mixed student outcomes.

Social

In the current educational environment, educators and schools are evaluated on students’ academic performance while in school. Student scores on standardized tests impact school accountability measures, teacher evaluations, and administrator evaluations. Multiple outside
influences can increase or decrease the measures of achievement. The way school stakeholders process and support change represent one of those influences. Students ranging in age from 11 to 13 experience multiple forms of change for the first time in a student's life. Physical, emotional, and environmental changes are challenges that middle school students face when transitioning to sixth grade. The move to middle school represents the first educational transition many students experience (Akos et al., 2015). Schools, teachers, and administrators have the power to influence experiences during these changes by understanding the relationship between student transitions and school climate. School climate represents a phenomenon that can be found in every school and allows educators to improve a school and academic performance without solely focusing on academics (Back, Polk, Keys, & McMahon, 2016; Sherblom, Marshall, & Sherblom, 2006).

**Theoretical**

Two theories support the research into the relationships between school climate and student growth during the transition through sixth grade. Stage-environment fit theory offers a framework to research school climate, especially during important transitions (Wang & Degol, 2016). According to the stage-environmental fit theory, a disconnect exists between the middle school environment and the psychological needs of adolescent students (Eccles et al., 1993). In order to produce positive academic outcomes, it is necessary for educators to identify factors that improve educational environments to better fit the needs of middle school students (Smith, Mann, Georgieva, Curtis, & Schimmel, 2016). Positive interventions involve support at the classroom, school, and district levels (Eccles & Roeser, 2011).

The transition theory provides a better understanding of the transition process experienced by students. Schlossberg (1981) reported that as life progresses, people continually
experience life changes and transitions that result in new relationships, behaviors, and self-perceptions. Transition theory supports the transition of the adolescent child to a new educational environment. A transition consists of three steps: moving in, moving through, and moving out (Schlossberg, Lynch, & Chickering, 1989). Middle school students continue to struggle with moving out of the elementary setting, where fifth graders are the oldest, and into a new setting where sixth graders are viewed by older middle school students as young and inferior. Adjusting to this setting throughout sixth grade requires students, adults, and parents to create an educational environment where a student can build a foundation for understanding the nature of transitions and by understanding Schlossberg’s 4 S system which includes an understanding of one’s situation, self, supports, and strategies (Schlossberg, 2008). The transition theory supports the need to understand how a positive school climate can improve the transition process for the students, thus allowing students to experience success during the transition to a new environment.

**Problem Statement**

Middle school is an important transition time as students are exposed to different social situations, multiple teachers, and increased academic demands (Kieffer, Marinell, & Neugebauer, 2014). Students who do not successfully navigate this transition have an increased risk for future school failure (Lane, Oakes, Carter, & Messenger, 2015). School climate can shape these educational experiences in many ways by creating a positive or negative school environment for students, teachers, and administrators (Thapa et al., 2013). School climate represents a multidimensional construct that encompasses a school’s atmosphere, culture, values, resources, and social networks (Wang & Degol, 2016). Research has identified different variations of dimensions of school climate (Jones & Shindler, 2016; Voight & Nation, 2016;...
Wang & Degol, 2016). The Georgia Department of Education identifies school connectedness, peer-social support, adult-social support, cultural acceptance, social-civic learning, physical environment, safety, and discipline as the eight dimensions of school climate (La Salle, 2017). Recent research findings indicate that there is an overall relationship between school climate and student achievement; however, there are no known studies that have investigated the relationships between school climate and student academic growth during the transition to sixth grade (Maxwell, Reynolds, Lee, Subasic, & Bromhead, 2017). When looking at transition programs, there are certain characteristics of successful programs which can be related to certain aspects of school climate (Goldstein, Boxer, & Rudolph, 2015). These studies focus more on certain programs that all schools cannot afford to implement; however, all schools have a school climate that can impact students. The problem is a decline in academic growth during sixth grade due to transition, and a lack of research that investigates the relationship between school climate or school climate dimensions and academic growth for that group of students (Lane et al., 2015).

**Purpose Statement**

The purpose of this quantitative, correlational study is to utilize a survey design to test the theories of transition and stage-environmental fit that relate the students' perceptions of school climate to academic growth as students move through the first year in middle school. School climate represents the predictor variable and is viewed as a multidimensional construct that encompasses a school’s atmosphere, culture, values, resources, and social networks (Wang & Degol, 2016). The dimensions of school climate consist of school connectedness, peer-social support, adult-social support, cultural acceptance, social-civic learning, physical environment, safety, and discipline (La Salle, 2017). The criterion variable of interest will be defined as
students’ academic growth on sixth-grade language arts state standardized tests. A student’s growth percentile describes a student’s academic growth by examining his/her current achievement compared to his/her academic peers (Betebenner, 2011). Academic peers are students who begin in the same place academically at the beginning of the school year. The population for the study emerges from middle schools in the state of Georgia. The sample will consist of 150 middle schools in the state. The amount of Title I and Non-Title I schools in the study will be proportional to Georgia’s middle school population. The research will focus on sixth-grade student perceptions of school climate and student academic growth as a grade level at each middle school. The archival data, provided by the Georgia Department of Education, will be disaggregated by school mean for climate and school mean academic growth in language arts during sixth grade. The study will provide teachers and administrators with insights on how to use school climate to improve the middle school transition and increase academic growth.

**Significance of the Study**

Educators are always seeking ways to improve the educational environment and produce positive academic results. However, concerns increase for students who are required to adapt to a new school setting while expected to meet academic requirements and reach emotional maturity (Bailey, Giles, & Rogers, 2015). Adolescent depression increases as students transition to middle school (Lester, Waters, & Cross, 2013). Students in transition are worried about the move from a self-contained elementary school environment to a team-centered environment in middle school often associated with more rigorous academics and new relationships among peers and teachers (Bailey et al., 2015). Elementary school students spend the majority of the school day working with an isolated teacher and collaborating with a small number of students who are in a single class. One year later, the same students are carrying books from class to class,
interacting with up to six different teachers, and sharing a space with hundreds of sixth graders who are experiencing the same change (Ryan, Shim, & Makara, 2013).

School improvement starts with leadership and the effect that it has on school climate and student achievement (Allen, Grigsby, & Peters, 2015). Educational leaders who utilize stakeholder perceptions of the school environment to help build and monitor a positive academic climate have increased student achievement (Urick & Bowers, 2014). Districts should begin with research-based methods that help examine and gain a better understanding of these phenomena (Allen et al., 2015). The current study will allow school leaders to self-reflect on leadership styles and how that style will impact the climate of sixth grade and the academic growth of the students. Understanding the relationship between students’ academic growth and school climate dimensions (school connectedness, peer-social support, adult-social support, cultural acceptance, social-civic learning, physical environment, safety, and discipline) will allow leaders to incorporate practices, procedures, and policies that can lead to school improvement. Focusing on an improved school climate will lead to student success and aid adult stakeholders during the transition time. The transition to middle school presents hardships for parents. Helping a child is a natural instinct of a parent, but many watch and wonder what role to play in school transition. Sixth-grade teachers can gain a better understanding of where to focus energy in order to maximize student academic growth. Overall, school climate continues to be an important and complex issue for schools, and there is a need to further develop theories, measurement, and research as we strive to boost student achievement, well-being and reduce problem behaviors (Reaves, McMahon, Duffy, & Ruiz, 2018).
Research Question(s)

RQ1: Is there a predictive relationship between schools’ sixth-grade student academic growth percentile and student perceptions of school climate during sixth grade?

RQ2: Is there a predictive relationship between schools’ sixth-grade student academic growth percentile and student perceptions of school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline) during sixth grade?

Definitions

1. Middle School - Organizational groupings generally containing Grades 6, 7, and 8 (Yecke, 2006).

2. Self-contained - A self-contained school organizational structure is one where a single teacher is responsible for the instruction of all subject matter, usually used in an elementary school setting (Randall & Engelhard, 2009).

3. Teaming - Teaming is an organizational strategy by which a common group of teachers share the following: (a) the responsibility of planning, teaching, evaluating curriculum and instruction in more than one subject in the core curriculum; (b) the same group of students; (c) the same schedule; and (d) the same area of the building (Alexander & George, 1981).

4. Transition - Duration of time when students exit elementary school and begin the sixth-grade year in a middle school setting (George & Alexander, 2003)
CHAPTER TWO: LITERATURE REVIEW

Overview

The purpose of this study is to examine the relationship between student perceptions of school climate, school climate dimension, and academic growth during the transition through sixth grade. The chapter will open with information about the theoretical framework and how it relates to the school climate, academic achievement, and student transitions. A detailed review of the literature related to the history of grade configuration and the transition to middle school will follow. The chapter will provide information describing school climate and its impact on students’ academic success. School climate will be examined through eight dimensions: school connectedness, peer social support, adult social support, cultural acceptance, social/civic learning, physical environment, school safety, and discipline. Transitions from one grade level to another and from one school to another can cause academic hardships for students, particularly the transition from elementary to middle school. Studies have supported the belief that school climate can impact overall student achievement (Shindler et al., 2016; Smith & Shouppe, 2018). There is a gap in school climate literature during key transition years and a need to understand how school climate can improve student experiences and produce greater academic success.

Theoretical Framework

Stage-environmental fit theory and transition theory provide the theoretical framework to support this study. Stage-environment theory was an advancement of the person-environment fit theory, which suggests that behavior is determined by the person and the immediate environment (Lewin, 1935). Hunt (1975) advanced person-environment fit theory by arguing that growth and development played an important role in the success or failure of an individual in certain
environments. Hunt's advancement prompted more educational psychologist to agree and better understand the paradigm. Eccles and Midgley (1989) added a developmental approach to the person-environment theory and termed it stage-environmental fit theory. The stage-environmental fit theory addresses the disconnect between the needs of the adolescent child and the support provided in the child’s social environment (Eccles et al., 1993).

The stage-environmental fit theory suggests that emotions, comprehension, and academic success are affected by the relationship of the person and the environment in which the person is placed (Eccles et al., 1993). Stage-environmental fit theory guides research into school climate, particularly major school transitions such as the transition to middle school (Wang & Degol, 2016). During the transition to middle school students are experiencing physical, social, emotional, and cognitive changes that have never been experienced (Bailey et al., 2015). Students’ perceptions of the new environment and support of adolescent needs in middle school impacts academic and life outcomes (Smith et al., 2016). Eccles et al. (1993) argued that much of the decline in student engagement during the transition to secondary school is a product of a lack of institutional support.

When a student’s environment does not meet the needs of that adolescent child, it can lead to a negative experience in school (Booker, 2018). Bellmore (2011) found that poor stage-environmental fit for boys and girls in middle school years caused a decline in grade point averages. In a similar study, Arens, Yeung, Craven, Watermann, and Hasselhorn (2013) found that transition to middle school and the beginning stages of puberty may contribute to decreased academic understanding and self-esteem.

By using the environmental-stage fit theory as a guiding framework, educators can begin to create an environment that meets the needs of students. Eccles and Roeser (2011) suggested
the classroom, school, and district can have significant impacts on the environmental fit of students during transitions. How teachers structure classrooms, present the curriculum, and enable quality, caring relationships have the largest impact (Eccles et al., 1993). Successful teachers mold the classroom environment to fit the individual needs of students and promote ownership for learning (Booker, 2018). The ability of schools to provide a safe environment where students and adults believe in a positive school culture enhances the environmental experience and improves students’ perceptions of the school environment (Eccles & Rosser, 2011). Finally, the ability of the districts to develop policies and practices influences the schools’ and teachers’ ability to create an environment where middle school students can prosper.

The second theoretical framework utilized in this study is Schlossberg’s transition theory. Schlossberg (1981) began by analyzing how adults adapt to transition, prompting the emergence of the transition theory. People continually experience life changes and transitions that result in new relationships, behaviors, and self-perceptions (Schlosberg, 1981). Schlossberg referred to these experiences as the ordinary and extraordinary process of living (Evans, Forney, Guido, Patton, & Renn, 2010). Schlossberg believed that a systematic framework was needed to understand these transitions and help identify coping strategies to aid in life’s transitions (Evans et al., 2013). Transition theory began as an adult developmental theory, but it has also been utilized when researching traditional college students (Elder, 2016). Winter (2014) expanded the theory by applying Schlossberg’s transition framework to transitions into state care for children age 7 to 11, an earlier age than students transitioning to middle school.

A transition occurs when an event produces a change in a person’s perspective requiring a change in behavior, relationships, and place in the world (Schlossberg, 1981). Transitions can be
described as anticipated, unanticipated, and nonevent transitions (Schlossberg, 2011). An anticipated event can be predicted. Examples can include moving to a different school for the sixth and ninth grade, graduating from high school, getting married, or becoming a parent. Unanticipated events are not planned and can become very disruptive. Sudden illnesses, car accident, death in the family, or a sudden job promotion are considered examples of unanticipated transitions. Nonevent transitions are expected events that do not occur such as failure to get accepted to law school or marriage. These events can have both a positive and negative impact on the individual. Having to alter roles, relationships, routines, and assumptions during the transition process can become difficult, particularly for students.

According to Schlossberg et al. (1989), transitions involve three steps: moving in, moving through, and moving out. The first stage involves becoming familiar with new roles, relationships, and routines (Anderson, Goodman, & Schlossberg, 2012). A relevant example in this research study is the transition to middle school and the roles, relationships and routines students will learn in a new educational environment. What programs are provided to help familiarize these students with the new surroundings? The second stage, moving through, requires learners to balance the academic challenges with life challenges while feeling supported and challenged (Schlossberg et al., 1989). Moving out is the end of the transition and the beginning of the next transition (Anderson et al., 2012). The human life cycle is composed of transition after transition where a person is always moving in, moving through, or moving out of a transition.

The ability to cope with these transitions is what makes the experiences positive or negative. The transition theory requires an understanding of the 4 S system. The 4 S system helps a person build a foundation for understanding the nature of transitions and how to respond
to the transitions (Schlossberg, 2008). The 4 S system includes situation, self, supports, and strategies. Situation refers to a person’s situation at the time of the event. The situation can include outside stressors, a person’s perspective, or physical surroundings. The second S, self, refers to personal and demographic information or any other factors that can alter a person’s perspective. Schlossberg (2011) wrote, “Attitude does not buy the groceries, but it can certainly make a difference in the quality of life” (p. 160). The term supports, the third S, includes the support available at the time of transition. In this study, the term situation could include family, bullying intervention programs, mental health training, counselor support, or quality teacher relationships. The last S in the 4 S model is strategies. Implementing strategies or coping mechanisms provides one with the ability to modify the situation, control the problem, or manage the stress caused by the transition (Schlossberg, 2011). As students move in, move through, and move out of sixth grade, school leaders can identify certain resources, through the 4 S model, to be the center of school improvement plans.

Related Literature

Grade Configurations

Grade configurations in American public schools have evolved as the need for quality education has grown. Currently, students who do not graduate from high school limit future employability and annual income. As the United States began to grow as an independent nation, education was an unorganized unit where primary, secondary, and college levels grew independently of one another. Young men attended colleges such as Harvard long before there were organized public secondary schools (Lounsbury, 2009). The original one-room ungraded school buildings began to grow and transition into the grade identified system in the mid-1800s (Dove, Pearson, & Hooper, 2010). By the late 1800s, the standard grade configuration consisted
of eight years of primary education and four years of secondary education (Lounsbury, 2009). Around that time, there was a shift in the American workforce. The transition from agriculture to industry in the United States prompted people to acquire higher education in order to secure employment (Dove et al., 2010). The increase in student population and the demand to increase student graduation rates brought about the creation of the junior high school.

It has been over 100 years since the first known junior high school was created in 1909 in Columbus, Ohio (Lounsbury, 2009). After junior high school was introduced, the predominant configuration of school was six years of primary school, three years of junior high, and three years of high school (Lounsbury, 2009). The junior high model was intended to prepare students for high school by introducing students to a smaller version of departmentalized classes and uniform class periods (Paglin & Fager, 1997). Student schedules were built around teacher availability. The scheduling process limited flexibility to meet the individual needs of students (Kokolis, 2007). The idea behind the creation of the junior high model was noble, but the implementation lacked a focus on the needs of the adolescent student. Around 50 years after the creation of junior high schools, educators realized students who transitioned from primary schools to junior high schools began to experience the same difficulties as students who transitioned from K-8 primary schools to high schools (Lounsbury, 2009). These problems led to a decrease in the number of high school graduates and a need to change the instructional model to a more child-centered approach. The continued concerns for students sparked the largest grade-span configuration in the 20th century, and the middle school concept was born (Paglin & Fager, 1997).

The year 1963 is recognized as the beginning of the modern middle school movement (Schaefer, Malu, & Yoon, 2016). During this time period, William Alexander created the term
"middle school" and introduced it to society (Lounsbury, 2009). During the 1980s, the dominant educational model featured five years of elementary, Grades 6 through 8 in middle school and Grades 9 through 12 in high school (Lounsbury, 2009). The increasing popularity of the middle school model coincided with the decline of junior high schools in the United States (Paglin & Fager, 1997). The number of middle schools grew to more than 5,000 by 1980 (Lounsbury, 1980). As the shift to middle school grew over the years, the process produced a series of themes associated with those periods. The period of 1963-1979 prompted an exchange of ideas and the promotion of middle schools; 1980-1989 was a time when the movement advanced by focusing on classroom practices and policies; 1990-1999 was a period of hope and opposition as the movement continued to gain momentum while fighting political backlash. The following decade was marked by efforts to study successful schools and create a blueprint for success in the midst of political reform at the federal level (Schaefer et al., 2016). The blueprint for a successful middle school serving Grades 6 through 8 is not reliant on a physical building or the configuration of the grades. It is the ability of the stakeholders to embrace the middle school concept.

The middle school concept was often misunderstood by those who are not familiar with that grade span. The philosophy associated with the middle school concept promotes an awareness of the needs, interests, and characteristics of young adolescents. This philosophy was instrumental in creating middle school cultures centered on meeting the needs of the students (Brinegar, 2009; Yoon et al., 2015). The middle school concept was intended to have a more child-centered approach, including team teaching, advisory programs, and flexible scheduling (Paglin & Fager, 1997). Teaming was an identified research-based practice that became the key component of the middle school movement (Schaefer et al., 2016). The teaming concept
allowed teachers to respond to students' needs through collaboration and schedule changes (Kokolis, 2007).

Currently, the debate on how to configure schools to provide the most efficient and effective education that prepares students for the next stage of life continues (Akos et al., 2015). The growth of high stakes testing and the emphasis placed on accountability has forced educational leaders to reevaluate how to configure student populations to maximize all areas of the educational setting while simultaneously increasing student achievement (Dove et al., 2010). Middle schools have been under heavy criticism because students may not reach academic targets. The criticism stems from those who believe the middle school's primary responsibility is to prepare for rigorous high school courses and not the needs of the whole adolescent child (Lousbury, 2009). There are increasing systems that are considering a change back to K-8 education configuration to reduce the number of student transitions and improve school climate (Dove et al., 2010).

**Middle School Transition**

In education, the term transition refers to the period when students move from elementary school to middle school, middle school to high school, and high school to college. Four hundred and eighty-four middle schools welcomed 139,269 students to sixth grade in 2019 (Georgia Department of Education, 2019). For the majority of students, the transition to middle school is the first experience moving to a different school, thus increasing areas of concern (Arens et al., 2013). The transition to middle school can be especially stressful for a variety of reasons (Akos et al., 2015; Coelho et al., 2017). Bailey et al. (2015) found that the majority of fifth graders express a moderate level of concern associated with the transition before beginning middle school. It is important to understand how to meet the needs of students during this transition.
Madjar, Cohen, and Shoval (2018) emphasized the importance of school leaders and teachers understanding how school transitions influence academic motivation and adjust identified supports to meet the needs of these students. Those students who are unsuccessful during this transition increase the risk for future failure in school (Lane et al., 2015).

The variety of changes experienced during the transition have been found to have lasting academic, emotional, social, and psychological needs (Akos et al., 2015; Lane et al., 2015). The culmination of the negative transition experiences can lead to a decrease in grade point average. Higher amounts of middle school transition stress predict lower grades, higher school anxiety, and lower school bonding (Goldstein et al., 2015). Ryan et al. (2013) examined students’ academic adjustment at four-time points as students transitioned from elementary to middle school and found that the overall decline in grade point average was due to transition. Madjar et al. (2018) compared a group that transitioned to middle school with a nontransition group and reported that students who transition have a decrease in the ability to acquire new knowledge. Holas and Huston (2012) reported similar findings when comparing transition students in sixth grade with students who remain in elementary. The declines were attributed to classroom quality and school characteristics.

School transitions during adolescence are one of the riskiest phases for school failure due to significant emotional, social, and behavioral changes (Longobardi et al., 2016). Beginning in the middle school years, students have increasingly negative attitudes towards school (Raphael & Burke, 2012). Teachers frequently wait and hope students grow out of it or label the issues as temporary due to the adjustment from elementary to middle school (Andrews, 2011). Students that transition to middle school experience an adjustment period being the oldest in elementary school to the youngest in middle school. Moreover, during that same time, an adjustment to the
physical size of a new middle school takes place, which is often larger with a more rigid schedule (Ryan et al., 2013). Academic stressors for students also include exposure to more teachers and increased rigor (Kieffer et al., 2014). Social challenges also force students to reevaluate how to interact with peers and react to issues in a socially acceptable manner. Often, a lack of support from teachers and peers can lead to difficulties in regulating these behaviors (Longobardi et al., 2016). For example, relationships with teachers during transitions can have an influential effect on behavior, individual adaptation in class, and academic achievement (Ellerbrock, Denmon, Owens, & Lindstrom, 2015).

Following the transition to middle school, students report lower levels of self-concept (academic, emotional, and physical) and self-esteem, but students who participate in successful interventions may experience increases in self-esteem and gains in social self-concept (Coelho et al., 2017). Often schools attempt to improve transitions by school visits, conducting assemblies, and establishing communication between the students’ families and the school (Paglin & Fager, 1997). Holas and Hudson (2012) suggested that student success depends on the quality of the classroom and positive school characteristics. The characteristics of a quality classroom and positive school are supported and promoted through a positive school climate. Unfortunately, the quality of school climate decreases as students transitioned to secondary levels (Shindler et al., 2016). Transitions to middle school are not inherently harmful; the key is creating a quality school that meets the needs of students (Holas & Huston, 2012). More research is needed to determine what qualities have the greatest impact on middle school transitions (Bailey et al., 2015).
School Climate

School climate is an important and complex phenomenon (Reaves et al., 2018). In 2015, President Obama signed the ESSA, which recommended school climate as a non-academic measure that state education agencies include in new school accountability systems (ESSA, 2015). Even though the national legislative bodies see the importance of school climate, there is no national or international consensus about how to define school climate, a positive and sustained school climate, the school climate process or the dimensions that need to be regularly measured in school climate research and improvement efforts (Thapa et al., 2013). Wang and Degol (2016) refer to school climate as a multidimensional construct that encompasses a school’s atmosphere, culture, values, resources, and social networks. A positive school climate can also be defined as an environment that makes students feel emotionally and physically safe and part of the school community where adults in the school show respect, are caring, and have high expectations for students’ well-being and success. The environment also promotes opportunities to provide input on how things work at the school (Cohen, McCabe, Michelli, & Pickeral, 2009). School climate reflects students’, school personnel’s, and parents’ experiences of school life socially, emotionally, civically, and academically (Thapa et al., 2013).

When defined narrowly, school climate can appear as a relatively independent factor. However, when viewed contextually, it becomes clear that it is related to everything else (Jones & Shindler, 2016). There are many dimensions of school climate identified in the research. Voight and Nation (2016) identified three domains: engagement, safety, and the environment. The three domains were expanded to 10 subdomains: relationships, respect for diversity, school participation, emotional safety, physical safety, substance use, physical environment, academic environment, wellness, and disciplinary environment. Wang and Degol (2016) studied the
multidimensionality of school climate by looking at four categories: academic, community, safety, and institutional environment. Jones and Shindler (2016) identified dimensions of school climate as physical appearance, relationships, safety, leadership, discipline environment, learning environment, attitude and culture, and school-community relations. Since the implementation of the School Climate Star Rating in Georgia, student surveys analyze school connectedness, peer-social support, adult-social support, cultural acceptance, social-civic learning, physical environment, safety, and discipline as dimensions of school climate.

**School connectedness.** Forming a connection to a school provides extra comfort and motivation for students: “Connectedness is the psychological state of attachment students experience when they feel a sense of acceptance, inclusion, and belonging in school” (Wang & Degol, 2016, p. 323). The Centers for Disease Control and Prevention (2009) referred to school connectedness as the belief held by students that the adults and peers in school care about student learning as well as student well-being. School connectedness takes many forms, such as students’ collective views of school attachment and bonding, which reflect the school’s ability to cultivate a sense of identification and affiliation among its students and teachers (Wang & Degol, 2016). School connectedness is synonymous with a sense of belonging at a school. Goodenow (1993) described that sense of belonging as a feeling of acceptance, encouragement from stakeholders, and the belief that the individual represents an essential part of the classroom and school. Reynolds, Lee, Turner, Bromhead, and Subasic (2017) researched the relationship between school climate, school identification, and academic achievement. The study found school identification has a significant, positive relationship with academics and an intercorrelation between school climate, which suggests that school identification may link the two variables. Bryan et al. (2012) found that school bonding had significant effects on academic
achievement, specifically the areas of attachment to school and teachers. The Centers for Disease Control and Prevention (2009) completed a comprehensive review of protective factors that can positively impact academic and nonacademic outcomes. School connectedness was found to be the strongest protective factor. Protective factors were viewed as environmental conditions, characteristics, or behaviors that help students process life events such as transitions (Lapan, Wells, Peterson, McCann, 2014).

Protective factors such as school connectedness are important due to fragile adolescent emotions and new challenges students may experience. There is a noticeable increase in depression among students after the transition to secondary schools (Lester et al., 2013). Niehaus, Rudasill, and Rakes (2012) examined student perception of school connectedness and found that students feel that school support declines significantly during the transition to sixth grade. During this transition, it is important to understand and support students’ sense of belonging (London & Ingram, 2018). Stronger connections help alleviate the anxiety associated with a move to a new educational environment (Lester et al., 2013). Moreover, students in middle school experience adolescent changes and begin to seek guidance from adults outside of the home (Wilkinson-Lee, Qionghui, Nuno, & Wilhelm, 2011).

A student’s health and well-being are directly affected when a student feels isolated or lonely at school (Hawkley & Capitanio, 2015). Loneliness has been linked to headaches, stomachaches, doctor visits, and lower self-reported health (Lohre, 2012; Qualter et al., 2013). School connectedness is also linked to mental health of students during the first two years of secondary school (Lester et al., 2013). Results from a study conducted by Shochet, Dadds, Ham, and Montague (2006) found a predictive link between school connectedness and future mental health problems. A recent study conducted by Klemera et al. (2016) found that students who
display a low sense of school belonging are seven times more likely to report self-harm than those with a high sense of belonging within a school. The negative impacts do not stop at mental health. In sixth grade, the same students who experience a decline in school support or school connections are victims of a declining grade point average (Niehaus et al., 2012).

During a transition to a new school, establishing connectedness is another process that students endure or embrace. Many schools try to create that connectedness through school visits, open houses, and information nights. Schools promote connectedness by hosting engaging and fun school-wide events and encouraging students to participate in clubs and extracurricular activities (Bouchard & Berg, 2017). The connections students have to the school environment is crucial for the success of sixth graders that are transitioning to another school. Rivera, McMahon, and Keys (2014) suggested that higher levels of collaborative teaching are also associated with a positive connection to the school. Students’ ability to feel connected to the school and the people at the school can decrease isolation and loneliness in middle school (London & Ingram, 2018). Oscar and Bamidele (2015) recommended schools build a sense of connectedness by creating a caring and supportive environment where students have positive interactions with adults, and there is active engagement among the family, school, and community. Uslu and Gizir (2017) stated, “teacher-student relationships are the most important predictive variable of adolescents’ sense of school belonging (p. 74). Building an encouraging and positive environment that enables students to replicate those positive relationships with others in the class begins with the adults in the room (Usla & Gizir, 2017). One of the many factors that affect connectedness is the relationships among students. Positive student relationships where students feel accepted, valued, and supported help promote a sense of belonging at school (Ellerbrock et al., 2014).
Peer social support. The patterns of norms, goals, values, and interactions that shape relationships in schools provide an essential area of school climate. How connected students feel with one another is an important part of building quality relationships (Thapa et al., 2013). According to the stage-environmental fit theory, peers can help create an environment that meets the developmental needs of adolescents (Eccles & Roeser, 2011; Eccles et al., 1993). Quality friendships and peer acceptance are included in those developmental needs (Eccles & Rosser, 2011). Peer relationships impact students’ ability to feel accepted at school (Usla & Gizir, 2017). The connections between students become stronger and more influential as students age. During this period, adolescent students rely on each other for academic help, emotional support and social interventions that are needed throughout the school day (Ellerbrock, Kiefer, & Alley 2014). The relationships among peers represent the basic sources of interactions among adolescents (Tian, Tian, & Huebner, 2016). Peer support has been found to predict higher levels of satisfaction with the overall school experience (Oriol, Torres, Miranda, Bilbao, & Ortúzar, 2017). Students that experience quality peer acceptance have an existing social structure that can be relied on for academic and social challenges (Kingerly, Erdley, & Marshall, 2011).

Transitions during adolescence is a time when negative relationships become more problematic and have a negative impact on student outcomes (Li, Lynch, Kalvin, Liu, & Lerner, 2011). Disruptions to peer groups occur during the transition to middle school and can increase stress (Goldstein et al., 2015). Students tend to transition from a smaller elementary school to a larger middle school. This transition makes reconnecting with friends in a larger setting more difficult. This short period without peer support can impact students’ social and academic adjustment. Lack of peer support, even for short periods, can have negative impacts on adolescents’ social and academic adjustment (Godlstein et al., 2015). Research conducted by
Ellerbrock et al. (2014) found that academic and emotional peer support were key elements in peer relationships.

Those students who work on positive peer relationships tend to perform better academically (Cheung, Wang, Monroy, & Couch, 2016). Kingery et al. (2011) found that social interactions of adolescents had a key impact on students’ academic success following a transition. In addition, peer rejection has been associated with lower academic performance during the transition to middle school (Bellmore, 2011). In order for these relationships to become productive, respect for diversity, school collaboration, and connectedness must become a core belief in an educational environment (Ramelow, Currie, & Felder-Puig, 2015). As students progress to high school, peer support in middle school can have lasting effects. Research conducted by Muscarà, Pace, Passanisi, and Zappulla (2018) found that perceived peer support in middle school directly predicts school satisfaction in high school. Moreover, schools that embed a positive social-relational climate within the school culture contribute to students’ current and future mental health (Oberle, Guhn, Gadermann, Thomson, & Schonert-Reichl, 2018). Peer pressure presents a powerful tool when schools can create an environment where students and adults understand the importance of peer support.

When students struggle in school, educators often take away time used for social interactions as a form of punishment. For example, there may be limited breaks or reduced lunch. Interventions should focus on creating quality social time where students with low peer acceptance can increase social networks (Kingerly et al., 2011). Moreover, daily interactions in the classroom shape a student’s sense of connection to others in meaningful ways. Classroom interventions can build trust, peer support, and emotional well-being, whereas lack of interventions erodes those same feelings, resulting in decreased peer-support (Booker, 2018).
Teachers should implement strategies that promote relatedness and create opportunities for adolescents to build a network of peer support (Muscarà et al., 2018). Peer relationships are powerful motivators when students believe the relationships can be repaired or improved. Recent research revealed when students believe peer relationships are not fixed, there is an opportunity to improve these relationships tend to do better in school (Cheung et al., 2016). Teachers and students should begin by promoting positive peer relationships and make an effort to decrease the influence of problematic friends (Li et al., 2011).

**Adult social support.** Principals, teachers, and other administrators play a meaningful role in the school’s climate (Back et al., 2016). The influence of transformational leadership qualities on school outcomes and the development of a positive educational environment is an important one to note (Allen et al., 2015). Teachers are the adults in the classroom and are viewed by the students as the formal leaders of the group. As leaders in the classroom, teachers have the ability to impact learning as well as school and life experiences (Tian et al., 2016). Research by Guess and McCain-Bowling (2016) found a significant correlation between student perceptions of teacher support and life satisfaction. These relationships are a critical component when creating an educational environment that fits the emotional and cognitive needs of adolescent students (Eccles & Roeser, 2011).

Teacher-student relations prove to be a strong predictor both of students’ general engagement and cognitive engagement (Fatou & Kubiszewski, 2018). Students who do not feel that connection in the classroom have lower math achievement scores and teachers report students are less engaged (Hughes & Coa, 2018). Decreased student engagement can often be attributed to bad relationships with teachers (Hoff, Olson, & Peterson, 2015). Teachers have the ability to promote confidence in a student’s academic ability enabling that student to experience
academic success. Schools that promote quality relationships, communication, cooperation, and connections between student and teacher are more prepared to support student needs and produce positive academic growth (Wong & Degol, 2016). Holas and Houston (2012) found that students taught by effective teachers who maintained close relationships with students performed better on tests, had higher teacher-rated achievement, increased school engagement, and possessed higher self-confidence than peers with ineffective teachers that could not connect with students. Positive student-teacher relationships allow students to feel safer in school. When students perceive that teachers care about student well-being, students are more likely to report weapons, bullying, and victimization (Eliot, Cornell, Gregory, & Fan, 2010).

The feelings of warmth and acceptance decline as students progress through secondary education, but the transition to middle school produces a decline of three times the normal annual decline (Hughes & Cao, 2018). Many students that possess a negative outlook on school climate experience limited positive relationships with teachers and administrators. Classrooms can be harmed beyond repair when adults display negative and belittling characteristics (Guess & McCain-Bowling, 2016). Schools combat these characteristics by implementing a common vision among staff, efficient staff meetings that identify weaknesses and provide solutions, and creating small committees of staff to implement solutions (Voight & Nation, 2016). These adult groups experience success when following the guidelines of a professional learning community to identify the individual needs of students. When teachers fail to understand students’ academic abilities and assume students already know certain academic standards, a negative student-teacher relationship emerges (Yu, Johnson, Deutsch, & Varga, 2018). Research from Hughes and Cao (2018) suggest high levels of teacher-reported social-emotional support and low levels of conflict during the middle school transition can predict academic achievement and
engagement. Social-emotional support refers to teacher behaviors that increase the sense of belonging or acceptance (Prewett, Bergin, & Huang, 2019).

When teachers use integrated teaching practices that help students learn and acquire skills from other subject areas through real-life experiences, the school climate improves through cooperation and collegial relationships (Oder & Eisenschmidt, 2018). Strategies teachers utilize in the classroom can support students’ social and emotional needs or negate feelings of trust, consideration, and mutual respect between the teacher and student (Booker, 2018). Prewett and colleagues (2019) conducted a recent student study among middle school students and found that when students perceive prosocial behaviors such as shared supplies, encouragement, and a positive classroom mood, there is a higher quality teacher-student relationship and increased social-emotional support. Yu et al. (2018) studied adolescent perceptions of the student-teacher relationship to identify characteristics of successful student-teacher relationships. The researchers identified teacher noticing and teacher investment as the two major themes: “Teacher noticing encompasses teachers’ noticing of students’ presence and needs in and outside of the classroom” (Yu et al., 2018, p. 357). The second theme, teacher investment, is defined “as moving beyond surface-level ways of interacting and connecting with students through the encouragement of growth and learning” (Yu et al., 2018, p. 357). Recently, teachers and students have begun to extend communication and build relationships outside of the classroom. One study found that out of class communication through technology promotes a positive classroom environment and teacher-student relationship (Elhay & Hershkovitz, 2019).

**Cultural acceptance.** When schools foster an appreciation for student diversity and culture, students may feel safer and more supported (Voight, Hanson, O’Malley, & Adekanye, 2015). A student’s perception of multiculturalism often mirrors the belief system the school
promotes through activities, interactions, and attitudes (Chang & Le, 2010). The absence of institutional discrimination with a school environment can promote fairness and racial equality (Golden, Griffin, Metzger, & Cooper, 2018). The acceptance of all students is an important step in improving connectedness, relationships, and overall school climate. There is a noticeable division in the United States that revolves around cultural acceptance. Middle-class values are interwoven into public education (Golann, 2015). When students from different cultures or backgrounds are placed in a middle-class environment with conflicting values and discipline, the cultural division grows (Welsh & Little, 2018). The differences in bullying and aggression among different racial and ethnic groups affect how students view roles and responsibilities within the school (Eliot et al., 2010). School administrators and leaders have the responsibility to ensure that students understand why it is important to treat all students with fairness and respect, regardless of race, academic ability, ethnicity, or culture (Welsh & Little, 2018).

Despite efforts to create cultural acceptance in schools, there are major achievement gaps among populations of students. A recent study investigated analyzed almost 3,000 school districts over five years and found that achievement gaps among African American and white students were the largest in the south, and inequality and adult education were strongly associated with these gaps (Hung et al., 2019). If schools continue to allow gaps in achievement, many current minority students will continue to repeat the unsuccessful cycle in adulthood. There are arguments that high stakes standardized testing increases the cultural divide in schools (Au, 2016). Variances in test scores can be attributed to race and socioeconomic status, but these are not the lone factors that affect success (Furgione, Evans, Russell, & Jahani, 2018). Students from disadvantaged backgrounds face challenges before arriving at school. When students from
disadvantaged backgrounds perceive the school climate to be positive, school grades were comparable to peers from higher-income families (Reynolds et al., 2017).

Often the achievement gap is linked to the increased discipline suspensions for students from minority races, with academic disabilities, and of low socioeconomic status (Welsh & Little, 2018). While examining the effects of school-wide interventions and supports in over 1,000 Florida schools, researchers found disproportionate discipline consequences among races, ethnicities, and students with disabilities (Gage, Grasley-Boy, George, Childs, & Kincaid, 2019). Moreover, research conducted by Skiba and colleagues (2014) raised concerns that race can predict the exclusionary discipline such as out of school suspension and expulsion. Disproportionate discipline rates are also evident among students with learning disabilities, who are often the most vulnerable subgroup in a school setting (Brobbey, 2018). There are conflicting studies that link socio-economic status and to suspensions and expulsions (Huang & Cornell, 2017; Petras, Masyn, Buckley, Ialongo, & Kellam, 2011; Welsh & Little, 2019). However, low socioeconomic students are more likely to fall victim to bullying and victimization in middle and high school (Peskin, Tortolero, & Markham, 2006).

The struggles of disadvantaged students are not isolated to economic status and often involve racial aspects in society and schools. Voight et al. (2015) found a significant relationship between the racial achievement gap and the racial climate gap in schools. Students from the same school may experience school climate differently based on race (Voight et al., 2015). Minority students who experience a less fair and equitable school environment also report a more negative perception of academic performance (Golden et al., 2018). When compared to white students, African American and Hispanic students tend to have more negative experiences with school safety, relationships, school acceptance, and opportunities for
participation (Voight et al., 2015). According to Eliot et al. (2010), when facing negative experiences related to the school climate, African American students are less likely to seek help.

How schools approach instruction, acceptance, and student data can influence cultural acceptance. Schools that promote respect and appreciation for diversity tend to make students of color, such as African American and Hispanic students, feel safer and more supported (Voight et al., 2015). Supportive school climates that incorporate multiculturalism, educate students about diversity, and create empathy for subpopulations may achieve better academic outcomes (Chang & Le, 2010). Schools and educators have the power to embrace diversity and model acceptance through the attitudes, interactions, and actions of the adults in the building. Some subgroups of students are better prepared to cope with cultural divisions in schools, and others will manifest these divisions (Parris, Neves, & La Salle, 2018). It is vital that students do not experience unfair treatment based on stereotypes and interpret the interactions around the school as fair and equitable for all races, ability levels, and socioeconomic backgrounds (Golden et al., 2018).

**Social/civic learning.** Effective leaders articulate the school’s vision to students and staff, inspire everyone to strive toward common goals, show respect for all staff members, and express concern about individual feelings and needs (Wang & Degol, 2016). Student perceptions are often used to identify how students are treated, but rarely are students asked to self-reflect on civic responsibility and the effects it can have on peers. Implementing strategic learning activities in and beyond the classroom is an effective way to incorporate civic education into a school, and these activities, in turn, promote student learning (Thapa et al., 2013). By making students aware of civic and social responsibilities, schools can reduce problem behaviors and improve academic outcomes (Diggs & Akos, 2016). Quality character education helps
shape the strong foundation needed for adolescent students to grow into successful citizens and contributing members of the community (Khoury, 2017).

Character education is a term used to describe the efforts to educate students in the areas of civic virtues, respect, responsibility, empathy, tolerance, and service for the community (Schwartz, Beatty, & Dachnowicz, 2006). Successful implementation depends on the willingness of teachers to model the identified values and incorporate the values in the classroom environment (Opuni, Washington, & Giddings, 2012). Effective character education programs may impact academic success. Research conducted by Benninga and colleagues (2003) concluded that schools that implement character education programs with fidelity tend to have higher academic scores than prior years. Character education also improves students’ self-awareness and social interactions in the school environment, which improves the educational experience (Lovat, Clement, Dally, & Toomey, 2011). In addition, the implementation of character education programs that promote positive decision making and conflict resolution contribute to a positive transition to middle school (Khoury, 2017).

Physical environment. Maintaining a clean, comfortable, and well-maintained school has shown to promote a positive school climate (Voight & Nation, 2016). Physical appearance includes temperature control, lighting, desk, lack of vandalism, and resources. These aspects can also provide students with a greater sense of safety. School start and end times, school populations, and policies are important parts of the school’s physical environment that impact adolescent experiences (Eccles & Rosser, 2011). Clean spaces, walkways, community areas provide students with a better sense of community. A building that is designed to utilize space to meet the needs of students and is well maintained indicates that the stakeholders value the activities and people in the building (Maxwell, 2016).
The monetary investment made in the physical environment of a school has a significant effect on student achievement (Crampton, 2009). A financial investment in the physical environment is important, but the greatest link to student achievement is the stakeholder’s perceptions of the school’s physical environment (Roberts, 2009). Students in what is perceived as a quality school building tend to possess increased self-efficacy and higher grade point averages (Maxwell & Schechtman, 2012). Uline and Tschannen-Moran (2008) identified a link between the quality of school facilities and student achievement through teacher perspectives of school facilities and resources and the effect that the two had on student achievement. School facilities are systematically related to the quality of teaching and learning in schools (Roberts, 2009).

Hattie (2015) ranked the top influences on student achievement. The research identified collective teacher efficacy as a top influencer with an effect size of 1.57. The research suggests that a confident teacher is a powerful resource for students. Educational leaders and administrators have the ability to ensure teachers are provided with the instructional resources, technology, and professional support needed to create a successful physical environment in the classroom. The current generation of students require teachers to provide differentiated resources that change periodically. The most profound example is the implementation of technology. Teachers who implement technology in a student-centered classroom create an environment that enhances the skills needed for the 21st century (Ruggiero & Mong, 2015). The need to integrate more technology creates two problems associated with the physical environment, the inability of schools to equip classrooms with modern technology and lack of time to provide teachers with professional development related to educational technology and how to integrate the phenomenon in classrooms (Stošić, 2015). Professional development is
ultimately the responsibility of the teacher, but the school environment and leadership can help or hinder professional growth (Patton, Parker, & Tannehill, 2015). The ability of educational leaders and teachers to work collaboratively through job-embedded professional learning creates a physical environment that supports student and teacher learning (Goddard, Goddard, Kim, & Miller, 2015).

The physical environment of a school also has an impact on attendance for both teachers and students. Student attendance increases when there are no temporary buildings, the permanent structures are well maintained, and there are adequate custodial services to ensure cleanliness (Branham, 2004). Maxwell (2016) investigated the relationship between the physical environments of middle schools and the achievement of the students. The results found that social climate and student attendance account for 70% of the variance in the outcome. Students want to attend a clean, safe, physically attractive school where social interactions are positive. Duran-Narucki (2008) examined attendance as a mediator in the relationship between schools with inadequate physical environments and the grade point average of students. The study found that attendance was a full mediator for academic performance. Teachers have a better experience when students attend school (Branham, 2004). Improved school facilities can improve teacher attendance and retention. Buckley, Schneider, and Shang (2005) examined teacher retention and found that facilities impact teacher attendance and retention more than increased pay.

Stakeholders in a school building begin to develop a sense of self-worth based on the physical surroundings. Students and teachers perceive a poor physical as a reflection of the feelings administrators and community members share about students and teachers in the building (Durán-Narucki, 2008). The quality of the physical environment plays a great part in
shaping the experiences people have in that environment (Wang & Degol, 2016; Sulak, 2016). The best predictor of the physical quality of a school is building safety (Maxwell & Schechtman, 2012).

**School safety.** The National Center on Safe and Supportive Learning Environments defines school safety as schools and school-related activities where students are safe from violence, bullying, harassment, and substance abuse. Before students can meet high expectations and adults can focus on students’ academic growth, both must trust that a safe and supportive environment is established (Maslow, 1943; Voight, Austin, & Hanson, 2013). Safety includes experiences and perceptions of physical, verbal, or emotional violence, bullying, or harassment (Voight & Nation, 2016). Students that feel safe at school tend to be more engaged, which contributes to higher academic achievement (Côté-Lussier & Fitzpatrick, 2016). Wang and Degol (2016) categorized safety into two distinct categories: emotional and physical safety. Emotional safety includes supports form those with mental health problems or verbal bullying and harassment. Physical safety is related to the prevention of violence, aggression, or victimization. Both aspects of safety are among the most commonly explored aspects of safety since they relate to bullying and violence (Kutsyuruba, Klinger, & Hussain, 2015).

Meeting students’ emotional needs begins with protection from bullying. During the transition from elementary school to middle school, students go from being the highest grade in elementary school to the lowest grade in middle school, and the new class ranking may make sixth graders more susceptible to bullying (Bailey et al., 2015). Georgia Code (20-2-751.4) defines bullying as any willful attempt or threat to inflict injury on another person when accompanied by an apparent present ability to do so. The attempt involves the intentional display of force that would give the victim reason to fear or expect immediate bodily harm. The
act has the effect of substantially interfering with a student's education and is considered so severe, persistent, or pervasive that it creates an intimidating or threatening educational environment.

Effects of bullying come in many forms and are often associated with depression, anxiety, and other mental health disorders (Gietz & McIntosh, 2014). Students bullied in middle school are three times more likely to feel unsafe at school (Bowser, Larson, Bellmore, Olson, & Resnik, 2018). Negative effects of bullying are not restricted to the victim and perpetrator. Results from a study conducted by Rivers, Poteat, Noret, and Ashurst (2009) found that observing bullying and victimization of others can have a significant negative impact on the witnesses’ mental health. The finding suggests that students who witness bullying may share characteristics with those involved in bullying behavior.

Traditional bullying can be in the form of verbal name-calling, taunting, rumor spreading, exclusion, or physical contact. The combination of technological advances and social media have brought about an increase in cyberbullying. Cyberbullying is similar to traditional bullying, but there are two distinct differences. Cyberbullies are often perceived as anonymous, and cyberbullies have more accessibility to the victim (Kowalski et al., 2014). In 2015, the Georgia General Assembly expanded the definition of bullying through House Bill 131, also known as "The End to Cyberbullying Act.” House Bill 131 modified the definition of bullying to include acts of cyberbullying which occur through the use of electronic communication, whether or not such electronic act originated on school property or with school equipment.

Lack of emotional safety often evolves into compromised physical safety. When physical contact is included in a scenario where students are bullied, students are six times more unlikely to feel safe at school (Bowser et al., 2018). Bullying is not the only threat to the
physical safety of students. In 2018, there were three school-related shootings that took the lives of 24 students and five teachers (Devos et al., 2018). The threat of gun violence adds a new dimension of physical safety for education leaders to consider. When comparing the number of school shootings in the 20th and 21st centuries, it is concerning that in less than 18 years, there are already more deaths in the 21st century than the entire 20th century (Katsiyannis, Whitford, & Ennis, 2018).

To meet the students’ basic safety needs school leaders must establish environments that prevent violent behavior, decrease bullying, and victimization and incorporate all stakeholders in the school safety process (Nijs et al., 2014). A study into the association between peer victimization, school climate, and grade point average found that peer victimization was related to lower grade point averages and poorer perception of school climate (Wang et al., 2014). Communicating expectations for procedures, guidelines, and behaviors is a critical component in the safety process (Gietz & McIntsh, 2014). Eliot et al. (2010) investigated the relationship between students’ perception of support and student willingness to ask for help. The research found that students who perceive the school climate to be more supportive are more likely to seek help in situations that involve bullying and threats of violence. In schools that emphasize creating an environment where threat assessment guidelines are followed, students report less bullying, feel more comfortable seeking help and possess more positive perceptions of the school climate (Thapa et al., 2013). The Federal Commission of School Safety recommends improving school climate by helping students feel connected with the school, providing school resource officers, and maintaining discipline as preventative measures to address school safety (Devos et al., 2018).
**Discipline.** A positive school climate appears to promote academic achievement, but a negative school climate, defined by an excess of disciplinary issues, may depress academic achievement (Sulak, 2016). Students exhibiting school delinquency problems may be less likely to be in the class due to detention, suspension, or expulsion and therefore have less time to build significant student-teacher relationships or meaningful relationships with peers (Reaves et al., 2018). A positive disciplinary climate is characterized by fewer suspensions, office discipline referrals, less disruptive student behaviors and increased positive student perceptions of classroom order, consistency, and fairness of school rules (Voight & Nation, 2016). During the 2013-2014 school year, 2.8 million K-12 students were assigned out of school suspension (U.S. Department of Education, Office of Civil Rights, 2016). A recent meta-analysis found there to be a significant relationship between all suspensions (in school and out of school) and academic achievement (Noltemeyer, Marie, Mcloughlin, & Vanderwood, 2015). Student behaviors also impact the quality of life outside the school. Nearly one-quarter of a million students engaged in behaviors that resulted in referrals to law enforcement and more than 64,000 students were arrested for acts that occurred on school grounds or during off-campus school activities such as transportation (Gage, Whitford, & Katsiyannis, 2018). Moreover, teen arrests increase the likelihood of mental health and emotional disorders (Barret & Katsyannis, 2016).

Traditionally, schools have used punitive strategies as an intervention for disruptive or violent behaviors. Over the past decade, many schools have implemented Positive Behavior Intervention and Supports (PBIS) or School-wide Intervention and Support (SWPBIS) to combat growing discipline problems. PBIS is a systematic approach comprised of intervention practices and organizational systems for establishing the social culture, learning and teaching environment, and individual behavior supports needed to achieve academic and social success.
for all students (Sugai et al., 2000). The focus of SWPBIS is not to improve academic instruction. However, the reduction in disruptive behaviors, disciplinary consequences, and suspensions can have a positive impact on academic achievement (Gage, Leite, Childs, & Kincaid, 2017). SWPBIS is not just a reward system for students who behave or meet expectations. When implemented with fidelity SWPBIS is a culture of change that promotes a positive environment.

SWPBIS follows an ordered criterion that includes organizing support teams, defining expectations, teaching exceptions, implementing a reward system to promote positive behavior, collecting data, and adjusting supports to meet the needs of individual students (Horner, Sugai, & Anderson, 2010). The implementation of SWPBIS involves primary prevention (universal or Tier I), secondary prevention (Targeted or Tier II) and tertiary prevention (intensive or Tier III) (Chitiyo & May, 2018). All prevention strategies rely on frequent data collection and analysis to move students to more or less intensive tiers if needed (Gage et al., 2019). The beginning stages of implementation at the universal level are the hardest due to the required collective belief from the adults in the school (Valenti & Kerr, 2015). In order to implement SWPBIS with fidelity, the stakeholders must agree on expectations and rules and then teach and model the agreed upon expectations and rules to the students (Bosworth & Judkins, 2014). Teachers cannot assume that students already know these behaviors. How rules are enforced, meaning the extent to which they are consistently and fairly enforced, is another factor that shapes how safe people feel in school (Thapa et al., 2013). Caldarella and colleagues (2011) suggested that the student abilities to learn and use suggested behaviors have the largest effect size on SWPBIS.

There continues to be multiple studies offering positive data to support SWPBIS as a method to decrease defiant and disruptive behavior. Calderalla et al. (2011) conducted a study of
the SWPBIS in middle schools and suggested there is a connection between SWPBIS implementation and increased school climate and decreased misbehavior. A meta-analysis of single school research found SWPBIS to be effective in reducing undesirable student behavior, particularly in unstructured settings such as recess, hallways, and cafeterias (Solomon, Klein, Hintze, Cresssey, & Peller, 2012). Gage et al. (2019) compared 593 schools implementing SWPBIS with fidelity to 596 schools that have never been trained. Results found that there were significantly fewer out of school suspensions for SWPBIS schools. SWPBIS implementation requires fidelity to be successful. Schools that implement SWPBIS with fidelity showed immediate decreases in problem behaviors and maintained the decrease across time when compared to schools implementing with less fidelity (Childs, Kincaid, George, & Gage, 2016). The ability to support SWPBIS can benefit the school climate by maintaining order by setting clear expectations, promoting respect, and consistently enforcing rules (Voight & Nation, 2016)

**Summary**

Educational leaders often discuss how to support students who transition to a new school. These transitions are associated with academic barriers that can impact student achievement for years to come. Many of the key areas of school climate are found to support students during the transition to sixth grade. Studies have concluded that school climate has a positive impact on student achievement (Back et al., 2016; Maxwell et al., 2017). There is a need to identify which dimensions of school climate (school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline) can have the most significant impact on students’ academic growth during the transition to middle school. Currently, there are no studies that focus on school climate and academic growth during the transition to middle school.
Thus, this study is necessary to provide educational leaders with relevant information that can better meet the academic, social, and emotional needs of students during transition years.
CHAPTER THREE: METHODS

Overview

The purpose of this predictive correlational study is to examine the theories of transition and stage-environmental fit among sixth-grade students moving through a critical transition year. The transition through sixth grade is associated with many new experiences that can impede academic success (Kieffer et al., 2014). Students who experience positive transitions decrease the risk of failure in the future (Lane et al., 2015). By examining the predictive relationship of school climate and school climate dimensions to academic growth, educational leaders can create an environment that promotes success. This chapter contains the research question, hypothesis, and experimental design. Participants, settings, and instrumentation are also addressed. The chapter concludes with the experimental procedures and data analyses.

Design

The purpose of this quantitative, correlational design is to determine how accurately schools’ academic growth in sixth grade, as measured by the 2017 Georgia Student Growth Model, can be predicted by students’ perceptions of school climate during sixth grade in 2017, as measured by the Georgia Student Health Survey 2.0. The correlational design utilized archival surveys and growth data provided by the Georgia Department of Education. Correlational research design is appropriate for this study because the purpose is to discover the relationships between variables (Gall, Gall, & Borg, 2007), whereas a causal-comparative research design is not appropriate because the purpose is to determine cause or reason for differences in groups or individuals (Gay & Airasian, 2000). In correlational research, a relationship exists when changes in one variable are associated with a predictable change in another variable (Rovai, Baker, & Ponton, 2014). Akkanat and Gökdere (2018) used a correlation design to determine if academic
involvement and school climate could predict motivation, creativity, and science ability in gifted students. In another correlation study, Kwong and Davis (2015) attempted to find a relationship between areas of school climate such as school safety, learning environment, and academic achievement in math and reading. In the proposed study, the criterion variable is middle schools’ 2017 sixth-grade student growth percentile in language arts. A criterion variable is an outcome variable that is affected by the predictor variable (Rovai et al., 2014). The main predictor variable is the mean 2017 student perception of school climate in sixth grade. The predictor variable is a variable or variables used to help predict the outcome of the criterion variable (Warner, 2013). The proposed study will also look at the relationship between the criterion variable, middle school’s sixth-grade student growth percentile in language arts, and sixth graders’ mean perception of the six dimensions of school climate: school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline. The correlational design will allow the researcher to reject or fail to reject the null hypotheses.

**Research Questions**

This study is proposed on the belief that there is a predictive relationship between students’ perception of school climate and sixth-grade academic growth. The research questions for this study are:

**RQ1:** Is there a predictive relationship between schools’ sixth-grade student academic growth percentile and student perceptions of school climate during sixth grade?

**RQ2:** Is there a predictive relationship between schools’ sixth-grade student academic growth percentile and student perceptions of school climate dimensions (school connectedness,
adult social support, cultural acceptance, social/civic learning physical environment, and discipline) during sixth grade?

The null hypotheses for this study are:

**H₀₁:** There is no statistically significant predictive relationship between schools’ sixth-grade student academic growth and student perceptions of school climate during sixth grade.

**H₀₂:** There is no statistically significant predictive relationship between schools’ sixth-grade student academic growth and student perceptions of school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline) during sixth grade.

**Participants and Setting**

The participants for this study (N = 150) were drawn from a stratified random sample of middle schools located in the state of Georgia during the 2017-2018 school year. The stratified random sample allowed the researcher to obtain a sample that is representative of the entire population and ensure the representation of all groups (Warner, 2013). In this study, the researcher randomly selected from Title I and Non-Title I middle schools. Specifically, a proportional stratified random sample was needed to ensure proportional representation that reflects the Title I and Non-Title I middle school populations in Georgia (Gall et al., 2007). Increased representation of the target population increases external validity in the study (Rovai et al., 2014). When stratified samples are used, the standard error is always smaller when compared to a simple random sampling (Milton, 1986). Simple random sampling allows each member of the population to have an equal and independent chance of selection (Rovai et al., 2014). Thus, simple random sampling may yield a participant pool that is not reflective of the overall middle school population. The Georgia Department of Education (GADOE) identifies a
middle school as a school that serves Grades 6 through 8. In 2017, there were 488 identified middle schools in the state of Georgia. The setting consisted of sixth-grade perceptions of school climate and student growth because of the transition from elementary to middle school. Those who do not successfully navigate this transition are at heightened risk for future school failure (Lane et al., 2015).

In correlation research, Gall et al. (2007) suggested a minimum of 30 participants but also advised researchers to use the largest sample possible to increase the accurate representation of the population. To determine the sample size necessary for regression analysis, Warner (2013) recommended the following equation: $N > 104 + k$ (k = number of predictor variables). The seven predictor variables present in this study (school climate, school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline) suggested that 111 participants are required for a medium effect size with a statistical power of 0.7 at the 0.05 alpha level. When regression designs are used, larger sample sizes are recommended to make confidence intervals more narrow (Bonett & Wright, 2011; Warner, 2013). Based on the previous suggestion, the goal for participants in this study was 150 middle schools. The sample size included 106 Title I schools and 44 Non-Tile I schools.

**Instrumentation**

The study gathered archival data from two instruments that were created and issued by the GADOE to students in Georgia. The first instrument is used yearly by the state of Georgia to determine student perception of school climate. The Georgia Student Health Survey 2.0 identifies student perceptions of the overall school climate and the eight dimensions of school climate. The second instrument is a student’s academic growth, which is also calculated yearly by the state of Georgia using achievement scores on the Georgia Milestones Assessment System.
Both instruments allowed the researcher to narrow the archival data down to school results, specifically sixth grade.

**Georgia Student Health Survey 2.0: Middle/High**

The Georgia Student Health Survey 2.0 is part of the Georgia School Climate Survey Suite that includes Georgia Student Health Survey 2.0: Elementary, Georgia Student Health Survey 2.0: Middle/High School, Georgia School Personnel Survey, and Georgia Parent Survey. School climate surveys yield meaningful data on overall school climate regarding interpersonal relationships, safety, connectedness, the learning environment, and orderliness. The middle and high school survey provides schools with an overall understanding of how middle and high school students perceive school climate overall and within eight subscales. This 121-item survey includes an embedded 36-item measure of school climate which uses a four-point rating scale (ranging from strongly disagree to strongly agree). The embedded school climate scale is a second-order model of school climate in which an overall school climate factor represents the relationships between eight sub-factors: school connectedness (5 items), peer social support (3 items), adult social support (4 items), cultural acceptance (5 items), social/civic learning (6 items), physical environment (4 items), school safety (4 items), and discipline (5 items). Middle and high school students complete the survey during school hours using campus computers under the guidance of teachers or other appropriate school personnel. Schools are asked to have a minimum participation rate of 75% from each grade level.

To compute the overall school climate score, scores for each subscale are summed and then divided by the total number of subscales (La Salle, 2017). Responses for items within each school climate dimension will be summed and divided by the number of items within the dimension to compute scores for each dimension. For all surveys, higher scores represent more
positive school climate perceptions. Results of the surveys can be viewed for all respondents or by grade, gender, or race/ethnicity. Survey data is available on the GADOE website. Analyses of the middle/high school survey scale items suggest a second order school climate scale that has desirable psychometric properties. A confirmatory factor analysis of all middle and high school records for the survey was conducted. The Technical Manual for the Georgia School Climate Survey Suite providing middle school results yielding adequate fit indices ($\chi^2 (17) = 27, 825.18$ $p < .001$, CFI = .966, TLI = .944, RMSEA = .074, SRMR = .030). Cronbach’s alpha for the overall school climate scale is 0.92 (La Salle, 2017). Cronbach’s alpha is a model of internal consistency reliability based on the average inter-item correlation of an instrument (Rovai et al., 2014). The internal consistency reliability describes the degree to which items on the survey measure the same thing (Warner, 2013). Cronbach’s alpha for individual school climate dimensions are as follows: school connectedness = 0.74, peer social support = 0.6, adult social support = 0.91, cultural acceptance = 0.88, social/civic learning = 0.85, physical environment = 0.78, school safety = 0.65, and discipline = 0.80 (La Salle, 2017). The acceptable score for Cronbach’s alpha is .70 or higher for a set of items to be considered an internally consistent scale (Rovai et al., 2014). Due to a Cronbach’s alpha being below 0.70, peer social support and school safety will not be included as individual variables but will be included in the overall school climate score.

The Georgia Student Health Survey 2.0 was designed to give the student perspective of school climate, school climate dimensions (school connectedness, peer social support, adult social support, cultural acceptance, social/civic learning, physical environment, school safety, and discipline) and help inform the overall school climate rating. La Salle, George, McCoach, Polk, and Evanovich (2018) used the Georgia Student Health Survey to examine perceptions of
school climate among middle school students who possess an emotional behavior disorder and counterparts without disabilities. Scores for the school climate were calculated by taking the mean scores for each subscale and dividing by the total number of subscales. The reliability analysis conducted in SPSS version 34 resulted in scale reliability of 0.92 for the school climate scale (La Salle et al., 2018). There was also an investigation into the relationships between suicidal thoughts and behaviors, school climate, and student demographics among middle school students which used the Georgia Student Health Survey 2.0 to attain data about school climate and suicide (La Salle, Wang, Parris, & Brown, 2017). The internal consistency for this study was 0.803. There have also been studies that utilized dimensions of school climate. La Salle, Parris, Morin, and Meyers, (2016) used the school climate dimension of school connectedness to study the relationship between school connectedness and peer victimization. The study’s Cronbach’s alpha was 0.78, indicating good internal consistency.

Georgia Student Growth Model

The Georgia Student Growth Model is designed to provide all stakeholders with important information on student progress. Student growth can help provide a complete picture of the academic performance of students. The Georgia Student Growth Model is based on student growth percentiles. Student growth percentiles are statistical, regression-based quantities used to characterize the growth of students on state-mandated assessments. Student growth percentile calculations utilize quantile regression with b-spline smoothing to create growth norms that model the relationship between students’ current and prior achievement scores (GADOE, 2017a). McCaffrey, Castellano, and Lockwood (2014) wrote a technical evaluation of Georgia’s student growth component and identified reliability to be at 0.87. Student growth percentiles describe the amount of growth a student has demonstrated relative to academically-
similar students from across the state. Growth percentiles range from 1 to 99, with lower percentiles indicating lower academic growth and higher percentiles indicating higher academic growth (GADOE, 2017a). In this study, student growth based on language arts scores on the Georgia Milestones Assessment System will provide the prior achievement at the end of the fifth-grade year and the current achievement at the end of the sixth-grade year. Each school will have a student growth percentile based on students’ sixth-grade language arts achievement compared to peers.

Georgia Student Growth Model is used to determine school-level progress on the College and Career Ready Performance Index (CCRPI), which provides an overall indication of school and district effectiveness. School level progress or growth counts 35% of the overall CCRPI score. In order for the student growth percentiles to have a positive effect, the student scores must show typical (35-65%) or high (66-99%) growth. Student growth percentiles are one of the instruments used to determine teacher and leader effectiveness in the Teacher Keys Effectiveness System (TKES) and Leader Keys Effectiveness System (LKES).

Fancera (2018) used an alternate definition of school climate to predict school growth in language arts and math in the state of New Jersey. The dependent variable in the study was the Student Growth Percentile, which measures student growth over the year by comparing a student’s achievement to a group of students that had similar achievements in previous years (Fancera, 2018).

Procedures

The researcher began by attaining approval from the committee and chairperson after the proposal defense. After the proposal had been approved, the researcher requested approval from the Liberty University Institutional Review Board (IRB) before any data was collected. The
researcher informed the GADOE research is being conducted using the data provided by the Georgia Student Health Survey 2.0 and the Georgia Student Growth Model. All of the required data can be obtained freely at the GADOE website.

The Georgia Student Health Survey is administered between November and February. A passive parental consent form was sent to each parent. The passive parental consent allowed parents to opt-out of having students participate in the survey by completing the form sent home before the survey was administered. All surveys were completed at the school under the supervision of a certified educator by way of an online portal provided by GADOE. The surveys are completely anonymous, and data retrieved from the GADOE will not include personally identifiable information. Upon approval from the IRB, the researcher began to disaggregate the survey data provided by the GADOE. The researcher calculated the average of student perceptions overall school climate and each of the six dimensions of school climate (school connectedness, adult social support, cultural acceptance, social/civic learning, physical environment, and discipline). Each school received a score between one (lowest) and four (highest) in each category.

Once all the school climate data had been disaggregated appropriately, the researcher added the overall language arts student growth percentiles assigned to each school. The student growth percentile is based on the Georgia Milestones Assessment System. This is a standardized test given in the academic area language arts during April and May. Student growth percentiles for each school are released between September and October of the following school year. The data file is located on the GADOE website (GADOE, 2017b). Once all the data was entered, the names of the schools were removed and replaced with pseudonyms. The data was stored on a password-protected computer in the researcher’s office.
Data Analysis

The first null hypothesis states there is no statistically significant predictive relationship between schools’ sixth-grade student academic growth and perceptions of school climate during sixth grade. To test this hypothesis, the researcher employed a predictive, correlation design in the form of a bivariate regression. A bivariate regression is a parametric procedure that predicts individual scores on a continuous dependent variable based on scores from a single independent variable (Rovai et al., 2014). The relationship was determined using an x-axis and y-axis where x is defined as school climate, and y is defined as student growth. The more linear the relationship, the more accurate the prediction (Rovai et al., 2014). SPSS was used to report the descriptive statistics, including mean and standard deviation, degrees of freedom (df), R and $R^2$, significance level (p), B, beta, and SE B, regression equation and power (Warner, 2013): “The coefficient of multiple correlation (R) and the adjusted coefficient of multiple determination ($R^2$) are appropriate effect size statistics for regression analysis” (Rovai et al., 2014, p. 421). The coefficient of multiple correlation (R) reflects the relationship between a single criterion variable and a single predictor variable (Rovai et al., 2014). The coefficient of multiple determination ($R^2$) is a mathematical expression that explains the amount of variance in the criterion variable that is explained by the predictor variable (Gall et al., 2007).

There are certain assumptions that must be met for bivariate regressions to produce accurate results. The assumption of normality tests whether the frequency distribution differs significantly from the normal or the two variables must be normally distributed. The researcher also utilized a scatterplot to visually check the assumption of normality. The researcher was looking for an approximate cigar shape among the data points. The researcher used a scatterplot
to determine the linear correlation between the two variables. The scatterplot enabled the researcher to visually identify linear correlation by looking for a straight line among the data points (Warner, 2013). To identify bivariate outliers, the researcher utilized a scatterplot between the criterion and predictor variables to check for extreme bivariate outliers that can make results very misleading. Individual data points identified as extreme were removed from the study. Bivariate normal distribution ensures that for each value of \( X \), \( Y \) is normally distributed (Warner, 2013).

The second null hypothesis states there is no statistically significant predictive relationship between schools’ sixth-grade student academic growth and perceptions of school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline) during sixth grade. According to Gall et al. (2007), multiple regression should be used in correlational studies when it is necessary to determine a correlation between one criterion variable and a combination of two or more predictor variables. In this study, the criterion variable is defined as student growth, and the predictor variables are the six dimensions of school climate. SPSS was used to report the descriptive statistics, including mean and standard deviation, degrees of freedom (df), \( R \) and \( R^2 \), significance level (\( p \)), \( B \), beta, and SE \( B \), regression equation and power (Warner, 2013): “The coefficient of multiple correlation (\( R \)) and the adjusted coefficient of multiple determination (\( R^2 \)) are appropriate effect size statistics for regression analysis” (Rovai et al., 2014, p. 421). The required assumption testing for multiple regression stars with examining the variables to ensure continuous or categorical and the variables are independent of each other. The researcher utilized a scatterplot to check the assumption of bivariate outliers and the assumption of multivariate normal distribution. Multiple regression assumption testing also included a test for
multicollinearity, which occurs when there are two or more independent variables that are highly correlated with each other. The researcher utilized SPSS to produce tolerance and variance inflation factors (VIF) to further investigate multicollinearity. The VIF range is one to infinity, but a common cutoff is a VIF value less than 10 (Rovai et al., 2014).
CHAPTER FOUR: FINDINGS

Overview

This chapter contains the research questions and hypotheses, as well as the data analysis related to this study. The purpose of this quantitative, correlational study was to test the relationship of students' perceptions of school climate to academic growth as students move through the first year in middle school. The chapter begins by analyzing the relationship between school climate and student academic growth during sixth grade. To further understand the effects of school climate, the researcher determined if school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning, physical environment, and discipline) have a significant impact on academic growth.

Research Questions

RQ1: Is there a predictive relationship between schools’ sixth-grade student academic growth percentile and student perceptions of school climate during sixth grade?

RQ2: Is there a predictive relationship between schools’ sixth-grade student academic growth percentile and student perceptions of school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning, physical environment, and discipline) during sixth grade?

Null Hypotheses

H₀1: There is no statistically significant predictive relationship between schools’ sixth-grade student academic growth measured by the Georgia Student Growth Model and student perceptions of school climate during sixth grade measured by the Georgia Student Health Survey 2.0.
**H02:** There is no statistically significant predictive relationship between schools’ sixth-grade student academic growth measured by the Georgia Student Growth Model and student perceptions of school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline) during sixth grade measured by the Georgia Student Health Survey 2.0.

**Descriptive Statistics**

The sample for this study consisted of 150 middle schools located in the state of Georgia during the 2017-2018 school year. To ensure equal socioeconomic representation, 44 of the schools are Non-Title I Schools and 106 schools are Title I Schools. The GADOE describes Title I schools as public schools with high percentages of socioeconomically disadvantaged students. The measurements provided by each school relevant to this study were the average sixth-grade students’ growth percentile in language arts and average sixth-grade students’ perceived school climate scores as measured by the Georgia Student Health Survey 2.0.

Descriptive statistics for the predictor and criterion variables for the entire sample \( (n = 150) \) are shown in Table 1. The school climate score and the six subscale measures of school climate (i.e., predictor variables) had a possible range of one to four, and the midpoint between one and four is two and one-half. Considering all school climate scores on average were above two and one-half, this suggests on average, the students rated their school climate as relatively good. The criterion variable, growth percentile had a possible range of one to 99 the midpoint between one and 99 is 50. The average growth percentile was 50.71, just slightly above the midpoint. This indicates on average, students experienced a relatively small amount of growth in language arts performance.
### Table 1

**Descriptive Statistics for the Predictor and Criterion Variables.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Valid</th>
<th>Missing</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Climate&lt;sup&gt;a&lt;/sup&gt;</td>
<td>150</td>
<td>0</td>
<td>0</td>
<td>3.14</td>
<td>0.19</td>
<td>2.66</td>
<td>3.89</td>
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<tr>
<td>School Connectedness&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>0</td>
<td>3.13</td>
<td>0.14</td>
<td>2.73</td>
<td>3.91</td>
</tr>
<tr>
<td>Adult Social Support&lt;sup&gt;a&lt;/sup&gt;</td>
<td>150</td>
<td>0</td>
<td>0</td>
<td>3.22</td>
<td>0.24</td>
<td>2.60</td>
<td>3.94</td>
</tr>
<tr>
<td>Cultural Acceptance&lt;sup&gt;a&lt;/sup&gt;</td>
<td>150</td>
<td>0</td>
<td>0</td>
<td>2.79</td>
<td>0.27</td>
<td>2.19</td>
<td>3.93</td>
</tr>
<tr>
<td>Social/Civic Learning&lt;sup&gt;a&lt;/sup&gt;</td>
<td>150</td>
<td>0</td>
<td>0</td>
<td>3.57</td>
<td>0.12</td>
<td>3.26</td>
<td>3.98</td>
</tr>
<tr>
<td>Physical Environment&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>0</td>
<td>3.09</td>
<td>0.27</td>
<td>2.12</td>
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<tr>
<td>Discipline&lt;sup&gt;a&lt;/sup&gt;</td>
<td>150</td>
<td>0</td>
<td>0</td>
<td>3.25</td>
<td>0.19</td>
<td>2.73</td>
<td>3.85</td>
</tr>
<tr>
<td>6 ELA GSGM Mean (student growth)&lt;sup&gt;b&lt;/sup&gt;</td>
<td>150</td>
<td>0</td>
<td>0</td>
<td>50.71</td>
<td>8.29</td>
<td>28.50</td>
<td>70.50</td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictor Variables: Sixth-grade students’ perceptions of school climate

<sup>b</sup> Criterion Variable: Sixth-grade students’ growth percentile in language arts

### Results

**Null Hypothesis One**

The null hypothesis states there is no statistically significant predictive relationship between schools’ sixth-grade student academic growth measured by the Georgia Student Growth Model and student perceptions of school climate during sixth grade measured by the Georgia Student Health Survey 2.0. A bivariate regression was used to measure the relationship between predictor and criterion variables. No single unit of observation (i.e., a middle school in the state of Georgia during the 2017-2018 school year) appears in more than one row of the database, which is to say, the 150 rows in the database represent 150 different middle schools in the state.
of Georgia during the 2017-2018 school year. All middle schools included in the sample provided predictor and criterion variables with no individual outliers.

**Assumption tests.** Several assumptions must be tested to ensure the bivariate regression could be conducted including the assumption of normality which ensures standardized residuals have a roughly normal distribution. This assumption was evaluated by way of inspection of a scatterplot between student growth (predictor) and school climate (criterion). The formation of a cigar shape indicates the assumption of normality was satisfied (see Figure 1).

![Figure 1. Scatterplot to evaluate the normality for hypothesis one.](image)

The assumption of linearity identifies a linear relationship between predictor and criterion variables. A scatterplot that graphically depicts the relationship between the predictor and criterion variables shows evidence of a linear relationship between growth and climate. Rovai et
al. (2014) suggested that the linearity assumption is considered satisfied when there is an approximate straight-line relationship between the two variables. Thus, the assumption of linearity was considered satisfied (see Figure 2).

Figure 2. Scatterplot to evaluate the linearity for hypothesis one.

The assumption of bivariate outliers identified extreme outliers that may produce misleading results. This assumption was evaluated by inspection of a scatterplot (see Figure 2) as well as the evaluation of the case-wise diagnostics. The scatterplot (see Figure 2) gave some indication of an outlier; however, the case-wise diagnostics displayed showed the largest standardized residual in absolute value, 2.645, was less than three (see Table 2). Rovai et al. (2014) suggested removing outliers beyond the value of +/- 3 in absolute value. Thus, it was concluded there were no bivariate outliers.
Table 2

Case-Wise Diagnostics to Evaluate the Presence of Extreme Outliers

<table>
<thead>
<tr>
<th>Case Number</th>
<th>Std. Residual</th>
<th>6 ELA GSGM Mean (student growth)</th>
<th>Predicted Value</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>135</td>
<td>-2.645</td>
<td>28.5</td>
<td>49.230</td>
<td>-20.7302</td>
</tr>
</tbody>
</table>

a. Criterion Variable: 6 ELA GSGM Mean (student growth)

Results for hypothesis one. Considering all assumptions for a bivariate regression analysis were found tenable, a bivariate regression analysis was used to evaluate the null hypothesis that school climate ($M = 3.14$, $SD = 0.19$) cannot predict student academic growth ($M = 50.71$, $SD = 8.29$) in sixth grade among middle schools ($N = 150$). The bivariate regression analysis indicated that school climate can predict student growth in sixth grade, $F(1, 148) = 18.7; p < 0.001$ (see Table 3). Consequently, there was enough evidence to reject the null hypothesis that school climate cannot predict student academic growth in sixth grade.

The interpretation of $R^2$ ($R^2 = 0.11$) was 11% of the variance in the criterion variable, which is student academic growth, can be explained by the predictor variable, which is school climate. Effect size was measured using $R^2$ ($R^2 = 0.11$). According to Cohen (1988), $R^2$ of 0.02, 0.1s, and 0.26 represent small, medium, and large effect sizes, respectively. Thus, the strength of the relationship between academic growth and school climate had a medium effect size.
Table 3

Results of the F-test for Testing Hypothesis One.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1148.816</td>
<td>1</td>
<td>1148.816</td>
<td>18.702</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Residual</td>
<td>9091.277</td>
<td>148</td>
<td>61.428</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10240.093</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Criterion Variable: 6 ELA GSGM Mean (student growth)

b. Predictors: (Constant), School Climate

The bivariate regression uses the equation $Y = b_0 + bX$ to predict increases in student academic growth based on increases in school climate (Warner, 2013). The coefficients of the linear regression model showed the equation of the model is: $GR = 4.55 + 14.70 \times SC$, where $GR$ = the average sixth grade ELA GSGM mean (student growth) and $SC$ = School Climate (see Table 4). On average, student growth is expected to increase by 14.70 points for every one-point increase in school climate. The null hypothesis was rejected and it was concluded school climate was a statistically significant predictor of academic growth during the transition through sixth grade.
Table 4

Regression Model for Hypothesis One

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>4.553</td>
<td>10.691</td>
<td>0.426</td>
<td>0.671</td>
</tr>
<tr>
<td>School Climate</td>
<td>14.696</td>
<td>3.398</td>
<td>0.335</td>
<td>4.325</td>
</tr>
</tbody>
</table>

a. Criterion Variable: 6 ELA GSGM Mean (student growth)

Null Hypothesis Two

Null hypothesis two states there is no statistically significant predictive relationship between schools’ sixth-grade student academic growth measured by the Georgia Student Growth Model and student perceptions of school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline) during sixth grade measured by the Georgia Student Health Survey 2.0. A multiple regression was used to measure the relationship between the criterion and predictor variables.

Assumption test. The proposed analysis for testing null hypothesis two was a multiple linear regression analysis. Prior to conducting the analysis, the assumptions for multiple linear regression analysis were tested. Assumptions must be satisfied for standard multiple linear regression to produce valid results.

The first assumption test addressed the assumption of bivariate outliers. Regression analysis can be highly influenced by extreme outliers (Rovai et al., 2014). The assumption was tested through visual inspection of scatterplots for each pair of predictor variables and between
predictor variables and academic growth (see Figures 3-21 in Appendix C). Visual inspection of all scatterplots identified no extreme outliers to address.

The second assumption test addressed was the assumption of multivariate normal distribution. The assumption was tested through visual inspection of scatterplots for each pair of predictor variables and between predictor variables and academic growth (see Figures 3-21 in Appendix C). The researcher identified the classic “cigar shape” formation to ensure the variables are linearly related.

The last assumption test was the assumption of non-multicollinearity, which means the six predictor variables in the model should not be strongly correlated with each other. Multicollinearity may influence beta weights and increase inflation of the standard error (Rovai et al., 2014). Multicollinearity also makes it difficult to identify individual predictor variables’ contributions to the study (Warner, 2013). The VIF can range from one to infinity with 10 or less being an acceptable value (Rovai et al., 2014). The assumption of non-multicollinearity was conducted by inspection of the VIF statistics (see Table 5). All predictor variables had a VIF score below 10. Therefore, the assumption of no multicollinearity was considered to be met.
Table 5

**Variance Inflation Factors (VIF) of Predictor Variables for Hypothesis Two**

<table>
<thead>
<tr>
<th>Predictor Variables in the Model</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Connectedness</td>
<td>VIF 1.963</td>
</tr>
<tr>
<td>Adult Social Support</td>
<td>VIF 7.586</td>
</tr>
<tr>
<td>Cultural Acceptance</td>
<td>VIF 4.281</td>
</tr>
<tr>
<td>Social/Civic Learning</td>
<td>VIF 3.893</td>
</tr>
<tr>
<td>Physical Environment</td>
<td>VIF 5.105</td>
</tr>
<tr>
<td>Discipline</td>
<td>VIF 6.146</td>
</tr>
</tbody>
</table>

**Results for null hypothesis two.** Considering all assumption tests were considered tenable, a multiple regression analysis was used to evaluate the null hypothesis that school connectedness ($M = 3.13$, $SD = 0.14$), adult social support ($M = 3.22$, $SD = 0.24$), cultural acceptance ($M = 2.79$, $SD = 0.27$), social/civic learning ($M = 3.57$, $SD = 0.12$), physical environment ($M = 3.09$, $SD = 0.27$), and discipline ($M = 3.25$, $SD = 0.19$) cannot predict student academic growth ($M = 50.71$, $SD = 8.29$) in sixth grade among middle schools ($N = 150$). The multiple regression model provided evidence $F(6, 143) = 3.53; p = 0.003$ that a linear combination of school connectedness, adult social support, cultural acceptance, social/civic learning, physical environment, and discipline has a statistically significant predictive relationship with student academic growth. The multiple regression model identified $p$-values smaller than the alpha of .05. A $p$-value above .05 indicates an increased probability of committing Type I error or rejection of the null hypothesis when the null hypothesis is true
Based on the provided evidence, the researcher rejected the null hypothesis that there is no significant predictive relationship between schools’ academic growth and school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning, physical environment, and discipline).

The interpretation of $R^2 = .13$ was 13% of the variance in the criterion variable can be explained by the combination of predictor variables. The effect size of the model was determined by $R^2 (R^2 = .13)$. According to Cohen (1988), small, medium, and large effect sizes for hypothesis tests are $R^2 = 0.02$, $0.13$, and $0.26$, respectively. Thus, the strength of the relationship between academic growth and six dimensions of school climate has a medium effect size.

Table 6

**Results of the F-test for Testing Hypothesis Two**

<table>
<thead>
<tr>
<th>Model a, b</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1321.755</td>
<td>6</td>
<td>220.293</td>
<td>3.532</td>
<td>0.003*</td>
</tr>
<tr>
<td>Residual</td>
<td>8918.338</td>
<td>143</td>
<td>62.366</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10240.093</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Criterion Variable: 6 ELA GSGM Mean (student growth)
b. $R^2 = 0.13$
c. Predictors: (Constant), Discipline, School Connectedness, Cultural Acceptance, Social/Civic Learning, Physical Environment, Adult Social Support

The coefficients of the linear regression model analyzed the individual impact school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning, physical environment, and discipline) have on student academic growth. The identified $p$-values for each school climate dimension were greater than the alpha of .05 (see Table 7). The
increased $p$-values indicate that none of the individual school climate dimensions have a statistically significant predictive impact on student academic growth.

Table 7

*Standard Multiple Linear Regression Model for Hypothesis Two.*

<table>
<thead>
<tr>
<th>Model a</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>$t$</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>20.127</td>
<td>27.591</td>
<td>0.729</td>
<td>0.467</td>
</tr>
<tr>
<td>School Connectedness</td>
<td>-8.407</td>
<td>6.638</td>
<td>-0.138</td>
<td>-1.267</td>
</tr>
<tr>
<td>Adult Social Support</td>
<td>-6.776</td>
<td>7.363</td>
<td>-0.198</td>
<td>-0.920</td>
</tr>
<tr>
<td>Cultural Acceptance</td>
<td>6.608</td>
<td>4.871</td>
<td>0.219</td>
<td>1.357</td>
</tr>
<tr>
<td>Social/Civic Learning</td>
<td>2.489</td>
<td>10.707</td>
<td>0.036</td>
<td>0.232</td>
</tr>
<tr>
<td>Physical Environment</td>
<td>3.974</td>
<td>5.388</td>
<td>0.130</td>
<td>0.738</td>
</tr>
<tr>
<td>Discipline</td>
<td>12.009</td>
<td>8.402</td>
<td>0.277</td>
<td>1.429</td>
</tr>
</tbody>
</table>

a. Criterion Variable: 6 ELA GSGM Mean (student growth)
CHAPTER FIVE: CONCLUSIONS

Overview

This chapter will explore the results of this quantitative, correlational study into the relationship between students' perceptions of school climate and academic growth as students move through the first year in middle school. Data from the Georgia Health Survey 2.0 provide student perceptions of school climate and the school climate dimensions. The Georgia Student Growth Model was used by the Georgia Department of Education to calculate students’ academic growth. Each variable was represented by individual school mean scores for sixth-grade students. The researcher will discuss the results of the research, implications in education, and limitations of the study. The chapter will conclude with recommendations for future research.

Discussion

The purpose of this quantitative, correlational study was to examine the relationship between sixth-grade perceptions of school climate and students’ academic growth at the school level. Furthermore, the study examined the relationship of certain dimensions of school climate and academic growth. The data gathered should help school leaders identify factors that impact the transition to and through sixth grade and increase academic growth. Stage-environmental fit theory and transition theory support research into the environmental factors that positively and negatively impact academic growth during the transition to and through sixth grade.

Research Question One

RQ1: Is there a predictive relationship between schools’ sixth-grade student academic growth percentile and student perceptions of school climate during sixth grade?

Null hypothesis one. The first null hypothesis is restated as: There is no statistically
significant predictive relationship between schools’ sixth-grade student academic growth measured by the Georgia Student Growth Model and student perceptions of school climate during sixth grade measured by the Georgia Student Health Survey 2.0. A bivariate regression was used to reject the null hypothesis. The study concluded that school climate accounted for 11% of the variance in student growth during sixth grade. The strength of the relationship had a medium effect size ($R^2 = 0.11$).

The statistically significant relationship between school climate and academic growth is supported by previous researchers. Research conducted in the state of Georgia by Smith and Shouppe (2018) found a positive relationship between school climate and student achievement. The researchers analyzed the relationship between Georgia’s School Climate Star Rating (SCSR) and student achievement on the Criterion-Referenced Competency Test (CRCT) in reading and math. Both math and reading were significantly impacted by SCSR with an 82% variance in reading and 26% variance in math. The difference in variance between the current study and results from Smith and Shouppe (2018) can be explained by the difference in variables. The CRCT measured student achievement whereas the Georgia Student Growth Model measures academic growth. Moreover, the Georgia Health Survey 2.0 measures student perceptions whereas the SCSR uses perception data from all stakeholders and school discipline data to assign the star rating. School climate was also linked to student achievement through a study conducted by Shindler et al. (2016). The researchers found a strong correlation between the quality of overall school climate and achievement in school ($r = .70$). The results support the relationship between overall school climate and student academic growth that was established in the current study.

There is recent research into the relationship between school climate and achievement
that offers a conflicting outcome. Reynolds et al. (2017) used student perceptions of school climate as a predictor for reading, writing, and numerical achievement. The conclusion was that school climate does not have a significant relationship with any of the achievement variables. The current study and Reynolds et al. (2017) used student perceptions of school climate. Varying outcomes emphasize the need to utilize multiple data gathering strategies to capture a more accurate assessment of school climate (Wang & Degol, 2016).

Research Question Two

RQ2: Is there a predictive relationship between schools’ sixth-grade student academic growth percentile and student perceptions of school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline) during sixth grade?

Null hypothesis two. The second null hypothesis is restated as: There is no statistically significant predictive relationship between schools’ sixth-grade student academic growth measured by the Georgia Student Growth Model and student perceptions of school climate dimensions (school connectedness, adult social support, cultural acceptance, social/civic learning physical environment, and discipline) during sixth grade measured by the Georgia Student Health Survey 2.0. A multiple regression was used to test the second null hypothesis. The results allowed the researcher to reject null hypothesis two. The overall model had a significant predictive impact with a medium effect size. These findings add additional support to reject Null Hypothesis One, which states there is no predictive relationship between school climate and student academic growth. In isolation, the dimensions of school connectedness, adult social support cultural acceptance, social/civic learning, physical environment, and discipline had no significant predictive impact on student growth in sixth grade.
A similar study was conducted in New Jersey to study the relationship between academic student growth and school climate proxies (Fancera, 2018). The researcher used an academic growth model similar to the current study to determine student academic growth. Fancera (2018) found a weak relationship with little variance explained by the proxies. These proxies were not identified as school climate dimensions but shared similar characteristics. The significance levels between the current research and Fancera (2018) differ; however, both studies offer little value in identifying school climate dimensions that have a large impact on student growth.

Shindler et al. (2016) also examined the correlation between school climate dimensions and student achievement. Results from the study contradict findings from the current study. Dimensions aligned with culture and discipline were highly correlated with school climate \((r = .9)\). The results of the current study and results from Shindler et al. (2016) conflicted, but both studies found the dimensions of school climate to be highly correlated, thus strongly interdependent which means changes in one dimension can influence changes in other dimensions.

There have been several studies that evaluate the relationship between individual variables of school climate and academic success. These variables, similar to dimensions of school climate, have been related to improved academic standing when the dimensions are the only variable in the research. Research into the relationship between school connectedness and student achievement contradicts the current study. Reynolds et al. (2017) found school connectedness, also referred to as school identification, to be an important predictor of academic achievement. The impact of school connectedness also had indirect effects because of the impact it has on school climate. Cultural acceptance in the form of multiculturalism has also been linked to improved student achievement (Chang & Le, 2010). Additionally, social and
civic learning such as character education also has positive associations with academic and behavioral successes (Diggs & Akos, 2016). Another dimension with research supporting a positive relationship is the physical environment of a school. Maxwell (2016) linked building conditions to academic achievement. Discipline inside the classroom is can also influence achievement. Increased student reports of discipline and classroom disruptions can negatively affect test scores and decrease academic achievement (Blank & Shavit, 2016). The differing research outcomes support the need for a unified definition of school climate and school climate dimensions (Thapa et al., 2013; Wang & Degol, 2016). A clear, common definition will allow researchers to determine how multiple dimensions work together to improve school climate and allow for improved data collection techniques.

**Implications**

The study supports the importance of a positive school climate. The relationships in the current study involved school student perceptions and student growth, but school climate impacts other elements of the educational environment. Sustained positive school climate increases student graduation rates, improves teacher retention, promotes positive child development, and decreases mental health issues (Thapa et al., 2013). The field of education has many important aspects many of which have larger effect sizes than current school climate research (Hattie, 2015). Despite the relatively small to medium effect size in the current study, the importance of school climate and the impact on all stakeholders cannot go unrecognized. The effects of school climate do not end with positive academic outcomes. The current research does support that student perceptions of school climate must be considered in the school improvement process.

School climate continues to be a complex concept. In the current study, individual school climate dimensions did not have a significant impact on students’ academic growth. However,
the dimensions as a collective group influence the overall student perception of school climate. The importance of understanding these dimensions must not be undervalued. There is more work to be done identifying certain dimensions of school climate that explain student academic growth and student achievement (Reynolds et al., 2017). Dimensions identified in the current study include school connectedness, cultural acceptance, social/civic learning, physical environment, and discipline. In other studies that include similar dimensions as an isolated variable, the listed dimensions have positive relationships with student achievement. Research has found that the student perceptions of school climate decline when students transition from elementary to the secondary school level (Shindler et al., 2016). Researchers must continue to identify certain dimensions that can help negate the declining perception of school climate as students progress to the secondary level.

**Limitations**

There are always limitations to research which presents opportunities for future researchers to improve the information provided. Some factors affect both external and internal validity of the study. The first limitation is related to the Georgia Student Health Survey 2.0. Each school can independently prepare the students for the survey as needed. Time spent preparing students for the survey may help the students make more informed decisions or influence the students to respond in a way that produces favorable results for the school. A solution would be more descriptive directives on how the Georgia Student Health Survey 2.0 must be administered. This possible solution must come from the state level.

The second limitation related to the Georgia Health Survey 2.0 is the window of time students can take the survey. The Georgia Student Health Survey 2.0 has a completion window beginning in November and closing in March. Students who take the survey early in the allotted
timeframe may feel differently about the school’s climate later in the school year. That change in feeling can skew student perspectives of school climate. A possible solution could be to push the survey dates back, allowing students to experience the majority of the academic school year. Changes to the survey calendar must come from the state level.

The current study incorporated students’ academic growth as a variable. Students' academic growth can be impacted by multiple variables outside of school climate. The current study identified the relationship between school climate and academic growth but cannot establish a cause and effect relationship. Solutions to this limitation would require experimental research (Gall et al., 2007).

Another limitation of the study was the intercorrelation between school climate dimensions. The Georgia Student Health Survey 2.0 uses eight dimensions of school climate. Two original dimensions were removed because of internal reliability and several variables had high variance inflation factors. Possible solutions would be identifying another method to gather student perceptions of school climate dimensions.

The last identified limitation was the use of school means in both variables. Using a school mean assumes the cause and outcome were universal throughout the school and does not account for the diverse characteristics among subpopulations (Thapa et al., 2013). A possible solution could be to test the relationships between perceptions of school climate and student growth by individual students. Another possible solution would be clustering students into subpopulations to ensure the group’s perception is not devalued because the subpopulation is a minority.
Recommendations for Future Research

School climate is consistently evolving and research into the phenomenon must continue. The following are recommendations for future research related to the current study:

1. Based on achievement, Smith and Shouppe (2018) found there is an increased need to focus on school climate at schools with higher poverty rates. Moreover, Shindler et al. (2016) also identified an increase in the correlation between school climate and student achievement when socio-economic status is controlled \((r = .80)\). Future research should focus more specifically on school climate and students’ academic growth. A possible solution would be using only Title I schools as a sample.

2. Due to the focus on transitioning to a new environment, the study was limited to relationships of school climate and student growth in sixth grade. The researcher recommends conducting the same study during the transition through ninth grade.

3. Identifying student needs at an early age is critical. The researcher recommends conducting a similar study on the home to K5 transition.

4. The current study used academic growth in language arts as the sole criterion variable. Future studies should use math as a criterion variable to determine if the studies align.

5. School climate is so much more than the student perspective. Wang and Degol (2016) argued that a single aspect does not adequately measure school climate. Future research should focus on an overall school climate which includes multiple stakeholder perspectives and school data and the relationship student growth has with overall school climate.

6. The current research used school means for school climate, school climate dimensions, and student academic growth. Future research should study the perspectives and growth
of individual students. Due to diversity in a school, students can have different experiences and academic outcomes in the same building. The perspective and achievement of minority groups are overshadowed by the majority.

7. Due to the multicollinearity between some school climate dimensions, future research should study individual relationships between school climate dimensions and academic growth.

8. Based on the data provided by the state of Georgia. It is possible to use methods in this study over a three year period. There is limited amounts of longitudinal research into the impact of school climate (Thapa et al., 2013).

9. There are certain programs that are dedicated to improvement of school climate. More research is needed to see if these programs have significant impacts on school climate.
REFERENCES


doi:10.1007/s11218-017-9422-x


doi:10.1108/09578230910955791


doi:10.3102/0034654313483907


APPENDIX A: IRB Approval

LIBERTY UNIVERSITY
INSTITUTIONAL REVIEW BOARD

October 15, 2019

Charles Heath Burch
IRB Application 4011: The Relationship between Academic Growth Percentiles and Student Perceptions of School Climate among Sixth Grade Students

Dear Charles Heath Burch,

The Liberty University Institutional Review Board 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 does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Your study does not classify as human subjects research because it will not involve the collection of identifiable, private information.

Please note that this decision only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued non-human subjects research status. You may report these changes by submitting a new application to the IRB and referencing the above IRB Application number.

If you have any questions about this determination or need assistance in identifying whether possible changes to your protocol would change your application’s status, please email us at irb@liberty.edu.

Sincerely,

[Signature]
APPENDIX B: Assumption Testing Hypothesis Two

Figure 3. Scatterplot of growth versus school connectedness to evaluate assumption testing for hypothesis two.
Figure 4. Scatterplot of growth versus adult social support to evaluate assumption testing for hypothesis two.
Figure 5. Scatterplot of growth versus cultural acceptance to evaluate assumption testing for hypothesis two.
Figure 6. Scatterplot of growth versus social/civic to evaluate assumption testing for hypothesis two.
Figure 7. Scatterplot of growth versus physical environment to evaluate assumption testing for hypothesis two.
Figure 8. Scatterplot of growth versus discipline to evaluate assumption testing for hypothesis two.
Figure 9. Scatterplot of cultural acceptance versus school connectedness to evaluate assumption testing for hypothesis two.
Figure 10. Scatterplot of physical environment versus school connectedness to evaluate assumption testing for hypothesis two.
Figure 11. Scatterplot of cultural acceptance versus school connectedness to evaluate assumption testing for hypothesis two.
Figure 12. Scatterplot of cultural acceptance versus adult social support to evaluate assumption testing for hypothesis two.
Figure 13. Scatterplot of social/civic learning versus adult social support to evaluate assumption testing for hypothesis two.
Figure 14. Scatterplot of physical environment versus adult social support to evaluate assumption testing for hypothesis two.
Figure 15. Scatterplot of discipline versus adult social support to evaluate assumption testing for hypothesis two.
Figure 16. Scatterplot of social/civic learning versus school connectedness to evaluate assumption testing for hypothesis two.
Figure 17. Scatterplot of cultural acceptance versus physical environment to evaluate assumption testing for hypothesis two.
Figure 18. Scatterplot of cultural acceptance versus discipline to evaluate assumption testing for hypothesis two.
Figure 19. Scatterplot of physical environment versus social/civic to evaluate assumption testing for hypothesis two.
Figure 20. Scatterplot of discipline versus social/civic learning to evaluate assumption testing for hypothesis two.
Figure 21. Scatterplot of discipline versus physical environment to evaluate assumption testing for hypothesis two.