

EXAMINING THE RELATIONSHIP BETWEEN CLASSROOM CLIMATE
AND STUDENT ACHIEVEMENT OF MIDDLE SCHOOL STUDENTS

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Christopher J. Barksdale, M.Ed.

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Christopher J. Barksdale

APPROVED BY

Michelle Peters, EdD, Chair

Antonio Corrales, EdD, Committee Member

Kent Divoll, EdD, Committee Member

Michelle Giles, PhD, Committee Member

RECEIVED BY THE SCHOOL OF EDUCATION:

Joan Y. Pedro, PhD, Associate Dean

Mark D. Shermis, PhD, Dean

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During the beginning stages of this journey remember being told by a former professor to always think with the end in mind. While enduring the process, those words at times almost seemed almost impossible, yet they kept my focused and challenged my faith. It is truly a blessing and an honor to have been able to experience this journey and complete it successfully. I am a true believer and thankful that God places people in your life for a reason. True to his word, my life has been blessed my life many amazing and unique individuals that kept my uplifted as I completed this journey.

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ABSTRACT

EXAMINING THE RELATIONSHIP BETWEEN CLASSROOM CLIMATE AND STUDENT ACHIEVEMENT OF MIDDLE SCHOOL STUDENTS

Christopher Barksdale
University of Houston-Clear Lake, 2017

Dissertation Chair: Michelle Peters, Ed.D.
Co-Chair: Antonio Corrales, Ed.D.

The purpose of this sequential mixed method study was to examine the relationship between classroom climate and student achievement of middle school students. This study included a review of data collected from the Learning Environment Inventory from a purposeful sample of middle school students from a large suburban school district. A purposeful sample of students in grades 6-8 were also interviewed in an attempted to provide a more in-depth understanding of the potential influence of classroom climate factors on student achievement. Quantitative data were analyzed using frequencies, percentage, and Pearson's product moment correlations (r), while an inductive coding process was used to analyze the collected qualitative data. Quantitative analysis demonstrated that there was not a significant mean difference between classroom climate and student achievement. The qualitative analysis supported evidence from current

research related to the topic that a positive relationship does exist between the two factors.

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CHAPTER I

INTRODUCTION

Strategies aimed to improve student achievement are continuously implemented in schools and districts across the nation as a result of the accountability standard movement and increased pressure regarding high stakes testing. In 2001, legislation was developed under the *No Child Left Behind* (NCLB) Act, which holds schools and districts in the United States (U.S.) responsible for federal guidelines in student performance (U.S. Department of Education, 2003b). In 2009, President Obama announced the *Race to the Top* initiative, which mounted even greater pressure for educational institutions to succeed. As noted in his 2009 speech, President Obama intended to incentivize excellence, spur reform, and reshape education policy around the world which research suggests was met with a fair bit of success (Howell, 2015). Since the enactment of the Race to the Top initiative, the U.S. Department of Education has awarded \$4 billion to winners as federal efforts to spur changes in schools (Weiss & Hess, 2015). The present study contributed to former analysis related to examining classroom climate and its influence on student achievement.

According to Vos, Van der Westhuizen, Mentz, and Ellis (2012), an “unhealthy” school climate can lead to ineffectiveness. A positive school climate encourages the development and learning necessary for students to become productive contributors to a

democratic society (Cohen, McCabe, Michelli, & Pickeral, 2009). Moreover, a series of studies on school and classroom climate from different parts of the world revealed that a positive climate: (a) has a powerful influence on the motivation to learn (Eccles et al., 1993); (b) mitigates the negative impact of the socioeconomic context on academic success (Astor, Benbenisty, & Estrada, 2009); (c) contributes to less aggression and violence (Gregory et al., 2010; Karcher, 2002a), less harassment (Blaya, 2006; Kosciw & Elizabeth, 2006), and less sexual harassment amongst students (Attar-Schwartz, 2009); and (d) acts as a protective factor for the learning and positive life development of young people (Ortega, Sanchez, & Viejo, 2011).

In the U.S. and around the world, there is a growing interest in school climate (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). The U.S. Department of Education (2007) has invested in the Safe and Supportive School (S3) grant program to support statewide school climate measurement and the study of school climate improvement efforts. The Centers for Disease Control and Prevention (2009) recommends school climate reform as a data-driven strategy that promotes healthy relationships, school connectedness, and dropout prevention. A growing number of State Departments of Education are also focusing on school climate reform as an essential component of school improvement and/or bullying prevention strategies (Thapa et al., 2013). Additionally, an increasing number of educational ministries from around the world, including the United Nations' Children's Fund, are invested in supporting school climate reform efforts (Thapa et al., 2013).

At the center of all efforts to reform educational systems are teachers who serve on the frontline in classrooms (Ballard & Bates, 2008). Teachers are perceived to be the most important factor in regards to student success (Day & Sammons, 2013; Lasley, Siedentop, & Yinger, 2006). How well or poorly students perform on standardized assessment creates the possibility for reflection on the quality of instruction students receive in the classroom (Ballard & Bates, 2008). Classroom teachers not only service student's instructional needs, but they also act as social agents by facilitating more personable and appropriate relationships with students which strongly influences students' social and ethical development (Wang & Holcombe, 2010; Wilson, Pianta, & Stuhlman, 2007). The relationship between the students and classroom teacher extends beyond daily social interactions and can build trust by bringing the students together (Rogers et al., 2007).

Studies have shown teacher's perceptions of the school climate contribute to a series of factors such as burnout, commitment, and job satisfaction (Yao et al., 2015). School principals who seek to improve institutional achievement often examine factors that cultivate leadership in students and staff to be prepared, empowered, and committed to changing the world (Bottoms, Schmidt-Davis, & Southern Regional Education, 2010). Cultivating leadership helps to build a community of leaders where teachers grow and students excel (Broin & New, 2015). Several studies show that classroom climate is an important determinant of student motivation and learning (Cheema & Kitsantas, 2014).

Classrooms which establish a supportive environment through the development of teacher-to-student and student-to-student relationships create deeper levels of

engagement, and allow students to be successful as academic standards increase (Buhs, Ladd, & Herald, 2006; Gest, Rulison, Davidson, & Welsh, 2008; Martin & Dowson, 2009; Wentzel, 2009). Student achievement is important, although, schools must also appeal to students' social and ethical development in order to create effective learning conditions (Kearney, Smith, & Maika, 2014). This study investigated the relationship between classroom climate and achievement. Schools and teachers are being held accountable in more ways than ever and must research strategies aimed towards increasing student achievement (Ballard & Bates, 2008).

Research Problem

In the last decade, much attention has been placed on response to NCLB (Bird, Wang, Watson, & Murray, 2009). The legislation shines focus on student performance and classifies schools as making Adequate Yearly Progress (AYP), or not making AYP based on annual standardized assessments in mathematics and reading. *No Child Left Behind* puts pressure on public education to increase student achievement for all students (Bevans, Bradshaw, Miech, & Leaf, 2007). Despite its rigid standards, the policy fails to provide guidance on school improvement strategies that produces student success (Weinbaum, Weiss, & Beaver, 2012). *No Child Left Behind* policy makers assume that new testing data, drawing public attention and establishing sanctions on institutions who perform negatively, will motivate educators to implement effective staff development and instructional methods (Aske, Connolly, & Corman, 2013; Husband & Hunt, 2015).

Higher standards for student achievement have led many schools and districts to introduce researched climate solutions that positively influences student achievement

(U.S. Department of Education, 2007). Students each possess unique differences and learning styles, therefore their classroom experiences must be deemed important, or academic performance could be negatively affected (Baeten, Dochy, & Struyven, 2013; Colak, 2015). Classroom climate is developed through sets of internal characteristics that influences the behavior of its members (Choi & Chang, 2011; DiTullio, 2014; Narhi, Kiiski, Peitso, & Savolainen, 2015). Researchers suggest that climate makes the difference in learning environments and student achievement (Gentilucci & Gentilucci, 2016; Johnson & Stevens, 2006).

Arguably, the public school is considered to be more locally enriched and community based than any other economic, social, or political institution (Aske et al., 2013). The common idea of school is based on the view that education should be an equitable, assimilative, and inclusive institution designed to prepare students to be future productive citizens (Aske et al., 2013). Over the past three decades, researchers and educators have increasingly recognized the importance of K–12 school and classroom climate (Bird et al., 2009; Thapa et al., 2013). The Centers for Disease Control and Prevention (2009) suggests a positive school climate promotes healthy relationships, school connectedness, and dropout prevention. In addition, a positive school and classroom climate is linked to lower levels of drug use as well as fewer self-reports of psychiatric problems among students (Bradshaw, Waasdorp, Debnam, & Johnson, 2014; LaRusso, Romer, & Selman, 2008; Sznitman, Dunlop, Nalkur, Khurana, & Romer, 2012).

With accountability being such a popular topic amongst schools and districts across the U.S., an emphasis on student learning environments has also become a crucial area of emphasis (Nichols, Glass, & Berliner, 2012). The classroom is the central organizing unit of most schools, which arranges students in classes intended to promote learning by allowing teachers and students to interact with different activities that result in learning (Schaper, 2008). The classroom learning environment promotes learner autonomy and enhances the development of mastery goal orientation (Sungur & Güngören, 2009). Many research studies related to this issue suggest that students learn better when they perceive their classroom environment positively (Asiyai, 2014; Dorman, Aldridge & Fraser, 2006; Lai et al., 2015).

Additionally, the classroom teacher is considered one of the most influential factors in regards to student achievement (Hoskins, 2016; Lasley et al., 2006; Yu-Liang, 2015). According to Stanford (2013), effective teachers encompass the following characteristics: they are organized and clearly explain concepts to students; they are well-prepared and clearly convey the objectives of their lessons; they transform difficult-to-understand concepts into easily understood ideas by using various examples; they present a variety of viewpoints to their students; they encourage rich, engaging interactions during lessons while simultaneously encouraging student autonomy; and they maintain a sense of community by being fair, approachable, and helpful to the students. Studies on student-teacher relationships in early childhood and secondary education settings have reported impact in response to different types of classroom interactions in areas including students' academic development, achievement, and overall attitude towards learning

(Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002; Maldonado-Carreno & Votruba-Drzal, 2011; O’Conner & McCartney, 2007; Pianta, 1999; Pianta & Nimetz, 1991).

Students are highly sensitive to the rapport they develop with their teachers and other adults in the school setting (White, 2016). The experience of students developing personal connections with teachers consistently relates to long-term academic success (Allen, Kuper-minc, Philliber, & Herre, 1994; Bell, Allen, Häuser, & O’Connor, 1996; O’Connor & McCartney, 2007).

Contemporary research reveals a need for systematic programming and strategic efforts aims to promote positive peer relationships and cohesiveness among students (Furrer, Skinner, & Pitzer, 2014). Teachers and students recognize high quality relationships; they also know when relationships are not working which can influence students to detract from instruction and interrupt classroom cohesion (Furrer et al., 2014). When student fundamental human needs are met, he or she is more likely to be engaged in classroom activities (Deci & Ryan, 2000; Skinner, Furrer, Marchand, & Kindermann, 2008).

The classroom learning environment has a strong influence on student outcomes and play an important role in improving the efficiency and levels of engagement in the classroom (Arisoy, 2007; DiTullio, 2014; Yu-Liang, 2015). The physical environment, specifically the material setting of the classroom such as furniture, lighting, spaces, desks, and chairs, affects the safety and comforts of students, as well as their individual learning development (Arisoy, 2007; Atbas, 2004). Research on the exposure to various educational materials listed several benefits for students. These benefits include (a)

making learning easier, (b) supporting active and individual learning, (c) providing real life experiences, (d) improving critical thinking, (e) problem solving, and (f) creative thinking skills (Apperson, Laws, & Scepansky, 2006).

Effective teaching cannot take place in poorly managed classrooms (Jones & Jones, 2012; Marzano, Marzano, & Pickering, 2003; Van de Grift, Van der Wal, & Torenbeek, 2011). Teachers play a key role in shaping students' future in education (Hattie, 2009). The actions teachers take to create a supportive environment for academic and social-emotional learning is described as classroom management (Evertson & Weinstein, 2006). Classroom management also refers to actions taken to create and maintain a learning environment conducive to successful instruction: establishing rules and procedures and maintaining students' attention to lessons and engagement in activities (Brophy, 2006). Research has shown that classroom rules and routines keep classrooms running smoothly. With the establishment of classroom procedures, more time is allowed for teaching academics and student behavior is positively impacted (Evertston & Weinstein, 2006).

In January 2014, the U.S. Department of Education released materials to help schools and districts across the nation address the overuse of exclusionary discipline and disproportionate rates of discipline for students of color and students with disabilities. Federal and state policies place student engagement at top priority of important details (Balfantz & Byrnes, 2012; Complete College America, 2012; Darling-Hammond, 2010). Students who are engaged are more likely to be considered satisfied, they are less likely to drop out, more likely to achieve higher grades, and engage in positive dialogue with

the institution once graduated (Alves & Raposo, 2009). According to Kuh et al. (2006) student engagement is paramount to student success as it affects behavior and academic performance. Fredin, Fuchsteiner, and Portz (2015) explain that student engagement represents the different resources and approaches schools utilize to induce student participation.

Classroom climate dimensions, specifically cohesiveness, material environment, formality, and satisfaction, have been identified as good predictors of learning (Fraser, Anderson, & Walberg, 1982). Despite the complexity and importance of each of these factors, it is essential to consider the overall impact teachers have on student success. School administrator, parents, and students each support the notion that teacher quality and interactions are vital to achievement (Ellerbrock et al., 2015; Kearney et al., 2014; Rogers et al., 2007). This study aims to take an ever more focused and in-depth look at student achievement, as this is the area by which schools and districts across the nation are rated. Previous studies have been conducted to examine the school climate as a whole and its influence on student achievement, as well as the school leadership influence on student achievement (Broin & New, 2015). With the amount of time students spend in the classroom, there also is a need to examine the relationship between classroom climate and student achievement.

Significance of the Study

The quality of the classroom environment established by a teacher is the single most important factor in determining how well a child will develop healthy relationships and engage in learning (Cohen et al., 2009; Cohen & Geier, 2010; Vandervoort, Amrein-

Beardsley, & Berliner, 2004). A student's own individual motivation and level of engagement is also another important factor that affects student achievement (Ballard, & Bates, 2008). While rigorous standards are important, schools must also work to create environments that meets a child's social and cultural development needs (Reyes, Brackett, Rivers, White, & Salovey, 2012; Rogers et al., 2007).

School environments strive to create the possibility for students to develop their own identity, experience engagement at a far more meaningful and in-depth level (Meirovich, 2012). Consistent exposure to a positive school environment has been associated with higher-academic achievement and healthy behavioral outcomes (Voight, Austin, & Hanson, 2013). Findings suggest that individuals approach task/situations with a performance-approach goal orientation are more confident in their ability to succeed, as they accept challenges and will persist in an effort to successfully complete a given task (Nabi Khan & Khan, 2015). Whereas, individuals with performance-avoidance goals doubt their ability, avoid challenges, show decreased performance, and low persistence when they encounter difficulties (Schwinger & Stiensmeier-Pelster, 2011).

Research Purpose and Questions

The purpose of this study was to examine the relationship between classroom climate and student achievement. The following research questions guided this study:

1. Is there a relationship between how well students know, help, and are friendly to one another in the classroom and student achievement?
2. Is there a relationship between providing adequate learning materials and student achievement?

3. Is there a relationship between the degree to which the class is guided by classroom rules/procedures and student achievement?
4. Is there a relationship between how well students are satisfied with the classroom environment and student achievement?
5. What are students' perceptions of classroom climate factors that generate achievement?

Definitions of Key Terms

The terms relevant to this study are listed below:

Classroom Climate: Classroom climate is a broad term intended to assess the perceptions that students have about different aspects of environment (Rowe, Kim, Baker, Kamphaus & Horne, 2010).

Classroom Environment: Classroom environment refers to the atmosphere, ambience, tone, or climate that pervades the particular setting (Dorman, Aldridge, & Fraser, 2006).

Classroom Rules/Procedures: Sound disciplinary systems to maintain safety and promote student learning (Everston & Weinstein, 2006).

Classroom Climate Dimensions: Students perceptions of the classroom environment related to Cohesiveness, Material Environment, Formality, and Satisfaction factors.

Cohesiveness: Extent to which students know, help, and are friendly toward one another (Fraser, Anderson, & Walberg, 1982).

Formality: Extent by which behavior within the class is guided by classroom rules and procedures (Fraser, Anderson, & Walberg, 1982).

Learning Environment Inventory: Final version consists of 105-item scale, which measures students perceptions of the classroom learning environment (Fraser, Anderson, & Walberg, 1982).

Material Environment: Availability of adequate books, equipment, technology, and space (Fraser, Anderson, & Walberg, 1982).

Middle School: Campus that serves students in the sixth through eighth grade

Relational Characteristics: Characteristics of classroom teachers that have been found to enhance student's social and emotional well-being, academic performance, and sense of belonging (Toste, Heath, McDonald-Connor, & Peng, 2015).

Satisfaction: Extent of enjoyment perceived by students of class work (Fraser, Anderson, & Walberg, 1982).

Student Achievement: The level of success students attained on the mathematics and reading *State of Texas Assessment of Academic Readiness* (STAAR) performance (TEA, 2012).

Teacher-Student Relationships: A relationship with a teacher is said to influences a child's social and emotional well-being and academic performance (Toste et al., 2015).

Conclusion

This chapter identified the need to examine the relationship between classroom climate and student achievement. The research problem and significance of the study were reviewed and research questions presented. In the next chapter, historical and current perspectives of students' attitudes towards the classroom environment and achievement will be discussed in further.

CHAPTER II

LITERATURE REVIEW

Research on school reform concentrates heavily on the establishment of higher standards in education, which has created the need to reshape curriculum in order to positively influence student achievement. While increased standards and implementation of rigorous curriculum programs are important, schools and districts may also have to address the socio-psychological theory of the classroom as a social system. Student acquisition of academic skills is established by stimulating responsive parenting skills, early literacy, numeracy experiences, and positive interactions with adults in the classroom (Committee on Early Childhood Pedagogy, 2000; Mathis, Bierman, & Society for Research on Educational Effectiveness, 2014). It is widely believed that a child's development of academic skills is greatly influenced by experiences in the classroom (Day, Connor, & McClelland, 2015; Lamb, 1998a, 1998b; NICHD Early Child Care Research Network, 2000). To address these areas, this literature review will focus on: (a) classroom climate and student achievement (b) cohesiveness (c) materials environment (d) formality, and (e) satisfaction.

Classroom Climate and Student Achievement

With billions of invested dollars and numerous reform initiatives in K-12 education, classroom climate studies are one of the most prominent contemporary

theories, which suggests strong evidence between classroom climate and student achievement (Wang & Holcombe, 2010). Gentilucci and Gentilucci (2016) conducted a qualitative study using an inductive approach to collect and analyze data about how students perceive the classroom environment, and how from their perception, experiences in the classroom affect their learning. The study consisted of gathering longitudinal data over a period of 34 years from middle school students in three different cohorts: (a) Cohort 1 – 1979, (b) Cohort 2 – 2000, and (c) Cohort 3 – 2013. Data collected from the latter two cohorts was analyzed to determine if, how, and why students' perception of classroom learning changed over time. Findings concluded that students in each cohort identified teacher characteristics, instructional practices, classroom discipline, and the level of challenge in the curriculum as the variables most responsible for promoting student learning.

In a similar study that analyzed the relationship between classroom climate and student achievement, LaRocque (2008) examined students' perceptions of their classroom environment and the possible effects the perceptions had on their achievement. In addition, the study investigated the significance of gender and grade level on students' perceptions of the classroom climate. Correlation analyses and multivariate analysis of variance (MANOVA) procedures were used to analyze the data. The results concluded perceptions of the classroom climate were significantly related to achievement. In addition, gender had no statistically significant association with the students' perceptions of the classroom climate, whereas the grade level had a statistically significant relationship with the perceptions.

Trying to find the relationship between climate and low performing schools, MacNeil, Prater, and Busch (2009) investigated the differences between low- and high-performing schools in the U.S. to determine whether Exemplary, Recognized, and Acceptable schools differ in their school climates. The Texas Education Agency (TEA) awards an accreditation status to each public school district and charter school. The accreditation status is based on the academic accountability rating and financial ratings from the Financial Integrity Rating System of Texas (TEA, 2012). The study consisted of measuring 10 dimensions of the Organizational Health Inventory. Significant differences were found on all ten dimensions of the Organizational Health Inventory, with Exemplary schools out-performing Acceptable schools. There was no statistical difference between schools ranked *Exemplary* and *Acceptable*. The findings of this study suggest that students achieve higher scores on standardized assessments in school with healthier learning environments.

In a study exploring the relationship between classroom climate, reading motivation, and achievement, Mucherah, Finch, Smith, and Ambrose-Stahl (2014) concluded that the more orderly and organized students believed the classroom was, the higher their performance on achievement tests. Order and organization was statistically significant and positively related to student achievement. The study sampled students in two public school seventh grade classrooms in the East coast region of the U.S. Participants completed a classroom climate and reading motivation questionnaire after taking a standardized assessment. The findings of the study established that greater perceived order and organization, teacher support, and affiliation was associated with

higher test scores through the reading motivation mediators of aesthetics, challenge, efficacy, and compliance.

In a study looking to analyze the link between classroom emotional climate and academic achievement, Reyes, Brackett, Rivers, White, and Salovey (2012) examined students in fifth and sixth grade. The purpose of the study was to better understand emotional connections students develop in the classroom likely to impact their success in school. The study included classroom observations, students' reports and report card grades. A multilevel mediation analysis showed that the positive relationship between classroom emotional climate and grades was influenced by engagement. Teacher characteristics and observations of both the organizational and instructional climates of the classroom were examined. Classroom climates both high and low were characterized by a sense of connectedness and belongingness, enjoyment and enthusiasm, and respect. The findings suggest when students rate the classroom emotional climate higher they are more likely to be engaged in learning, which leads to greater academic achievement.

In a consolidated intent to analyze the impact in classroom climate and student achievement, Lopez-Gonzalez, Amutio, Oriol, and Bisquerra (2016) conducted a study to find out if students' personal, family, and school habits related to their relaxation and mindfulness. The study was conducted with a sample of four hundred twenty students in a high school setting. Results showed that personal and family habits predicted student achievement. The study emphasized the need to help students apply practicing relaxation and mindfulness techniques to improve their academic performance.

Researchers found that relaxation and mindfulness have an impact on classroom climate and student achievement. Relaxation and mindfulness contributed to improving interactions amongst classmates, as well as teacher-student relationships, thus improving the classroom climate and student achievement.

As portrayed in the above studies, classroom climate is positively related with student achievement. It is critical to analyze whether the same pattern is repeated when studying the relationship between classroom climate and student achievement based on various classroom climate dimensions. The next section will examine in depth the classroom climate dimensions.

Cohesiveness and Student Achievement

When examining factors that are influencing classroom climate and student achievement, considering the importance and need for students to develop positive relationships may be critical. In order to examine the potential relationship between student achievement and observed teacher-student classroom interactions, Allen et al. (2013) conducted a study using multilevel modeling techniques with a sample of six hundred forty-three students enrolled in thirty-seven secondary school classrooms. Data was assessed using a Classroom Assessment Scoring System. Classrooms were characterized by a positive emotional climate, with sensitivity to adolescent needs and perspectives, use of diverse and engaging instruction, and a focus on analysis and problem solving were associated with higher levels of student achievement. The results indicated that teacher-student interactions were predictive of higher student achievement.

In addition, when there is an emphasis on the classroom environment, qualities of teacher-student interactions is also influenced.

Humans foster social connections with others as a fundamental, intrinsic social motivation – we are hard-wired to be social animals (Lieberman, 2013; Ryan & Deci, 2000). Throughout a vast review of recent research and literature Gehlbach et al. (2016) analyzed schools that appears to close the achievement gap at over 60% by focusing on relationships between teachers and their “underserved” students. The study examined affiliations between 315 ninth grade students and their 25 teachers. Students in the treatment condition received feedback on five similarities that they shared with their teachers; each teacher received parallel feedback regarding about half of his/her 9th grade students. Five weeks after the intervention, the students in the treatment conditions perceived greater similarity with their teachers, and vice versa. The findings suggest similarity fosters liking and more positive relationships. By experimentally manipulating teachers and students’ perceptions of actual similarities, the study allows casual inferences to be made about the effects of similarity on real world, ongoing relationships. Students’ perceptions of how much they have in common with their teacher likely boosts their grades and motivation.

In an effort to analyze the relationship between teacher-student interpersonal relationships and student achievement, Fan (2012) found that good human relationships are a lubricant to high productivity. The study concluded that teachers should galvanize cordial relationships between themselves and students. Also, teachers should keep in mind that a healthy interpersonal relationship is one indispensable instrument of high

productivity and student achievement. The finding of this study showed a statistically significant positive relationship between classroom relationships and student achievement. Researchers suggest the teacher is a major component of a favorable classroom climate as an enabling factor for high student achievement. Interactions in the classroom between the teacher and students seem to influence each child's attitude towards school learning.

In an attempt to summarize current studies in regards to developing classroom relationships and student achievement, Ellerbrock et al. (2015) classify relationships as fundamental in education. The study found classrooms that serve as a community of care provide emotional support and help students focus on learning. Additionally, it was also found that caring classroom environments establish a safe and academic-focused classroom culture, create shared norms and values, promote open and honest communication, make time for everyone to get to know one another, facilitate mutual respect, encourage reciprocal care and mutual responsibility demand academic excellence, and incorporate student-centered cooperative group structures. Researchers strongly emphasized the need for educators to focus on the fundamental R in education – relationships. Findings suggest that through genuine care, educators nurture a responsive classroom environment that can help establish the foundation for student success.

Two of the most important forms of social relations that students create and maintain in school are relations with peers and with teachers (Kosir & Tement, 2013). In a study looking to analyze teacher-student relationships and student achievement, Kosir and Tement (2013) tested three competing models that hypothesized directionality of

influence in relations between teacher acceptance, student-perceived teacher support, and academic achievement. Eight hundred sixteen students from three different grade levels in elementary and secondary schools, covering the age range from late childhood through early-to-middle adolescence, participated in the study at the beginning and at the end of the school year. The researchers used a structural equation model. Different models of relations between teacher acceptance, student-perceived teacher support, and academic achievement were analyzed using the cross-lagged panel correlation technique. The results indicated students' engagement was predicted by their sense of relatedness with teachers and teacher support. In parallel, students who perceived that their teachers care for them behaved in a friendlier manner towards them, which can cause changes in teachers' attitude toward these students, classroom climate, and student achievement.

As past and current research constantly shows, teacher-student relationships/classroom cohesiveness play the role of protagonist in the relationship between classroom climate and student achievement. Considering this affirmation, it may be important to analyze the materials students have available to them in the classroom and student achievement. The next section will explore, in details, the essentials of the classroom material environment and student achievement.

Material Environment and Student Achievement

When analyzing the impact of classroom climate on student achievement, it may also be critical to consider the different materials and resources students have access to in order to meet their specific needs. Decades of research have shown that schools, classrooms, and resources have a strong linkage to student achievement (Cassidy, Buell,

Pugh-Hoese, & Russell, 1995; Darling-Hammond, 1998; Hoy, Tarter, Hoy, 2006). In a study designed to contribute to the discussion regarding the role of the classroom teacher and school resources in learning, Jung, Brown, and Karp (2014) investigated the degree to which school-level teacher characteristics and resources relate to student learning. Teacher characteristics were operationalized as collective teacher efficacy, teacher experience, and teacher preparation; school resources were operationalized as efforts that schools make to reach out to parents, classroom with mathematics manipulatives, and classroom technology. The findings revealed that school resources yielded a range of significant, yet mixed results in students' achievement. Notably, students with lower levels of mathematical skills benefited greatly from classroom resources. Also, the presence of technology was positively related to students' learning.

The use of technology in classrooms has become increasingly popular as educators strive to meet the needs of 21st century learners. In an attempt to examine student achievement and motivation during an augmented reality mathematics activity focused on dimensional analysis, Estapa and Nadolny (2015) conducted a quasi-experimental study using the Instructional Materials Motivation Survey, as well as pre, post, and delay post achievement tests. The study collected data from sixty-one high school students from one comprehensive high school. The findings support claims that technology use within a mathematics lesson increases student achievement, and teacher's ability to incorporate real-world connections in their lesson reality enhances student's motivation to learn.

The classroom environment is not only impacted by the materials that are available to students but also the physical elements including color, lighting, space, social, furniture that characterize the place in which students are expected to learn (Anekwe & Ifeakor, 2010). In an attempt to examine the perception of secondary students on the condition of their classroom physical learning environment, Asiyai (2014) conducted a study to determine its impact on student learning and motivation. Four research questions were asked and answered using descriptive statistics while three hypotheses were formulated and tested using t-test statistics at 0.05 level of significance. A significant difference existed between the perception of urban and rural school students on the condition of their classroom physical learning environment. The findings revealed that the condition of the classroom physical learning environment had great impact on students' leaning and motivation including the motivation to actively participate in academic activities. Students' behavior and daily attendance can also be influenced by the physical environment. The findings also suggest that government and other education stakeholders should give priority attention to creating positive learning environments in schools for students' successful learning and academic development.

The physical quality of learning spaces is often overlooked when designing educational programs intended to improve student learning (Maxwell, 2016). The quality of a school building may communicate to the students, teachers, and staff that they are valued and that the activities that take place within the school are important (Maxwell, 2016). In a vast study focused on evaluating student achievement and the contribution of that physical and social context of schools, Maxwell (2016) analyzed secondary data

from 236 New York City middle schools using structural equation modeling. The findings of the study show that student achievement is linked to building condition mediated by social climate and student attendance. Maxwell (2016), also found that student perception of a positive school climate fosters an atmosphere of mutual respect, therefore, students are willing to engage with each other in ways that are productive for learning.

After viewing the role that the classroom material environment plays in making an impact in student achievement, it seems imperative for the purpose of this study to consider other factors of classroom climate such as formality, and its potential relationship to student achievement. In that direction, it is crucial for the purpose of this investigation to examine, in-depth, the effect that formality has on the relationship between classroom climate and student achievement. The next section will examine in depth the weight of this factor.

Formality and Student Achievement

Effective teaching can be described as practices predictive of student learning (Grossman, Loeb, Cohen, & Wyckoff, 2013). In a synthesis of research to describe effective teaching, Good, Wiley, and Florez (2009) noted nine general principles, including specific teaching practices (i.e. scaffolding students' ideas and task involvement, practice/application, goal-oriented assessments) and global factors of the classroom process quality (i.e. thoughtful discourse, proactive and supportive classrooms, classroom management). The authors also included content-related principles (i.e. coherent content, curriculum alignment, appropriate expectations). To examine the

interplay between curriculum-embedded formative assessment and general features to the classroom process quality (i.e. classroom management and supportive climate), Decristan et al. (2015) conducted a study in order to better understand the combined effects on students. The study included data from a cluster randomized-controlled trial and compared curriculum-embedded formative assessment (17 classes) with a control group (11 classes). The findings indicated that student learning is enhanced when the specific teaching practice is combined with high-quality classroom processes. These factors allow for opportunity to learn (OTL), which is a strong predictor of student learning.

Supporting students' social development and reducing behaviors that interfere with learning are critical outcomes of the school process (Greenberg et al., 2003). Evidence-based universal interventions that support students' social and academic competence represent one promising approach to promoting students' school success (Bradshaw et al., 2009). Diperna, Lei, Bellinger, and Cheng (2016) conducted a study to examine the impact of a universal program to promote positive classroom behavior on students' approaches to learning and early academic skills. The study consisted of second grade classrooms ($n = 39$) which were randomly assigned to treatment and business-as-usual control conditions. Teachers in intervention classrooms implemented the Social Skills Improvement System Classwide Intervention Program (SSIS-CIP) over a 12-week period. Participating students' engagement, motivation, and academic skills were assessed before and after treatment implementation. The findings indicated that students who reported lower levels of engagement, motivation, academic skills at pretest experienced significant improvement in these areas after exposure to the SSIS-CIP.

Although no significant differences were observed in reading, students receiving supplemental instructional services demonstrated greater gains in mathematics than did their peers in the control condition. Based on the results of the study, the behavioral intervention program yields positive outcomes in the areas of academic motivation and engagement for students with lower initial skill levels.

As portrayed in the above studies, the implementation of formal classroom processes have an influence on student learning and may be positively related with favorable classroom climate. In that direction, it is critical to analyze whether the same pattern is repeated when studying the impact of satisfaction and student achievement. The next section will examine, in-depth, the interaction of those issues.

Satisfaction and Student Achievement

Trying to find connections between how students' perceptions influence their learning, Gietz and McIntosh (2014) examined student perceptions of the school environment and its relation to academic achievement. Findings indicated that perceptions of the school environment were significantly associated with academic success. The analysis also found that improving students' perceptions of the school environment can positively impact student and school-wide achievement. The most effective behavior intervention for indirectly influencing academic outcomes focus on teacher expectations, reducing bullying, and promoting campus-wide safety. The study suggests that school-wide interventions such as the Positive Behavior Intervention & Support (PBIS) program, which aims to teach students behavioral expectations, can provide a solid foundation for both social and academic achievement.

Adolescent's perceptions of the school environment are highly individualistic and subjective (Buehler, Fletcher, Johnston, & Weymouth, 2015). It is important to examine adolescents' own individual perception of school environment, and how it relates to the student learning experiences. Buehler et.al. (2015), studied several aspects of the perceived school environment and youths' school-related experiences during the first semester of middle school. School-related experiences included school satisfaction, engagement, and positive behavior. The findings revealed students were more engaged in their educational experiences when they perceived a positive learning climate from teachers in a safe environment. A safe environment includes physical, social, and cultural elements (Dubois & Losoff, 2015). In the study, school safety was measured using an 11-item school safety subscale of the School Success Profile (Bowen & Richman, 2010). Students reported to be more likely to avoid getting in trouble when they perceived the environment to be safe.

When investigating the types of learning environments that best address 21st century students' perceived needs, researchers concluded that the presence of a positive 21st century learning environment is directly related to student satisfaction and teacher-student relationships (Lemley, Schumacher, & Vesey, 2014). This study also revealed that students were not as concerned with technology as they were with autonomy, relevance, and connectedness. The study consisted of a mixed methods design to triangulate the data collected on student perceptions of the learning environment as related to achievement levels, student-teacher relationships, and satisfaction with the

learning process. The main conclusion of the research is that student learning environments serve an important role in promoting student satisfaction and achievement.

In an attempt to analyze student satisfaction and its relation to retention, Sembiring (2015) found that career advancement, retention, academic achievement, and persistence were all influenced by student satisfaction. This study was conducted using an explanatory-design. Satisfaction associated with persistence, academic performance, and retention was assessed. It was concluded that the more students are satisfied, the more likely that will persist leading to higher student achievement. This study also found satisfaction to be affected by responsiveness, assurance, tangible, reliability, and empathy.

Student satisfaction describes favorability one's own subjective evaluations of experiences and interactions within the school and classroom (Oliver & DeSarbo, 1989). The perception of student's satisfaction is shaped over time by repeated experiences in the campus environment (Elliott & Shin, 2002). Modern researchers found that student satisfaction is related to factors of student priorities/preferences and classroom environment (Borden, 1995; Fraser, 1994).

Summary of Findings

Research on cohesiveness and achievement conducted by Gehlbach et al. (2016) indicated the more students realize what they have in common with their teachers, the more their motivation and achievement increases. Researchers also found that similarity fosters a more positive teacher-student relationship which boosts grades. In research conducted by Allen et al. (2013) findings suggest that higher achievement in student

performance was predictive based on teacher-student interactions. Fan, in 2012, conducted research on achievement and relationships. The researcher found that good human relationships are essential to high productivity. In 2013, Kosir and Tement closely examined the relationship between student-teacher relationships and student achievement. Findings suggest that teacher-student relationships and teacher support were closely related to the level of engagement students demonstrated in class.

Research related to the material environment and student achievement including the use of various school/classroom resources suggests a strong linkage to student achievement. In 2014, Jung et al., found that access to multiple school resources yield a range of significance to student achievement. In 2014, Asiyai conducted a study to determine the impact the physical environment of a school or and/or classroom has on student achievement and motivation. Findings suggest that student learning and motivation is strongly influenced by the condition of the environment which students are expected to learn in.

Formality and student achievement have been researched. Decristan et al. (2015) found that student learning is positively impacted when specific teaching practices are combined with high-quality classroom processes. The researchers also concluded that these factors provide opportunity to learn (OTL) for students. Also, Diperna et al. (2016) examined the impact of a structured behavior-management program which yields positive outcomes in motivation and student engagement in learning.

Research related to satisfaction and student achievement conducted by Gietz and McIntosh (2014) suggests that students were more satisfied and perceived the school

environment to be more favorable with the presence of an active school-wide behavioral management program. While conducting research on student perceptions of the school environment, researchers found that strategies aimed towards improving perceptions positively impacts student and school-wide achievement. Also, Buehler et al. (2015) examined how student's satisfaction of the school environment related to achievement. Researchers concluded that student's perceived the environment to be more favorable when they felt the environment was safe and they developed a good relationship with their teachers.

Theoretical Framework

Student achievement, high stakes, and accountability, as studied by Ballard and Bates (2008), are highly familiar terms amongst educators. Ballard and Bates wrote that student achievement on standardized assessment is used to a high extent to further reflect on the quality of instruction and interaction that students receive from classroom teachers. Students who are considered engaged in schools are more successful in many aspects. Furthermore, students who have good attendance, participate in learning, follow school/classroom rules, and avoid causing discipline issues typically get better grades and perform successfully on standardized assessments (Bandura, Barbaranelli, Caprar, & Pastorelli, 1996; Caraway, Tucker, Reinke, & Hall, 2003; Finn & Rock, 1997).

Given the study's examination of the relationship between classroom climate and student achievement, classroom assessment geared towards motivating student effort and achievement was used as a theoretical framework (Brookhart, 1997). As described by Brookhart (1997), the theory states that in any particular classroom, the classroom

assessment environment is demonstrated each day through assessment events, and activities associated with expectations and assessment. This theoretical framework should predict the role of classroom practices in motivating student effort and achievement. In teaching and learning, the nature of the student is to process and developing meaning of information, while the role of the school is to develop group norms and expectations for that meaning (Cobb, 1994).

Conclusion

This chapter presented a review of relevant literature relating to the purpose of this study, which was to examine the relationship between classroom climate and student achievement. Key details discussed include cohesiveness, material environment, formality, and satisfaction dimensions as they relate to influences on academic achievement. In the next chapter, an overview of the research problem, operationalization of theoretical constructs, research purpose, questions, research design, population and sampling selection, instrumentation to be used, data collection procedures, data analysis, privacy and ethical considerations, and the limitations to the research design will be introduced.

CHAPTER III

METHODOLOGY

The purpose of this study was to examine the relationship between classroom climate and student achievement in mathematics and reading. This mixed method study collected survey and focus group data from a purposeful sample of middle school students in grades 6-8 within a large suburban school district located in southeast Texas. Quantitative data, collected from the *Learning Environment Inventory* (LEI), was analyzed using Pearson's product moment correlations (r). Data from the survey responses was analyzed using frequencies and percentages, while an inductive coding process was used to look for themes that may emerge from the participants' focus group. This chapter presents an overview of the research problem, operationalization of theoretical constructs, research purpose and questions, research design, population and sampling selection, instrumentation to be used, data collection procedures, data analysis, privacy and ethical considerations, and the research design limitations of the study.

Overview of the Research Problem

Classroom climate is essential for developing resiliency (DiTullio, 2014). The role of the classroom social climate or environment is important to assess to further understand factors that affect student learning (Lewis, Schaps, & Watson, 1995). Positive

relationships and group characteristics to productivity in educational environments, furthermore, implies that examination of characteristics and dimensions of the classroom environment may potentially be beneficial for intervention and planning (Fraser et al., 1982). In the last decade much attention has been placed on response to NCLB. The legislation shines focus on student performance and classifies schools as making AYP or not making AYP based on annual standardized assessments in mathematics and reading. As standards of successful student performance increases, school leaders and teachers may need to understand and employ a classroom climate which promotes student achievement.

Operationalization of Theoretical Constructs

The study consisted of two constructs: (a) classroom climate and (b) student achievement. Classroom climate is defined as a sociocultural reality experienced and interpreted by individuals (Brookhart, 1997). This construct was measured using the *Learning Environment Inventory* (LEI). Student achievement is defined by how well students perform on the *State of Texas Assessment of Readiness* (STAAR) (Texas Education Agency, 2012). Student achievement was measured using each participating 6th – 8th grade student's STAAR mathematics and reading scores.

Research Purpose, Questions, and Hypothesis

The purpose of this study was to examine the relationship between classroom climate (Cohesiveness, Material Environment, Formality, and Satisfaction) and student achievement in mathematics and reading. The study addressed the following research questions:

R1: Is there a relationship between how well students, know, help, and are friendly to one another in the classroom environment and student achievement?

Ha: There is a relationship between how well students know, help, and are friendly to one another in the classroom environment and student achievement.

R2: Is there a relationship between providing adequate learning materials in the classroom and student achievement in mathematics and reading?

Ha: There is a relationship between providing adequate learning materials in the classroom and student achievement in mathematics and reading.

R3: Is there a relationship between the degree to which the class is guided by formal rules in the classroom and student achievement in mathematics and reading?

Ha: There is a relationship between the degree to which the class is guided by formal rules in the classroom and student achievement in mathematics and reading.

R4: Is there a relationship between satisfaction of the classroom environment and student achievement?

Ha: There is a relationship between satisfaction of the classroom environment and achievement in mathematics and reading.

R5: What are students' perceptions of classroom climate factors that generate achievement?

Research Design

For this study, the researcher used a sequential mixed-methods design (QUAN→qual). This design consisted of two phases: first, a quantitative phase and second, a qualitative phase. The advantage of implementing this design is it allows for a more thorough and in-depth exploration of the quantitative results by following up with a qualitative phase. A purposeful sample of 6th-8th grade students from a large suburban school district in the Southeast region of Texas were solicited to complete the *Learning Environment Inventory* (LEI), which assesses the perceived climate factors of students in the classroom environment. In addition, focus group sessions were conducted with participants to provide a deeper analysis of how students perceive the classroom climate and its influence on learning. Quantitative data were analyzed using Pearson's *r*, while qualitative data were analyzed using an inductive coding process.

Population and Sample

The population of this study consisted of a large suburban school district in southeast Texas. This school district is composed of 25 campuses (two high schools, one academic alternative school, one behavior alternative school, six junior high schools, and 15 elementary schools), employs 1,208 teachers, and has a student population of 19,667 students (TEA, 2014). Table 3.1 provides the student district data obtained from the 2014-2015 Texas Academic Performance Report.

Table 3.1

District Student Demographic Data

	Frequency (n)	Percentage (%)
Female	10,794	52.0
Male	9,963	48.0
African American	3,246	15.6
Hispanic	9,113	43.9
White	6,106	29.4
American Indian	85	0.4
Asian	1,805	8.7
Pacific Islander	11	0.1
Two or More Races	391	1.9
Economically Disadvantaged	10,230	49.3
English Language Learners	3,424	16.5
At-Risk	9,222	44.4
Special Education	1,917	9.2

A purposeful sample of middle school students (6th – 8th grade) in the participating district were solicited to participate in this study. The four middle schools within this study are comprehensive grade 6-8 campuses with student enrollment ranging from 550 to 1,035. Each campus has only one principal and most have two full-time assistant principals. One of the middle school campuses has one additional full-time assistant principal. Table 3.2 presents the district and junior high student enrollment data.

Table 3.2

Student Enrollment for the Middle Schools

	District	A	B	C	D
Grade 6	1,583	328	252	441	318
Grade 7	1,506	285	242	394	339
Grade 8	1,483	292	216	397	326
Student Total (n)	4,572	905	710	1232	983

Overall, the district serves 4,393 students in the middle schools. The enrollment of students in sixth grade ranges from 244 to 441, seventh grades ranges from 210 to 410, and eighth grade enrollment ranges from 208 to 392 students. In middle schools across the district the average percentage of students per teacher is 16.3% and the percentage of students per teacher ranges from 15.4% to 17.9%. Table 3.3 presents the student demographics for the district broken down by campus. For the purpose of this study, Campus C was selected to participate in the study based on its campus demographics being more proportion, whereas on each of the other campuses one race appears to be more dominate than all others.

Table 3.3

Student Demographics of District and Middle Schools

	District (%)	A (%)	B (%)	C (%)	D (%)
Female	52.0	51.0	53.0	51.0	47.0
Male	48.0	49.0	47.0	49.0	53.0
African American	15.6	4.4	2.3	36.2	24.9
Hispanic	43.9	51.5	63.2	21.0	47.6
White	29.4	37.9	32.0	15.6	21.5
American Indian	0.4	0.6	0.6	0.4	0.3
Asian	8.7	3.8	0.3	24.2	3.5
Pacific Islander	0.1	0.0	0.0	0.1	0.0
Two or more races	1.9	1.9	1.7	2.5	2.2
Economically Disadvantaged	49.3	61.2	68.3	26.7	56.3
English Language Learners	16.5	10.6	11.5	5.0	11.6
At-risk	44.4	48.4	51.4	29.5	41.4
Mobility	13.0	13.0	12.0	8.2	12.8
Special Education	9.2	12.5	17.2	7.1	11.9

Instrumentation**Learning Environment Inventory**

The *Learning Environment Inventory* (LEI), redeveloped by Fraser, Anderson, and Walberg (1992), is a pre-existing validated survey, which measures student perceptions of 15 subscales of the social climate of school classrooms (see Appendix A). The LEI has two distinct purposes: (a) to assess individual student perceptions of the classroom environment and (b) to gauge the learning environment of a particular classroom or group. The rationale for developing the instrument consisted of three

important factors. First, limited financial resources forced the Harvard Project Physics evaluation group to seek alternatives to assess classroom interaction. Secondly, traditional classroom observation methods consist of “low inference” which fails to provide a significant connection to student learning (Rosenshine, 1969). Lastly, students themselves were viewed as the most accurate source for assessing their own learning accurately, as evaluation methods have failed to provide “high inference” variables within the classroom.

The original version of the LEI was developed by Hemphill and Westie (1950), then redesigned and named the *Classroom Climate Questionnaire* (1968). The LEI later became an expansion of the Classroom Climate Questionnaire in 1968, which contained 14 subscales. However, in 1969 the instrument was redesigned to consist of 15 subscales (Cohesiveness, Diversity, Formality, Speed, Material Environment, Friction, Goal Direction, Favoritism, Difficulty, Apathy, Democracy, Cliqueness, Satisfaction, Disorganization, and Competitiveness). These subscales were considered to be good predictors of students learning, concepts relevant to social psychological theory and research, concepts present in theory and educational research, as well as concepts intuitively judged as best practices relevant to social development factors of the classroom.

The final version of the LEI is a 105-item survey (15 subscales; 7-items per subscale) that contains statements descriptive of the typical school classroom experiences. Table 3.4 lists the name of each scale in the final version of the LEI, and clarifies the meaning of scales by providing a description and sample item for each scale. Participants are asked to express their level of agreement or disagreement related to

classroom climate statements using a 4-point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly Agree*). Individuals' scores are measures of their perception of the group, which they are a part of. Composite scores for each subscale ranges from 7-28. The greater the score, the more a student perceives the classroom climate as influential to his or her learning.

For the purpose of this study, the LEI was simplified to accommodate middle school students in the 10 to 14-year-old age range. In order to reduce fatigue and maximize engagement the LEI will only contain four of the original subscales: (a) Cohesiveness (Items 1-7), (b) Material Environment (Items 8-14), (c) Formality (Items 15–21), and (d) Satisfaction (Items 22–28). Table 3.5 provides detailed description of each subscale present in this study and Table 3.6 provides reliabilities for the subscales included the study.

Table 3.4

Scale Description and Sample Item for each LEI Scale

Scale	Scale Description (Fraser, Anderson, & Walberg, 1982)	Item Number on the LEI Number of Items included in each scale N = 7
Cohesiveness	Extent to which students, know, help and are friendly toward each other.	1, 16, 31, 46, 61, 75, 91
Diversity	Extent to which differences in students' interests exist and provided for.	2, 17, 32, 47, 62, 77, 92
Formality	Extent to which behavior within the class is guided by formal rules.	3, 18, 33, 48, 63, 78, 93
Speed	Extent to which class work is covered quickly.	4, 19, 34, 49, 64, 79, 94
Material Environment	Availability of adequate books, equipment, space, and lighting.	5, 20, 35, 50, 65, 80, 95
Friction	Amount of tension and quarrelling among students.	6, 21, 36, 51, 66, 81, 96
Goal Direction	Degree of goal clarity in the class.	7, 22, 37, 52, 67, 82, 97
Favoritism	Extent to which the teacher treats certain students more favorably than others.	8, 23, 38, 53, 68, 83, 98
Difficulty	Extent to which students find difficulty with the work of the class.	9, 24, 39, 54, 69, 84, 99
Apathy	Extent to which students feel no affinity with the class activities.	10, 25, 40, 55, 70, 85, 100
Democracy	Extent to which students share equally in decision-making related to the class.	11, 26, 41, 56, 71, 86, 101

Cliqueness	Extent to which students refuse to mix with the rest of the class.	12, 27, 42, 57, 72, 87, 102
Satisfaction	Extent of enjoyment of class work.	13, 28, 43, 58, 73, 88, 103
Disorganization	Extent to which classroom activities are confusing are poorly organized	14, 29, 44, 59, 74, 89, 104,
Competiveness	Emphasis on students competing with each other.	15, 30, 45, 60, 75, 90, 105

Table 3.5

Description of the LEI Subscales

Scale	Description (Fraser, Anderson, & Walberg, 1982)	Sample Item
1. Cohesiveness	Extent to which student, know, help and are friendly toward each other.	All students know each other very well
2. Material Environment	Availability of adequate materials, equipment, classroom spacing and lighting	The books and equipment students need or want are easily available to them in the classroom
3. Formality	Extent to which students behavior within the class is guided by formal rules	The class is rather informal and few rules are imposed
4. Satisfaction	Extent of enjoyment of the class work	There is considerable satisfaction with the work of the class

Table 3.6

Reliabilities of LEI Scales

	Items	Intra-class Correlation (ICC)	Alpha Coefficients
1. Cohesiveness	1, 16, 31, 46, 61, 75, 91	0.85	0.69
2. Material Environment	5, 20, 35, 50, 65, 80, 95	0.81	0.56
3. Formality	3, 18, 33, 48, 63, 78, 93	0.92	0.76
4. Satisfaction	13, 28, 43, 58, 73, 88, 103	0.84	0.79

(Fraser, Anderson, & Walberg, 1982)

State of Texas Academic Readiness (STAAR) Test

In schools across the U.S., student achievement is measured based on performance on state assessment data. In Texas, students are given the STAAR (State of Texas Assessment of Academic Readiness) as the state assessment. The STAAR test was implemented in spring 2012, consists of assessments including: reading and mathematics grades 3-8, writing at grades 4 and 7, science at grades 5 and 8, social studies at grade 8, and end-of-course (EOC) assessments for Algebra I, English I, English II, Biology, and U.S. History. Texas Education Agency (2014b) states that the purpose of the STAAR test is to determine whether or not a student has mastered specific knowledge or a core subject at the grade level tested and is ready to enter the next grade level.

Each STAAR assessment given is based on the Texas Essential Knowledge and Skills (TEKS), the state mandated curriculum (TEA, 2010c). The curriculum and standards taught to students contain specific knowledge and skills necessary for student progress from year to year. The STAAR assessments test a student's knowledge based on curriculum taught within a specific academic year, whereas the previous state assessment, TAKS, measured student knowledge over multiple years. As the demand for acceptable student performance became more important Texas schools switched from the TAKS to a more rigorous-styled assessment which assesses skills at a greater depth.

Mathematics STAAR. The mathematics STAAR test is given to students in grades 3-8. There are four reporting categories that are measures: (a) numerical representations and relationships, (b) computations and algebraic relationships, (c) geometry and measurement, (d) data analysis and personal financial literacy (TEA, 2014). In grade 6-8, the test is composed of 52-56 questions, with four questions containing a griddable response, which requires students to develop an answer response independently (TEA, 2014). During the 2011-12 school year, reliability for the STAAR test was estimated using statistical measures in areas such as: internal consistency, classical standard error of measurement, conditional standard error of measurement and classification accuracy.

Reading STAAR. The reading STAAR test is given to students in grades 3-8. The reading STAAR assessments measures students' ability to think critically and infer about different texts, as well as make connections, and their ability to understand and apply specific academic vocabulary associated with literary/informational reading. In grade 7, the STAAR reading test contains 4-5 single sections (dependent upon length)

with a total of 50 multiple choice items. The genres assessed include both literary and informational texts such as: fiction, literary nonfiction, poetry, drama, media literacy; as well as expository, persuasive, and procedural. Total reading load is approximately 4,100 words (TEA, 2012). In grade 8, the test contains 4-5 single sections with a total of 52 multiple choice items. The genres assessed include fiction, literary nonfiction, poetry, drama, media literacy, expository, persuasive, and procedural.

Data Collection Procedures

Quantitative

Prior to data collection, the researcher gained approval from the University of Houston-Clear Lake's (UHCL's) Committee for Protection of Human Subjects (CPHS) and the school district in which the study took place. Next, the participating middle school principal was contacted via email with information regarding the purpose of the study and the process for collecting the surveys. The researcher disseminated an electronic link containing access to the SPCEQ survey through the use of SurveyMonkey. The purpose of the study, voluntary participation, the timeframe for completing the survey, as well as ethical and confidentiality considerations was communicated to parents and teachers through a cover letter.

Letters of parental consent and student assent outlining the details of the study was given to parents and students. Students received the consent and assent letters via the campus research assistant and/or teacher prior to the administration of the survey. Appendix C contains the parental consent form and Appendix D contains the student assent form. The consents/assents states that participation is voluntary, the approximate timeline to complete the survey (15-20 minutes), and that demographic information will

remain confidential. Once the consent and assent letters were signed by participants and their respective parent/guardian and returned to the campus research assistant or teachers the survey was administered. Students were provided with an electronic link or hard-copy of the survey which also contained the survey cover letter.

The survey responses were collected over a four-week period. The campus research assistant, teachers, and students were notified of the survey via email at the beginning of the data collection period. Follow-up emails were sent to teachers during both the first two weeks and again during weeks four and five of the data collection period. Upon receipt of the survey responses, the data was entered into quantitative research software Statistical Package for the Social Sciences (SPSS) for further analysis.

All data were secured in a password-protected folder on the researcher's computer and in the researcher's office within a locked file cabinet at all times. At the culmination of the study, the data will be maintained by the researcher for five years, which is the time required by CPHS and district guidelines. The researcher destroyed the contents of the file once the deadline expired.

Qualitative

Student perceptions of classroom climate were further examined using a focus group protocol as developed to measure student's individual perceptions of the classroom learning environment. The interview protocol was designed with overarching open-ended questions that focused on two areas of inquiry including teacher relational characteristics and the development of classroom climate. Prior to administering the survey, a panel of experts in the field of qualitative research examined the interview protocol for alignment goals to better support the validity of the study. The researcher conducted the focus group

session with participants and pose questions using the *Student Focus Group Protocol*.

The researcher assigned code names to the participants' responses to protect their identity.

The students participating in the study came from the participating middle school. Students were selected purposefully based on their enrollment in the Advisory, or Homeroom course. The focus group meetings took place in the campus' conference room with prior reservation arrangements made. The focus group discussions consisted of approximately 6-8 students per campus group, include equal student representatives from each grade level and campus demographics, and lasted approximately 45-50 minutes each. The questions posed during the focus groups were based on content from the survey and previous research conducted on classroom climate and achievement. Each focus group session was recorded for accuracy of the transcription process.

Data Analysis

Quantitative Analysis

To answer research questions 1-4, a Pearson's product moment correlation (r) was conducted to determine if there is a relationship between classroom climate factors (Cohesiveness, Material Environment, Formality, Satisfaction) and student achievement in mathematics and reading. Effect size was measured using the coefficient of determination (r^2) and a significance value of .05 was used for this study. All variables are continuous in measurement. STAAR student achievement data was collected as a percent correct score for each student participant in the study.

Qualitative

Following the analysis of the quantitative data, the findings were utilized to develop the student focus group questions in an attempt to provide more in-depth understanding of the relationship between classroom climate and student achievement. To answer research question 5, qualitative data gathered from the focus groups were examined, analyzed, and coded for themes. The data were sorted and categorized by themes. Obtaining additional data allowed the researcher to further study the constructs in greater detail. The open-ended questions were aimed at providing an in-depth understanding of the general pattern that emerged from the quantitative of the study. The coding process began by recognizing in-vivo codes. After identifying the appreciate codes, emphasis was placed on the search for themes and patterns from the data (Coffey & Atkinson, 1996). Once the categories were established, codes were again organized into subcategories and findings recorded.

Validity

The qualitative analysis process entailed validation by using triangulation of individual student responses by campus. In order to ensure validity, data obtained from the surveys and focus groups was cross-checked and compared amongst participating groups. The data collected during the focus group sessions was subject to member-checking by having student participants review the preliminary results and transcripts in order to enhance the validity of the responses provided. The questions and results were peer reviewed by experienced educators including district level administrators in order to ensure questions are valid. The peer reviews served the purpose of obtaining feedback related to questions posed to students related to their perceptions regarding the classroom

environment. Member checking was used to ensure the voices of participants is accurately captured and thus increasing the validity of the findings.

Privacy and Ethical Considerations

Prior to the collection of any data, the researcher gained approval from the UHCL's CPHS and the school district in which the study took place. Given that the intended survey instruments are pre-existing, the researcher asked for written approval for its use. All participants were provided with detailed information related to the purpose of the study and directions for completing the surveys. Parent consent and student assent forms were collected from participants prior to collecting any survey data. The data collected remains securely locked in a cabinet and pin drive in the researcher's office. The researcher will maintain the data for 5 years as required by the CPHS and school district guidelines. After the deadline has passed the researcher will destroy all data files associated with the study.

Research Design Limitations

The research design consisted of several limitations. First, student's class scheduling presented a limitation in that it was difficult to coordinate focus group interview sessions while aiming to avoid having participants miss any classroom instruction as a result of participation in the study. This potentially impacted the validity of the response of the focus group session because the data was only as accurate as the honesty of the respondents. Second, given that a middle school of only one school district was studied, the generalizations of the findings were limited. Third, the implementation of the different classroom climate factors was a limitation to this study. Some teachers may opposed classroom climate factors that students perceived as favorable. Fourth, the

level of honesty of the participants based on them being middle school students varied. One must assume participants were completely honest when providing responses to the survey and focus group questions. The validity of the findings was jeopardized if the participants were dishonest.

Currently, the district has six traditional middle school campuses. The number of students enrolled in each middle school campus varies based on location and program offerings. For this study, only one of the six middle schools was selected to participate. Two of the middle school campuses were not included in the study based on: (a) one of the campuses is currently being housed in facilities under construction, which makes it difficult for the researcher to conduct the qualitative phase of the study, (b) another campus is newly established and campus procedures are still being developed, and (c) the remaining three middle school campuses were not included in the study based on the researcher not receiving approval from these campus principals due to the nature of when this study will take place.

Conclusion

The purpose of this study was to examine the relationship between dimensions of classroom climate and student achievement in mathematics and reading. This chapter identified the need to further examine the relationship amongst the constructs. In order to better understand the student perceptions of the classroom climate and its relationship to academic achievement, both the quantitative and qualitative finding was essential to the study. In Chapter IV, survey, focus group, and achievement data was analyzed and discussed in further detail.

CHAPTER IV

RESULTS

The purpose of this study was to examine the relationship between classroom climate and student achievement. This chapter presents the finding of quantitative and qualitative data analysis of the study. First, an explanation of the participants' demographics of the study are presented, followed by results of the data analysis. This chapter presents the data analysis for each of the five research questions. It concludes with a summary of the findings.

Participant Demographics

Four hundred thirty-seven parents consented to having their student participate in the survey and focus groups; of that 428 students completed the survey (97.9% response rate). Table 4.1 provides specific response data for each grade level. Of the 428 participants, 397 indicated a gender based on data obtained from the survey. Two-hundred five students indicated they were female (51.6%), while 192 students indicated they were male. Of the 428 student participants, 396 indicated their race/ethnicity. One hundred sixty students (40.4%) indicated they were African American, five students (1.3%) indicated they were American Indian, forty-seven students (11.9%) indicated they are Hispanic, two (0.5%) indicated they were Native American, fifty-seven (14.4%) indicated they were White, and one hundred twenty-five students (31.6%) indicated they were other. Table 4.2 provides specific participating student demographics per grade level.

Table 4.1

Student Participant Demographics of Participating Campus

	All (%)	Grade 6 (%)	Grade 7 (%)	Grade 8 (%)
Total Students	100.0 (n = 428)	26.4 (n = 100)	32.2 (n = 122)	41.4 (n = 157)
Female	51.6 (n = 205)	61.0 (n = 61)	46.7 (n = 57)	52.2 (n = 82)
Male	48.4 (n = 192)	39.0 (n = 39)	53.3 (n = 65)	47.8 (n = 75)
African American	40.4 (n = 160)	49.5 (n = 49)	32.0 (n = 39)	44.0 (n = 69)
American Indian	1.3 (n = 5)	2.0 (n = 2)	0.8 (n = 1)	1.3 (n = 2)
Hispanic	11.9 (n = 47)	8.1 (n = 8)	13.4 (n = 17)	12.7 (n = 20)
Native American	0.5 (n = 2)	1.0 (n = 1)	0.8 (n = 1)	0.0 (n = 0)
White	14.4 (n = 57)	12.1 (n = 12)	16.4 (n = 20)	12.7 (n = 20)
Other	31.6 (n = 125)	27.3 (n = 27)	36.1 (n = 44)	29.3 (n = 46)

Research Question One

Research question one, *Is there a relationship between how well students, know, help, and are friendly to one another in the classroom environment and student achievement?*, was measured using frequencies, percentages of the *Learning Environment Inventory*. Research question one was also measured using a Pearson's Product-Moment correlation (r). Results indicated that there was not statistically significant positive relationship between a student's perception of the classroom climate factor cohesiveness and his or her STAAR Math and STAAR Reading scores, $r = -.094$, $r^2 = .009$, $p = .068$ (STAAR Math), and $r = .075$, $r^2 = .005$, $p = .142$ (STAAR Reading). The survey questionnaire related cohesiveness included 7-items using a 4-point Likert

scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly Agree*). The responses related to Cohesiveness factors that influence student achievement are provided below.

Grade 6

Students in 6th grade (82.0%) *Agreed/Strongly Agreed* about members doing favors for one another, knowing other members in class by their first name (91.0%), and having a chance to get to know other students in class (82.0%). Although most students in 6th grade (69.0%) *Agreed/Strongly Agreed* about members of the class being personal friends, 55.0% *Disagreed/Strongly Disagreed* all students in the classroom know each other very well. Students' opposing perceptions were indicated regarding student proximity to develop like or dislike for one another (65.4%). Students *Disagree/Strongly Disagreed* (55.0%) about students in class not knowing one another well.

Grade 7

Students in 7th grade (83.6%) *Agreed/Strongly Agreed* about students in class doing favors for one another, knowing other members in class by their first name (94.3%), and having the chance to get to know other students in class (81.1%). Majority of students (60.6%) *Agreed/Strongly Agreed* about members of the class being personal friends, whereas 63.9% *Disagreed/Strongly Disagreed* about all students knowing each other very well. Most students (71.3%) *Disagreed/Strongly Disagreed* about being in close proximity to one another to develop likes or dislikes. Students *Disagreed/Strongly Disagreed* (75.4%) about being in a class in which individuals do not know each other well.

Grade 8

Students in 8th grade (83.4%) *Agreed/Strongly Agreed* about students in class doing favors for one another, knowing other students in class by their first names (90.4%), and having the chance to get to know other students in class (75.2%). Most students (58.6%) *Agreed/Strongly Agreed* about students in the class being personal friends, while 69.1% *Disagreed/Strongly Disagreed* about all students knowing each other very well. Most students (65.4%) *Disagreed/Strongly Disagreed* about being in close proximity to one another to develop likes or dislikes. Students *Disagreed/Strongly Disagreed* (69.1%) about students in classes in which individuals do not know each other well.

Total Student Comparison

Overall students in grades 6th - 8th (83.0%) *Agreed/Strongly Agreed* about students in the class doing favors for one another. Students in 6th and 7th grade in comparison to 8th graders express more positive perceptions related to having a chance to get to know all other students in the class. Students in 7th and 8th grade in comparison to 6th graders disagreed more about all students knowing each other well.

Table 4.2

Expanded Responses to Cohesiveness Factors for All Participants (%)

Survey Item		Strongly Disagree	Disagree	Agree	Strongly Agree
1. Members of the class do favors for one another	Grade 6	2.0 (n = 2)	16.0 (n = 16)	62.0 (n = 62)	20.0 (n = 20)
	Grade 7	0.8 (n = 1)	15.6 (n = 19)	69.7 (n = 85)	13.9 (n = 17)
	Grade 8	3.2 (n = 5)	13.4 (n = 21)	69.4 (n = 109)	14.0 (n = 22)
	All	3.0 (n = 12)	15.0 (n = 62)	66.0 (n = 282)	17.0 (n = 72)
2. Each students knows the other members of the class by their first names.	Grade 6	2.0 (n = 2)	7.0 (n = 7)	43.0 (n = 43)	48.0 (n = 48)
	Grade 7	1.6 (n = 2)	4.1 (n = 5)	44.3 (n = 54)	50.0 (n = 61)
	Grade 8	1.9 (n = 3)	7.6 (n = 12)	52.2 (n = 82)	38.2 (n = 60)
	All	1.9 (n = 8)	6.3 (n = 27)	46.0 (n = 196)	46.0 (n = 197)
3. A student has the chance to get to know all other students in the class.	Grade 6	3.0 (n = 3)	15.0 (n = 15)	46.0 (n = 46)	36.0 (n = 36)
	Grade 7	3.4 (n = 4)	15.6 (n = 19)	54.9 (n = 67)	26.2 (n = 32)
	Grade 8	3.8 (n = 6)	21.0 (n = 33)	56.1 (n = 88)	19.1 (n = 30)
	All	4.0 (n = 15)	18.0 (n = 75)	53.0 (n = 226)	26.2 (n = 112)

4. Members of the class are personal friends.	Grade 6	5.0 (n = 5)	26.0 (n = 26)	46.0 (n = 46)	23.0 (n = 23)
	Grade 7	4.1 (n = 5)	35.3 (n = 43)	47.5 (n = 58)	13.1 (n = 16)
	Grade 8	11.0 (n = 17)	31.0 (n = 48)	43.3 (n = 68)	15.3 (n = 24)
	All	7.2 (n = 31)	30.0 (n = 128)	46.0 (n = 195)	17.2 (n = 74)
5. All students know each other very well.	Grade 6	13.0 (n = 13)	42.0 (n = 42)	32.0 (n = 32)	13.0 (n = 13)
	Grade 7	9.0 (n = 11)	54.9 (n = 67)	29.5 (n = 36)	6.6 (n = 8)
	Grade 8	19.1 (n = 30)	50.0 (n = 78)	24.0 (n = 37)	8.0 (n = 12)
	All	14.0 (n = 59)	47.2 (n = 202)	30.1 (n = 129)	9.0 (n = 38)
6. Students are not in close enough contact to develop likes or dislikes for one another.	Grade 6	17.0 (n = 17)	44.0 (n = 44)	29.0 (n = 29)	10.0 (n = 10)
	Grade 7	16.4 (n = 20)	54.9 (n = 67)	21.3 (n = 26)	7.4 (n = 9)
	Grade 8	13.4 (n = 21)	52.0 (n = 81)	29.3 (n = 46)	5.7 (n = 9)
	All	16.1 (n = 69)	49.3 (n = 211)	27.1 (n = 116)	7.5 (n = 32)

7. The class is made up of individuals who do not know each other well.	Grade 6	27.0 (n = 27)	45.0 (n = 45)	22.0 (n = 22)	6.0 (n = 6)
	Grade 7	20.5 (n = 25)	54.9 (n = 67)	19.7 (n = 24)	4.9 (n = 6)
	Grade 8	14.0 (n = 22)	51.0 (n = 80)	28.0 (n = 44)	7.0 (n = 11)
	All	20.0 (n = 84)	51.0 (n = 216)	23.8 (n = 102)	6.1 (n = 26)

Table 4.3

Collapsed Responses to Cohesiveness Factors for All Participants (%)

Survey Item		Strongly Disagree/Disagree	Agree/Strongly Agree
1. Members of the class do favors for one another	Grade 6	18.0 (n = 18)	82.0 (n = 82)
	Grade 7	16.4 (n = 20)	83.6 (n = 102)
	Grade 8	16.6 (n = 26)	83.4 (n = 131)
	All	18.0 (n = 74)	83.0 (n = 354)
2. Each students knows the other members of the class by their first names.	Grade 6	9.0 (n = 9)	91 (n = 91)
	Grade 7	5.7 (n = 7)	94.3 (n = 115)
	Grade 8	9.5 (n = 15)	90.4 (n = 142)
	All	8.2 (n = 35)	92.0 (n = 393)
3. A student has the chance to get to know all other students in the class.	Grade 6	18.0 (n = 18)	82.0 (n = 82)
	Grade 7	19.0 (n = 24)	81.1 (n = 99)
	Grade 8	24.8 (n = 39)	75.2 (n = 118)
	All	22.0 (n = 90)	79.2 (n = 338)

4. Members of the class are personal friends.	Grade 6	31.0 (n = 31)	69.0 (n = 69)
	Grade 7	39.4 (n = 48)	60.6 (n = 74)
	Grade 8	42.0 (n = 65)	58.6 (n = 92)
	All	37.2 (n = 159)	63.2 (n = 269)
5. All students know each other very well.	Grade 6	55.0 (n = 55)	45.0 (n = 45)
	Grade 7	63.9 (n = 78)	36.1 (n = 44)
	Grade 8	69.1 (n = 108)	32.0 (n = 49)
	All	61.2 (n = 261)	39.1 (n = 167)
6. Students are not in close enough contact to develop likes or dislikes for one another.	Grade 6	61.0 (n = 61)	39.0 (n = 39)
	Grade 7	71.3 (n = 87)	28.7 (n = 35)
	Grade 8	65.4 (n = 102)	35.0 (n = 55)
	All	65.4 (n = 280)	34.6 (n = 148)

7. The class is made up of individuals who do not know each other well.	Grade 6	72.0 (n = 72)	28.0 (n = 28)
	Grade 7	75.4 (n = 92)	24.6 (n = 30)
	Grade 8	65.0 (n = 102)	35.0 (n = 55)
	All	71.0 (n = 300)	29.9 (n = 128)

Research Question Two

Research question two, *Is there a relationship between providing adequate learning materials and student achievement?*, was measured using frequencies and percentages of the *Learning Environment Inventory*. Research question two was also measured using a Pearson's Product-Moment correlation (r). Results indicated that there was not statistically significant positive relationship between a student's perception of the classroom climate factor material environment and his or her STAAR Math and STAAR Reading scores, $r = -.032$, $r^2 = .001$, $p = .536$ (STAAR Math), and $r = .082$, $r^2 = .006$, $p = .108$ (STAAR Reading). The survey questionnaire related material environment included 7-items using a 4-point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly Agree*). The responses related to Material Environment factors that influence student achievement are provided below.

Grade 6

Students in 6th grade (74.0%) *Agreed/Strongly Agreed* about books and equipment students need or want being easily available in the classroom, having a good collection of books and resources available (86.0%), and students being proud to show the classroom to a visitor (81.0%). Although most students (88.0%) *Agreed/Strongly Agreed* about there being displays visible around the room, 65.0% *Agreed/Strongly Agreed* about the classroom being bright and comfortable. Students (77.0%) *Strongly Disagreed/Disagreed* about the classroom being too crowded. *Agreed/Strongly Agreed* perceptions were expressed about there being enough room in the classroom for both individual and group work.

Grade 7

Students in 7th grade (86.9%) *Agreed/Strongly Agreed* about books and equipment students need or want being easily available in the classroom, having a good collection of books and resources available (88.5%), and students being proud to show the classroom to a visitor (76.2%). Most students (77.8%) *Agreed/Strongly Agreed* about the classroom being bright and comfortable. *Agreed/Strongly Agreed* perceptions were also expressed about the classroom having displays around the room. Students (77.0%) *Strongly Disagreed/Disagreed* about the classroom being too crowded, and most students also *Agreed/Strongly Agreed* about there being enough room in the classroom for both individual and group work.

Grade 8

Students in 8th grade (82.1%) *Agreed/Strongly Agreed* about books and equipment students need or want being easily available in the classroom, having a good collection of books and resources available (79.4%), and students being proud to show the classroom to a visitor (69.1%). Most students (71.0%) *Agreed/Strongly Agreed* about the classroom being bright and comfortable. *Agreed/Strongly Agreed* perceptions were also expressed about the classroom having displays around the room. Students (76.4%) *Strongly Disagreed/Disagreed* about the classroom being too crowded, and most students also *Agreed/Strongly Agreed* about there being enough room in the classroom for both individual and group work.

Total Student Comparison

Students in grades 6th – 8th were consistent as it pertains to available books and equipment in the classroom, as well as the collection of books and resources available. Variations in the perceptions of students in each grade level is evident by responses regarding whether the students would be proud to show the classroom to a visitor. Most students *Agreed/Strongly Agreed* about there being displays posted around the classroom, as well as there being enough room in the classroom for both individual and group work. Tables 4.4 and 4.5 displays the percentages and frequencies of students in grades 6th – 8th on responses in expanded form and collapsed form respectively on perceptions related to material environment factors related to student achievement.

Table 4.4

Expanded Responses to Material Environment Factors for All Participants (%)

Survey Item		Strongly Disagree	Disagree	Agree	Strongly Agree
8. The books and equipment students need or want are easily available in the classroom.	Grade 6	4.0 (n = 4)	22.0 (n = 22)	43.0 (n = 43)	31.0 (n = 31)
	Grade 7	1.6 (n = 2)	11.5 (n = 14)	59.0 (n = 72)	27.9 (n = 34)
	Grade 8	5.1 (n = 8)	13.0 (n = 20)	64.3 (n = 101)	17.8 (n = 28)
	All	3.6 (n = 15)	15.4 (n = 64)	56.1 (n = 233)	24.8 (n = 103)
9. All good collection of books and resources is available in the classroom for students to use.	Grade 6	3.0 (n = 3)	11.0 (n = 11)	49.0 (n = 49)	37.0 (n = 37)
	Grade 7	1.6 (n = 2)	9.8 (n = 12)	62.3 (n = 76)	26.2 (n = 32)
	Grade 8	5.7 (n = 9)	15.2 (n = 24)	55.4 (n = 87)	24.0 (n = 37)
	All	3.9 (n = 16)	12.3 (n = 51)	56.4 (n = 234)	27.5 (n = 114)
10. The students would be proud to show the classroom to a visitor.	Grade 6	9.0 (n = 9)	10.0 (n = 10)	55.0 (n = 55)	26.0 (n = 26)
	Grade 7	4.1 (n = 5)	19.7 (n = 24)	55.7 (n = 68)	20.5 (n = 25)
	Grade 8	6.4 (n = 10)	25.0 (n = 39)	54.1 (n = 85)	15.0 (n = 23)
	All	6.9 (n = 29)	20.0 (n = 83)	53.3 (n = 221)	19.8 (n = 82)

11. The room is bright and comfortable	Grade 6	6.0 (n = 6)	29.0 (n = 29)	41.0 (n = 41)	24.0 (n = 24)
	Grade 7	1.6 (n = 2)	20.1 (n = 25)	55.7 (n = 68)	22.1 (n = 27)
	Grade 8	8.3 (n = 13)	21.0 (n = 33)	51.0 (n = 80)	20.0 (n = 31)
	All	6.0 (n = 25)	22.2 (n = 92)	49.4 (n = 206)	22.2 (n = 92)
12. There are displays around the room.	Grade 6	3.0 (n = 3)	9.0 (n = 9)	48.0 (n = 48)	40.0 (n = 40)
	Grade 7	0.8 (n = 1)	6.6 (n = 8)	60.7 (n = 74)	32.0 (n = 39)
	Grade 8	3.2 (n = 5)	4.5 (n = 7)	66.0 (n = 103)	27.0 (n = 42)
	All	2.7 (n = 11)	6.3 (n = 26)	59.3 (n = 246)	31.8 (n = 132)
13. The classroom is too crowded.	Grade 6	21.0 (n = 21)	56.0 (n = 56)	17.0 (n = 17)	6.0 (n = 6)
	Grade 7	18.0 (n = 22)	59.0 (n = 72)	18.0 (n = 22)	5.0 (n = 6)
	Grade 8	12.1 (n = 19)	64.3 (n = 101)	18.5 (n = 29)	5.1 (n = 8)
	All	16.9 (n = 70)	59.8 (n = 248)	17.6 (n = 73)	5.8 (n = 24)

14. There is enough room for both individual and group work.	Grade 6	2.0 (n = 2)	11.0 (n = 11)	56.0 (n = 56)	37.0 (n = 37)
	Grade 7	0.8 (n = 1)	9.0 (n = 11)	54.1 (n = 66)	36.1 (n = 44)
	Grade 8	5.1 (n = 8)	12.1 (n = 19)	59.2 (n = 93)	24.0 (n = 37)
	All	2.9 (n = 12)	11.1 (n = 46)	54.7 (n = 227)	31.3 (n = 130)

Table 4.5

Collapsed Responses to Material Environment Factors for All Participants (%)

Survey Item		Strongly Disagree/Disagree	Agree/Strongly Agree
8. The books and equipment students need or want are easily available in the classroom.	Grade 6	26.0 (n = 26)	74.0 (n = 74)
	Grade 7	13.1 (n = 16)	86.9 (n = 106)
	Grade 8	18.1 (n = 28)	82.1 (n = 129)
	All	19.0 (n = 79)	80.9 (n = 336)
9. All good collection of books and resources is available in the classroom for students to use.	Grade 6	14.0 (n = 14)	86.0 (n = 86)
	Grade 7	11.4 (n = 14)	88.5 (n = 108)
	Grade 8	20.9 (n = 33)	79.4 (n = 124)
	All	16.2 (n = 83)	83.9 (n = 348)
10. The students would be proud to show the classroom to a visitor.	Grade 6	19.0 (n = 19)	81.0 (n = 81)
	Grade 7	23.8 (n = 29)	76.2 (n = 93)
	Grade 8	31.4 (n = 49)	69.1 (n = 108)
	All	26.9 (n = 112)	73.1 (n = 303)

11. The room is bright and comfortable	Grade 6	35.0 (n = 35)	65.0 (n = 65)
	Grade 7	21.7 (n = 27)	77.8 (n = 95)
	Grade 8	29.3 (n = 46)	71.0 (n = 111)
	All	28.2 (n = 117)	71.6 (n = 298)
12. There are displays around the room.	Grade 6	12.0 (n = 12)	88.0 (n = 88)
	Grade 7	7.4 (n = 9)	92.7 (n = 113)
	Grade 8	7.7 (n = 12)	93.0 (n = 145)
	All	9.0 (n = 37)	91.1 (n = 378)
13. The classroom is too crowded.	Grade 6	77.0 (n = 77)	23.0 (n = 23)
	Grade 7	77.0 (n = 94)	23.0 (n = 28)
	Grade 8	76.4 (n = 120)	23.6 (n = 37)
	All	76.7 (n = 318)	23.4 (n = 97)

14. There is enough room for both individual and group work.	Grade 6	13.0 (n = 13)	93.0 (n = 93)
	Grade 7	9.8 (n = 12)	90.2 (n = 110)
	Grade 8	17.2 (n = 27)	83.2 (n = 130)
	All	14.0 (n = 58)	86.0 (n = 357)

Research Question Three

Research question three, *Is there a relationship between the degree to which the class is guided by classroom rules/procedures and student achievement?*, was measured using frequencies and percentages of the *Learning Environment Inventory*. Research question three was also measured using a Pearson's Product-Moment correlation (r). Results indicated that there was not statistically significant positive relationship between a student's perception of the classroom climate factor formality and his or her STAAR Math and STAAR Reading scores, $r = -.057$, $r^2 = .003$, $p = .270$ (STAAR Math), and $r = .091$, $r^2 = .008$, $p = .081$ (STAAR Reading). The survey questionnaire related formality included 7-items using a 4-point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly Agree*). The responses related to Formality factors that influence student achievement are provided below.

Grade 6

Students in 6th grade (70.0%) *Agreed/Strongly Agreed* about penalties being assigned to students who break the rules, and having rules to guide activities in class (89.0%). Only 52.0% *Agreed/Strongly Agreed* about students being asked to follow strict rules. Students expressed positive perceptions about there being an established right and wrong way of going about class activities, and felt classroom procedures were well established. Students (89.0%) *Agreed/Strongly Agreed* about there being a set of rules in place for students to follow.

Grade 7

Students in 7th grade (80.7%) *Agreed/Strongly Agreed* about penalties being assigned to students who break rules, and having rules to guide activities in class

(89.0%). Most students (61.5%) *Agreed/Strongly Agreed* about students being asked to follow strict rules. Students perceptions were split as (50.0%) *Agreed/Strongly Agreed* about the class being rather informal with few rules, while (50.0%) *Strongly Disagreed/Disagreed*. Positive student perceptions were consistent about there being an established right and wrong way of going about class activities, procedures being well established, and there being a set of rules in place for students to follow.

Grade 8

Students in 8th grade (79.0%) *Agreed/Strongly Agreed* about penalties being assigned to students who break the rules. Most students (88.6%) *Agreed/Strongly Agreed* about the class having rules to guide its activities, while only (63.5%) *Agreed/Strongly Agreed* about students being asked to follow strict rules. Majority of students (58.6%) *Agreed/Strongly Agreed* about the class being rather informal. Positive student perceptions were consistent about there being an established right and wrong way of going about class activities, procedures being well established, and there being a set of rules in place for students to follow.

Total Student Comparison

Students in grades 6th – 8th from the participating campus were consistent as it pertains to penalties being assigned to students who break the rules, the class having rules to guide its activities, and there being an established right and wrong way of going about class activities. Variations in perceptions of 6th – 8th grade students can be evidenced by responses related to strict rules. Although most students *Agreed/Strongly Agreed* about students being asked to follow strict rules, only (52.0%) 6th grade students *Agreed/Strongly Agreed*. Tables 4.6 and 4.7 displays the percentages and frequencies of

students in grades 6th – 8th on responses in expanded form and collapsed form respectively on perceptions related to formality factors related to student achievement.

Table 4.6

Expanded Responses to Formality Factors for All Participants (%)

Survey Item		Strongly Disagree	Disagree	Agree	Strongly Agree
15. Students who break the rules are penalized.	Grade 6	7.0 (n = 7)	23.0 (n = 23)	43.0 (n = 43)	27.0 (n = 27)
	Grade 7	4.1 (n = 5)	15.6 (n = 19)	55.7 (n = 68)	25.0 (n = 30)
	Grade 8	4.5 (n = 7)	17.2 (n = 27)	54.0 (n = 84)	25.0 (n = 39)
	All	6.1 (n = 25)	18.8 (n = 77)	50.7 (n = 208)	24.4 (n = 100)
16. The class has rules to guide its activities.	Grade 6	3.0 (n = 3)	8.0 (n = 8)	53.0 (n = 53)	36.0 (n = 36)
	Grade 7	0.8 (n = 1)	7.4 (n = 9)	67.2 (n = 82)	25.0 (n = 30)
	Grade 8	3.2 (n = 5)	8.3 (n = 13)	73.3 (n = 115)	15.3 (n = 24)
	All	2.4 (n = 10)	8.1 (n = 33)	64.9 (n = 266)	24.6 (n = 101)
17. Students are asked to follow strict rules.	Grade 6	13.0 (n = 13)	35.0 (n = 35)	36.0 (n = 36)	16.0 (n = 16)
	Grade 7	7.4 (n = 9)	31.2 (n = 38)	44.3 (n = 54)	17.2 (n = 21)
	Grade 8	1.3 (n = 2)	36.0 (n = 56)	45.0 (n = 70)	18.5 (n = 29)
	All	6.3 (n = 26)	34.3 (n = 141)	42.0 (n = 172)	17.3 (n = 71)

18. The class is rather informal and few rules are imposed.	Grade 6	9.0 (n = 9)	37.0 (n = 37)	41.0 (n = 41)	13.0 (n = 13)
	Grade 7	9.0 (n = 11)	41.0 (n = 50)	46.0 (n = 56)	4.1 (n = 5)
	Grade 8	11.5 (n = 18)	30.0 (n = 47)	51.0 (n = 80)	7.6 (n = 12)
	All	9.8 (n = 40)	35.4 (n = 145)	46.3 (n = 190)	8.5 (n = 35)
19. There is a recognized right and wrong way of going about class activities.	Grade 6	3.0 (n = 3)	15.0 (n = 15)	58.0 (n = 58)	24.0 (n = 24)
	Grade 7	1.6 (n = 2)	9.8 (n = 12)	63.1 (n = 77)	25.4 (n = 31)
	Grade 8	3.8 (n = 6)	10.0 (n = 15)	65.0 (n = 102)	22.0 (n = 34)
	All	3.2 (n = 13)	12.0 (n = 49)	62.2 (n = 255)	22.7 (n = 93)
20. All classroom procedures are well established.	Grade 6	5.0 (n = 5)	14.0 (n = 14)	50.0 (n = 50)	31.0 (n = 31)
	Grade 7	1.6 (n = 2)	18.9 (n = 23)	63.1 (n = 77)	16.4 (n = 20)
	Grade 8	5.7 (n = 9)	17.0 (n = 26)	57.3 (n = 90)	20.4 (n = 32)
	All	4.6 (n = 19)	16.8 (n = 69)	56.1 (n = 230)	22.4 (n = 92)

21. There is a set of rules for the students to follow.	Grade 6	3.0 (n = 3)	8.0 (n = 8)	47.0 (n = 47)	42.0 (n = 42)
	Grade 7	0.8 (n = 1)	5.7 (n = 7)	65.0 (n = 79)	29.0 (n = 35)
	Grade 8	3.0 (n = 4)	10.0 (n = 15)	63.1 (n = 99)	25.0 (n = 39)
	All	2.4 (n = 10)	8.5 (n = 35)	58.8 (n = 241)	30.2 (n = 124)

Table 4.7

Collapse Responses to Formality Factors for All Participants (%)

Survey Item		Strongly Disagree/Disagree	Agree/ Strongly Agree
15. Students who break the rules are penalized.	Grade 6	30.0 (n = 30)	70.0 (n = 70)
	Grade 7	19.7 (n = 24)	80.7 (n = 98)
	Grade 8	21.7 (n = 34)	79.0 (n = 123)
	All	24.9 (n = 102)	75.1 (n = 308)
16. The class has rules to guide its activities.	Grade 6	11.0 (n = 11)	89.0 (n = 89)
	Grade 7	8.2 (n = 10)	92.2 (n = 112)
	Grade 8	11.5 (n = 18)	88.6 (n = 139)
	All	10.5 (n = 43)	89.5 (n = 367)
17. Students are asked to follow strict rules.	Grade 6	48.0 (n = 48)	52.0 (n = 52)
	Grade 7	38.6 (n = 47)	61.5 (n = 75)
	Grade 8	37.3 (n = 58)	63.5 (n = 99)
	All	40.6 (n = 167)	59.3 (n = 243)

18. The class is rather informal and few rules are imposed.	Grade 6	46.0 (n = 46)	54.0 (n = 54)
	Grade 7	50.0 (n = 61)	50.1 (n = 61)
	Grade 8	41.5 (n = 65)	58.6 (n = 92)
	All	45.2 (n = 185)	54.8 (n = 225)
19. There is a recognized right and wrong way of going about class activities.	Grade 6	18.0 (n = 18)	82.0 (n = 82)
	Grade 7	11.4 (n = 14)	88.5 (n = 108)
	Grade 8	13.8 (n = 21)	87.0 (n = 136)
	All	15.2 (n = 62)	84.9 (n = 348)
20. All classroom procedures are well established.	Grade 6	19.0 (n = 19)	81.0 (n = 81)
	Grade 7	20.5 (n = 25)	79.5 (n = 97)
	Grade 8	22.7 (n = 35)	77.7 (n = 122)
	All	21.4 (n = 88)	78.5 (n = 322)

21. There is a set of rules for the students to follow.	Grade 6	11.0 (n = 11)	89.0 (n = 89)
	Grade 7	6.5 (n = 8)	94.0 (n = 114)
	Grade 8	13.0 (n = 19)	88.1 (n = 138)
	All	10.9 (n = 45)	89.0 (n = 365)

Research Question Four

Research question four, *Is there a relationship between how well students are satisfied with the classroom environment and student achievement?*, was measured using frequencies and percentages of the *Learning Environment Inventory*. Research question four was also measured using a Pearson's Product-Moment correlation (r). Results indicated that there was not statistically significant positive relationship between a student's perception of the classroom climate factor satisfaction and his or her STAAR Math and STAAR Reading scores, $r = .018$, $r^2 = .000$, $p = .725$ (STAAR Math), and $r = .047$, $r^2 = .002$, $p = .352$ (STAAR Reading). The survey questionnaire related satisfaction included 7-items using a 4-point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly Agree*). The responses related to Satisfaction factors that influence student achievement are provided below.

Grade 6

Students in 6th grade (54.0%) *Strongly Disagreed/Disagreed* about students enjoying their class work. Only 52.0% *Agreed/Strongly Agreed* about personal dissatisfaction being too small to be a problem, and 53.0% *Agreed/Strongly Agreed* about many students being dissatisfied with much that the class does. The same students (51.0%) *Agreed/Strongly Agreed* about there being a considerable dissatisfaction with the class work, although, 71.0% *Agreed/Strongly Agreed* about the being a sense of satisfaction after the class.

Grade 7

Students in 7th grade (46.0%) *Agreed/Strongly Agreed* about the students enjoying their class work. Student perceptions were divided regarding dissatisfaction with much that the class does with 50.8% who *Strongly Disagreed/Disagreed* and 49.2% who *Agreed/Strongly Agreed*. Student perceptions were also divided regarding students looking forward to coming to class each day.

Grade 8

Students in 8th grade (60.0%) *Strongly Disagreed/Disagreed* about students enjoying their class work. Student perceptions were divided regarding dissatisfaction with much that the class does and dissatisfaction with the work of the class. Only 41.2% of students *Agreed/Strongly Agreed* about students looking forward to coming to class each day, while 58.6% *Agreed/Strongly Agreed* about students being well satisfied with the work of the class.

Total Student Comparison

In comparing all grade levels 6th – 8th students were very consistent on the satisfaction factors related to classroom climate and expressed varied perceptions to the questions posed. Grade level perceptions differed regarding students being well satisfied with the work of the class. Tables 4.6 and 4.7 displays the percentages and frequencies of students in grades 6th – 8th on responses in expanded form and collapsed form respectively on perceptions related to satisfaction factors related to student achievement.

Table 4.8

Expanded Responses to Satisfaction Factors for All Participants (%)

Survey Item		Strongly Disagree	Disagree	Agree	Strongly Agree
22. The students enjoy their class work.	Grade 6	22.0 (n = 22)	32.0 (n = 32)	38.0 (n = 38)	8.0 (n = 8)
	Grade 7	15.0 (n = 18)	38.0 (n = 46)	37.0 (n = 45)	11.0 (n = 13)
	Grade 8	24.0 (n = 37)	36.3 (n = 57)	33.1 (n = 52)	7.0 (n = 11)
	All	20.6 (n = 83)	36.0 (n = 145)	34.7 (n = 140)	8.7 (n = 35)
23. Personal dissatisfaction is too small to be a problem.	Grade 6	13.0 (n = 13)	35.0 (n = 35)	38.0 (n = 38)	14.0 (n = 14)
	Grade 7	15.0 (n = 18)	36.1 (n = 44)	37.0 (n = 45)	12.3 (n = 15)
	Grade 8	15.3 (n = 24)	30.0 (n = 47)	47.0 (n = 73)	8.3 (n = 13)
	All	14.9 (n = 60)	32.8 (n = 132)	41.4 (n = 167)	10.9 (n = 44)
24. Many students are dissatisfied with much that the class does.	Grade 6	10.0 (n = 10)	37.0 (n = 37)	36.0 (n = 36)	17.0 (n = 17)
	Grade 7	9.0 (n = 11)	41.8 (n = 51)	36.1 (n = 44)	13.1 (n = 16)
	Grade 8	10.3 (n = 16)	40.0 (n = 62)	36.0 (n = 56)	14.1 (n = 22)
	All	9.7 (n = 39)	39.8 (n = 160)	36.1 (n = 145)	14.4 (n = 58)

25. There is a considerable dissatisfaction with the work of the class.	Grade 6	12.0 (n = 12)	37.0 (n = 37)	41.0 (n = 41)	10.0 (n = 10)
	Grade 7	11.5 (n = 14)	40.1 (n = 49)	41.0 (n = 50)	7.4 (n = 9)
	Grade 8	7.0 (n = 11)	42.0 (n = 66)	37.0 (n = 58)	14.0 (n = 22)
	All	9.9 (n = 40)	40.4 (n = 163)	38.5 (n = 155)	11.2 (n = 45)
26. Students look forward to coming to class each day.	Grade 6	24.0 (n = 24)	29.0 (n = 29)	38.0 (n = 38)	9.0 (n = 9)
	Grade 7	11.5 (n = 14)	38.5 (n = 47)	38.0 (n = 46)	12.3 (n = 15)
	Grade 8	24.2 (n = 38)	35.0 (n = 55)	31.2 (n = 49)	10.0 (n = 15)
	All	19.9 (n = 80)	34.7 (n = 140)	35.7 (n = 144)	9.7 (n = 39)
27. After the class, the students have a sense of satisfaction.	Grade 6	6.0 (n = 6)	23.0 (n = 23)	58.0 (n = 58)	13.0 (n = 13)
	Grade 7	6.6 (n = 8)	28.7 (n = 35)	54.1 (n = 66)	11.0 (n = 13)
	Grade 8	11.0 (n = 17)	27.0 (n = 42)	54.0 (n = 84)	9.0 (n = 14)
	All	8.9 (n = 36)	26.1 (n = 105)	54.3 (n = 219)	10.7 (n = 43)

28. Students are well satisfied with the work of the class. Students are well satisfied with the work of the class.	Grade 6	11.0 (n = 11)	32.0 (n = 32)	42.0 (n = 42)	15.0 (n = 15)
	Grade 7	5.0 (n = 6)	28.0 (n = 34)	57.3 (n = 70)	9.8 (n = 12)
	Grade 8	13.4 (n = 21)	28.0 (n = 44)	52.2 (n = 82)	6.4 (n = 10)
	All	10.2 (n = 41)	29.0 (n = 117)	51.4 (n = 207)	9.4 (n = 38)

Table 4.9

Collapse Responses to Satisfaction Factors for All Participants (%)

Survey Item		Strongly Disagree/Disagree	Agree/Strongly Agree
22. The students enjoy their class work.	Grade 6	54.0 (n = 54)	46.0 (n = 46)
	Grade 7	53.0 (n = 64)	48.0 (n = 58)
	Grade 8	60.3 (n = 94)	40.1 (n = 63)
	All	56.6 (n = 228)	43.4 (n = 175)
23. Personal dissatisfaction is too small to be a problem.	Grade 6	48.0 (n = 48)	52.0 (n = 52)
	Grade 7	51.1 (n = 62)	49.3 (n = 58)
	Grade 8	45.3 (n = 71)	55.3 (n = 86)
	All	47.7 (n = 192)	52.3 (n = 211)
24. Many students are dissatisfied with much that the class does.	Grade 6	47.0 (n = 47)	53.0 (n = 53)
	Grade 7	50.8 (n = 62)	49.2 (n = 60)
	Grade 8	50.3 (n = 78)	50.1 (n = 78)
	All	49.5 (n = 199)	50.5 (n = 203)

25. There is a considerable dissatisfaction with the work of the class.	Grade 6	49.0 (n = 49)	51.0 (n = 51)
	Grade 7	51.6 (n = 63)	48.4 (n = 59)
	Grade 8	49.0 (n = 77)	51.0 (n = 80)
	All	50.3 (n = 203)	49.7 (n = 200)
26. Students look forward to coming to class each day.	Grade 6	53.0 (n = 53)	47.0 (n = 47)
	Grade 7	50.0 (n = 61)	50.3 (n = 61)
	Grade 8	59.2 (n = 93)	41.2 (n = 64)
	All	54.6 (n = 220)	45.4 (n = 183)
27. After the class, the students have a sense of satisfaction.	Grade 6	29.0 (n = 29)	71.0 (n = 71)
	Grade 7	35.3 (n = 43)	65.1 (n = 79)
	Grade 8	38.0 (n = 59)	63.0 (n = 98)
	All	35.0 (n = 141)	65.0 (n = 262)

28. Students are well satisfied with the work of the class. Students are well satisfied with the work of the class.	Grade 6	43.0 (n = 43)	57.0 (n = 57)
	Grade 7	33.0 (n = 40)	67.1 (n = 82)
	Grade 8	41.1 (n = 65)	58.6 (n = 92)
	All	39.2 (n = 158)	60.8 (n = 245)

Research Question Five

Research question five, *What are students' perceptions of classroom climate factors that generate achievement?*, was answered by using a qualitative inductive coding process. In an attempt to capture a more in-depth understanding of the relationship between classroom climate and student achievement, 18 students (6 6th graders, 6 7th graders, 6 8th graders) were interviewed regarding their perceptions on the issue. A deductive coding analysis developed four distinct themes based on the review of literature and responses concerning classroom climate and student achievement. From the major themes identified, subthemes emerged from feedback received from all participants. The emergent themes and subthemes obtained from students' responses are provided below followed by a sample of the students' comments.

6th Grade Students' Perceptions

Interviews were conducted with a representative group from 6th grade students about their perceptions of the classroom climate factors: cohesiveness, material environment, formality, and satisfaction. An inductive coding analysis derived additional themes based on the responses concerning classroom climate: (a) cohesiveness such as how well students know each other in class (b) material environment such as the availability and use of various/multiple resources in class (c) formality such how well the classroom is structured, and (d) satisfaction such as how well students perceive their classroom environment.

Cohesiveness. Based on 6th grade student's survey responses regarding the classroom climate factor cohesiveness and its influence on student learning and achievement, the majority of the student participants *Agreed/Strongly Agreed* that

students know each other well and are friendly towards one another in the classroom. Sixth grade students were asked three questions pertaining to cohesiveness. The response from these questions can be broken into three categories: (a) relationships with peers, (b) friendliness, and (c) opportunities to get to know one another.

Relationships with peers. One of the 6th grade students describes the relationships in the classrooms, based on how well students know each other name. Two other students described the level connectedness students in the classroom have developed with other classmates. When 6th grade students were asked, “How well do students know each other?” Caleb claimed, “Some people know each one a first name basis only. Most students are not very close and don’t know other students last name.” Lauren somewhat disagreed, as she stated, “Students in my class know each other very well, if not better. Most students in the class are close friends and get along pretty good.” Matthew also added, “Usually everybody knows everybody by their first names. Most students interact in their own groups and know each other by their last name.” The other students in the group agreed with the comments that were presented by nodding.

In addition, students expressed their perceptions regarding relationships amongst students in the classroom. Isaiah commented, “Most students in my class talk to the same people and rarely talk to others. Most often, I talk with those students whom I close with only.” Caleb agreed by adding, “Students mostly talk to the people they know well. If they try to associate with someone else, the other people might pick on them or something because they do not know them very well.” Matthew, somewhat disagreed by stating, “Usually everybody talks to everybody, but students talk to their friends more than they do everybody else.” The researcher then asked for the remaining participants if

there were any other comments/perceptions that were not already captured, which they declined suggesting the comments presented were valid and aligned with their own views.

These comments indicate student relationships vary, as some students know each other more closely than others do. The 6th grade focus group session consisted of six students. Based on the student responses collected from four out of six participants, 6th grade students seem to know each other on a first name basis. Students shared experiences related to developing some type of relationship with other students in the class whether it be just a working relationship or more personal.

Friendliness. A student described their experiences on how students in the classroom interact with others regarding friendliness. Three of the six described how student interactions and friendliness varies amongst different individuals. When 6th grade students were asked, “How well do students act friendly toward each other?”, Caleb viewed classroom interactions for the most part as friendly, “Not everyone is friendly to each and every person, but mainly a lot of people are friendly.” Matthew represents a different viewpoint of interaction by stating, “Students in my class are usually friendly. Every once in a while someone gets mad and upset at you over minor problems.” Phillip described student’s friendliness in the classroom by stating,

I get along with most of the students in class because I know everyone is friendly and we never really get into arguments. Some of the students in my class, I have known for several years so we have become closer friends.

Five of the six students described their perceptions on how the teacher’s mood and personality affects the classroom environment. For example, Jariah stated, “The level

of friendliness amongst students often depends on the teacher. If he/she is mad and yelling at everyone, then everybody's going to be upset because of the teacher." Matthew describes his perception on how teacher attitudes and how they respond to frustration, "Teachers often are nice and try to make things fun, however when they get upset, class is not fun and they just give us worksheets."

Two students described their feelings about their teacher's friendliness towards students. Caleb described teacher's friendliness in the classroom by stating, "Teachers are very nice. During class, you get to know them, and they get to know you very well. When teachers get mad they can be very rude and harsh." Lauren agreed as she described her perception of teachers, "Teachers are very nice. They are strict when they have to be, but its okay. They are mostly nice and are there to help us."

These comments shared by students illustrate how students feel about the friendliness amongst other students and teachers in class. Students appear to easily gauge how friendly other students and teachers are based on daily interactions. Despite the various conflicts that may arise in class, students overall appear to have established friendly relationships with others. The mood of students and climate of the classroom is also closely related to the level of friendliness modeled by the teacher.

Opportunities to get to know others. When 6th grade students were asked, "Are there opportunities provided to you in the classroom to get to know one another?" Four of the six students suggested that participating building relationship activities are important and help them learn about each other. Jariah described her experiences in the classroom regarding building relationships, she commented, "At the beginning of the year, we did these little activities where we got to know each other's names. We also had to talk about

ourselves for a little bit.” Isaiah also recognized teachers attempts to have student get to know one another, “I like the beginning of the year when my teacher made everyone say their name to the class and then tell something interesting about ourselves.” Caleb also recalled a classroom activity which helped him learn about others, “In my class we played a game called Two Truths and a Lie, which was really fun and helped you remember things about other students.” Other students focused on other various in-class opportunities in which students have opportunities to get to know one another. For example, Matthew stated, “We don’t have much time in my class to get to know one another, but when our teacher places us in groups to work with other students, we get a chance to interact and learn more about others. Phillip also added his experiences on working with groups in the classroom:

In my class we get to know each other when our teacher puts us at certain tables/groups to work with other students. When we are working on certain projects in class, we are forced to talk to one another about the project and as a result, we tend to learn more about the individuals in the group.

Students described their perceptions regarding their personal comfort level around others based on the opportunities to get to know others. Phillip described his perception of being comfortable amongst students in class, “In the beginning of the year, I wasn’t really comfortable with my peers/classmates, because I didn’t know them. Now I’m comfortable, because throughout the year and through different activities I got to know them.” Lauren shared her perception of other classmates, she stated, “I have learned that most of my classmates are very nice to me and I’m very comfortable in my learning environment.” Isaiah expressed a different perception of students in his class, he stated,

“I’ve learned that some of my classmates are very disgusting. They spit a lot and talk very dirty.” Caleb, also shared his perception of other classmates, he added, “some of the students in my classroom curse and talk about inappropriate things.”

Students commented and discussed the level of comfort amongst other students in the class. Based on student’s comments, it appears as though many relationships have developed throughout the school year. Sixth grade students appear to be flexible and have experience interacting with different personalities and attitudes. These comments shared by students illustrate how students feel about the cohesiveness amongst other students and teachers in class. Students appear to easily gauge how friendly other students and teachers are based on daily interactions. Despite the various conflicts that may arise in class, 6th grade students overall appear to have established friendly relationships with others.

Material environment. In regards to 6th grade students’ perceptions regarding the classroom climate factor material environment and its influence on student learning and achievement, based on their survey responses, the majority of the student participants *Agreed/Strongly Agreed* there is adequate availability of books, equipment, technology, and space available in the classroom. Sixth grade students were asked two questions pertaining to material environment. The response from these questions can be broken into two categories: (a) various resources and (b) organization of available materials.

Various resources. Two students described the different classroom resources made available to them and how use of these resources affect their learning. When 6th grade students were asked to, “Describe what available equipment is accessible for student-use in the classroom?” Nemyn described her experience in utilizing classroom

resources, “In my class we have different materials available for use, depending on the lesson or activity we’re doing. We have books, dictionaries, and Chromebooks that we can use often.” Matthew suggested students have access to different resources. He also added how the resources are useful to students, “Students in my class utilize the books and Chromebooks. They are great because you can quickly look up different things that you do not understand.” Matthew also commented on materials students must provide for themselves, “In my class the teacher usually provides us with different materials such as: glue sticks and construction paper and the materials that we need, however, usually on major projects we have to buy our own materials and supplies.”

Three students expressed their perceptions regarding material environment factors that influence their learning. Caleb commented, “In my class we do activities on our devices such as, Kahoot games, which helps us study for upcoming test and quizzes. Students also get very excited during these activities.” Matthew added,

“In my class, we make a lot of foldables and utilize our journals to add notes on different lessons. We have filled them up throughout the year and have it to look back on to better understand the lessons in class.”

Lauren also shared, “I like in my class that my teacher has lots of different books for us to choose to read. We also get to move around the room to find a quiet area to read.” The other students in the group agreed with the comments that were presented by nodding.

These comments provide a closer insight to the different materials available to student in the classroom, and which resources students perceive as helpful to their learning. Based on the responses collected, 6th grade students seem to enjoy having

access to Chromebooks and books to research information. Students also enjoy interactive activities, which help them learn and prepare for upcoming assessments.

Organization of available materials. Three students described how teachers organize materials for students to use. Students also suggested that there is an established procedure/routine for students to know what materials are available for use. When 6th grade students were asked, “How do you know what materials are available to students in the classroom?” Phillip describes his experience using classroom materials when he stated, “my teachers prepare the materials that students are able to use. The materials we use, such as markers and crayons are typically organized in buckets, which lets us know what is available for the class.” Isaiah described how materials are organized for students, “we also have buckets in my class. The teacher places them in the center of each group for us to use what we need.” Caleb also shared what teachers do to help students know what materials are available in the classroom. He stated,

At the beginning of the year, my teacher labeled and pointed out where everything was located in the classroom. If students need anything, we know where to go to locate what we need and already have permission to retrieve the materials ourselves.

In addition, students described their feelings about what they like most about their classroom environment. Caleb stated, “What I like most about my class is when our teachers assigns projects. On these days, we get to move around the room and collaborate with other students.” Lauren, agreed by adding:

My teacher gives us a lot of activities in which we have stations around the room that we go to learn about different concepts and work with other students. I like doing stations much more than copying notes or doing worksheets.

Students also described their feelings about what they would change about the organization of the classroom if it were possible, for example, Nemyn stated, “If I could change the classroom environment, I would put the girls on one side of the classroom and boys would be on the other. Students tend to work better when they are separated by boys and girls, because they get along better and get more done.”

The examples from student comments displays how the organization of materials in the classroom helps 6th grade students know what is available to them for use. Several students acknowledged how they like having access to different materials and like having the freedom to choose materials based on what teachers makes accessible. Students also appear to enjoy activities in the classroom that are interactive and allow them to move around the room.

Formality. In regards to 6th grade students’ perceptions regarding the classroom climate factor formality and its influence on student learning and achievement, based on their survey responses, the majority of the student participants *Agreed/Strongly Agreed* that the class is guided by a set of formal rules and procedures. Sixth grade students were asked two questions pertaining to formality. The response from these questions can be broken into two categories: (a) establishing classroom rules (b) how the rules help students learn.

Establishing classroom rules. Two students described student participation in establishing classroom rules, and one students describes teacher involvement in the

development of rules. Most students suggested, their classroom teachers establish, communicate and maintains clear expectations for student behavior. When 6th grade students were asked to, “Describe how rules are established in your classroom?” Phillip describes students’ role in establishing rules, he stated, “at the beginning of the year we establish our classroom rules together. The students have a chance to give their input. The class agrees on a certain rule and then everybody follows the rules we established as a class.” Caleb agreed as he shared similar experiences regarding students having input in establishing classroom rules, he stated, “my teacher has each class write down their set of rules and she then hangs them on the wall so everyone can remember what the rules are to follow.” Matthew, somewhat disagreed by describing a different perception regarding how classroom rules are established, by stating, “students are not given the opportunity to give input on the classroom rules. My teacher just tells us what the rules are and we are expected to know and follow the rules.”

In addition to sharing perceptions about how classroom rules are established, the remaining students nodded in agreement as others expressed difficulty in having to adjust to different teachers teaching styles and rules they expect students to follow. Nemyn described her concerns with teachers as it pertains to classroom rules. She stated:

I find myself having a hard time understanding each teacher’s classroom rules and expectations. My parents are always on me about following the rules and doing what the teacher asks, but that is sometimes hard to do. The rules that teachers set are not consistent. The rules appear to change based on how the teacher is feeling that day. Each teacher has a different method for establishing classroom rules, and

I wish that each class was on the same page as far rules go, because that would help students better understand what is expected of them.

Jariah somewhat agreed as she expressed similar experiences pertaining to teacher actions by stating:

My teachers also change the rules sometimes based on how he/she feels. They also do not always follow the rules themselves. What I least like about teachers is sometimes they dismiss us well after the bell has rung or wait until the very last minute to share important information, which makes students late for their next class.

The comments shared by students illustrate how students feel about the methods teachers utilize to establish classroom rules. With having, high expectations from both teachers and parents, students expressed having feelings of worry about having to follow so many different rules and going about different ways of establishing the rules. The greatest concern expressed by students in establishing classroom rules deals with teachers having a lack of consistency in how each classroom goes about developing rules.

How the rules help us learn. When 6th grade students were asked, “What happens in your classroom that helps you learn?” five out of six students described how having classroom rules helped students learn better. For example, Lauren stated:

I look forward to going to class because we have the freedom to move around the classroom and talk to other at the appropriate time. In elementary school, we could never leave our seats and the teachers always got onto us for the littlest things. Now I feel, most students know how to act and when they can get away

with certain behaviors. When it's time to learn, most students know what the rules are and it's very helpful because the class is quiet so that students can concentrate.

Another example pertaining to how having the opportunity to participate in developing classroom rules influences learning was expressed as Jariah shared her experiences. She stated:

My brother who always gets in trouble in school, has hard time complying with what others tell him to do. I also experienced this problem, because in elementary school we never had the chance to give input on what rules work best for us in the classroom. Now that I am in middle school, I have the opportunity to provide input regarding the classroom rules which helps students learn better, because we are the ones who came up with the rules, therefore we know what we have to do, it also makes school easier and more fun.

In general, students were consistent about sharing their feelings regarding how classroom rules were established. In observing students while responding to the question, the researcher noticed most students expressed strategies about students having the opportunity to provide input in developing classroom rules. Sixth grade students appear to find this method effective, however, also expressed concerns regarding consistency amongst teacher in regards to how classroom rules are established.

Satisfaction. Pertaining to 6th grade students' perceptions regarding the classroom climate factor satisfaction and its influence on student learning and achievement, based on their survey responses student were divided, the majority of the student participants *Disagreed/Agreed* that students are satisfied with the classroom environment. The

response from these questions can be broken into 2 categories: (a) classroom learning environment, (b) experiences and interactions

Classroom environment. Three of the six students described the physical and visual features of the classroom when 6th grade students were asked to, “Describe the characteristics that influence the climate and student learning.” Phillip began by sharing what he noticed visibly posted around the classroom:

This year I was excited to come to middle school and have the opportunity to switch to different classes. There are a lot more classes in middle school than in elementary and that can become overwhelming. To address this issue, the teachers did a good job posting notes and helpful posters around the classroom. If students ever get to a point where they are struggling and don’t remember something, they can just look on the wall and there is probably a poster or helpful strategy to help us remember what to do.

Matthew, also mentioned what he noticed about the walls and posting in the classroom:

I enjoyed visiting the different classrooms and getting to learn more about each teacher’s different personalities. The classrooms are bigger in middle school and allow students to move around better. In the classrooms, there are many different colors on the walls versus just a bland white wall. This makes the classroom more inviting and enjoyable.

Phillip, also commented about the visuals posted throughout the classrooms that influence students:

I have met many new teachers in middle school. Some days I come to school and do not want to participate in groups or do my work. However, teachers push us

and are continuously encouraging students to do better. There are always motivational quotes posted throughout the classrooms, which helps motivate students to learn even when we do not feel like it.

During the focus groups session, students in 6th grade expressed comments regarding the visuals that were posted throughout the classroom which influence the classroom environment.

Collaboration. Four of the six students described classroom interactions and assignments that influence connectedness amongst students. When 6th grade students were asked to, “Describe if there is anything that takes place in the classroom that makes students want to learn?”, students’ perceptions included comments on how they enjoy having opportunities to collaborate with other classmates. Lauren described her experiences related to collaboration with other students. She shared:

It’s like students who you have never seen or met before are now in classes with you on daily basis. You can choose to have a lot of friends or not. I sometimes worry about meeting new people, however, in my classes we are able to collaborate with other students. We get to talk about the assignment and learn from each other, which sometimes helps develop a friendship with that person.

Similar to feedback from Lauren, Caleb responded by describing his experiences related to collaboration with other. He added:

I was a student who moved here in the middle of the school year. It was difficult for me to move to a new school and meet new friends. I was worried about meeting new people, but in my class, I like when my teacher gives us a big assignment or lets us work in groups. We get to move around the classroom and

we get to talk with other students. This has allowed me to make new friends during that time.

Nemen also described her level of satisfaction in working with groups. She stated:

I like when my teacher assigns students to different groups and allows us to play Kahoot. This helps us review for upcoming test/quizzes and also gives an opportunity to discuss the material with our peers as we work together to solve the answer to the question on the board. The teacher encourages us by allowing students to work together and also gives rewards for correct answers.

Phillip also agreed as he described his experience related to collaboration and student competition. He shared:

In my class I like the competitive nature that exists amongst students in the classroom. Everyone likes to participate in different competitions against their peers. I like how everyone is competitive which motivates us all to learn and the lessons become more excited. Because of this, we better understand how certain lessons can be applied to our lives in the future.

7th Grade Students' Perceptions

Interviews were conducted with a representative group from 7th grade students about their perceptions of the classroom climate factors: cohesiveness, material environment, formality, and satisfaction. An inductive coding analysis derived four distinct themes or categories of responses concerning classroom climate: (a) cohesiveness such as how well students know each other in class (b) material environment such as the availability and use of various/multiple resources in class (c) formality such how well the

classroom is structured, and (d) satisfaction such as how well students perceive their classroom environment. The identified concerns are discussed in this section.

Cohesiveness. Pertaining to 7th grade students' perceptions regarding the classroom climate factor cohesiveness and its influence on student learning and achievement, based on their survey responses, the majority of the student participants *Agreed/Strongly Agreed* that students know each other well and are friendly towards one another in the classroom. Seventh grade students were asked 3 questions pertaining to cohesiveness. The response from these questions can be broken into 3 categories: (a) relationships with peers, (b) friendliness, and (c) opportunities to get to know others.

Relationships with peers. Two students described how well students know each other when 7th grade students were asked, "How well do students know each other?" Osiris described his experiences in getting to know other students in the classroom, he stated:

In my classes, everybody gets a good chance to know each other. We all interact with each other pretty well. I think everybody in the class knows each other. We have a pretty good time getting to know each other. We have good discussions during class.

Anka, somewhat agreed by sharing her experiences in learning other students personality. She added:

Our classmates know each other pretty well and throughout the year we got to know each other's personalities and how students would act in different situations. My teacher allows us the opportunity to choose our own partners to work with depending on how much work we get done.

In addition, five of the six 7th grade students also described their perceptions regarding relationships amongst students in the classroom. For example, Yusef described his experiences related to learning how to work with students that may have different viewpoint. He stated:

The environment that the teacher has established for us allows students to bond together. In life you're always going to find someone that you don't like for whatever reason, however, if you take the time to get to know them, you may find that you may have a lot in common and may even become good friends. The activities in class allow us to really get to know people we would never really talk to much.

Dezra, somewhat agreed by sharing his experiences in working with different students, as he commented:

I feel like everybody knows each other on a cordial basis. You do not have to necessarily be friends with everyone in the class, but we get to interact a lot with each other on group projects and other activities which gives us the opportunity to make new friends and enjoy the classroom.

These comments indicate student relationships amongst 7th graders are positive as most students know each other well and have opportunities to get know other students and different personalities. Overall, most 7th grade students in class seem to have some type of relationship with other students in the class, whether it be just a working relationship or more personal.

Friendliness. Three of the six students described the perceived level of friendliness in the classroom when 7th grade students were asked, "How well do students act friendly

towards each other?” Overall 7th grade students expressed that the level of friendliness varied. Dezra shared his experiences related to having to interact with other that may not have a positive attitude. He commented, “people have their days, everybody has their days. Some days they can be nice, other days they can be like get out of my face. I’m not in the mood. But that’s everyone, everywhere you go.” Josh, somewhat agreed by adding his experiences in having to work with other students. He shared, “students in my class are not very friendly unless you know the person well. Even if you do not know the person you will still have to work with them.”

Osiris, also described his experience related to working with other students that may not have a positive attitude. He added:

Students in my classes we’re friends, we’re good but then sometimes one kid might get mad or one kid might do something to annoy the other kids and then they get mad. Then they take their anger out on everyone else. Which then causes everybody mad, and then students don’t want to interact with others and shut down. That happens a lot. Like mentioned previously, everybody has their bad days and they might do something that isn’t very kind towards the other classmates. This effects the tone of the learning environment for everyone else.

Additionally, five of the six 7th grade students discussed teacher friendliness in the classroom. For example, Osiris described how teachers respond to students in the classroom. He shared:

My reading teacher, is very nice and kind. She teaches us she cares for us, unless you talk a lot or do something that’s outrageous, then she’ll give you a warning. After that she’ll give you another warning, and then if the problem continues

she'll give you an office referral. In regards to my math teacher, she's not very gracious, she gives you office referrals without thinking about it if you do anything wrong. It might be one warning, then that's it.

Kindsey, also shared her experiences regarding teacher friendliness, as she commented, "I feel like my teachers are very supportive, understanding, and kind. They handle discipline and have fun at the same time. So it's pretty good class."

Dezra disagreed, by sharing a different perception of teacher's attitude. He mentioned:

My math teacher says stuff that can be rude and she acts like a child. She entertains the class by being rude and making all these jokes about the students, which can make them feel uncomfortable or feeling like they need to walk out the classroom to get away from the atmosphere. My reading teacher, is totally different. She's nice, caring, and understanding. She's sympathetic and she's just like my mom or my aunt. I love going to her class. I learn and get rewarded for learning and know what I have to do.

These comments shared by students illustrate how students feel about the friendliness amongst other students and teachers in class. Students appear to easily gauge how friendly other students and teachers are based on daily interactions. Despite the various conflicts that may arise in class, students overall appear to have established friendly relationships with peers and teachers.

Opportunities to get to know others. Four of the six students described various "Getting to Know You" activities they have participated in during class when 7th grade students were asked, "Are there opportunities provided to you in the classroom to get to

know one another?” Anka shared her experience in getting to know other classmates based on her experiences at the beginning of the school year. She shared:

My teacher always gives us the opportunity to get to know some else that you might not really know and is not already your friend. It was communicated at the beginning of the school year that all students would learn to work with each other. In my math class, my teacher definitely pushes the opportunity and sometimes she'll let you pick your own partner as a reward.

Yusef agreed about there being an emphasis placed on building relationships and working with others. He stated:

In my math class, we all got to know each other because we played this game where we had two balls. We stood up in a circle and tossed the ball around to different members in the circle. Once you caught the ball, you'd have to state your name, your favorite hobby and different things about you. This helped me remember other student's names and also helped us begin talking to others we did not know very well.

Chancellor agreed by describing the activities in the classroom that help students get to know each other. She commented:

Also in my math class, many of the activities we do give students the chance to interact with each other which has been helpful because we work in groups and do group projects a lot so we are familiar with one another. With my reading teacher, we also sit in groups but we usually don't do group projects as much as with my math teacher. Although, the activities we did at the beginning of the year in this class also helped students begin building relationships with each other.

Dezra, also described activities in the classroom that helped students get to know each other. He added:

I feel that there are opportunities at the beginning of the year when we learn each other's hobbies and stuff. In reading we did ice breakers or things to get to learning about each other. And in math, like mentioned previously, we tossed around a ball and said our names and hobbies and stuff. That was really fun and a great way to get students talking to each other.

Students commented and discussed their level of comfort amongst other students in the class. It appears as though many relationships have developed overtime during the school year. Being able to deal with different personalities, attitudes, and work styles of different students was mentioned by several students.

Material environment. Pertaining to 7th grade students' perceptions regarding the classroom climate factor material environment and its influence on student learning and achievement, students were asked 3 questions related to material environment. The response from these questions can be broken into 3 categories: (a) various resources (b) friendliness, and (c) opportunities to get to know one another.

Various resources. Two students described various resources that are available to students, while one student described his perception of what is needed when 7th grade students were asked to, "Describe what available equipment is accessible for student-use in the classroom?" Kinsey described the classroom material environment by what is made available to students. She stated:

I feel like in my language arts we have tons of materials. Often times, we utilize textbooks and given online projects. In my math class, it is pretty much the same.

I feel like I have a lot of access to different materials. There are lots of manipulatives and supplies for every activity that we're doing. On top of that, my teacher has also given us online assignments to do for more practice so we're always prepared, especially for eighth grade. So I feel like both my classes have a lot of materials.

Anka, agreed as she the various materials made available to students in the classroom.

She shared:

I feel like in my math class, my teacher has everything. Anything students need for assignments, the teacher has available for students. We are given different types of assignments and have the right materials to complete the work. In my reading class, it varies because she doesn't really have the technology. She usually has textbooks, dictionaries, thesauruses, and I don't feel like I have access to new materials, but we do have what we need, it's just different because we're so use to technology.

Dezra, somewhat disagreed by sharing his experiences and what could be improvement.

He commented:

I feel that in my reading class, we could have more. Mainly my teacher relies on technology. I don't really like going on a website, having to go through all these websites, it's just too much. I'd rather have my teacher sort of like, no offense to the teachers, do her job by giving me hard copies of the assignment, because I'm not the type of person that will go through all the trouble to get the work that I'm supposed to get in class. In math, we have the different supplies that we need for completing projects and drawing activities.

Having access to various resources and materials was expressed by most students during the interviews. Several students referenced the use of technology in the classroom and their perception related to technology in the classroom.

Organization of Available Materials. Four of the six students described how students know what materials are available for use in the classroom when 7th grade students were asked, “How do you know what materials are available to students in the classroom?” Students shared how teachers designate areas in the classroom for different materials. Dezra described his classroom environment and system in place for students. He stated:

Students know what materials are available by how the teacher lets you to know what is available. She might have some markers in the cabinet, but you can’t get the markers because that might be invading her personal space. However, this makes you just feel like what is the point of having the markers right there if we can’t use them?

Chancellor disagreed by sharing a different perception of her classroom environment and systems. She added:

I’m not sure about everyone else, but I know where most of the stuff is in my classes and students are available to get the materials that they need at any time. My teacher has Chromebooks in the back which are available for students, and she usually lets us use the erasers and pencils on her desk. She also had a bookshelf in the back of the room, and we can go get materials from. In my math class, my teacher usually has markers and grading utensils on the desk in a cup.

The responses from students shows how the organization of materials in the classroom helps students know what is available to them for use in the classroom. The 7th grade students comments included how they like having access to different materials and also enjoy having the freedom to choose materials based on what is available to them.

Formality. Pertaining to 7th grade students' perceptions regarding the classroom climate factor formality and its influence on student learning and achievement, based on their survey responses, the majority of the student participants *Agreed/Strongly Agreed* that the class is guided by a set of formal rules and procedures. Seventh grade students were asked 2 questions pertaining to formality. The response from these questions can be broken into 1 category: (a) establishing classroom rules.

Establishing classroom rules. Four of the six students described teacher's methods in establishing classroom rules, when 7th grade students were asked to, "Describe how rules are established in your classroom?" For example, Anka described her experiences in the classroom related to how rules are establish. She stated:

In my reading class, I feel like the rules are pretty much established. I feel like everybody follows them, they know what to do, when they're supposed to be quiet and when it's okay to talk. However, in math class, it's kind of different, because sometimes my classmates get loud and crazy. My teacher doesn't really do much about it. So it makes me think, how do you expect us to follow the rules when you do really do anything about it when the room gets too loud.

Another example was provided as Kinsey somewhat agreed by adding her experiences regarding establishing classroom rules. She shared:

I feel like both of my math and reading classes have a certain set of rules that were created by including both student and teacher input. It's a pretty loose class but you still learn. In my math class, sometimes my teacher doesn't get mean enough or serious enough to say OK, this actually needs to stop. I had yelled at a student before because they were in several classes with me in a row and I didn't learn anything because they were always distracting me as well as others. I feel like my teacher needs to be a little bit more stern with students with have difficulty following the rules.

In general, student comments were somewhat consistent regarding their perception on how classroom rules are established and classroom management. The researcher noticed 7th grade students expressed a need for more structure and cohesiveness in some classrooms. Seventh grade students appear to be able to gauge when classroom rules are implemented effectively as well as when teachers struggle to follow through on established rules.

Satisfaction. Pertaining to 7th grade students' perceptions regarding the classroom climate factor satisfaction and its influence on student learning and achievement, based on their survey responses student were divided, the majority of the student participants *Disagreed/Agreed* that students are satisfied with the classroom environment. The response from these questions can be broken into 2 categories: (a) classroom learning environment, (b) activities in the class that help students learn.

Classroom learning environment. Five of the six students described characteristics of the environment which positively influences student learning when 7th grade students were asked to, "Describe classroom characteristics that influence the

climate and student learning.” Chancellor described her learning style and characteristics of the classroom which help her learn. She shared:

I’m a visual learner, so when my teacher uses color or makes something pop out, it really helps me learn because that shows me that it’s a key word or a key step. Also there are lots of helpful posters and charts and on the walls around the classroom that I can easily refer to if I am stuck or have trouble remembering how to do something.

Yusef, added comments regarding how the teacher influences the environment. He stated:

I feel like my classroom environment is safe. My teacher emphasizes the importance of treating others with kindness and respect. Therefore, students feel safe to answer questions aloud without having fear that someone is going to make fun of them, even if they answer a question incorrectly. My teacher also works very hard to get us prepared for upcoming tests/assignments. I feel like I learn the material that she teaches.

Dezra, also shared comments regarding what helps him learn and how teacher influences the classroom environment:

What I like the most about classroom environment is I actually feel as though I am learning something in class and I understand the material. Students have access to things that we need and the classroom is a fun place. My teacher is sometime too playful and could be a little more serious.

Anka, agreed by sharing his experience regarding how the teacher influences the classroom environment:

I think my classroom environment is perfect for students to learn. I agree, I actually feel as though I am learning and my teacher make sure we understand what is that they are teaching. Even if there is one person in the whole class who does not get it, my teacher will take the time to answer questions and reteach the material.

Osiris also shared comments on how the teacher influences the classroom environment.

He stated:

My classroom environment is very playful and talkative. I agree, the environment could be more serious. Sometimes, even the teacher is playful and jokes around. At times, it is unnecessary and seems to take away from time when we could be learning. I still have learned the concepts she teaches and have picked up different skills that have helped me prepare for finals.

Activities in the class that help students learn. Three students described the activities that help students learn when 7th grade students were asked to, “Describe if there is anything that takes place in the classroom that helps students learn?” Kindsey described chrematistics in the classroom that help her learn, she stated:

I think that our class is what helps me want to learn from the moment I walk in. In my classes, it’s a really open environment, and because our teachers have been so diverse with who we sit with and allowing us to change seats, I’ve made friends and I know who I’m sitting with and who I can ask who for help. Also, teachers look and sound like they want to teach us and still be involved with us, which makes me think OK, I’m fine with learning this and I want to learn now because you’re nice to me and the whole class.

Yusef, agreed by sharing characteristics that help him learn:

My class is very friendly and students are can easily make new friends. I like that my teacher can gauge when students are becoming bored with something. When this happens, she works to make changes and tries to make the lesson more fun and interesting. I know that at times, we are not always going to have fun but it helps us to pay attention and learn.

Chancellor also mentioned comments regarding how engagement influences students.

She stated:

Most of the time I like going to class. The most fun thing that we did was when we played Kahoot for review. We also have activities that we do in the hallways, which students enjoy because we get to move around and get a chance to get out the classroom. In my math class, my teacher makes things fun by sometimes allowing the class to go outside to complete activities and assignments.

Overall, student comments were consistent regarding their perceptions and satisfaction with the classroom environment. The 7th grade students appear to enjoy having fun while learning, while also wanting a balance of fun/engaging vs. serious/focused classroom environment. The 7th grade comments also appear as though students are learning and mostly satisfied with the classroom environment.

8th Grade Students' Perceptions

Interviews were conducted with a representative group of 8th grade students about their perceptions of the classroom climate factors: cohesiveness, material environment, formality, and satisfaction. The inductive coding analysis derived four distinct themes or categories of responses concerning classroom climate: (a) cohesiveness such as how well

students know each other in class (b) material environment such as the availability and use of various/multiple resources in class (c) formality such how well the classroom is structured, and (d) satisfaction such as how well students perceive their classroom environment. The identified concerns are discussed in this section.

Cohesiveness. Pertaining to 8th grade students' perceptions regarding the classroom climate factor cohesiveness and its influence on student learning and achievement, based on their survey responses, the majority of the student participants *Agreed/Strongly Agreed* that students know each other well and are friendly towards one another in the classroom. Sixth grade students were asked 3 questions pertaining to cohesiveness. The response from these questions can be broken into 3 categories: (a) relationships with peers, (b) friendliness, and (c) opportunities to get to know one another.

Relationships with peers. Four of six students mentioned having opportunities to get to know others as well as having to work with different personalities when 8th grade students were asked, "How well do students know each other?" For example, Dawn shared her experiences interacting with students in the classroom. She stated, "most of the people that I know in my classroom are most people that I hang around with. Some people I don't know, so I get to know them if I'm in the class with them." Kianna, somewhat agreed by adding her experiences getting to know other students, "There is only 30 people in the classroom therefore I'm really close with almost everyone. It's an advanced class, but other than that, the other kids I like get to know them and we help each other out." Olivia also shared comments regarding how well students know each other. She stated, "The kids in my class, I have other classes with them, so I basically

know them.” Johnny mostly agreed as he described student dynamics in the classroom. He stated, “I know most of the other students in my class, and some of the people I don’t know, so if I get the chance to talk to them I’ll talk to them.”

These comments indicate student relationships amongst 8th graders are positive as most students know each other well and appear open to the possibility of getting to know other students whom one may be unfamiliar with. Based on student’s comments during the focus group session, most 8th students seem to have some type of relationship with other students in the class, whether it be just a working relationship a more personal connection.

Friendliness. Five students described the level of friendliness students perceived amongst other students and the classroom teacher when 8th grade students were asked, “How well do students act friendly towards each other?” For example, Olivia described how students interact with one another. She stated, “most students in my class, they’re friends but they like to joke around with each other, however, sometimes they can be too serious and things happen. So sometimes they’re nice and sometimes they’re not.” Kianna shared a different perception of how students interact with one another. She shared:

For the most part, many of the students in my class are quiet and very competitive. Students do not seem to like helping others unless you help them. Therefore, it appears, as they will only do something for you if you have done something for them.

Additionally, three of the six 8th grade students discussed teacher friendliness in the classroom as it relates to influencing the classroom environment. For example, in

regards to teacher friendliness, Olivia described how the teachers attitude influence student's motivation to learn, she commented:

My reading teacher, she's friendly, she's nice, and she helps us with things we don't know. My math teacher, she's, I really can't explain, but she has her days when she is not nice, but then other days she is very nice and friendly. My teacher's intentions seem to be good and she appears to want students to learn, however, sometimes her tone can be mistaken as offensive and not appropriate for teachers to say.

Cameron, agreed that different teacher personalities exist and affect the classroom environment. She stated,

My language arts teacher is fun and she gets us excited to do the work. She is always joking with students and makes what we are learning interesting. My math teacher, however, I do not really like her, to be honest, but she still allows students to work together with each other. That is how we have gotten to know each other, because we work together a lot on different assignments.

Kianna, described a different perception regarding teachers, she shared:

My language arts teacher does not get students excited to learn. She like gives us information we need or ever really grade us on and it seems as though she does not expect us to complete the assignments that she gives students. It is our own choice. She like lets us make our own choice to do the assignment or not. She won't feel bad if you don't do it, because that's your choice. My math teacher, she's really nice sometimes. She gives us information we need and then she'll reward us in the long run if she feels we really understand the lesson.

These comments shared by 8th grade students illustrate how students feel about the friendliness amongst other students and teachers in class. Students appear to easily gauge how friendly other students and teachers are based on their daily interactions. Based on 8th grade student's comments during the focus group session, overall, students appear to have established friendly relationships with peers and teachers.

Opportunities to get to know others. Four students described various “getting to know you” activities they have participated in during class when 8th grade students were asked, “How well do students act friendly toward each other?” Dawn described experiences regarding opportunities to get to know other. She stated:

There was a girl that I didn't know, but I saw her around school a lot, and she turned out to be somebody in my class and I had to sit next to her. So eventually we had to talk about the work, and so then we started talking about other things, and that's how we got closer and became friends.

Olivia also shared experiences related to activities in the classroom which provide students opportunities to get to know others. She stated:

You get to know people by when you get projects together, and so if you don't know somebody and the teacher pairs you with that person, you can get to know each other.”

Cameron, also shared comments related other activities, He stated:

One day our teacher, she set up some type of game where we were required to have different discussion with students about a topic she choose. If the teacher thinks you don't know someone, she'll group you with that person so you have the change to get to know them.

Johnny, agreed by sharing a classroom experience, which he participated in that helped him get to know other students. He stated:

When I came here, like when I first came here to this school and in my math class, we did like a group assignment/mini project. The were different word problems for students to solve posted around the classroom. Students were supposed to go around the classroom and answer questions, which would then lead us to another question. Working in a group on this assignment helped me because, I met friends who I mostly hung around with the rest of the school year.

Based on the comments, 8th grade students discussed the level of comfort amongst other students in the class. It appears as though many relationships have developed throughout the school year due to students having to work together on various assignments. The 8th grade students are also able to interact and work with each other in class, as students mentioned this during the focus group session.

Material Environment. Regarding 8th grade students' perceptions related to the classroom climate factor material environment, the majority of the student participants described their classroom environment with having various books/resources as well as having organization. Access to various resources was a common theme expressed by students in each grade level. Different perceptions regarding technology was expressed by several students.

Various resources. Three students described the access students have to different materials in the classroom when 8th grade students were asked to, "Describe what available equipment is accessible for student-use in the classroom?" Olivia described the different materials mostly used in her classroom. She stated:

In language arts and math classes, we mostly work out of the textbooks. My teacher has materials that we are able to use such as pencils, rulers and scissors. In language arts, if we are doing a project we have the magazines where we cut out things we want to put them on posters.

Cameron also described the materials used in his classroom and included mention of accessible technology. He stated:

In math we have all the materials we need such as: pencil sharpeners and stuff, and computers, laptops, Chromebooks. In language arts, sometimes my teacher will pass on the materials, but if you don't have the items you need for class she's going to give you a zero.

Dawn, shared similar experience in having utilized technology in the classroom she also mentioned:

Usually my teacher allows us go by BYOD, which is bring your own device.

Most of the students bring different devices to school each day. However, if we don't have a device, teachers will still have any other electrical devices that we can use, just in case we need it.

Based on 8th grade student comments, having access to various resources and materials was expressed by many students during the focus group interview. Students also mentioned the use of technology in the classroom. The ideas expressed indicated a need to further explore the materials that are available to students by grade level.

Organization of available materials. Five of the six students described their perceptions regarding how students know what materials are available for use in the classroom when 8th grade students were asked, "How do you know what materials are

available to students in the classroom?”. For example, Cameron described the systems in place for students to know what material are available for use in the classroom, he mentioned:

In my math class, we usually just already have the available materials on our desks so we can just use them. Our teachers say it doesn't matter what we use, just go ahead as soon as you walk in you can just grab anything you want, just make sure you put it back.

Dawn described how students in her class students are aware of the system in place to get materials. She stated:

The teacher, he or she tells us where everything is located in the classroom, and we should go about getting the materials we need. Teacher also tell us how we have to ask for permission to use the materials, and any other things that we need to know.

Olivia also shared her experience in the classroom regarding how students are to go about getting materials. She stated,

We have to ask the teacher for permission to use the materials in class. She tells us that she does not like students to just grab and take things without permission. Sometimes, when you borrow certain materials from my teacher the make you give up something that belongs to you, so they can make sure they get their materials back.

The comments shared by 8th grade students reveal how the organization of materials in the classroom helps students know what is available to them for use in the classroom. Several 8th grade students mentioned how they like having access to different

materials and are also aware of different systems in place for choosing materials based on what is available to them.

Formality. Pertaining to 8th grade students' perceptions regarding the classroom climate factor formality and its influence on student learning and achievement, based on their survey responses, the majority of the student participants *Agreed/Strongly Agreed* that the class is guided by a set of formal rules and procedures. Eighth grade students were asked 2 questions pertaining to formality. The response from these questions can be broken into 1 category: (a) establishing classroom rules.

Establishing classroom rules. Four of the six students described their experience on how rules are established. Olivia, described her teacher's method for establishing classroom rules, "the teacher already establishes the rules for us to follow. If we don't follow them, we get the consequences or written up. Sometimes we make up our own rules." Dawn, shared her experience and how her teacher responds to students who do not follow the rules. She added:

In math class, my teacher reminds us not every day but almost once a week about what we need to do. If we don't do it, she'll let you know what you need to do and if you still like, keep making the same mistakes she'll let you suffer the consequences. In language arts, there aren't really any good rules. We basically follow the regular school rules

Cameron, also described his experience in the classroom pertaining to teacher's response to misbehavior. He added:

In math class it's when you walk in, you see the rules on the board and you just follow them, or else you'll just get consequences. The teacher will probably write

home or put you out of the room. In my language arts class, my teacher kind of leaves stuff up and she doesn't really tell us, because sometimes she's like you can listen to your music and then sometimes we can't listen to music. She'll say put them up, and when you don't know that you can't listen to music.

Kiana, also described her teacher's actions:

In my math class, my teacher gives you a warning, and if you keep on doing it she'll like, what Dawn said, you going to suffer the consequences. In language arts class, the teacher makes the rules up as she goes. If she sees something that she doesn't like, she'll tell you and you'll get in trouble for it right then and there and you didn't know.

In general, 8th grade student's comments were consistent regarding their perceptions on how classroom rules are established. In observing students while responding to the question, the researcher noticed that students expressed strong feelings in regards to there being inconsistencies in how rules are established and carried out in the classroom.

Satisfaction. Pertaining to 8th grade students' perceptions regarding the classroom climate factor satisfaction and its influence on student learning and achievement, based on their survey responses student were divided, the majority of the student participants *Disagreed/Agreed* that students are satisfied with the classroom environment. The response from these questions can be broken into 2 categories: (a) classroom learning environment, (b) activities in the class that help students learn

Classroom learning environment. Four of the six students described their perceptions related to the activities and characteristics of the classroom environment

which positively influence the classroom environment when 8th grade students were asked to, “Describe the characteristics that influence the climate and student learning.”. For example, Cameron shared descriptions related to the visuals posted throughout the classroom. He shared:

There are a lot of different posted and visuals on the walls. It is really good and cool stuff, make me like want to do stuff and never give up. My teacher has lots of motivational quotes and helpful things to remember.

Another example was provide as Dawn agreed that different visuals are posted around her classroom. She stated, “in my classes, my teachers have signs and helpful information around the walls. This help us just in case we forget things, like formulas and stuff like that.”

Activities in the class that help students learn. Three students described the activities that help them learn when 8th grade students were asked to, “Describe if there is anything that takes place in the classroom that makes students want to learn?”. The activities were mentioned by several students. Dawn shared what helps her during instances when she does not understand something:

Usually the teacher will say things over and over again, but there are sometimes certain ways that people have to say it for you to get it. We have different opportunities to talk to other students around us, so if there is something I still don’t understand I’ll ask another student and then maybe I’ll get it.

Olivia shared what her teacher does that makes her want to learn and shared similar perceptions. She added:

My teacher makes me want to learn. She does repeat what she is say a lot, however, she makes sure students learn the material she teaches to them. My teacher has different ways of teaching us and makes learning interesting by giving us different things to do. It's like we never get bored in class because we always doing something different.

In addition, Oliva described activities she likes to do:

I like the Kahoot games that we do. Last year we even got to make up questions. We had to like make up the questions, and the students had to come in and answer the Kahoot that other students made. Sometimes the teacher makes them and includes personal questions. This allows us to learn more about your teacher.

Dawn, also agree that certain activities help her lean. She added:

I like most of the time when we do activities in class where we go around the classroom and answer questions in our notebook. Like we'll have pictures and words and stuff around the room and we'll stand up and go around the room and answer the questions. I also like other times when we get to stand up and move and do stuff.

Johnny agreed by sharing his experience with technology use:

Like mentioned previously, I like when we get to move around. In one of my classes we play the Kahoot game from the beginning to the end, and the top five winners= will like get a reward like a candy or something.

Overall, student comments were consistent regarding their perceptions and satisfaction with the classroom environment. The 8th grade students appear to have positive perception related to their classroom environment. They appear to enjoy the

visuals posted on the wall and like having opportunities for technology use in the classroom.

Conclusion

This chapter presented the analysis of qualitative and quantitative data collected from surveys and interviews, participant demographics, and processes of answering each research question. In the next chapter, findings will be presented to compare what was found through this study with existing literature. Implications of this study in education and future research will be discussed.

CHAPTER V

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to examine the relationship between classroom climate (Cohesiveness, Material Environment, Formality, and Satisfaction) and student achievement in mathematics and reading. The attitudes and perceptions of students toward classroom climate and achievement have been well documented in research literature, but the relationship between classroom climate and student achievement has been minimally explored at the middle school level (Lai, Chou, Miao, Wu, Lee, & Jwo, 2015).

To quantify student attitudes toward classroom climate, 423 students enrolled in a middle school within a single large suburban school district in Southeast Texas completed the *Learning Environment Inventory*. The middle school also participated in semi-structured interviews: qualitative data enriched the understanding of perceptions and attitudes regarding classroom climate and student achievement. Within this chapter, the findings of this study are contextualized in the larger body of research literature. Implications for district administrators, school administrators and teachers as well as recommendations for future research are also included.

Summary

The research questions addressed whether there was a relationship between classroom climate and student achievement. The following research questions guided this study:

1. Is there a relationship between how well students know, help, and are friendly to one another in the classroom and student achievement?
2. Is there a relationship between providing adequate learning materials and student achievement?
3. Is there a relationship between the degree to which the class is guided by classroom rules/procedures and student achievement?
4. Is there a relationship between how well students are satisfied with the classroom environment and student achievement?
5. What are students' perceptions of classroom climate factors that generate achievement?

Classroom climate has four factors (Cohesiveness, Material Environment, Formality, and Satisfaction) and student achievement as defined by student performance on the Math and Reading STAAR test. The researcher examined the relationship in each respected question.

Research Question 1

The current study did not provide evidence of a direct influence of how well students know and/or are friendly to each other on student achievement. However, there was evidence that the cohesiveness climate dimension does affect the classroom environment, which relates to student achievement. This suggests that teachers should examine both their interactions with students and the type of classroom activities developed for students in an attempt to provide students with many opportunities to develop socio-emotion skills and build positive relationships.

Cohesiveness and student achievement. There was a not a statistical significant relationship between cohesiveness and student achievement, consistent with the research of Allen et al. (2013). Based on the quantitative findings from the current study, this suggests that student perception of the overall classroom climate and teacher-student interactions were not predictive of higher student achievement, although, qualitative findings developed through this investigation suggests teacher-students interaction does influence student's perception of the classroom environment and motivation to engage in learning which affects student achievement. This premise is congruent with findings from the research which suggested teacher-student interaction was predictive of higher student achievement test scores. Although, effects of higher-quality teacher-student interactions were greatest in classrooms with fewer students.

One explanation for the difference in results could be that the Allen et al. (2013) study was conducted by including observation of teacher-student classroom interactions as part of the data collection as the current study did not. Another explanation for the difference in results could be the current study did not include classroom size as a factor to having impact on student's perception of the classroom climate factor cohesiveness as concluded in the research. Additionally, Gehlbach et al. (2016) determined that students' perceptions of how much they have in common with their teacher likely boosts their grades and motivation. It was found in the current study that teacher-student interaction does impact student's attitudes. Although, the findings from the current study primarily focused on teacher friendliness as a factor having in influence on student achievement.

By examining student's perception of how much they have in common with their teacher as part of the data collection, this may have contributed to the difference in results

found in the research. Gehlbach et al. (2015) also surveyed students in high school as part of their data collection, while the current study included only participants in middle school. Based on this research, explanation for the different in results could be high school students may have different expectations and experiences in school that could potentially influence their responses. Fan (2012) discovered that good human relationships are a lubricant to high productivity. In the research, the relationship between teacher-students' interpersonal relationships and achievement was examined using two different quantitative instruments. The inclusion of two instruments could explain the differences between statistical findings in the research and current study. Based on the inclusion of the additional quantitative instrument, the data analysis may have produced different results.

Research Question 2

As with research question 1, there was no statistical significant finding between student's materials environment and student achievement. However, based on the qualitative findings, there was evidence of a positive relationship between student's perceptions of accessible materials and achievement. This suggests that principals and teachers should consistently examine the different resources students have access to in the classroom to provide more opportunities for student engagement at deeper levels.

Material environment and student achievement. As stated previously, there was not a statistical significant relationship between factors of material environment and student achievement. Based on the quantitative findings, this is inconsistent with the findings of Estapa and Nadolny (2015) which found technology use within the classroom increases student achievement. Technology use was also found highly favorable based on

student responses collected during the qualitative investigation of the current study. Items directly related to technology factors that might have this impact on student achievement were not examined in the current study. Jung et al. (2014) determined school resources yielded a range of significant results in student achievement. Students with lower levels of mathematical skills benefited greatly from classroom resources. It was found in the current study that various classroom resources and organization does impact student's perceptions regarding achievement. Although, the findings concluded from the current study does not include factors related to student's achievement level in any subject area to determine if exposure to classroom resources yielded significant results or growth. This may provide explanation for the difference in results between research and the current study.

Research Question 3

The current study did not provide evidence of statistical significance between having formal classroom rules/procedures in place and student achievement. However, based on findings concluded from the qualitative assessment there was evidence to show formality factors does influence student perceptions of the classroom environment and ability to learn. Students expressed their ability to gauge the established right or wrong way of doing things in the classroom, as well as teacher's ability to enforce rules and procedures. This suggests that teachers should continuously examine discipline management procedures to ensure consistent enforcement and follow-through is carried out in order to promote student achievement.

Formality and student achievement. There was insufficient evidence to suggest a statistical significant relationship between the classroom climate factor formality and

student achievement, consistent with the findings of Decristan et al. (2015). Based on the quantitative findings from the current study, this suggests that student achievement is not influenced by the enforcement of classroom processes/procedures. However, qualitative findings concluded from this investigation suggests that student's assessment of the classroom environment includes perceptions related to rules and the teacher's ability to follow-through/enforce procedures that have been established. This is congruent with the findings from the research which suggested student learning to be enhanced when specific teaching practices are combined with high-quality classroom processes.

Embedded formative assessment activities was suggested to be vital for effectiveness in enhancing student learning. An explanation for the difference in results could be Decristan et al. (2015) included formative assessment strategies to provide teachers with information on adapting classroom instruction based on student responses, whereas the current study utilized student responses related to formality and student achievement only to examine the relationship between the two factors. Students responses were not shared with teachers to make adjustments in teaching practices. Furthermore, Diperna et al. (2016) determined that behavioral interventions and supplemental instructional activities yield positive outcomes in the areas of academic motivation and student engagement based on the implementation of a behavioral intervention program. The current study's findings did include rules having impact on student learning, however, participant responses were not based on exposure to a specific behavioral intervention program as included in Diperna et al. (2016). This could potentially explain the difference in results between the current study and research.

Research Question 4

As with the previous research questions, there was no statistical significance found between the relationship of student satisfaction and student achievement. Although, based on findings concluded from the current study's qualitative investigation there was evidence that shows student's level of satisfaction does influence their perceptions of the classroom environment and achievement. Negative perceptions were found to be positively influenced based on experiences in the classroom. Overall, most students responded strongly disagreed/disagreed about looking forward to coming to class each day. Most students also *Agreed/Strongly Agreed* to having a sense of satisfaction after the class. This evidence shows students perceptions can be influenced based on experiences in the classroom.

Satisfaction and student achievement. There was not a statistical significant relationship between student's perception of the learning environment and the promoting satisfaction and achievement, which is consistent with the research of Lemley, Schumacher, and Vesey (2014). Based on the quantitative findings from the current study, this suggests that student's satisfaction of the overall classroom climate does not influence student achievement. However, qualitative finding developed from this study did reveal student satisfaction having positive relationship to achievement. This notion is congruent with findings concluded from the previous research. Satisfaction factors developed from both the current study and research includes autonomy and connectedness.

One explanation for the difference in results could be Lemley et al. (2014) included student participations in upper high school grade levels, while the current study

focused on responses collected from middle school students on. As stated previously, high school students may have different expectations and experiences which may have influenced their responses. In addition, Buehler et al. (2015) discovered that students more likely to avoid getting in trouble when they perceived the environment to be safe. The current study found factors related to the physical classroom environment and activities students engaged in were more likely to peek student's satisfaction. In the research, Buehler et al. (2015) collected data during the first semester of the school year. This factor could explain the difference in results between the current study and research as findings concluded from the current study suggests students perceived their classroom environment to be more favorable based on activities students engaged in at the beginning of the school year.

Research Question 5

Research question five, was answer using an inductive thematic coding process based on three semi-structured interviews with students from the participating middle school campus. Responses were organized into four major themes: cohesiveness, material environment, formality, and satisfaction. Student responses to the interview questions pertaining to cohesiveness were consistent across all three participating grade levels with emphasis placed on subthemes including relationship with peers, friendliness, and opportunities to get to know each other. Overall, students shared their experiences regarding interactions amongst students in the classroom and activities that influence the development of relationships with their peers. Students also shared feedback regarding how their teacher's attitude relates to the overall climate of the classroom. Students

expressed positive perceptions about having opportunities to collaborate and engage in to work that allows them to work closely with their peers.

Emerging themes related to material environment factors addressed in the interviews include available resources and the organization of materials in the classroom. Overall, students expressed their liking to the many different resources available for student use. Teachers have different processes in place for students to request to use the materials, however, based on their comments, students appear to know the right and wrong way for using/requesting available materials in the classroom.

Formality factors evident in the student interview questions included a subtheme related to how rules are established in the classroom. Students across each participating grade level shared experiences regarding the process for establishing rules in their classrooms. Overall, students expressed positive perceptions when given the opportunity to provide student-input in establishing classroom rules. Students preferred this method and were more likely to have buy-in based on their participation in the development process.

In regards to satisfaction factors, emerging themes developed in the interviews included student's perceptions of the classroom environment and activities that help them learn. Students across each participation grade level shared experience relations to activities and factors of the classroom environment. Overall, students expressed positive perceptions regarding classroom visuals, collaboration with other classmates, and lessons including a particular technology application as having influence on student learning.

Implications

As a result of this study's examination of student's perceptions regarding classroom climate and student achievement, implications for administrators and teachers emerged. For administrators, this research revealed the critical need for leaders to establish a positive school climate for both teachers and students (Cohen et al., 2009), based on student's assessment of the classroom climate. For teachers, the research provided deeper insight about the perceptions middle school students in regards to what helps them learn better (Kearney et al., 2014). The research also highlighted the importance of ongoing formative assessment practices to help make adjustments as necessary.

Implications for Administrators

School administrators play a critical role in influencing the school climate, which influences the classroom climate through vision, mission, and belief systems (Cohen et al., 2009). Teacher actions are shaped by the shared beliefs and culture of a school community. School administrators are primarily responsible for shaping and leading the vision for a school community. Based on findings concluded from the current study, school administrators should ensure teacher actions and classroom experiences are in alignment with research-based factors suggested to positively influence student achievement. The administrator's role involves engaging teachers and staff in meaningful activities geared towards establishing a school culture focused on building relationships with students and designing meaningful lessons. In an effort to positively influence student's assessment of the classroom environment, administrators and teachers should

strive daily to create learning opportunities that meaningfully engage students during their time in the classroom.

This study revealed the need for schools to consider establishing procedures that positively influence the school and classroom climate, as well as increase student achievement. For example, students reported friendliness and satisfaction as factors contributing to their academic achievement. This may imply that school-wide procedures should be implemented to address positive interactions with students, as well as the enforcement of rules and school policy. Research suggests that smaller classroom sizes influences student perception of the learning environment. Policy makers and administrators should consider this factor when looking for way to positively influence student achievement. This reality may create a clear path for school administrators to invest school funds in terms of personnel, training, program evaluations, and school resources in general.

Implications for Teachers

In regards to teachers, this study revealed the need for teacher training specifically geared towards student engagement. The current study concluded student's perception of the classroom environment and motivation to learn was enhanced when specific factors such as collaboration, whole-class activities involving technology, and opportunities to get to know others were consistently implemented in the classroom. Ongoing trainings related to establishing a positive classroom climate that are also effective practices in increasing student engagement may be beneficial to teachers (Asiyai, 2014). A concern revealed by students is having ongoing opportunities to interact and get to know other students. By providing training, teachers can develop strategies to better meet the

academic and social needs of students. Such training should be provided during certification and pre-training for aspiring teachers, as well as ongoing professional development for new and veteran teachers. With teachers having knowledge in establishing a positive classroom climate, less opportunities for misbehavior may occur, which allows for more time to focus on student learning (Diperna et al., 2016). This reality may be critical when considering the impact that the standards' movement and the standardized testing may have had on the student-teacher dynamic in the classroom (Carman, 2013).

Recommendations for Future Research

Findings from this study involved obtaining feedback (quantitative and qualitative) from students. Although the findings provided data and information about students' perceptions, recommendations for future research will help expand the knowledge on this topic. The following recommendations are based on data and findings from this study.

This study took place in one participating middle school campus from a suburban school district located in the southeast region of Texas, therefore results are only applicable to similar campuses and districts in terms of size and demographics. Data collection from a larger populations and sample may produce different results. A recommendation for future research would be to include more middle schools, or conduct the study at the elementary and high school level to determine how the needs of students differ based on educational level. Future research could also focus its efforts on examining the ratio of teacher-to-student class sizes to determine if there is an influence on student's perception of the classroom environment. Finally, data should be collected

on teacher education programs and professional development offerings provided to teachers related to classroom climate. This type of research could provide more insight in regards to examining student's perceptions of teacher performance.

Conclusion

The relationship between classroom climate and student achievement has been well researched. Researchers suggest that climate makes a difference in learning environments and student achievement (Gentilucci & Gentilucci, 2016; Johnson & Stevens, 2006). Given that students spend the majority of their day in the classroom and higher standards for student achievement has been placed on schools and districts, it is imperative to increase the knowledge and understanding of the relationship between classroom climate and student achievement. The classroom is the central organizing unit of most schools (Schaper, 2008). Considering the fact that experiences in the classroom are one of the most influential factors in student achievement (Hoskins, 2016), this study could provide significant contribution not only to teachers and school leaders but to the overall discussion on the relationship between classroom climate and student achievement.

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APPENDIX A
LEARNING ENVIRONMENT INVENTORY (LEI)

APPENDIX A

LEARNING ENVIRONMENT INVENTORY (LEI)

DIRECTIONS

The purpose of questions in the survey is to find out what your class is like. This is not “Test”. You are asked to give your honest, opinions about the class which you are attending now.

The survey consists of three parts. Please read the rating system carefully for each section. Record your answer to each of the questions by click/circle your response.

A. Disorganization, Material Environment, Formality, Satisfaction Dimensions

Indicate your response by circling/clicking

SD if you **strongly disagree** with the statement

D if you **disagree** with the statement

A if you **agree** with the statement

SA if you **strongly agree** with the statement

Disorganization:

- | | | | | |
|---|----|---|---|----|
| 1. There are long periods during which the class does nothing. | SD | D | A | SA |
| 2. The work of the class is frequently interrupted when some students have nothing to do. | SD | D | A | SA |
| 3. The class is well organized. | SD | D | A | SA |
| 4. The class is disorganized. | SD | D | A | SA |
| 5. The class is well organized and efficient. | SD | D | A | SA |
| 6. Many class members are confused during class. | SD | D | A | SA |
| 7. There is great deal of confusing during class meetings. | SD | D | A | SA |

Material Environment:

- | | | | | |
|--|----|---|---|----|
| 8. The books and equipment students need or want are easily available in the classroom. | SD | D | A | SA |
| 9. A good collection of books and resources is available in the classroom for students to use. | SD | D | A | SA |
| 10. The students would be proud to show the classroom to a visitor. | SD | D | A | SA |
| 11. The room is bright and comfortable. | SD | D | A | SA |
| 12. There are displays around the room. | SD | D | A | SA |
| 13. The classroom is too crowded. | SD | D | A | SA |
| 14. There is enough room for both individual and group work. | SD | D | A | SA |

Formality:

15. Students who break the rules are penalized.	SD	D	A	SA
16. The class has rules to guide its activities.	SD	D	A	SA
17. Students are asked to follow strict rules.	SD	D	A	SA
18. The class is rather informal and few rules are imposed.	SD	D	A	SA
19. There is a recognized right and wrong way of going about class activities.	SD	D	A	SA
20. All classroom procedures are well established.	SD	D	A	SA
21. There is a set of rules for the students to follow.	SD	D	A	SA

Satisfaction:

22. The students enjoy their class work.	SD	D	A	SA
23. Personal dissatisfaction is too small to be a problem.	SD	D	A	SA
24. Many students are dissatisfied with much that the class does.	SD	D	A	SA
25. There is a considerable dissatisfaction with the work of the class.	SD	D	A	SA
26. Students look forward to coming to class each day.	SD	D	A	SA
27. After the class, the students have a sense of satisfaction.	SD	D	A	SA
28. Students are well satisfied with the work of the class.	SD	D	A	SA

B. Demographic Data

29. What is your gender?

- a) Male
- b) Female

30. What is your race?

- a) African American
- b) Asian American
- c) Hispanic
- d) Native American
- e) White
- f) Other (please write in) _____

31. What is your age?

- a) 10
- b) 11
- c) 12
- d) 13+

32. Were you a student in this district last year (circle one)? If no, write the district you were enrolled in last year?

- a) Yes
- b) No

33. What junior high do you currently attend?

- a) Alvin Junior High
- b) Fairview Junior High
- c) Harby Junior High
- d) Nolan Ryan Junior High
- e) Rodeo Palms Junior High

APPENDIX B
STUDENT FOCUS GROUP PROTOCOL

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STUDENT FOCUS GROUP PROTOCOL

Student Perceptions on Dimensions of the Classroom Climate

Introduction: Introduce yourself and tell the group how many years you have gone to school in this district. **(Students should be told to avoid using their teacher's name or student's name during the interview to protect their identity.)**

Describe your classroom (characteristics)

How do you know you are doing well in your teacher's classroom?

Do you feel comfortable in your classroom? Why or why not?

Does the environment in your class seem to be caring and nurturing for students?

Do you feel as though you are cared about in class? How?

Is it important for you to have good relationships with members in class?

Thinking about your classroom: What do you like most? What do you like least?

What makes you want to be in your classroom learning?

Do you think your classroom is fun (engaging place)? Why or why not?

What happens in your classroom that helps you learn?

If you could change anything about your classroom what would that one thing be?

APPENDIX C
PARENTAL CONSENT FORM

APPENDIX C

PARENTAL CONSENT FORM

Title of Study: Examining the Relationship between Classroom Climate and Student Achievement of Middle School Students

Student Researcher:
Christopher Barksdale, M.S.
SOE University of Houston-Clear Lake
Lake
832-425-7555
BarksdakeC3755@uhcl.edu

Faculty Sponsor:
Michelle Peters, Ed.D.
SOE University of Houston-Clear
Lake
281-283-7600
PetersM@uhcl.edu

Your child is invited to participate in a research project. Your child's participation is entirely voluntary and you may choose that your child not participate. If you choose for your child to participate, or if you withdraw your consent and stop your child's participation in the study, your decision will involve no penalty or loss of benefits normally available for you or your child. If you have any questions about the study, please contact the Student Research or Faculty Sponsor listed above.

The purpose of this research is to study will be to examine the relationship between dimensions of classroom climate and student achievement in mathematics and reading. A description of the procedures is as follows: Student participants will complete a questionnaire form and participate in a focus group to obtain data and feedback on stakeholder perceptions. It will take about 15-20 minutes for your child to complete the *Student Perception on the Classroom Environment Questionnaire*.

There are no direct benefits expected as a result of your child's participation in the project, however, research like this does help to develop better understanding of factors that promote student achievement in middle school students.

There are no risks expected as a result of your child's participation.

Any information obtained from this study will remain confidential. Your child's responses will not be linked to his or her name or your name in any written or verbal report of this research project. The data collected will be used for educational and publication purposes and presented in summary form. For federal audit purposes, the documentation for this research project will be maintained and safeguarded by the Student Investigator for a minimum of three years after completion of the study. After that time, documentation may be destroyed.

SIGNATURES:

You are making a decision about allowing your child to participate in this study. Your signature below indicates that you have read the information provided above and have decided to allow your child to participate in the study. You are free to withdraw consent for your child to participate in this study at any time by contacting the Student Researcher, Christopher Barksdale at phone number 832-425-7555 or by email at BarksdaleC3755@uhcl.edu. The Faculty Sponsor Michelle Peters, Ed.D., may be contacted at phone number 281-283-7600 or by email at PetersM@uhcl.edu. You will be given a copy of this consent form for your records.

 Printed Name of Child

 Printed Name and Signature of Parent

 Date

 Signature of Investigator

 Date

THE UNIVERSITY OF HOUSTON-CLEAR LAKE (UHCL) COMMITTEE FOR PROTECTION OF HUMAN SUBJECTS HAS REVIEWED AND APPROVED THIS PROJECT. ANY QUESTIONS REGARDING YOUR RIGHTS AS A RESEARCH SUBJECT MAY BE ADDRESSED TO THE UHCL COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (281-283-3015). ALL RESEARCH PROJECTS THAT ARE CARRIED OUT BY INVESTIGATORS AT UHCL ARE GOVERNED BY REQUIREMENTS OF THE UNIVERSITY AND THE FEDERAL GOVERNMENT. (FEDERALWIDE ASSURANCE # FWA00004068)

APPENDIX D
STUDENT ASSENT FORM

APPENDIX D

STUDENT ASSENT FORM

Student Project Director: Christopher Barksdale, M.S.
832-425-7555, Barksdalec3755@uhcl.edu

Faculty Sponsor: Michelle Peters-Ed.D., 281-283-7600, PetersM@uhcl.edu
School of Education-University of Houston-Clear Lake

You are being asked to help in a research project titled Examining the Relationship between Classroom Climate and Student Achievement of Middle School Students and the project is part of my doctoral dissertation at the University of Houston-Clear Lake. The purpose of this study is to examine the relationship between dimensions of classroom climate (Diversity, Material Environment, Democracy, and Satisfaction) and student achievement in mathematics and reading. You will be asked to complete a questionnaire and participate in a focus group. Your help will be needed for one to two hours over a two-day period.

You do not have to help if you do not want, and you may stop at any time even after you have started, and it will be okay. You can just let the researcher know if you want to stop or if you have questions. If you do want to do the project, it will help us a lot.

THE UNIVERSITY OF HOUSTON-CLEAR LAKE (UHCL) COMMITTEE FOR PROTECTION OF HUMAN SUBJECTS HAS REVIEWED AND APPROVED THIS PROJECT. ANY QUESTIONS REGARDING YOUR RIGHTS AS A RESEARCH SUBJECT MAY BE ADDRESSED TO THE UHCL COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (281-283-3015). ALL RESEARCH PROJECTS THAT ARE CARRIED OUT BY INVESTIGATORS AT UHCL ARE GOVERNED BY REQUIREMENTS OF THE UNIVERSITY AND THE FEDERAL GOVERNMENT. (FEDERALWIDE ASSURANCE # FWA00004068)

Please keep the upper part of this page for your information. Thank you for your assistance.

_____ Yes, I agree to (allow my child to) participate in the study on the Relationship between Classroom Climate and Student Achievement

_____ No, I do not wish to (allow my child to) participate in the study on the Relationship between Classroom Climate and Student Achievement

Printed name and Signature of parent or guardian Date

Printed name and Signature of child assenting Date

Printed name and Signature of **Witness** of child's assent Date