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by

Windy M. Clark

May, 2012

STUDENT PERCEPTIONS OF SCHOOL CLIMATE: DISAGGREGATED  
BY GENDER, GRADE LEVEL, AND SUBJECT AREA

A Doctoral Thesis Presented to the  
Faculty of the College of Education  
University of Houston

In Partial Fulfillment  
of the Requirements for the Degree

Doctor of Education  
in Professional Leadership

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## ABSTRACT

Students spend an average of 10,000 hours in classrooms by the time they reach middle school; they represent a valuable source of school climate data. Students' perceptions of the school and classroom climate give an insider's reflection of the actual climate that an outside observer would not capture. Rather than analyzing school and classroom climate as an aggregated totality, the purpose of this study was to disaggregate the data to examine the effects of gender, grade level, and subject area on climate perceptions at an intermediate school. The study addressed the following questions: (a) Do students' perceptions of school and classroom climate significantly vary with gender? (b) Do students' perceptions of school and classroom climate significantly vary with grade level? (c) Do students' perceptions of school and classroom climate significantly vary with subject area (math, reading, and science)? Climate data from the student survey were disaggregated to evaluate the effects of multiple independent variables on multiple dependent variables using a multivariate analysis of variance (MANOVA), Tests of Between-Subjects Effects, and Tukey's HSD. The data revealed that the three independent variables (gender, grade level, and subject area) have significant effects on the five dependent variables (climate themes: Prevention, Caring, Cooperation, Organization, and Community). The Tests of Between-Subjects Effects indicated statistically significant effects for gender within the Prevention Theme; grade level within the Caring Theme; and subject area within the Prevention, Caring, and Organization Themes. This study embarks on promising research that explores school and classroom

climate disaggregated by gender, grade level (fifth-sixth grade), and subject area (math, reading, and science).



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## **Chapter I**

### **Introduction**

#### **Justification for Inquiry**

The emphasis on student achievement has increased dramatically in the last 10 years as a result of the federal No Child Left Behind Act (NCLB Act) of 2001 (Public Law No. 107-110). The NCLB law holds states accountable for improving academic achievement for all students regardless of ethnicity and background. One of the major goals of NCLB is to improve the performance of America's schools while ensuring that children are not trapped in low-performing schools. Under NCLB, schools are required to make "Adequate Yearly Progress" (AYP; Public Law No. 107-110). In order to meet AYP, individual states must develop and implement an accountability program that demonstrates student proficiency levels in reading and mathematics. The NCLB Act requires that states use standardized assessments to measure AYP, which allows State Education Agencies to develop goals in order for 100 percent of the students to become proficient on the state-mandated assessments by the 2013-2014 school year. Schools that do not demonstrate Adequate Yearly Progress two years in a row are identified as "schools in need of improvement." These underperforming schools are subject to immediate interventions and technical assistance by the State Education Agency. Schools that fail to meet AYP for five consecutive years are restructured by replacing school staff; closing and reopening as a public charter school; or taken over by the state (Public Law No. 107-110). The current standards-based reform and strict accountability has influenced the practice in today's schools. Administrators and teachers have focused

their efforts on academic achievement and results which may reduce or eliminate content areas that are not tested in the states' assessments, such as music and art. This narrow focus may limit their efforts in promoting, improving, and maintaining a positive school and classroom climate resulting in teacher attrition and student drop-outs.

Along with the increase of high-stakes testing, the student dropout rate continues to grow. According to the National Center for Education Statistics (2010), approximately 613,000 public school students dropped out of grades 9-12 during the 2007-2008 school year; an increase of 142,000 students from the 2000-2001 school year. In addition, when students give up on school and drop out, teachers continue to follow them out the door. The National Commission on Teaching and America's Future (NCTAF) reported that teacher attrition had increased by 50 percent over the past 15 years (NCTAF, 2007). The findings of the 18-month study indicated that the nation's teacher dropout problem was becoming a serious problem with the national teacher turnover rate at 16.8 percent (NCTAF, 2007). The study revealed that in some schools and districts, the teacher dropout rate was higher than the student dropout rate (NCTAF, 2007). Tom Carroll, the president of the NCTAF states, "We don't have a teacher shortage, but we have a horrendous turnover and attrition problem. We are constantly trying to replace teachers who are leaving" (Vail, 2005, p. 4).

While assessments of academic achievement are an important measure of school success, they should not be the only measure used for student and teacher accountability. One factor that has been identified to have a positive impact on academic achievement (Brookover, Schweitzer, Schneider, Beady, Flood, & Wisenbaker 1978; MacNeil, Prater, & Busch, 2009) and school completion (Rumberger, 1987; Sommer, 1985) is the

perceived school climate. Researchers have examined the positive impact that school policies and personnel have on students' academic performance (Kagan, 1990; Reyes, 1988) and the decision to stay in school or drop out (Persuad & Madak, 1992).

Researchers have studied the role of the school and its contribution to dropout rates with a range of variables: students' desire to attend school, interaction between school personnel and students, and the perceived school climate (Worrell, 2000). School administrators have the ability to create and shape a positive school climate built around their vision and beliefs. A principal can create a positive school climate by visiting classrooms on a regular basis, giving attention to student behaviors and achievements, and making sure the school building promotes a student-friendly learning environment. Kelley, Thornton, and Daugherty (2005) stated, "Principals have the power, authority, and position to impact the climate of the school, but many lack the feedback to improve" (p. 1). Over the last two decades research has confirmed the importance of a positive school and classroom climate for students, teachers, and parents (Brookover et al., 1978; Freiberg, 1999; Johnson & Stevens, 2006), and it has been found to positively affect student achievement (MacNeil et al., 2009; Baynes, 2009; Greenberg, 2004).

There is a significant gap between the research on school and classroom climate and NCLB, the driving force of today's education policy (Cohen, 2006). The NCLB act has failed to mandate state assessments aimed to measure school climate that is disaggregated across gender, grade level, and subject area. However, reading and mathematics are rigorously tested each year with higher proficiency levels across gender and grade level. This single priority for academic testing amongst America's schools will continue to have devastating effects on students. Policymakers and test advocates often



assume that scores on tests are direct and unambiguous measures of student achievement, and an increase of test scores is an indication that students are learning more (Koretz, 2002). However, the majority of achievement tests provide a limited measure of student proficiency. Koretz (2002) described two fallacies of test scores as a measurement for student achievement: (a) tests include measurement error and (b) tests are vulnerable to corruption or inflation. An education policy that is focused solely on academic achievement fails to examine other factors in a school that contribute to or hinder a student's ability to learn. Measuring school climate and culture in schools provides a broader picture of the learning environment, which empowers administrators and teachers to examine the health of the school.

### **Definition of School Climate and Culture**

Over the last two decades, there has been a growing emphasis on the quality of the school and classroom environment. The study of school climate evolved out of organizational research and studies on school effectiveness (Hoy, Tarter, & Kottkamp, 1991). A common conclusion of such studies was that the school's climate had a direct effect on student achievement. One of the factors of effective schools was a safe and orderly environment (Bolender, 1997). Although, there are several definitions for school climate, researchers and scholars suggest that school climate reflects subjective experiences of those who work and learn in school (Cohen, 2006).

The National School Climate Council (2007) defined the school climate as the “quality and character of the school life and is based on patterns of school life experiences and reflects norms, goals, values, interpersonal relationships, teaching, learning and leadership practices, and organizational structures” (p. 5). The school

climate is distinctive to each individual environment and could positively or negatively influence the health of the learning environment. Freiberg (1999) stated, “School climate is much like the air we breathe – it tends to go unnoticed until something is seriously wrong” (p. 1).

Jerald (2006) stated:

Walk into any truly excellent school and you can feel it almost immediately — a calm, orderly atmosphere that hums with an exciting, vibrant sense of purposefulness just under the surface. Students carry themselves with poise and confidence. Teachers talk about their work with intensity and professionalism. And despite the sense of serious business at hand, both teachers and students seem happy and confident rather than stressed. Everyone seems to know who they are and why they are there, and children and staff treat each other with the respect due to full partners in an important enterprise. (p. 1)

The term climate and culture are often used to describe the environment within a school; however, the culture of a school carries a different connotation. Hoy *et al.* (1991) distinguished the difference between climate and culture, with the climate represented by behavior, while the culture is represented by the values and norms of the school. Hoy *et al.* (1991) stated that the culture “is a system of shared orientations that hold the unit together and give it a distinctive identity” (p. 4). School culture can be visible throughout the school with artifacts, symbols, decoration, and maintenance. In order to differentiate the concepts of climate and culture, Owens (as cited in Baynes, 2009, p. 3) indicated that

the “climate is the study of the perception of participants of factors in the organizational environment that are likely to reflect the culture of the organization.”

Educational research confirms the importance of school climate and culture for students, teachers, and parents. A positive school climate is the school’s personality; it either promotes or hinders the students’ ability to learn. School climate has been found to be positively correlated with student achievement (MacNeil et al., 2009; Baynes, 2009; Greenberg, 2004), student motivation (Anderson, Hamilton, & Hattie, 2004), and job satisfaction amongst teachers (Ma & MacMillan, 1999).

### **Evaluating School Climate**

In the past 30 years, with the first use of classroom environment assessments in an evaluation of Harvard Project Physics (as cited in Fraser, 1998), the field of learning environments has experienced significant growth. A growing plethora of literature reviews studied a variety of economical, valid, and widely-applicable questionnaires that have been developed and used for assessing perceptions of classroom environment (Fraser, 1998). Freiberg (1998) and Freiberg and Stein (1999) identified other approaches to study the climate in a school and classroom including classroom observations, case studies, interviews, teacher and student journal narratives, young children’s drawings, cost of replacing broken windows, ambient noise cafeteria check list, and academic work on the classroom and hallway walls. An advantage of using student feedback to assess the classroom climate is the ability to capture a true reflection of the climate from the students’ eyes. Furthermore, it prevents an observer from missing or not capturing the real climate. Even if teachers are inconsistent in their day-to-day behavior, students can capture the image of the long-standing attributes of the classroom

climate (Fraser, 1998). Researchers have used classroom climate instruments in the aim of improving the overall climate in the classroom. Many studies have used a five-step procedure as a plan of action for improving school and classroom climate: (a) assessment of students' perceptions of the learning environment, (b) providing feedback to the teacher from the students' perceptions, (c) reflection and discussion, (d) an intervention period for the teacher to gain the necessary knowledge and skills, and (e) re-administration of the feedback instrument to determine if their perceptions have changed (Aldridge, Fraser, & Null, 2009).

Most school and classroom climate instruments are questionnaires or surveys completed by students, teachers, and parents. Some of the more effective instruments used to gather data on the school and classroom climate are the Learning Environment Inventory (LEI), Classroom Environment Scale (CES), and the Individualized Classroom Environment Questionnaire (ICEQ) (Fraser, 1982). These instruments evaluate several factors of the school climate—competition, formality, involvement, and rule clarity (Fraser, 1982).

Climate instruments have evolved over the past 30 years by incorporating different perceptions of the actual and preferred climate of students and teachers. These climate instruments evaluate four different perceptions on the climate: preferred climate by student, actual climate by student, preferred climate by teacher, and actual climate by teacher (Fraser, 1982). Climate instruments are a valuable tool to gather data regarding the climate, which could lead to identification of strategies and interventions that schools could use to improve academic performance in students. The implementation of surveys would provide administrators and teachers with quantitative data regarding the students'

perceptions of the school climate; focus groups and discussions aimed at improving the overall health of the school would alleviate the unnecessary stress amongst transitioning students.

### **School Organizations**

School organizations for students in kindergarten through high school are arranged in a variety of grade spans or grade configurations (Combs, Moore, Edmonson, & Clark, 2008). Grade span refers to the number of grade levels that are in a school building and grade configurations represent the grade levels (K-5, K-6, 5-6, 9-12, 10-12, etc.) taught at a particular school. Historically, students would attend a single school for kindergarten through 12<sup>th</sup> grade. However, as populations increased in school districts and studies suggested alternative grade arrangements, students were divided into two schools: K-8 and 9-12 (Saleh, 2006).

Junior high schools were developed in 1909 after studies indicated that children in the middle grades needed specialized attention; these schools served as a bridge between elementary and high school (Paglin & Fager, 1997). “The purpose of the junior high school was to prepare students for high school, and departmentalized classes were successful in meeting this objective” (Saleh, 2006, p. 2). However, later research found that the junior high school configuration created an environment that was too similar to high school when students were not developmentally or emotionally ready for such a configuration (Saleh, 2006). The National Middle School Association (NMSA) was established in 1973 to advocate the middle school concept, a school for mid-level grades: grades 6-8 (NMSA, 2011). The NMSA served as the only national education association for the educational and developmental needs of young adolescents in the middle level

grades (NMSA, 2011). The middle school concept often involves a group of teachers (2-5) from different subject areas that work together as a team with the same group of students. Middle schools (grades 6-8) strive to establish a community within the students to foster a sense of belonging to ease social, emotional, and developmental difficulties during the adolescence years (Saleh, 2006).

Students in fifth grade are educated in a variety of grade configurations; fifth-grade students could be the oldest students in an elementary setting or the youngest students in an intermediate or middle school setting (Combs, Clark, Moore, Onwuegbuzie, Edmonson, & Slate, 2011). The intermediate school setting is typically grades 5 and 6, a transitional school that prepares students for middle school (grades 7-8). An increase of school districts have moved upper elementary students into an intermediate school setting to provide an appropriate setting and environment for adolescent students. The intermediate setting allows teachers to become specialized in their subject area as the curriculum becomes more advanced and rigorous.

### **Statement of the Problem**

#### **The need to engage students in their own learning.**

When students are connected and engaged at school, they are more likely to learn. Research confirms that students who feel both valued by teachers and a part of their school perform better academically (ASCD, 2009). According to the social learning theory, it is the meaningful environment that is the best predictor of a person's actions (Rotter, 1954). A meaningful environment, which is created and sustained by teachers, provides an optimal learning opportunity that increases student engagement and

motivation. The classroom climate can either promote or hinder a student's desire to be an active participant in their own learning. When students sit in a classroom without interaction or stimulation, they are no longer engaged or motivated to learn. This lack of engagement or boredom is the leading reason that students leave school (Bridgeland, DiIulio, & Burke Morison, 2006). Only 55 percent of high school students feel they are an important part of their school community, and two-thirds of students report that they are bored in class every day (Yazzie-Mintz, 2007). Slavin and Lake (2008) conducted a meta-analysis on the effects of three different approaches to math reforms targeted at increasing mathematical achievement amongst elementary students: curricular changes, computer-assisted instruction programs, and instructional process programs. The results of the study indicated that of the three different reform strategies, the programs that involved instructional process had a significant impact on student mathematics achievement at the elementary school level. Instructional process approaches included cooperative learning, classroom management and student motivation programs, and tutoring. Slavin and Lake (2008) found that cooperative learning has increased student achievement when cooperative groups have goals and are held accountable for their learning.

Student feedback should be the driving force of school improvements and reform. Giving students the opportunity to voice their unique perceptions of the school and classroom climate validates their learning experiences and unites a partnership between the students, teachers, and administrators. At the intermediate level, students have been in school since kindergarten and have an average of 7,000 hours in the classroom. This experience in the classroom and school setting allows students' feedback to be the most

important and valued sources for data amongst the stakeholders. Freiberg (1999) stated that “feedback would begin to let us know the extent to which this learning environment and its curricular content is being received and integrated into the life of the student” (p. 211).

A problem that exists in fifth and sixth grade intermediate school classrooms is the lack of student feedback to promote positive changes in the classroom climate. The increased focus on academic achievement and accountability may neglect the importance of students’ feedback to promote a positive classroom environment where students are engaged in learning. Without a policy to measure climate and student engagement, teachers focus their teaching on a narrow curriculum targeted at the end of the year assessment, without considering the important relationship between a positive school and classroom climate and student engagement.

### **The need to educate the whole child.**

Teachers can use climate data to promote a positive classroom climate to enhance the social, emotional, and intellectual skills for students to be successful in school. Strong foundations in reading and mathematics are important; however, only learning core subjects is insufficient for lifelong success (ASCD, 2009). The 21<sup>st</sup> century learners must be able to think critically and creatively to solve complex problems with strong communication skills. Schools that are primarily concerned with preparing their students to pass the core subjects may be missing other alterable variables for improving learning and the importance of social and emotional development. A student who has at least one adult in school who understands his or her social and emotional development is more likely to stay in school (ASCD, 2009). When policies do not reflect educating ‘the whole



child,' it is the responsibility of educators to provide a healthy, engaging, and supportive environment for students. Learning environments that focus on caring student-teacher relationships, students' social and emotional needs, and high expectations result in students who perform better academically and are more likely to attend school (Collaborative for Academic Social and Emotional Learning, 2008). When schools use data to create a positive learning environment, they help students develop the social and emotional skills that predict success in school and life.

### **The need to utilize student feedback.**

There is research-based evidence that shows a correlation between positive school and classroom climate and student achievement (Baynes, 2009; Johnson & Stevens, 2006; Anderson, 1982; Brookover et al., 1978). However, administrators and teachers seldom use student feedback as a source to examine the effects of gender, grade, and subject area on school and classroom climate. Students spend eight hours a day for 180 days a year, for seven years (grades K-6), accumulating over 10,000 hours in classrooms by the time they reach middle school. They represent a valuable source of data about the climate in the classroom. One way of acquiring student feedback is from a survey that measures the learning environment at the school and classroom from the students' perspective. Information regarding the school and classroom climate could lead to an action plan in which schools could identify poor climate perceptions among gender, grade, and subject area in order to implement strategies and interventions aimed to increase a more positive climate.

However, with the potential significance of student feedback regarding the school and classroom climate, current educational policies continue to ignore this crucial piece

of the puzzle when evaluating student and teacher performance. Furthermore, research has studied the relationship of school climate and academic achievement in effective and ineffective schools, yet there has been minimal research at the classroom level. Freiberg (1999) stated, “The school effects studies neglected the classroom level and the classroom climate was not considered a research topic at all” (p. 36).

### **The need to disaggregate climate data.**

Climate research has primarily focused on the overall climate in a school without taking a closer look at possible discrepancies between three important factors: gender of student, grade level of student, and subject area. Disaggregating climate data by gender, grade level, and subject area may shed new light to the factors that may influence perceptions of school and classroom climate. Rather than analyzing school and classroom climate as an aggregated totality, data could be disaggregated to determine the microcosm of issues that students see on a daily basis. Perceptions of climate could lead to targeted interventions aimed at directly impacting and improving the climate for specific subjects and grade levels at the classroom level. It could determine if differences occur between females and males in the same classroom. The disaggregated data will provide administrators and teachers with an accurate picture of the school and classroom climate which would drive an action plan to improve the low areas of perception among differentiated groups of students: gender, grade level, and subject area. Data that reflects a high perception for school and classroom climate could provide administrators and teachers with insight on the factors that influence the students’ positive perceptions of climate. Academic achievement data is routinely disaggregated by gender, grade level, and subject area to provide administrators and teachers with valuable information that

drives interventions. School and classroom climate data should be disaggregated and analyzed at the same level of sophistication as test scores to encourage collaboration amongst teachers and administrators to develop an action plan which targets low perceptions of school and classroom climate.

### **The problem.**

There is a problematic lack of student feedback in the transitional grades to examine how school and classroom climate perceptions vary with gender, grade level, and subject area. School and classroom climate instruments are rarely used to identify variations of climate perceptions among different groups of students, which would provide valuable data that could drive interventions aimed at improving poor climate perceptions.

Fifth and sixth grade students are at a developmentally appropriate age in which it is beneficial to elicit feedback from them regarding the school and classroom climate. Fifth and sixth grade students are able to distinguish the factors in the school and classroom that promote or hinder their ability to learn in such an environment. Furthermore, fifth and sixth grade students are at an age in which academic achievement can determine their likelihood of success in the future. When academic achievement data is the only measurement used to understand learning and school improvement efforts, the importance of student engagement and educating the whole child fade away in the background. The classroom setting becomes a place where students are no longer encouraged to work creatively or think independently. The influence of state-mandated assessments has become the cornerstone of a school's curriculum, in which teachers abandon effective instructional strategies for worksheets and lectures. The lack of an

engaging and motivating school and classroom environment results in students dropping out of school each year.

Research studies across third and 12th grades from urban to suburban schools confirm the importance of a positive school and classroom climate for students, teachers, and parents (Brookover et al., 1978; Johnson & Stevens, 2006). A positive climate has been found to positively affect student achievement (MacNeil et al., 2009; Baynes, 2009; Greenberg, 2004), increase student engagement and motivation (Anderson et al., 2004), and prevent students from dropping out (Rumberger, 1987). Despite the research that has supported positive benefits of establishing and maintaining a positive school and classroom climate, educational policy has continued to focus on academic achievement as the primary measure of student success. The goals of education should go beyond passing a high-stakes assessment by utilizing student feedback data in order to optimize learning.

### **Need for the Study**

#### **Lack of research.**

Two key factors form the need for this study. First, a school's environment is a key element in influencing student success (Baynes, 2009; Brookover et al., 1978). There is a significant need for research to be conducted that is aimed to identify the variations of perceptions among the students. Studies on school and classroom climate have neglected the importance of examining the effects of gender, grade level, and subject area on school and classroom climate.

Second, student feedback instruments have been proven to be a reliable and valid measure of school and classroom climate (Creemers and Reezigt, 1999); however, there are few studies that have measured the usefulness of these instruments at an intermediate school level (fifth-sixth grade). The intermediate level is a crucial time when students' transition from elementary school for the first time and are faced with new challenges as they approach adolescence.

### **Purpose of the Study**

The purpose of this study is to examine the effects of gender, grade level, and subject area on school and classroom climate at an intermediate school (fifth-sixth grade). The *School & Classroom Climate Survey For Students: Elementary Short Form* (Freiberg and Stein, 2003) will be used to elicit students' perceptions of school and classroom climate. The study will examine possible perceptual variations among gender, grade level, and subject area.

The goal of this paper is to provide administrators and teachers with valuable data regarding variations of students' perceptions of the school and classroom climate. The data will provide administrators and teachers the opportunity to improve low perceptions of school and classroom climate with targeted interventions. Once potential barriers have been identified among gender, grade level, and subject area, administrators and teachers could lead action teams aimed at improving the overall school and classroom climate. These action teams would consist of students and parents involved in the collaboration, discussion, and plan of action targeted at improving the overall climate. School and classroom climate changes could have a significant effect on student achievement, engagement and motivation, and dropout rates.

**Implications for Practice**

Teachers and students could benefit from the use of school and classroom feedback instruments given throughout the year that would focus on areas of improvement identified in the survey. Administrators and teachers will no longer create school and classroom climate plans without eliciting feedback from the students in order to identify possible variations in perceptions among gender, grade level, and subject area, which would provide target areas for improvement.

On a broader scale, district and state policies could encourage schools to survey students every year regarding the school and classroom climate; the results could be disaggregated on school and district report cards. Incorporating climate instruments on school and district report cards would encourage teachers and principals to promote a positive learning environment that focuses on educating the ‘whole child.’

**Summary**

The federal No Child Left Behind Act (NCLB) of 2001 (Public Law No. 107-110) has dramatically changed how schools operate. The emphasis on student achievement and high-stakes testing has put an enormous amount of pressure on districts and schools, which has resulted in teachers teaching a narrow curriculum. While assessments are important measures of school success, they should not be the only measure. A narrow curriculum and an increase in priority for testing prevent teachers from focusing on the importance of a healthy learning environment.

Research studies have shown the positive impact school and classroom climate has on student achievement, engagement and motivation, and dropout rates. The use of

climate instruments can serve as a powerful tool for administrators and teachers when evaluating the factors of the school and classroom climate. Students' perceptions on the school and classroom climate give a true reflection of the actual climate that an outside observer would not capture. The purpose of this study is to examine the effects of gender, grade level, and subject area on school and classroom climate perceptions at an intermediate school (fifth-sixth grade).

## **Chapter II**

### **Review of Related Literature**

#### **Theoretical and Historical Perspectives of Learning and Environment**

How can teachers create the perfect learning environment? It is nearly impossible to provide a definition for a 'perfect' learning environment because each student may perceive a different experience in the classroom. Such an environment is designed to support a learning theory, and there are many theories that attempt to explain the learning process. It is equally important to consider the many different learning styles that will comprise a particular class of students. However, many would agree that the primary reason for students to attend school every day is to learn, which can be defined: learning is the acquisition of skills, knowledge, values, wisdom, and understanding. Learning occurs in a formal setting like a school, and in an informal setting such as a home. Two dominant theories have explained how learning occurs: behaviorism and constructivism. These two theories are on opposite ends of the spectrum and have dramatically changed the learning environments in America's classrooms in the last 40 years.

Behaviorist and constructivist theories agree that there are differences among learners, and the environment can affect learning. However, the theories differ in the emphases they give to these factors (Schunk, 2004). Behaviorist theories put more emphasis on the role of the environment with the arrangement of stimuli, and how the responses are reinforced (Schunk, 2004). Constructivist theories emphasize the role of environmental conditions as an influence on learning, such as the use of effective instructional practices and corrective feedback. However, constructivist theories



emphasize the role of the learners' thoughts, beliefs, attitudes, and values (Schunk, 2004). Constructivist theories understand the importance of the learner in conjunction with the environment.

Burrhus Frederic Skinner, known as B.F. Skinner, was a major proponent of the behaviorist theory and believed that learning occurs by a change in actions through a process that exposes an individual to external stimuli until a desired response occurs (Schunk, 2004). Skinner conducted experiments on animals to define operant conditioning, the idea that behavior is determined by its consequences – either reinforcements or punishments (Schunk, 2004). Learning environments that are designed based on behaviorism are teacher-focused and are highly structured. The physical learning environment would have desks in rows and columns with minimal room for flexibility. This type of learning environment would resemble a lecture hall where students are quietly listening to their teacher in order to gain knowledge.

Constructivist theories consider the learners' social, cultural, and contextual conditions and emphasize the importance of the learners' experiences when acquiring new knowledge (Boyle, 1994). Jean Piaget and Lev Vygotsky had a major influence on the rise of constructivism, and today a number of learning researchers have shifted more toward a focus on learners (Schunk, 2004). Learning environments designed based on constructivism are student-centered, collaborative, and experiential. The physical learning environment would have desks in pods and would resemble a more collaborative learning environment. This type of environment would resemble a community of learners engaged in a discussion and learning from each other.

Many schools and classrooms develop a learning environment based on theories that explain how students learn. The arrangement of the desks, role of the teacher, and ‘feel’ of a classroom are just a few factors that create the overall climate. The role of a school and classroom climate is an important issue for principals and teachers to consider when structuring the environment because of its influence on learning

Learning theories were first studied as far back as the late 19th century; however, the notion that the environment affects learning gained popularity with the publication of the Coleman Report (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, & York, 1966). The 1966 report, titled “Equality of Educational Opportunity” was one of the largest studies in history, with more than 600,000 students in the sample. One of the objectives of the study was to document the amount students learned as measured by performance on standardized achievement tests. The Coleman Report (1966) was controversial due to its claim that school funding had little effect on student achievement; they estimated that the percentage of school influence on student achievement accounted for only 10 percent to 20 percent of the total variance. Coleman concluded that a school had little or no effect on student achievement, and the family background of the student was the primary contributor to success.

Since the Coleman Report (1966), researchers have recognized the difficulty of studying school and classroom climate by examining the failure of earlier studies that were a result of poor models, inadequate measures, too few variables, or the wrong variables (Wilson, 1980). Wilson (1980), criticized the Coleman Report (1966) by claiming they ignored important variables of school process, such as the social system and culture dimensions. Many researchers (Rutter, 1980; Wilson, 1980) were more

optimistic and viewed “school climate as the Phoenix, born of the ashes of past school effects research” (Anderson, 1982). It was suggested that some composite of school characteristics and qualities do create a climate that accounted for a substantial portion of the variance in student outcomes (Anderson, 1982). One critique of the Coleman Report was Richard Edmond, who set out to find schools where low-income families were successful to prove that schools can and do make a difference. Edmonds and Fredrickson (1978) examined the relationship between students’ achievement and the type of school they attended and concluded that unique characteristics were common to schools where all students were learning, regardless of their socioeconomic status.

### **Testing**

In 1983, the national report, *A Nation At Risk*, described the grim realities of our education system. *A Nation At Risk* reported an alarming number of functionally illiterate high school dropouts, low student performance, and international students outperforming America’s students. This national report was the driving force of The No Child Left Behind Act (NCLB Act), which was signed into law on January 8, 2002. NCLB was reauthorization of the Elementary and Secondary Act (ESEA) of 1965 and provided a federal framework for public education throughout the country. One of the major goals of NCLB is for all students to attain proficiency or better in reading and mathematics by 2013-2014, and to close achievement gaps in low-performing subgroups. Additional goals of NCLB include: (a) highly qualified teachers; (b) all students will be educated in schools and classroom that are safe, drug free, and conducive to learning; (c) all limited English proficient students will become proficient in English; and (d) all students will graduate from high school.

The goals of NCLB are appealing; however, they pose great challenges for schools, school districts, and states to achieve these unrealistic goals. NCLB requires states to test students to ensure these goals are met, and holds schools, school districts, and states accountable for achieving high levels of achievement and improvement toward meeting these goals. The incremental testing and accountability have increased the amount of pressure for students and teachers to perform, and have required many schools to make fundamental changes in curriculum and ways to measure student progress.

The increased demand for testing and accountability has resulted in negative effects on students' education by the emphasis of basic skills and a culture of teaching-to-the-test. Teaching to the test narrows the curriculum for students and puts little or no emphasis on the arts, sciences and humanities, and character education. Schools focus their efforts on programs they believe will directly improve test scores, rather than focusing on strategies to improve school climate and student learning (NASP, 2002). The focus on large scale testing to measure achievement of uniform standards are considered to be "high-stakes" when critical decisions about students' retention or promotion are made based on a single test. Thompson and Crank (2010) emphasized that these high-stakes assessments are equally important for teachers. Teachers not performing at a high level have severe consequences, such as losing their position or receiving a poor yearly teacher evaluation. This pressure amongst teachers can contribute to a serious tone for school personnel and can be detrimental in developing a positive school climate (Thompson & Crank, 2010).

The NCLB Act requires schools to demonstrate Adequate Yearly Progress (AYP) measured by standardized testing of all students; this large-scale testing has a major

impact on school functions, goals, and climate in both positive and negative ways (Thompson & Crank, 2010). According to the National Association of School Psychologists (NASP), the requirement for AYP and the use of large scale assessments has the potential for unintended negative outcomes at both the system and individual levels (NASP, 2002). The unrealistic goals of AYP affects school climate by injecting unreasonable accountability that pressurizes teachers, staff, and students (Faircloth, 2004).

### **School and Classroom Climate**

#### **A positive school and classroom climate.**

The characteristics of a positive school and classroom climate are uniquely defined the moment you step into a school or classroom. These characteristics can be physical, such as the structure of the school building, or the colorful student work on the walls. Other times the characteristics of the climate are not observable; however, the “feel” of the climate can be felt when walking the hallways or stepping into the cafeteria. School climate has been researched for many years and continues to be studied and redefined as a result of its significant influences on learning. School climate can have a nurturing environment which treats children as individuals, while other environments have strictly enforced rules with a strong hierarchical control (ASCD, 2011). Freiberg and Stein (1999) defined school climate as the “quality of a school that creates healthy learning places; nurtures children’s and parents’ dreams and aspirations; stimulates teachers’ creativity and enthusiasm, and elevates all members” (p. 11).

Tagiuri (as cited in Anderson, 1982) developed four terms to define and describe the environment within an organization: ecology, milieu, social system, and culture. Each of these four terms has a specific definition for the different dimensions of the environment: (a) ecology: the physical and material aspects; (b) milieu: the social dimension of the population of the school; (c) social system: the relationships between the persons and groups; and (d) culture: the belief systems and values.

Creemers and Rezigt (1999) modified Tagiuri's climate terms to create a new model that differentiated between the classroom and school climate factors. The following factors specific to the climate in the classroom from the physical to the abstract characteristics are (Creemers & Rezigt, 1999, p. 34):

- 1) The physical environment of classroom (size and location);
- 2) The social system (relationships and interactions between students and between students and teachers);
- 3) An orderly classroom environment (arrangement and functionality);
- 4) Teacher expectations about student outcomes (expectations and attitude).

The following factors specific to the climate at the school level included (Creemers & Rezigt, 1999, p. 35):

- 1) The physical environment of the school (school building and yard);
- 2) The social system (relationships and interactions between teachers, parents, and external agencies);

- 3) An orderly school environment;
- 4) The expectations about teacher behavior and student outcomes.

The term school climate is defined differently by different researchers. At times the term refers to psychological factors in the school context affecting student learning; other times it refers to school management issues that influence staff attitudes (Esposito, 1999). Despite a fairly ambiguous definition, the climate of a school and classroom is an important concept when looking at student achievement. Hoy et al. (1991) described the climate of the school as a “potential means for making schools more productive as well as an important end-in-itself” (p. 2).

### **School climate and student achievement.**

There has been a considerable amount of research linking school climate to student performance, with the overall conclusion that a positive climate is essential to any successful school (Esposito, 1999; Gareau, Monrad, DiStefano, May, Price, Ishikawa, & Mindrila, 2009). Brookover et al. (1978) was a landmark study that examined the relationships between school climate and student achievement. The study was motivated by the Coleman Report (1966), which suggested that the level of academic achievement varied between schools; an effect associated with the socioeconomic and racial composition of schools. The Brookover et al. study (1978) used a multiple regression analysis that examined the proportion of variance in fourth and fifth grade students’ achievement tests in Michigan. The staff and students were in three random samples, with one sample that matched the Michigan elementary schools. The state sample consisted of 68 schools—a random sample of Michigan public schools (8,078 students,

327 teachers, 1 principal). The black sample consisted of 30 schools (4,737 students, 177 teachers, 1 principal), and the white sample consisted of 61 schools (6,729 students, 276 teachers, 1 principal). Brookover et al. (1978) found that school climate was as good or better predictor of student achievement than were socioeconomic status (SES) and ethnicity. They concluded that some aspects of the school social environment made a difference in the academic achievement between schools. However, the contribution to variance of achievement ranged from only 4 percent for a statewide sample to 12 percent in primarily white schools and 36 percent in primarily African-American schools. Brookover et al. (1978) stated “the variance attributed to social composition may also be explained by the differences in the social-psychological climate associated with socioeconomic and racial composition” (p. 36).

Johnson and Stevens (2006) examined teachers’ perceptions of school climate in 59 elementary schools using a modified version of the School-Level Environment Questionnaire (SLEQ). The SLEQ consisted of three dimensions: school climate, general satisfaction, and demographics. The questionnaires were distributed to elementary teachers and examined the relationship between school climate, community and school context, and student achievement. The study showed a positive and statistically significant relationship between school mean teachers’ perceptions of school climate and student achievement, which indicated that school climate is a valuable factor worth considering when examining student achievement. In schools with high SES communities, school climate had a more significant influence on student achievement than it was for schools in low SES communities.



MacNeil et al. (2009) examined the effects of school culture and climate on student achievement using the Organizational Health Inventory (OHI). The study identified three categories based on the state of Texas Accountability Rating System: Exemplary, Recognized, and Acceptable. The three categories of schools were compared to the 10 dimensions of school climate that were measured by the OHI. The sample included 29 schools with 24,684 students, located in a large suburban school district in southeast Texas. Student performance was assessed by the end of the year state mandated assessment: Texas Assessment of Academic Skills (TAAS). Each school's rating was based on their test results; the Texas Education Agency (TEA) assigned one of the three ratings to each school. A total of 1,727 teachers from each school rated the organizational health of their school using the OHI. The OHI was developed by Matthew Miles (as cited from MacNeil et al., 2009) and consisted of 10 internal dimensions: goal focus, communication adequacy, optimal power equalization, resource utilization, cohesiveness, morale, innovativeness, autonomy, adaptation, and problem-solving adequacy. The 10 dimensions represented the different aspects of climate by measuring the interaction among members, and the school's ability to deal with stress from the environment. The results for the MANOVA revealed that the schools that demonstrated higher levels of student achievement had healthier school climates with higher scores on the OHI. In other words, the Exemplary schools had a healthier climate than the Acceptable schools, and the students performed at a higher level on the TAAS annual state achievement assessment. It is important to note that the post-hoc comparisons only indicated a statistical significance in two organizational health dimensions: goal focus and adaptation. The Recognized schools scored higher on the goal focus and adaptation

than the Acceptable scores, indicating that the two health dimensions were most effective in discriminating between the culture and climate of Recognized and Acceptable schools. This study is limited by the small sample size; however, the results are encouraging and suggest an importance for a healthy school culture and climate.

Sherblom, Marshall, and Sherblom (2006) examined the relationship between different aspects of school climate as reported on student, teacher, and parent surveys with third and fourth grade math and reading achievement. Forty schools in St. Louis were randomly selected to participate in the study. Schools ranged from inner city schools with 80-90 percent free and reduced lunch, to wealthy suburban schools with little or no free or reduced lunch. The schools were spread from being situated in a densely populated urban area to rural schools, along with schools outside the metropolitan area. The Caring School Community (CSC) student survey had 77 questions to measure students' perceptions of nine elements of school climate: altruistic behavior, autonomy, classroom community, concern for others, democratic values, affective liking for school, parent involvement, trust and respect of teachers, and well-being at school. The Staff Survey had 40 questions to measure five elements of school climate: feelings of belonging; school expectations; school leadership; staff culture; and parent-teacher relations. The Parent Survey used 32 questions to measure aspects of school climate: students' feeling of belonging, school expectations, parent and staff relations, school quality, and parent involvement. Student achievement data were collected from the 2003 Missouri Assessment Program (MAP) in reading and math. Results showed that students' sense of well-being at school was strongly correlated to academic achievement on the math and reading assessments. Positive classroom

community, affective liking of school, trust for teachers, and concern for others were positively correlated with reading scores. The staff survey measured the school's readiness to improve the overall school climate, and the data showed a relationship between the staff's evaluation of the school's ability and student achievement. Specifically, leadership support and their support of a learning community were strongly correlated with both the reading and math scores. The Parent Survey results did not show a strong correlation with student achievement. The study revealed that a school-wide caring community with healthy interactions and relationships within a school can have a direct effect on student achievement.

#### **School climate and student motivation.**

Motivation is the driving force that contributes to student achievement and success. Ryan and Deci (2000) defined motivation:

To be motivated means *to be moved* to do something. A person who feels no impetus or inspiration to act is thus characterized as unmotivated, whereas someone who is energized or activated toward an end is considered motivated. Most everyone who works or plays with others is, accordingly, concerned with motivation, facing the question of how much motivation those others, or oneself, has for a task, and practitioners of all types face the perennial task of fostering more versus less motivation in those around them. (p. 1)

It is difficult to accept when students do not have the desire to work hard or participate in activities, regardless of their ability to be successful. This lack of desire or engagement in learning activities is commonly described as a lack of student motivation.

When students lack the motivation to engage in learning, they are often engaged in other behaviors that do not promote learning: disrupting others, avoiding homework, and sleeping. Klose (2008) defined achievement motivation as the factors that affect students' perceptions of their relationship to the achievement in the classroom setting. Furthermore, students' perceptions about these factors change over time. In early grades, children focus on self-mastery and competence; however, adolescent children become more externally oriented, with a focus on academic and social competence (Klose, 2008).

Students' motivation to engage in activities or be successful on tasks is rooted from either intrinsic or extrinsic motivation. Intrinsic motivation is driven by an interest or enjoyment in the task and exists within the individual. Students who have intrinsic motivation attribute their achievement or results to internal factors that they can control, while students who possess extrinsic motivation work hard to achieve their goals for an outside reward. Common extrinsic motivators are grades or ribbons. Students who have extrinsic motivation are driven by external factors that may not require them to fully master or learn a skill.

Anderson et al. (2004) studied motivation from an ecological perspective by considering the student in interaction with the learning environment. The study investigated the relationship between aspects of the classroom climate and motivational behavior in high school students. The grade 12 students were from four classes in each of the three urban secondary schools, located in similar neighborhoods, and had comparable SES amongst their students. The study utilized the Classroom Environment Scale (CES) that was originally developed by Trickett and Moos in 1973. The original CES consisted of nine scales; however, only five of the nine scales were assessed in the

study: competition, order and organization, rule clarity, teacher control, and affiliation. The students' motivated behavior was measured using a self-report, teacher rating, and a quantitative measure. The study showed a statistically significant difference in classroom climate between school and classroom levels of motivation. The results of the study revealed that the social environment of classrooms significantly impact students' motivated behavior. Affiliation was an important dimension of the classroom climate, which was a measure of the level of friendship between students. The study proved that high levels of the dimensions of classroom climate are associated with high levels of student motivation.

A study by Fenzel and O'Brennan (2007) examined the mediating effects of intrinsic motivation in students, along with teacher ratings of student engagement in relation between school climate perceptions and student academic performance. The participants of the study included 282 African American students in grades six through eight from seven different parochial middle schools in four Eastern cities located in the United States. The students were of low SES—92 percent of the students qualified for free or reduced meals. Surveys assessed the students' perceptions of the school climate relating to their views on how positive the student social interactions were at the school; their enjoyment of school; how they viewed the fairness of the school rules; support of teachers and principals; and their perceptions of how learning and task focused they perceived math and language arts. In addition, the survey assessed the students' motivation for school work, or tendency to persist with difficult tasks. The academic performance of the students was assessed using report card grades in four subject areas. In addition to academic performance, teachers assessed the students' engagement with a

three-point rating scaled. The results showed that the level of students' perceptions of the school climate as enjoyable and fair were significantly related to their achievement in the four subject areas. The results of the study showed that both the students' perceived levels of intrinsic motivation and levels of engagement in learning were significantly related to their achievement in the four subject areas. The findings in this study suggest that a healthy and supportive learning environment in school has a significant effect on students' motivation to persist at difficult tasks and engage in learning activities. A healthy and supportive learning environment that is fair and conducive to learning is crucial for at-risk students. At-risk students are vulnerable to the hazards of an unhealthy learning environment and eventually will be motivated to engage in alternative activities that are detrimental to their success in school.

Motivation is the driving force that engages students in activities and allows them to learn and master new concepts, and the classroom environment can either promote or hinder their motivation. Ames and Archer (1988) studied achievement goals within a particular classroom with students' learning strategies and motivation processes. The study investigated how specific motivation patterns were related to the salience of mastery and performance goals in the classroom setting (Ames & Archer, 1988). The participants of the study included 176 students in eighth through 11<sup>th</sup> grades who achieved an 80<sup>th</sup> percentile score on the Secondary School Admission Test. The students were assessed with a survey that assessed six areas related to motivation: goal orientation, learning strategies, task challenge, attitude toward class, casual attribution, and perceived ability. The results revealed that when students perceived a stronger emphasis on mastery goals rather than performance goals, they reported using more learning strategies

and had a more positive attitude toward their class. Ames and Archer stated, “The consistent pattern of findings across a number of discrete variables suggest that a mastery goal orientation may foster a way of thinking that is necessary to sustain student involvement in learning” (1988, p. 264). Even though the sample of students was considered academically advanced, their use of learning strategies was dependent on their perceptions regarding the emphasis of performance or mastery goals. The findings of this study suggest that the degree to which the classroom climate emphasized mastery goals, rather than performance goals, is predictive of how students engaged in learning. Furthermore, a classroom climate that emphasizes mastery learning over performance may promote higher levels of motivation and engagement.

### **Measuring and Improving School Climate**

#### **Measuring school and classroom climate.**

Measuring school and classroom climate accurately can be problematic due to the broad definition of a positive climate. Perceptions of climate are formulated by an individual’s experiences; therefore, their responses or perceptions are subjective in nature. The school climate perceived by the students may differ from the climate perceived by teachers. However, when researchers have used objective proxies such as the school and classroom size or composition of the student body, the numbers are rather meaningless (Creemers & Reezigt, 1999). Perceptions of the school and classroom climate, whether they are from principals, teachers, or students, may paint the most realistic picture of the actual climate.

There are two different categories that measure climate: direct and indirect (Freiberg & Stein, 1999). Direct measures require an individual to interact with others in order to collect the climate data: climate surveys, classroom observations, interviews, videotaping, and focus groups (Freiberg & Stein, 1999). Freiberg and Stein (1999) described two invasive examples of direct measures that use student drawings and journal narratives. Drawings and journal narratives by teachers and students can provide rich data but are rarely used to measure climate. Student drawings may be an appropriate measure for children who are too young to read a survey or participate in a focus group. Indirect measures do not require interactions with individuals; instead existing data is used to analyze the climate (Freiberg & Stein, 1999). Indirect measures are usually kept by the teacher or as a part of the school records which include attendance records, visits to the nurse, discipline referrals, suspensions, teacher and administrator turnover rates, student achievement, physical attributes of the school, and noise level (Freiberg & Stern, 1999). Indirect measures can give valuable data of the school climate without ever stepping inside the school or classrooms, but it fails to measure data directly from the targeted audience: the students.

### **Measuring school climate with student feedback.**

The goal when measuring school and classroom climate is to collect information that provides accurate feedback to teachers and administrators in order to improve the quality of teaching and learning. Freiberg (1999) described the need to measure climate with student feedback:

The quality of teaching and learning is a reflection of many complex factors but without continuous and varied sources of feedback, improvement efforts are



eroded by a lack of history of accomplishments and a sense of direction. In practice, few climate measures tap students as a source of feedback. However, by third grade, most students could tell you if they like or hate school, which teachers are caring, and if they are learning. (p. 209)

In the last 40 years, school and classroom learning environment assessments have been used in a variety of research spanning across many countries. These learning environment assessments have evolved to be a reliable and valid measure for assessing students' perceptions of school and classroom climate (Fraser, 1998). The original Learning Environment Inventory (LEI) was developed in the late 1960s by Walberg (1969) and contained 105 statements that described typical classrooms. The inventory contained four responses: strongly disagree, disagree, agree, and strongly agree. The LEI has been used throughout the world with over 300 investigations of classrooms, and has been used to measure school-wide climate (Anderson, 1982).

The Classroom Environment Scale (CES), an instrument used in studies by Moos and Trickett (Moos and Trickett, 1974; Trickett and Moos, 1973) was developed by Rudolf Moos of Stanford University. The CES originated out of research involving perceptual measures of a variety of environments including psychiatric hospitals, prisons, university residences, and work milieus (as cited in Fisher & Fraser, 1983). The CES measures three distinct categories that described diverse psycho-social environments: relationship dimensions, personal development dimensions, and system maintenance and change dimensions. The final version consisted of nine scales with 10 items of true-false response format in each scale (as cited in Fisher & Fraser, 1983). The CES has been

shown to correlate classroom perceptions to student satisfaction, student absences, and grades (as cited in Fisher & Fraser, 1983).

Halpin and Croft (1962) identified the critical aspects of teacher-teacher and teacher-principal interactions in school (as cited in Hoy, et al., 1991). They developed the Organizational Climate Descriptive Questionnaire (OCDQ), which was a useful instrument constructed to portray the climate of an elementary school. This instrument was the first questionnaire used to examine school climate and organization. The OCDQ measured eight dimensions associated with the characteristics of the group and behavior of the leader, which was measured along a continuum from open to closed. The four dimensions of the characteristics of the group included: disengagement, hindrance, esprit, and intimacy. The four dimensions of the behavior of the leader included: aloofness, production emphasis, thrust, and consideration. The original construction of the OCDQ was a result of four factors: (a) schools differ amongst each other in their “feel”; (b) morale does not capture this difference in feel among schools; (c) effective principals in low-performing schools are often immobilized by a recalcitrant faculty; and (d) the notion of the “personality” of a school is intriguing (Hoy, et al., 1991). The OCDQ was the first instrument that examined the school climate in regards to the teacher and principal behaviors through the perceptions of the teachers. Since the OCDQ was developed, many researchers have developed and studied the use of instruments when evaluating school and classroom climate including the Individualized Classroom Environment Questionnaire (ICEQ) developed by Fraser (1990); My Class Inventory (MCI) developed by Fisher and Fraser (1980); and the Constructivist Learning Environment Survey (CLES) developed by Taylor, Dawson, and Fraser (1995).

Instruments used to measure school and classroom environment have continued to evolve and become more sophisticated in providing accurate data for school improvement and reform.

### **Improving school and classroom climate.**

Collecting data is an important and necessary step when the intent is to improve the overall climate in a school or classroom, but the climate will not improve with data collection alone. Freiberg and Stein (1999) stressed the importance of utilizing the data for improvement by comparing schools to other professions. “Other professions, including law, medicine, engineering, and accounting, have changed greatly in recent decades to meet modern conditions. Schools, by and large, have shown a unique resilience for the *status quo*” (Freiberg & Stein, 1999, p. 24). Freiberg and Stein (1999) developed five questions for improving school climate:

- 1) How does the school look, smell, feel, and taste – would I eat in the cafeteria?
- 2) What direct and indirect measures can be used to help document and create a base-line for change?
- 3) What initial climate changes can we make that would have the highest visibility and be accomplished in the shortest period of time?
- 4) What groups or individuals should be involved to encourage and create an environment for sustainable school climate improvements?
- 5) What long-term changes are needed to create a healthy environment for all members of the learning community? (p. 25)

Improving school and classroom climate involves a conscious effort to consistently analyze and reflect upon the current climate and strategically plan the interventions needed to reach the desired climate. Aldridge et al. (2009) outlined a five-step procedure commonly used in studies aimed at improving classroom climate: (a) assessment of students' perceptions of their learning environment; (b) providing feedback to the teacher based on student feedback; (c) reflection and discussion based on feedback; (d) teacher intervention over a period of time; and (e) re-administration of the student feedback questionnaire at the end of the intervention period. Administrators and teachers focused on improving the climate of a school or classroom have to continuously reflect and make changes to sustain a positive climate; climate does not change quickly, instead it takes time to establish norms that can endure over time.

### **School climate and gender differences.**

There is limited research that has examined the effects of gender on school and classroom climate. The majority of climate research has focused on the reliability and validity of climate instruments; correlation between school climate and student achievement; and student and teacher differences in the perceived and desired school climate. Buckley, Storino, and Sebastiani (2003) conducted a study that examined the impact of school climate on variations of ethnicity and gender. The study involved 369 seventh grade students in a semi-rural school district; approximately 23 percent of the sample was categorized as Latino. The students completed the California School Climate and Safety Survey (CSCSS; Furlong & Morrison, 1995). The CSCSS consisted of 102 items that provided data on violence victimization and three factors associated with

school climate: Well-Kept School, Supportive School, and Unsafe School. Academic achievement was obtained through students' grade point average (GPA).

The study examined gender and ethnic differences on GPA and perceptions of school climate. The results of the study did not reveal a significant difference in climate perceptions between Latino and non-Latino students; however, the Latino students possessed lower GPAs than non-Latino students. Gender differences were significant for the three school climate factors: Well-Kept ( $F = 5.07, p = .025$ ), Supportive School ( $F = 6.83, p = .009$ ), and Unsafe School ( $F = 8.60, p = .004$ ). Boys were less likely than girls to perceive the school climate as well maintained and safe. Boys were also less likely to perceive the adults in the school climate as supportive and had lower GPAs than girls. The data revealed that the students' perceptions of school climate were a significant predictor of academic achievement; perceptions of school climate contributed 12 percent of explained variance in academic achievement. The results of this study have provided valuable information regarding the impact of school climate on gender and academic achievement amongst boys and girls. Overall, the boys' perceptions of school climate were more negative in comparison with the girls' perceptions of school climate, which predicted twice as much variance in GPA than it did with the girls.

Way, Reddy, and Rhodes (2007) examined the variations of school climate perceptions between boys and girls and changes of perceptions during the middle school years when school plays an important role in the development of adolescents. The study included 1,451 students from 22 socio-economically diverse backgrounds during the 1995-1997 school years. Four dimensions of school climate were examined using the Perceived School Climate Scale (Felner et al., 1997): teacher support, peer support,

student autonomy and clarity, and consistency in school rules. The average growth trajectory revealed that as the students progressed through middle school, their perceptions of teacher and peer support declined significantly from sixth to eighth grade. Furthermore, girls reported a higher level of teacher and peer support than the boys in sixth grade. However, as the girls progressed through middle school—seventh and eighth grade—they experienced steeper declines in their perceptions of peer support than the boys. For student autonomy, girls perceived greater opportunities for student involvement in their classrooms than boys. For clarity and consistency in school rules, girls perceived greater clarity, consistency, and fairness at the beginning of middle school than the boys. The study concluded that overall gender differences were detected for the initial levels of the four dimensions related to school climate, with girls perceiving higher levels of school climate than boys.

Bickel, Qualls, and O'Neill (1980) explored gender and race differences in student perceptions of school climate with low and high suspension rates. The sample consisted of ninth grade students from eight public secondary schools: four with low suspension rates and four with high suspension rates. A total of 70 intact classes were sampled, with a total of 1,634 students. The gender and race composition of the sample as comprised of 36.5 percent white males; 32.9 percent white females; 15.9 percent black males; and 14.7 percent black females. The students completed an 82-item school climate questionnaire over a three-week period. The school climate questionnaire consisted of two factors: social environment and learning environment. Discriminant analysis was completed on the resulting factors with the variables of gender, race, and low and high suspension rate. The results on the initial discriminant analysis on the

variable of low and high suspension rates and gender indicated that the males and females responded similarly regarding school climate, and the gender of the student did not affect the perceptions toward climate regardless of the suspension rate. The second discriminant analysis was done for female and male responses by low and high suspension rate. The results revealed that the climate in low and high suspension schools was perceived differently by female and male students. More specifically, the third discriminant analysis indicated that the Caucasian students in the low suspension schools were significantly more favorable toward school climate than the African American students. Female students in low suspension schools were more favorable toward school climate than the male students; Caucasian female students were more positive toward that school climate than any other group. The highest number of negative responses regarding school climate came from African American females, whether in the low or high suspension school. The extreme negative results may be the result of a lack of opportunities that would encourage school involvement and access to extracurricular activities. The study demonstrated that there were significant differences in perceptions amongst gender, race, and high and low suspension schools.

### **Intermediate and Middle School**

#### **Achievement loss associated with intermediate and middle school.**

There is evidence that there is a steady decline in student achievement and intrinsic motivation amongst students in middle school (Wigfield, Eccles, & Rodriguez, 1998; Alspaugh, 2001). This decline in achievement has sparked many attempts to reform middle schools through a variety of interventions. One of the more recent attempts to reform middle school is Middle School Matters (MSM), an initiative

introduced by the George W. Bush Institute in 2011 (George Bush Center, 2011). The MSM initiative will develop a school transformation model that will enable middle school (sixth-eighth) students to possess the necessary academic skills and foundation to successfully complete high school (George Bush Center, 2011). Top researchers and practitioners will collaborate on the design and development on the model to build a set of specifications for selected districts and school. They will work directly with schools to assist with implementation, and develop a partnership with schools to ensure that the teachers and students benefit directly from the research. The MSM initiative was developed to increase high school graduation rates and access to meaningful post-secondary education and career opportunities (George Bush Center, 2011).

Reforms and initiatives strive to close the achievement gap in middle school when students experience many changes in the school and classroom environment. The changes in environment occur when students transition from elementary school to middle school and from middle school to high school. The shift from small-group instruction in elementary school to whole-class instruction in the intermediate or middle schools are associated with student and teacher relationships (Alspaugh, 2001). Aslpaugh and Harting (as cited in Alspaugh, 2001) established student achievement loss associated with the transitions from elementary to intermediate schools. Way et al., (2007) stated “middle schools play an important role in the development of adolescents. They provide a context in which students learn, implicitly and explicitly, about themselves and relationships, and about how to navigate the turbulent waters of early adolescence” (p. 194).



Alspaugh (2001) conducted a study to examine the achievement loss associated with transitions from elementary to middle school and middle school to high school. The sample consisted of three groups of 16 school districts for a total sample of 48 districts. The first group had a K-8 and 9-12 organization of grade levels, with one elementary (K-8) and one high school (9-12). The second group had one elementary (K-5), one middle school (6-8), and one high school (9-12). The third group of districts had two or three elementary schools (K-5), one middle school (6-8), and one high school (9-12). Students from multiple elementary schools were filtered into a single middle school. The Missouri Mastery and Achievement Tests (MMAT) assessed students in May of each academic year. The MMAT assessed scores for reading, mathematics, science, and social studies.

The results of the study revealed a statistically significant achievement loss related to the transition from elementary to middle school. These results were compared to the K-8 schools that did not have a transition from elementary school to middle schools. The achievement loss was higher when students from multiple elementary schools were filtered into one single middle school. All students experienced an achievement loss when transitioning to high school. However, the students who had previously attended middle school experienced an increased achievement loss than the students who attended the elementary school before high school. Alspaugh (2001) stated, “The increased high school dropout rates for the students attending middle schools may have been associated with the achievement losses and the double transitions at grades six and nine” (p. 24).

The significance of this study illustrates the considerable amount of achievement losses that occur as a result of transitioning from one school to another. The results of

this study provide powerful data that supports the importance for middle schools and high schools to create an environment that is supportive and conducive to learning during transition years. The transitional years from elementary to middle school may be the most critical time for adolescent children due to physical and emotional changes and would require middle schools to create environments that nurture learning and achievement.

Anderman and Midgley (1997) examined the changes in motivation in English and mathematics across and after the transition from elementary school to middle school in a longitudinal study. The study examined changes in goal orientations, perceptions of classroom goal structures, academic efficacy, and grades in school. The sample consisted of 341 students who participated throughout the three year study. Data was collected when the students were in fifth grade at an elementary school, when they were in sixth grade at a middle school, and when they were in seventh grade. The students completed the Patterns of Adaptive Learning Survey (PALS) during the spring of their fifth grade year, the spring of their sixth grade year, and again in the spring of their seventh grade year.

Three of the categories on the survey changed during and after the middle school transition: personal task goals ( $F(1,309) = 19.39, p < .001$ ), ability goals ( $F(1,309) = 10.84, p < .001$ ), and academic efficacy ( $F(1,309) = 22.51, p < .001$ ). More specifically, the students' task goals declined across the three grade levels. However, their ability goals increased across the transition from fifth to sixth grade in English and later decreased between grades six and seven. The students who perceived their classrooms as placing a high emphasize on relative ability, rather than mastery experienced more

achievement loss after they moved to middle school. The data also revealed a mean decline in report card grades after the transition from elementary school to middle school. The results of the study shed light on the steady decline of academic achievement and efficacy that occur as a result of the transition through the different schools before graduation.

### **Research Questions**

The lack of research that focuses on the variations in students' perceptions of school and classroom climate raises the following research questions:

- 1) Do students' perceptions of school and classroom climate significantly vary with gender?
- 2) Do students' perceptions of school and classroom climate significantly vary with grade level (fifth-sixth grade)?
- 3) Do students' perceptions of school and classroom climate significantly vary with subject area (math, reading, and science)?

First research question: To investigate the first research question, "*Do students' perceptions of school and classroom climate significantly vary with gender?*", survey data will be collected and disaggregated from the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003).

Second research question: To investigate the second research question, "*Do students' perceptions of school and classroom climate significantly vary with grade level (fifth-sixth grade)?*", survey data will be collected and disaggregated from the

*Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003).

Third research question: To investigate the second research question, “*Do students’ perceptions of school and classroom climate significantly vary with subject area (math, reading, and science)?*”, survey data will be collected and disaggregated from the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003).

## **Summary**

Learning theories were first studied as far back as the late 19th century. Behaviorism and constructivism are two dominant theories that explain how learning occurs, and both of the theories agree that the environment can affect learning. The notion that the environment affects learning gained popularity with the publication of the Coleman Report (Coleman et al., 1966). The Coleman Report concluded that a school had little or no effect on student achievement, and the family background of the student was the primary contributor to success. The Coleman Report was controversial and sparked interest from many researchers to examine the effects of the environment on student achievement and motivation. Edmonds and Fredrickson (1978) examined the relationship between students’ achievement and the type of school they attended and concluded that unique characteristics were common to high-achieving schools. Since the Coleman Report, there has been a considerable amount of research linking school climate to student achievement and motivation, with the conclusion that a positive climate is essential to any school (Esposito, 1999; Gareau et al., 2009; Brookover et al., 1978; Anderson et al., 2004).

In the last 40 years, the use of school and classroom learning environment assessments have been used in a variety of research to provide schools with data regarding the overall climate. Once data has been collected on the school or classroom climate, administrators and teachers can strategically plan interventions to reach the desired climate. A healthy school and classroom climate may be the most important asset of a transitional school from elementary school, such as an intermediate or middle school due to the evidence that has shown a steady decline in student achievement and motivation at these grade levels (Wigfield, Eccles, & Rodriguez, 1998). The need for healthier school and classroom climates after students transition from elementary school to intermediate school has provoked the following three research questions: (a) Do students' perceptions of school and classroom climate significantly vary with gender?; (b) Do students' perceptions of school and classroom significantly vary with grade level (fifth-sixth grade)?; and (c) Do students' perceptions of school and classroom climate significantly vary with subject area (math, reading, and science)?

Table 1

*Literature Review Research Summary*

<b>School Climate and Student Achievement</b>		
<b>Source</b>	<b>Study/Purpose</b>	<b>Findings</b>
Anderson, C. S. (1982). The search for school climate: A review of the research. <i>Review of Educational Research</i> , 52(3), 368-420.	An analysis of school climate literature that reviewed the influence of climate instruments; difficulty of defining school climate; and the debate over school climate and achievement.	The definition of school has begun to take distinct features by the characteristics of climate and outcomes that are recurring in the research. However, there are still gaps in the knowledge of school climate: mechanisms by which individual and group level variables interact to create a healthy climate; differences of climates on individuals; and important variables regarding climate. Current research should focus on improving school climate effects.
Brookover, W. B., Schweitzer, J. H., Schneider, J. M., Beady, C. H., Flood, P. K., & Wisenbaker, J. M. (1978). Elementary school social climate and school achievement. <i>American Educational Research Journal</i> , 15, 301-318.	The study used a multiple regression analysis that examined the proportion of variance in fourth and fifth grade students' achievement tests in Michigan. The staff and students were in three random samples, with one sample that matched the Michigan public schools: (a) state sample of 68 schools (8, 078 students,	The school climate accounts for a significant amount of the variance in all dependent variables. Some of the social structures are correlated with student achievement: teacher expectations, instructional program, student responsibility, and principal leadership.

	327 teachers, 1 principal); (b) Black sample of 30 schools (4,737 students, 177 teachers, 1 principal); (c) White sample of 61 schools (6,729 students, 276 teachers, 1 principal); (d) sample of 4 school matched on SES and race.	
Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfeld, F., & York, R. (1966). Equality of educational opportunity (Clearinghouse No. UD002122). Washington, D.C.: National Center for Educational Statistics (DHEW/OE).	In the 1960s, Coleman and several other researchers were commissioned to write a report regarding the educational equality in America. The study consisted of more than 600,000 students and 60,000 teachers in the sample. It encompassed Black, Native, and Mexican American, poor White, Puerto Rican, and Asian students. The result was a massive report of over 700 pages, entitled <i>Equality of Educational Opportunity</i> .	<p>Segregation and poorer resources of minority schools were not the influencing factors in poor academic performance of minorities.</p> <p>The dropout rate from schools for Black students was twice as high as for White students.</p> <p>An unhealthy home environment is one of the most detrimental factors in poor academic performance of minorities.</p>
Johnson, B., & Stevens, J.J. (2006). Student achievement and elementary teachers' perceptions of school climate. <i>Learning Environments Research</i> 9 (2), 111-122.	The sample consisted of 59 schools in a southwestern city in the United States. There were 1,106 completed teacher surveys from the participating schools. The School-Level Environment Questionnaire (SLEQ) was used consisting of 56 items related to school climate, community, school context, and student	A statistically significant, positive relationship was found between school mean teachers' perceptions of school climate and school mean achievement. School and community context variables mediated the relationship. In schools that had a high SES, the influence of school climate was stronger than it was for

	achievement. The study examined student achievement and elementary teachers' perceptions of school climate.	schools that had a low SES.
MacNeil, A. J., Prater, D. L., & Busch, S. (2009). The effects of school culture and climate on student achievement. <i>International Journal of Leadership in Education</i> , 12(1), 73-84.	The study investigated whether Exemplary, Recognized, and Acceptable schools had different school climates. The Organizational Health Inventory (OHI) measured 10 dimensions of the climate. The sample consisted of 29 schools in a large suburban school district in Texas; a total of 1,727 teachers completed the survey. Test results from the Texas Assessment of Academic Skills (TAAS) from 24,684 students were used as the basis for the ratings.	Results of the MANOVA showed significant differences between the Exemplary, Recognized, and Acceptable categories of schools across each of the 10 dimensions of the OHI. Exemplary schools outperformed Acceptable schools on student achievement; students performed higher on the TAAS. The schools that demonstrated higher student achievement also demonstrated a healthier school climate on the OHI. Post-hoc comparisons using Tukey's Honestly Significant Difference (HSD) indicated that statistical difference was not found between Exemplary schools and Recognized schools or Recognized schools and Acceptable schools. There were two exceptions to the pattern on the OHI: Goal focus and Adaption. Recognized schools outperformed Acceptable schools suggesting that the dimensions of Goal focus



		and Adaptation are important aspects of school climate and culture.
Sherblom, S. A., Marshall, J. C., & Sherblom, J. C. (2006) The relationship between school climate and math and reading achievement. <i>Journal of Research in Character Education</i> , 4(1-2), 19-31.	Forty schools were selected to participate in the study in St. Louis, Missouri. Schools ranged from inner city with 80-90 percent free or reduced lunch from densely populated urban areas to rural schools. Student achievement data from the 2003 Missouri Assessment Program (MAP) in reading and mathematics at the third and fourth grade were used to measure student achievement. Student, teacher-staff, and parent surveys were collected during February and March 2003. The study reported the relationship between aspects of school climate and reading and math achievement.	Results from the study indicated that school climate—classroom community, sense of well-being, and concern for others—was strongly correlated with reading and mathematics proficiency. The study revealed that 44 of the 54 indices of school climate were significantly related to reading and mathematics achievement. Teacher and staff feedback from the survey had a correlation with reading and mathematics proficiency: belonging, leadership support, common belief that school climate was positive and strong spirit for collaboration.
<b>School Climate and Student Motivation</b>		
<b>Source</b>	<b>Study/Purpose</b>	<b>Findings</b>
Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation process. <i>Journal of Educational Psychology</i> , 80(3), 260-267.	Study examined how specific motivation patterns are related to the salience of mastery and performance goals. The sample of students consisted of 176 students in grades 8-11 who were academically advanced; student scored at	Students who perceived an emphasis on mastery goals reported using more learning strategies, preferred challenging tasks, and had a more positive attitude toward class. Students who perceived their classroom as

	the 80 <sup>th</sup> percentile on the Secondary School Admission Test. Students completed a questionnaire based on goal orientations, learning strategies, task challenge, attitude toward class, causal attribution, and perceived ability.	emphasizing performance goals were not related to their used of learning strategies or task choices, and were negatively related to attitudes and self-perceptions of ability. The findings showed that mastery and performance goals provide a useful way of differentiating students' perceptions of the classroom learning environment.
Anderson, A., Hamilton, R .J., & Hattie, J. (2004). Classroom climate and motivated behavior in secondary schools. <i>Learning Environments Research</i> , 7, 211-225.	The purpose of the study was to investigate the relationship between factors of the classroom climate and motivated behavior in the classroom of student in grade 12 English classes. Three urban co-educational secondary schools were involved in the study; the schools were comparable in terms of SES. The Classroom Environment Scale (CES) was used to assess the climate and relationships in the classroom. Three different measures were used to assess students' motivation in the classroom: self-reports, teacher ratings, and a quantitative measure of task completion.	The study found a statistically significant difference between schools and classroom within schools. There was not a statistically significant difference for gender in the sample. There were statistically significant differences between classrooms on measures of motivation. The results show that aspects of the classroom climate are significantly related to all the measures in motivation.
Fenzel, L. M., & O'Brennan, L. M. (2007).	The sample included 282 African American students	The results showed that the level of students'

<p>Educating at-risk urban African American children: The effects of school climate on motivation and academic achievement. Paper presented at the annual meeting of the American Educational Research Association. Chicago, IL.</p>	<p>in grades 6 through 8 from seven different urban middle schools in four Eastern cities located in the United States. The mean age of the students was 12.6 years and 92 percent qualified for free or reduced meals. School climate surveys were administered to the students to assess their perceptions of the school climate: student interactions; enjoyment of school and fairness; support of teachers and principal; and perceptions of learning and tasks in math and language arts classes. Students' academic proficiency was assessed with their report card grades and academic engagement. Academic engagement was collected from teacher ratings regarding independent work, completion of assignments, and preparation.</p>	<p>perceptions of their school as enjoyable and fair was significantly related to academic achievement. Correlation results showed the both students' perceptions of intrinsic motivation and teachers' ratings of engagement were significantly related to higher report card grades, and well as the students' perceptions of their school as enjoyable and fair. The results revealed that the students' perceptions of the peer social climate in their schools was related to intrinsic motivation, which can be viewed that relationships at the middle school level influence academic achievement and motivation.</p>
Achievement Loss Associated with Intermediate and Middle School		
Source	Study/Purpose	Findings
<p>Alspaugh, J. W. (2001). Achievement loss associated with the transition to middle school and high school. <i>The Journal of Educational Research</i>, 92(1), 20-25.</p>	<p>The sample of the study consisted of three groups of 16 school districts (total of 48 districts). The first group had a K-8 elementary school and a 9-12 high school. The second group</p>	<p>Relative to the state average of 300 on the MMAT, the K-8 elementary schools showed an average gain of 7.40. The K-8 school did not have a transition between grades 5 and 6.</p>

	<p>contained one elementary school, one middle school, and one high school (linear group). The third group consisted of two or three elementary schools, one middle school, and one high school (pyramid group). The schools were located in rural school districts in Missouri. The Missouri Mastery and Achievement Tests (MMAT) scores measured pre-transition achievement and post-transition achievement in reading, mathematics, science, and social studies.</p>	<p>Both middle schools experienced a loss in academic achievement with an average of 5.00 in the linear group and 1.55 in the pyramid group. All three schools transitioned to high school at ninth grade; the ANOVA did not indicate a statistically significant difference among the three schools. All three high schools experienced a mean achievement loss in the transition to high school. The K-8 group of students experienced a gain of 6.06, which may have caused the overall achievement loss to not be statistically significant.</p>
<p>Anderman, E. M., &amp; Midgley, C. (1997). Changes in achievement goal orientations, perceived academic competence, and grades across the transition to middle-level schools. <i>Contemporary Educational Psychology</i>, 22(3), 269–298.</p>	<p>A longitudinal study that examined the changes in motivation in English and mathematics achievement across and after the transition from elementary to middle school. Data were collected from students as they progressed from fifth to seventh grade regarding changes in personal goal orientations, perceptions of classroom goal structures, academic efficacy, and grades. Students were given surveys containing items from the Patterns of Adaptive Learning Survey (PALS)</p>	<p>Examination of the pre- and post-transition revealed that there was a considerable lack of stability in academic efficacy over the transition from grades 5 to 6 and between grades 6 to 7. The stability coefficient was negative in math efficacy after the transition, which suggested that students who had high efficacy at the end of grade 6 experienced a small decline in efficacy during grade 7. Students who had lower efficacy in grade 6 experienced a slight increase in efficacy during 7. Stability was greater one</p>

	during the spring of grade 5, spring of grade 6, and spring of grade 7.	year after the transition than it was during the transition, indicating that grades and goal orientations stabilize one year after transition.
School Climate and Gender Differences		
Source	Study/Purpose	Findings
Buckley, M., Storino, M., & Sebastiani, A. M. (2003). The impact of school climate: Variations by ethnicity and gender. Poster session presented at the 111 <sup>th</sup> Annual Meeting of the American Psychological Association, Toronto, Canada.	The purpose of the study was to examine the relationships among perceptions of school climate, victimization, and academic achievement in middle school students. In addition, it investigated the possible differences in perceptions of school climate across gender and ethnicity.	Gender differences were significant for each of the three school climate factors: Well-Kept, Supportive School, and Unsafe School. Boys were less likely than the girls to perceive the school climate as positive. For boys, perception of school climate was a predictor of GPA with 12 percent variance. For girls, perception of school climate was a predictor of GPA with 8 percent variance.
Way, N., Reddy, R., and Rhodes, J. (2007). Students' perceptions of school climate during the middle school years: Associations with trajectories of psychological and behavioral adjustment. <i>American Journal of Community Psychology</i> , 40, 194-213.	The purpose of the study was to examine four questions: (a) How do student's perceptions of school climate change during the middle school years? (b) Does gender or SES explain variations in perceptions of school climate? (c) Are changes in perceptions of school climate associated with psychological and behavioral adjustment? (d)	The results of the study indicated that all of the dimensions of perceived school climate declined over the three years in middle school. The study concluded that overall gender differences were detected for the initial levels of the four dimensions related to school climate, with girls perceiving higher levels of

	What is the direction of effect between each dimension of perceived school climate and psychological and behavior adjustment?	school climate than boys.
Bickel, F., Qualls, R., & O'Neill, M. (1980). Sex and race differences in student perceptions of school climate. <i>The High School Journal</i> , 64(1), p. 16-21.	The study compares the perceptions of students towards school climate on the variable of gender, race, and enrollment in schools with low or high suspension rates.	Results indicated differences in the perceptions of students in low and high suspension schools. Caucasian students had more positive responses towards school climate of low suspension schools than of high suspension schools. The highest number of negative responses regarding school climate came from African American females, whether in the low or high suspension school. Gender appeared to be a stronger discriminator than race.

Table Literature Research Design by H. Jerome Freiberg (1989-2012)

## **Chapter III**

### **Methodology**

This study examined the complexity of school climate as perceived by intermediate students in an urban school district located in Texas. There are a variety of methods for assessing and evaluating the school and classroom environment. Direct and indirect measures to collect climate data include focus groups, surveys, observational methods, interviews, and attendance and discipline data (Freiberg & Stein, 1999). Methods that are scientifically developed to be reliable and valid measures provide a comprehensive and detailed picture of the perceived climate. Students spend a vast amount of time in the classroom, and validating their perceptions and views on the school and classroom climate with surveys and questionnaires may provide the most accurate data. Scientifically sound surveys or questionnaires that assess all of the complex dimensions that color and shape the process of teaching and learning with the students' experiences make it a preferred method when assessing school and classroom climate (Cohen, Pickeral, & McCloskey, 2008). Student survey data regarding the school climate provides a comprehensive report for administrators and teachers when improving and sustaining the health of the environment.

This study used a cross-sectional survey design explored students' perceptions on school and classroom climate at an intermediate school. Chapter three is divided into nine sections to describe the methods used for conducting the research: *Background of Research; Restatement of Research Purpose; Research Questions; Setting and*

*Participants; Instrumentation; Procedure and Time Frame; Research Design and Data Analysis; Limitations; and chapter Summary.*

## **Background of Research**

The current research was initiated after previously implementing a student survey at an intermediate school to measure the school climate. The school climate survey measured the students' perceptions of the school climate along with the three different content classrooms: math, reading, and science. The climate survey contained 16 items that assessed four categories: self-worth, active engagement, purpose, and content areas. The climate survey contained items such as "My teachers present lessons in different ways," "Teachers care about my problems and feelings," and "My teacher makes learning fun." The student climate survey was part of the school action plan to measure and improve the overall school and classroom climate.

The sample was comprised of approximately 300 fifth grade students and 325 sixth grade students. The school climate survey data revealed that the students' perceptions of the reading classrooms were more positive than the math and science classrooms. The students viewed their reading classroom as a more healthy and engaging environment than the math and science classrooms. The school climate survey was not correlated with individual student achievement. However, at the end of the school year, the state mandated assessments had the highest levels of student achievement in reading over the math and science test scores. The results of the study indicated that there were variations in the students' perceptions across the math, reading, and science classrooms. In addition, the students perceived the climate in their reading classrooms as a positive environment which may have had an impact on the high levels of achievement in reading.



The study was limiting and inconclusive due to the lack of data indicating that the survey was a reliable and valid measure for assessing school climate. The lack of reliability and validity in the study provoked interest and questions regarding possible variations in students' perceptions with subject area. This small study, however flawed, led to a deeper analysis of school climate with the addition of a scientifically sound instrument to collect students' perceptions on the climate.

### **Restatement of Research Purpose**

Research has confirmed that school and classroom climate has an impact on academic achievement (Brookover et al., 1978; MacNeil et al., 2009); student motivation (Anderson et al., 2004); school completion (Rumberger, 1987; Sommer, 1985); and job satisfaction amongst teachers (Ma & MacMillan, 1999). School and classroom climate can promote or hinder learning and should be regarded as a critical component of every school. School climate data should be measured, disaggregated, and analyzed to ensure that all students have the opportunity to thrive in a healthy environment. There is a significant need for research to be conducted that is aimed to identify the variations of perceptions among the students.

The transition from elementary to intermediate or middle school has been shown to have a negative impact on student achievement and intrinsic motivation (Wigfield, Eccles, & Rodriguez, 1998; Alspaugh, 2001). This study recognized the importance of assessing the students' perceptions on school and classroom climate after a critical transition from elementary school to begin to understand any factors that may influence the decline of achievement during intermediate or middle school. This study examined

possible perceptual variations among gender, grade level, and subject area at an intermediate school.

### Research Questions

Table 2 displays the following research questions addressed in the study.

Table 2

#### *Research Questions and Data Analysis*

<b>Research Questions</b>	<b>Data Source</b>	<b>Collection Procedure</b>	<b>Data Analysis</b>
1) Do students' perceptions of school and classroom climate significantly vary with gender?	Sample of 224 fifth grade students and 235 sixth grade students completed the <i>Classroom &amp; School Climate Survey For Students: Elementary Short Form</i> (Freiberg & Stein, 2003).	Anonymous online survey results on school and classroom climate.	MANOVA
2) Do students' perceptions of school and classroom climate significantly vary with grade level (fifth-sixth grade)?			
3) Do students' perceptions of school and classroom climate significantly vary with subject area (math, reading, and science)?			

Table Research design provided by H. Jerome Freiberg (1989-2012)

## **Setting and Participants**

The school used for this study is part of a predominantly minority school district in Texas that extends over 111 square miles and serves portions of Houston and Harris County. The school district enrolled 63,187 students in 2010, the 11<sup>th</sup> largest school district in Texas. The district campuses are organized for students in kindergarten through high school consisting of the following grade spans: pre-kindergarten school, elementary school (grades K-4), intermediate school (grades 5-6), middle school (grades 7-8), ninth grade school (grade 9), and high school (grades 10-12). In 2011, the school district was rated “Academically Acceptable” by the Texas Education Agency. The district qualifies under Title 1: 84 percent of the total students are economically disadvantaged according to the United States Department of Education.

The participants used for this study consisted of 224 fifth and 235 sixth grade students in one intermediate school. The intermediate school qualifies under Title 1 with 75 percent of the students qualified as economically disadvantaged. Intact classes, not random individuals, comprised of the sampling unit from 24 classrooms divided by three subject areas: math, reading, and science. The age of the participants ranged from 10 years of age to 13 years. The ethnicity of the participants in fifth and sixth grade included 42.5 percent African American; 5.2 percent Caucasian; 48.4 percent Hispanic; 1.8 percent Asian; 1.4 percent Multiracial; and 0.5 percent Native Hawaiian.

Initial contact to participate in the study was made by the researcher to discuss student participation with an overview of the study. The researcher informed students that participation of the study involved completing an online climate survey during the regular school day. Potential participants were informed that there were no penalties or

incentives for not choosing or choosing to participate in the study. The students were instructed that if they chose to participate, the survey would be anonymous. Parental permission and participant assent was obtained with permission and assent forms.

### **Instrumentation**

In the 1970s, Jerome Freiberg initiated and conceptualized the framework for the current instructional climate measure in participating Consistency Management Cooperative Discipline (CMCD) schools. Freiberg and his colleagues measured school climate from the perspective of teachers, students, and parents using a climate instrument specifically developed for a sample of Houston schools. The climate survey contained questions for the teachers, students, and parents from a sample of a feeder pattern of elementary and middle schools that took part in an intervention used in the University of Houston and Houston Sixth Cycle Teacher Corps. The survey later evolved into a series of surveys used in pre-school through high school and was disaggregated by grade level and subject area (Freiberg, Stein, & Lamb, 2009; Freiberg, 1999; Freiberg, 1998).

The five themes from the current CMCD climate survey evolved from CMCD which is a person-centered classroom management program that allows administrators, teachers, and students the tools necessary to build a functioning community within their classrooms and schools. The intervention program is designed to build a positive school and classroom climate, self-discipline of students, effective use of instructional time, and school connectedness to improve student achievement. The program is implemented in the classroom and then expands into the common areas of the school. CMCD has five points of action that strive to (a) increase teacher and student attendance rates; (b) reduce office discipline referrals; (c) increase student achievement in mathematics and reading;

(d) create a positive school climate; (e) improve the classroom and school learning environments. The five central themes (Prevention, Caring, Organization, Cooperation, and Community) drive the CMCD program and are embedded in the three climate surveys developed specifically for CMCD to determine the climate perceptions of teachers, students, and parents: *The School & Classroom Climate Survey For Students*; *The School and classroom Climate for Teachers*; and *The School & Classroom Climate Survey For Leadership Team Members*.

The composition of the items on the three surveys builds around five themes of the CMCD program: Prevention, Caring, Organization, Cooperation, and Community (Freiberg, 2012; Freiberg, 1999; Freiberg, 1986). The items can be viewed as a “pyramid” with the base of the pyramid comprised of the student survey items and serves as the pivotal structural element. The next tier of the pyramid represents the 16 items on the teacher survey that pertains to teachers. The last tier of the pyramid represents the additional nine items that pertain specifically to the leadership team. The three surveys all contain the 70 items but are phrased appropriately to each group. The construction of the three surveys allow for comparisons across the three groups on a common set of instructional climate indicators and group-specific climate perceptions. Each of the three surveys has an adopted *Short Form* with a selective number of items from the original 70 items to assess the school and classroom climate at the elementary and secondary level. The student version has corresponding forms for each subject area in math, reading, and science to correlate subject area with students’ perceptions on school climate.

This study used the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003) that contains 47 items to assess

students' perceptions on climate across math, reading, and science classrooms. The last portion of the survey has items that identify the gender and grade level of the participants. The student survey can be completed by paper and pencil or electronically online.

The CMCD Climate Survey for elementary and secondary schools and classrooms incorporates five themes including Prevention, Caring, Organization, Cooperation, and Community from the perspective of students, teachers, and the leadership team. The Prevention Theme measures the teacher's ability to prevent or minimize future discipline problems by investing time at the beginning of the year establishing opportunities for students to achieve high standards for behavior (Freiberg, 1996; 1986). The Prevention Theme questions focus on class distractions and school-wide discipline problems (Question 40: *Students making noise in this class.* and Question 47: *Students bringing weapons to this school.*). The Caring Theme measures the teacher's ability to listen, reflect, trust, and respect the learner. The Caring Theme questions focus on student satisfaction and school satisfaction (Question 22: *I like to help other students in this class.* and Question 28: *I am actively involved in my lessons in this class.*). The Cooperation Theme measures the extent the students share, participate, and work together in the learning environment. The Cooperation Theme questions focus on student connectedness; student involvement with curriculum; and student involvement with collaboration (Question 6: *Students in this class respect me.* and Question 10: *I like working with my classmates in this class to achieve goals.*). The classroom Organization Theme measures the level of mutual responsibility between the teacher and students. The organization of the classroom learning environment that adds valuable teaching and learner while building student ownership and self-discipline. The Organization Theme

questions focus on teacher effectiveness and student academic orientation (Question 14: *The teacher for this class encourages me to do my best.* and Question 5: *Learning is important at this school.*). The Community Theme measures the extent the classroom learning environment extends to the community and families; the ability of the school staff and teachers to effectively seek outside participation and support. The Community Theme questions focus on parent involvement (Question 30: *My parents help in the school.* and Question 1: *Sometimes my parents help me with my homework for this class.*).

The internal consistency of the items that comprise the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003) was measured using Cronbach's Alpha. The Cronbach's Alpha is a statistic that is generally used as a measure of internal consistency or reliability of a psychometric instrument (Choudhury, 2010). The alpha coefficient ranges in value from zero to one and provides a description of the reliability of factors extracted from dichotomous or multi-point questionnaires or surveys (Choudhury, 2010). Some professionals insist on a reliability score of 0.70 to be used as a psychometric instrument (Choudhury, 2010). The reliability of the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003) was calculated for each theme: (a) Prevention = 0.84; (b) Caring = 0.86; (c) Cooperation = 0.81; (d) Organization = 0.88; and (e) Community = 0.73.

The *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003) is at a 5.5 readability level as determined by the Flesch-Kincaid Readability Test. The student survey contains two sections: Section A and Section B. The instructions are provided at the beginning of the survey and describe the process for

rating the items in the two sections. Section A requires the participants to rate the items on a scale of agreement from “Strongly Disagree” to “Strongly Agree.” Section B requires the students to rate the items on a scale of seriousness from “Not a problem” to “Serious problem.” The climate survey contains items such as “Sometimes my parents help me with my reading homework.” “My math teacher knows how to help me when I don’t understand something,” and “I like working with my classmates in science to achieve goals.”

### **Procedure and Time Frame**

The fifth and sixth grade classes that were used in the sample were intact for convenience. The researcher’s thesis proposal was given to the district’s research department and campus principal to obtain permission in spring 2011. After district and campus permission was approved, the Human Subjects Application was approved on September 8, 2011. The researcher conducted training at the intermediate school to provide teachers with pertinent information regarding the study. The researcher provided the teachers with parent permission and student assent forms to disperse a month before the study began. The researcher informed the students that their participation was voluntary and anonymous.

The parent permission and student assent forms were collected and stored by the researcher in a secure location before, during, and after the study for three years to ensure student confidentiality. In November 2011, the participants that obtained proper permission completed the climate survey electronically during the regular school day. The participants completed the survey electronically in the campus computer lab; the campus testing coordinator supervised the computer lab for technical support and fidelity



purposes. After students completed the survey, they received a sheet with the researcher's contact information should questions or concerns arise. The student survey data was compiled electronically to provide a thorough analysis and disaggregation of gender, grade level, and subject area. After the data analysis was completed, the school received a comprehensive report regarding the school and classroom climate.

### **Research Design and Data Analysis**

This study used cross-sectional research to make comparisons across gender (female and male), grade level (fifth and sixth grade), and subject area (math, reading, and science). Quantitative data regarding the students' perceptions on the school and classroom climate were collected from the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003). The school and classroom climate data were collected at one time in November 2011. The school climate data from the *Classroom & School Climate Survey For Students: Elementary Short Form* represented the outcome or dependent variable. Gender, grade level, and subject area served as the independent variables to predict the variations of the school and classroom climate data.

The dependent variables were collected from the student surveys to measure the school and classroom climate and consisted of an ordinal measurement from the Likert Scale in Section A and Section B: Strongly Disagree, Disagree, Agree, Strongly Agree in Section A, and Not a Problem, Minor Problem, Moderate Problem, and Serious Problem in Section B. The independent variables consisted of the gender, grade level, and subject area and was measured with a nominal measurement: female = 1 and male = 2; fifth grade = 1 and sixth grade = 2; reading = 1, math = 2, and science = 3. The five themes

(Prevention, Caring, Cooperation, Organization, and Community) of the survey served as multiple dependent variables.

The school climate data were collected from the student survey to measure the significance of the factors with gender, grade level, and subject area. A discriminant analysis was conducted from quantitative data from the student survey using R (R Foundations for Statistical Computing, Austria) and SPSS (SPSS, Inc., Chicago IL), a programming language and software for statistical computing and graphics. The objectives included:

- 1) Determine whether there is a statistically significant difference in climate score means between genders.
- 2) Determine whether there is a statistically significant difference in climate score means between grade levels.
- 3) Determine whether there is a statistically significant difference in climate score means between subject areas.

To evaluate the effects of multiple independent variables (gender, grade, subject) on multiple dependent variables (five themes of the survey: Prevention, Caring, Cooperation, Organization, Community), a multivariate analysis of variance (MANOVA) was used. MANOVA allows researchers to estimate the effects of the independent variables; interactions within the independent variables; the importance of the dependent variables; the correlation between dependent variables; and the impacts of covariates. The measurement of the dependent variables must be a ratio/interval measure; an ordinal measure with equal-appearing intervals; or a dichotomy (Nardi, 2006).

MANOVA was chosen over ANOVA for several reasons. It is more likely to determine which factors are important by measuring several dependent variables. It mitigates against false positives that can occur while conducting separate ANOVA tests. It can also illuminate differences undetected by running ANOVA tests.

In order to interpret the MANOVA results, a significance level must be chosen. The significance level represents a tolerance threshold that the results have occurred by chance. An appropriate significance level in social science is .05 (Nardi, 2006), meaning that results will be accepted if it is estimated that probability of obtaining a test statistic at least as extreme as the observed value is less than 5 percent, given that the independent variables actually have no effect on the dependent variables.

### **Limitations**

There are several limitations that influenced the results of the study. First, the sample size is limited when analyzing variations of students' perceptions on subject area. A total of eight intact classrooms were used for each subject area: math, reading, and science, a relatively small comparison across subjects. There is a possibility that the data may be skewed if the perceptions of the climate are a result of the effectiveness of the teacher, rather than the distinct climate inherent to the different subject areas. The limited sample may invalidate broad generalizations across other schools with a different population of teachers. Second, the sample used in this study is unique in its demographics with a high level of economically disadvantaged students and diversity. The ability to generalize the results and conclusions of this study to other populations of students and schools may be dependent on the similarity of the demographics between the two schools. Third, the survey results were based on the perceptions of the

participants, which are subjective in nature and may lack validity. Surveys and questionnaires are vulnerable to the participants' willingness and motivation to answer the questions honestly. Participants may not wish to reveal certain information on the survey, or they may think that they will be penalized by giving their true opinion despite being told otherwise.

### **Summary**

This study examined the complexity of school climate as perceived by intermediate students in a Title 1 school located in Texas. There are a variety of methods for assessing and evaluating the school and classroom environment; however, scientifically sound student surveys that assess all the complex dimensions that color and shape the students' experiences make it the most comprehensive method (Cohen et al., 2008). This study used a cross-sectional survey design that examined the effects of gender, grade level, and subject area on school and classroom climate. The participants used for this study consisted of 224 fifth and 235 sixth grade students in one intermediate school. The students' perceptions on climate were measured with the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg and Stein, 2003) that contains 47 items to assess students' perceptions on school climate across math, reading, and science classrooms. Climate data from the student survey was disaggregated to evaluate the effects of multiple independent variables (gender, grade, subject) on multiple dependent variables (five subparts of the survey: Prevention, Caring, Cooperation, Organization, Community) using a multivariate analysis of variance (MANOVA). Limitations of the study included a limited sample size to assess climate across the three subject areas; a unique demographics of the sample and school that may

prevent broad generalizations; and the subjectivity of participants' perceptions on school and classroom climate on the survey.

## Chapter IV

### Results

This chapter presents the results of this study and the analysis of the effects of gender, grade level, and subject area on students' perceptions of the school and classroom climate. The chapter is divided into five sections: *Summary of Quantitative Results*, *Descriptive Characteristics of Participants*, *Overview of the Analysis Process*, *Quantitative Results*, and a *Summary* of the chapter. The *Summary of Quantitative Results* provides a brief summary of the overall results of the statistical tests. The *Descriptive Characteristics of Participants* provides demographic data from the survey results with the breakdown of the total participants for gender, grade level, and subject area. The *Overview of the Analysis Process* provides a detailed overview of how the survey data was analyzed and reported. The *Quantitative Results* section provides numerical data from the student survey regarding the school and classroom climate and answers the following research questions:

- Do students' perceptions of school and classroom climate significantly vary with gender?
- Do students' perceptions of school and classroom climate significantly vary with grade level (fifth-sixth grade)?
- Do students' perceptions of school and classroom climate significantly vary with subject area (math, reading, and science)?

School and classroom climate data were collected from the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003); a survey

that contains 47 items to assess students' perceptions on climate in math, reading, and science classrooms. The last portion of the survey has items that identify the gender and grade level of the participants. The survey incorporates five themes including Prevention, Caring, Organization, Cooperation, and Community from the perspective of students.

### **Summary of Quantitative Results**

The MANOVA data revealed that the three independent variables (gender, grade level, and subject area) had statistically significant effects on the five dependent variables (Prevention, Caring, Cooperation, Organization, and Community) at the  $p < 0.05$  alpha level. The interaction of subject area and grade level was found to have a statistically significant effect at the  $p < 0.05$  alpha level. Differences were found with a  $p$  value of 0.001 for sixth grade science and fifth grade math; fifth grade science and sixth grade science; and sixth grade science and sixth grade math. Sixth grade science classrooms were shown to have a significantly lower mean than fifth grade math, fifth grade science, and sixth grade math. The Tests of Between-Subjects Effects indicated statistically significant effects for gender within the Prevention Theme; grade level within the Caring Theme; and subject area within the Prevention, Caring, and Organization Themes at the  $p < 0.01$  alpha level. Furthermore, the Tests of Between-Subjects Effects were performed for the Cooperation and Community Themes with no statistically significant results.

### **Descriptive Characteristics of Participants**

Intact classes, not random individuals, comprised the sampling unit from 24 intermediate classrooms divided by three subject areas: math, reading, and science. The age of the participants ranged from 10 years of age to 13 years. The ethnicity of the

participants in fifth and sixth grade included 42.5 percent African American; 5.2 percent Caucasian; 48.4 percent Hispanic; 1.8 percent Asian; 1.4 percent Multiracial; and 0.5 percent Native Hawaiian. The gender of the participants included 248 females and 211 males. The grade level of the participants included 224 fifth graders and 235 sixth graders. The subject area participants included 172 in math, 152 in reading, and 135 in science.

Table 3 presents the total number of female and male participants across the three subject areas in fifth grade. The response rate across all three subject areas was 100 percent.

Table 3

*Fifth Grade Females and Males by Subject Area*

<i>Participants</i>	<b>Female</b>	<b>Male</b>	<b>% of Total Participants</b>
<b>Math</b>	48	39	39
<b>Reading</b>	34	37	32
<b>Science</b>	30	36	29
<b>Totals (N = 224)</b>	112	112	100

Table 4 presents the total number of female and male participants across the three subject areas in sixth grade. The response rate across all three subject areas was 100 percent.



Table 4

*Sixth Grade Females and Males by Subject Area*

<i>Participants</i>	<b>Female</b>	<b>Male</b>	<b>% of Total Participants</b>
<b>Math</b>	58	27	36
<b>Reading</b>	41	40	35
<b>Science</b>	37	32	29
<b>Totals (N = 235)</b>	136	99	100

### **Overview of the Analysis Process**

The dependent variables were collected and disaggregated from the five themes of the student survey: Prevention (9 questions), Caring (12), Cooperation (7 questions), Organization (13 questions), and Community (6 questions).

The data were compiled from the Likert Scale in Section A and Section B: Strongly Disagree, Disagree, Agree, Strongly Agree in Section A, and Not a Problem, Minor Problem, Moderate Problem, and Serious Problem in Section B. The Likert Scale items were assigned a numerical value: Strongly Disagree = 1; Disagree = 2; Agree = 3; Strongly Agree = 4; and Not a Problem = 4; Minor Problem = 3; Moderate Problem = 2; Serious Problem = 1. The independent variables consisted of the gender, grade level, and subject area and were measured with a nominal measurement: female = 1 and male = 2; fifth grade = 1 and sixth grade = 2; reading = 1, math = 2, and science = 3. The Likert Scale items from the student survey were organized in numerical values prior to the discriminant analysis.

## MANOVA Procedures

To evaluate the effects of multiple independent variables (gender, grade, subject area) on multiple dependent variables (five climate themes: Prevention, Caring, Cooperation, Organization, Community), a multivariate analysis of variance (MANOVA) was used. A MANOVA tests whether mean differences among groups on a combination of dependent variables are statistically significant, or are unlikely to occur by chance. Four multivariate tests were utilized: Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. The Pillai's Trace is the sum of the variance which can be explained by the calculation of discriminant variables; it calculates the amount of variance in the dependent variable. The Wilks' Lambda can be interpreted as the proportion of the variance in the outcomes that is not explained by an effect. The Hotelling's Trace is used when the independent variable forms two groups and represents the most significant linear combination of the dependent variables. The Roy's Largest Root is similar to the Pillai's Trace except it only considers the largest eigenvalue. A summary of the analysis procedure for the MANOVA included three steps:

- 1) A MANOVA was used to determine whether differences in the independent variables were associated with statistically significant differences on the dependent variables and the interactions among the independent variables. Four multivariate tests were utilized: Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root.
- 2) For any statistically significant multivariate effects, the Tests of Between-Subjects Effects were used for each of the five dependent variables: Prevention, Caring, Cooperation, Organization, and Community.

- 3) For any statistically significant results found in the Tests of Between-Subjects Effects, a Tukey's HSD was performed for any independent variables with more than two levels to determine where the significant differences exist. For any statistically significant results for independent variables with two levels, a simple comparison of means will suffice.

### **Quantitative Results**

This section provides the quantitative results from the data collected using the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003). Five themes were assessed in the survey: Prevention, Caring, Cooperation, Organization, and Community. The Prevention Theme questions measured the teacher's ability to prevent or minimize future discipline problems and focus on class distractions and school-wide discipline problems. The Caring Theme questions measured the teacher's ability to listen, reflect, trust, and respect the learner and focused on student satisfaction and school satisfaction. The Cooperation Theme questions measured the extent to which students share, participate, and work together in the learning environment and focused on student connectedness; student involvement with curriculum; and student involvement with collaboration. The classroom Organization Theme questions measured the level of mutual responsibility between the teacher and students and focused on teacher effectiveness and student academic orientation. The Community Theme questions measured the extent to which the classroom learning environment extends to the community and families; the ability of the school staff and teachers to effectively seek outside participation and support and focus on parent involvement. Table 5 presents quantitative results from the MANOVA.

Table 5

*MANOVA Results*

Effect		Value	F	Hypothesis df	Error df	Sig.
Subject	Pillai's Trace	.079	3.633	10.000	888.000	.000**
	Wilks' Lambda	.923	3.642 <sup>b</sup>	10.000	886.000	.000**
	Hotelling's Trace	.083	3.651	10.000	884.000	.000**
	Roy's Largest Root	.061	5.430 <sup>c</sup>	5.000	444.000	.000**
gender	Pillai's Trace	.026	2.400 <sup>b</sup>	5.000	443.000	.036*
	Wilks' Lambda	.974	2.400 <sup>b</sup>	5.000	443.000	.036*
	Hotelling's Trace	.027	2.400 <sup>b</sup>	5.000	443.000	.036*
	Roy's Largest Root	.027	2.400 <sup>b</sup>	5.000	443.000	.036*
grade	Pillai's Trace	.030	2.748 <sup>b</sup>	5.000	443.000	.019*
	Wilks' Lambda	.970	2.748 <sup>b</sup>	5.000	443.000	.019*
	Hotelling's Trace	.031	2.748 <sup>b</sup>	5.000	443.000	.019*
	Roy's Largest Root	.031	2.748 <sup>b</sup>	5.000	443.000	.019*
subject * gender	Pillai's Trace	.029	1.326	10.000	888.000	.212
	Wilks' Lambda	.971	1.325 <sup>b</sup>	10.000	886.000	.212
	Hotelling's Trace	.030	1.324	10.000	884.000	.212
	Roy's Largest Root	.022	1.962 <sup>c</sup>	5.000	444.000	.083
subject * grade	Pillai's Trace	.049	2.249	10.000	888.000	.014*
	Wilks' Lambda	.951	2.262 <sup>b</sup>	10.000	886.000	.013*
	Hotelling's Trace	.051	2.276	10.000	884.000	.012*
	Roy's Largest Root	.046	4.120 <sup>c</sup>	5.000	444.000	.001**
gender * grade	Pillai's Trace	.005	.436 <sup>b</sup>	5.000	443.000	.823
	Wilks' Lambda	.995	.436 <sup>b</sup>	5.000	443.000	.823
	Hotelling's Trace	.005	.436 <sup>b</sup>	5.000	443.000	.823
	Roy's Largest Root	.005	.436 <sup>b</sup>	5.000	443.000	.823
subject * gender * grade	Pillai's Trace	.032	1.438	10.000	888.000	.158
	Wilks' Lambda	.968	1.436 <sup>b</sup>	10.000	886.000	.159
	Hotelling's Trace	.032	1.433	10.000	884.000	.161
	Roy's Largest Root	.020	1.809 <sup>c</sup>	5.000	444.000	.110

\*\*Mean differences are significant at the  $p < 0.01$  level.

\*Mean differences are significant at the  $p < 0.05$  level.

Table 5 shows the three independent variables (gender, grade level, and subject area) are associated with statistically significant differences in the means of the dependent variables (Prevention , Caring, Cooperation, Organization, and Community) at the  $p < 0.05$  alpha level using Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. Additionally, the interaction between subject area and grade level was found to have a statistically significant effect.

Table 6 presents quantitative results from the MANOVA Tests of Between-Subjects Effects. In order to account for the increased probability of falsely rejecting a null hypothesis while testing five dependent variables, a  $p < 0.01$  level was used. The lower alpha level was obtained by dividing the MANOVA alpha level, 0.05 by the total number of dependent variables, five resulting in a more stringent test and higher level of significance to counteract the potential of an inflated Type I error. This adjustment is evident in Tables 6, 9, 10, 11, and 12.

Table 6

*Tests of Between-Subjects Effects*

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.
subject	Prevention	7.829	2	3.915	6.259	.002**
	Caring	3.955	2	1.977	6.502	.002**
	Cooperation	.492	2	.246	.823	.440
	Organization	1.802	2	.901	3.782	.001**
	Community	1.047	2	.524	1.336	.264
gender	Prevention	4.933	1	4.933	7.887	.005**
	Caring	.028	1	.028	.091	.763
	Cooperation	.651	1	.651	2.181	.140
	Organization	.052	1	.052	.217	.641
	Community	.000	1	.000	.001	.977
grade	Prevention	.159	1	.159	.254	.615
	Caring	2.905	1	2.905	9.551	.002**
	Cooperation	.847	1	.847	2.835	.093
	Organization	.238	1	.238	1.000	.318
	Community	2.026	1	2.026	5.168	.023
subject * gender	Prevention	1.919	2	.960	1.534	.217
	Caring	.037	2	.018	.061	.941
	Cooperation	.596	2	.298	.997	.370
	Organization	.540	2	.270	1.133	.323
	Community	1.372	2	.686	1.750	.175
subject * grade	Prevention	2.324	2	1.162	1.857	.157
	Caring	4.603	2	2.301	7.568	.001**
	Cooperation	1.764	2	.882	2.953	.053
	Organization	1.644	2	.822	3.450	.033
	Community	.623	2	.311	.794	.453
gender * grade	Prevention	1.126	1	1.126	1.801	.180
	Caring	.056	1	.056	.184	.668
	Cooperation	.001	1	.001	.003	.959
	Organization	.044	1	.044	.183	.669
	Community	.000	1	.000	.001	.974
subject * gender * grade	Prevention	.981	2	.491	.784	.457
	Caring	.075	2	.037	.123	.884
	Cooperation	1.473	2	.736	2.466	.086
	Organization	.311	2	.156	.653	.521
	Community	2.176	2	1.088	2.775	.063

\*\* Mean differences are significant at the  $p < 0.01$  level.

Research Question 1: *Do students' perceptions of school and classroom climate significantly vary with gender?* To test for the effects of gender on school and classroom climate, a MANOVA was performed to determine if gender had statistically significant effects on the five themes measured in the school and classroom climate. The MANOVA indicated that gender was associated with statistically significant differences in means on at least one of the five dependent variables at the  $p < 0.05$  alpha level. The Tests of Between-Subjects Effects results (see Table 6) indicated statistically significant effects with a  $p$  value of 0.005 for gender within the Prevention Theme. Males scored higher on the Likert Scale than females in the Prevention Theme indicating that the males had more positive perceptions than females regarding their teacher's ability to prevent or minimize future discipline problems and focus on class distractions and school-wide discipline problems. Table 7 presents the survey questions compiled in the Prevention Theme.

Table 7

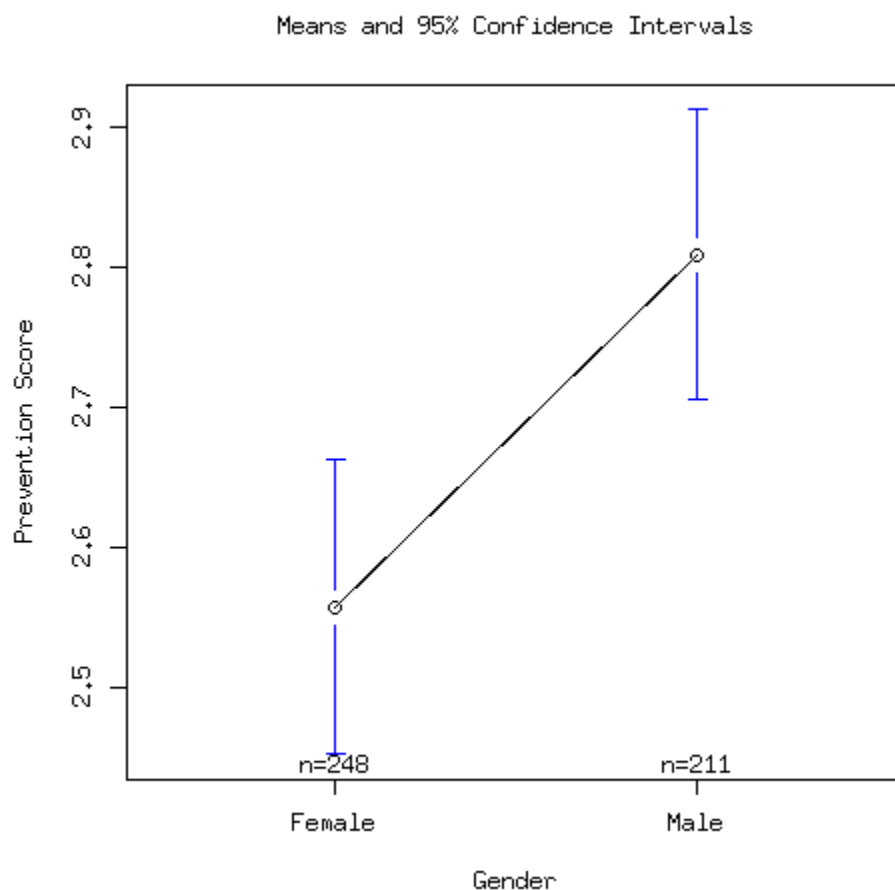
*Prevention Theme Questions*

- |  |
|--|
| 39. Noise from the hallways disturbing class work.<br>40. Students making noise in this class.<br>41. Students hitting adults in this school.<br>42. Students coming late to this class.<br>43. Students being sent out during this class because they break the rules.<br>44. Students cutting classes.<br>45. Loud Speaker announcements disturbing my work in this class.<br>46. Students using illegal drugs or alcohol in this school.<br>47. Students bringing weapons to this school. |
|--|

Males scored a mean of 2.81 on the Prevention Theme, while females scored a mean of 2.56. Figure 1 displays the statistically significant differences found for females and males within the Prevention Theme.



Figure 1

*Gender within Prevention Theme*

Research Question 2: *Do students' perceptions of school and classroom climate significantly vary with grade level (fifth-sixth grade)?* To test for the effects of grade level on school and classroom climate, a MANOVA was performed to determine if grade level had statistically significant effects on the five themes measured in the school and classroom climate. The MANOVA indicated that grade level was associated with a statistically significant difference in means on at least one of the five dependent variables at the  $p < 0.05$  alpha level. The Tests of Between-Subjects Effects results (see Table 6)

indicated within the Caring Theme, grade level had statistically significant effects with a  $p$  value of 0.002. Fifth grade participants scored higher on the Likert Scale than sixth grade participants in the Caring Theme indicating that the fifth grade participants had more positive perceptions than sixth grade participants regarding their teacher's ability to listen, reflect, trust, and respect the learner and focused on student satisfaction and school satisfaction. Table 8 presents the survey questions compiled in the Caring Theme.

Table 8

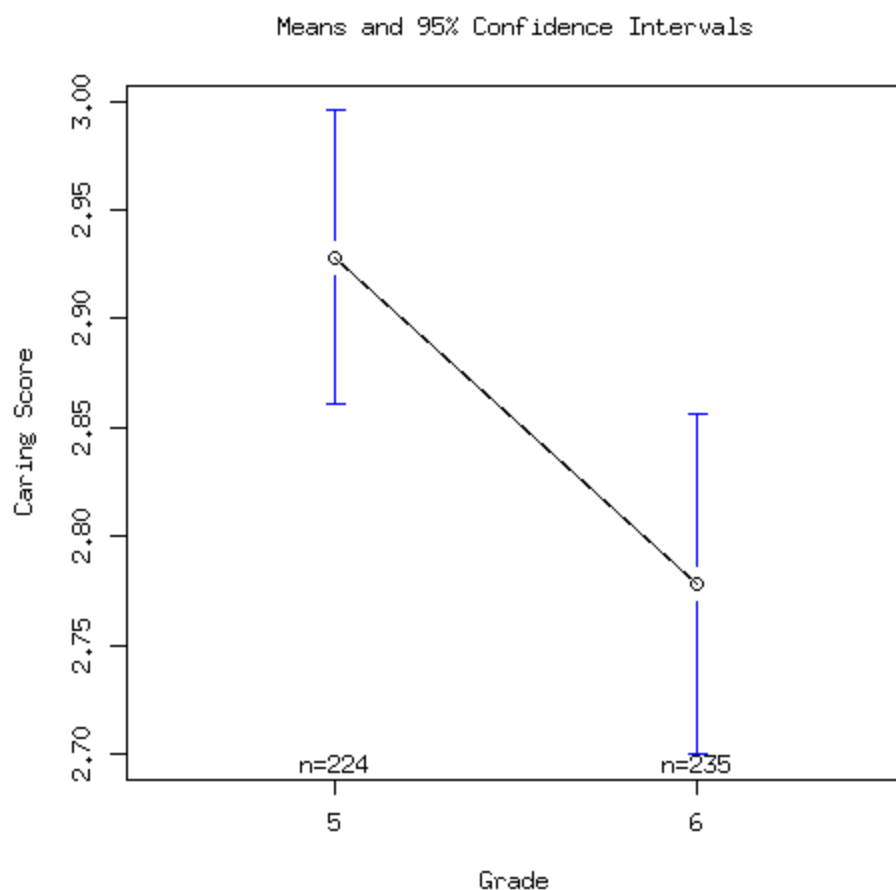
*Caring Theme Questions*

- |   |
|---|
| 11. I like to read.<br>18. I enjoy my schoolwork.<br>19. The outside areas of my school are clean.<br>22. I like to help other students in this class.<br>28. I am actively involved in my lessons in this class.<br>38. I am proud of my work in this class. |
|---|

Fifth grade students scored a mean of 2.93 on the Caring Theme questions, while sixth grade students scored a mean of 2.78. Figure 2 displays the statistically significant differences found for fifth graders and sixth graders within the Caring Theme.

Figure 2

*Grade Level within Caring Theme*



Research Question 3: *Do students' perceptions of school and classroom climate significantly vary with subject area (math, reading, and science)?* To test for the effects of subject area on school and classroom climate, a MANOVA was performed to determine if subject area had statistically significant effects on the five themes measured in the school and classroom climate. The MANOVA indicated that subject area was associated with a statistically significant difference in means of at least one of the five dependent variables at the  $p < 0.05$  alpha level. The Tests of Between-Subjects Effects results indicated within the Prevention Theme, subject area had statistically significant effects with a  $p$  value of 0.002. The Tukey's HSD revealed a difference between the

science and math subject area at the  $p < 0.01$  alpha level within the Prevention Theme in Table 9.

Table 9

*Tukey's HSD on Subject Area within Prevention Theme for 5<sup>th</sup> and 6<sup>th</sup> Grade Combined*

<b>5<sup>th</sup> and 6<sup>th</sup> grades</b>	<b>Mean Difference</b>	<b>Lower</b>	<b>Upper</b>	<b>Adjusted <i>p</i></b>
<b>Reading-Math</b>	0.1916905	-0.01534332	0.3987243	0.0762094
<b>Science-Math</b>	0.3670208	0.15317886	0.5808627	0.0001887**
<b>Science-Reading</b>	0.1753303	-0.04461111	0.3952717	0.1472724

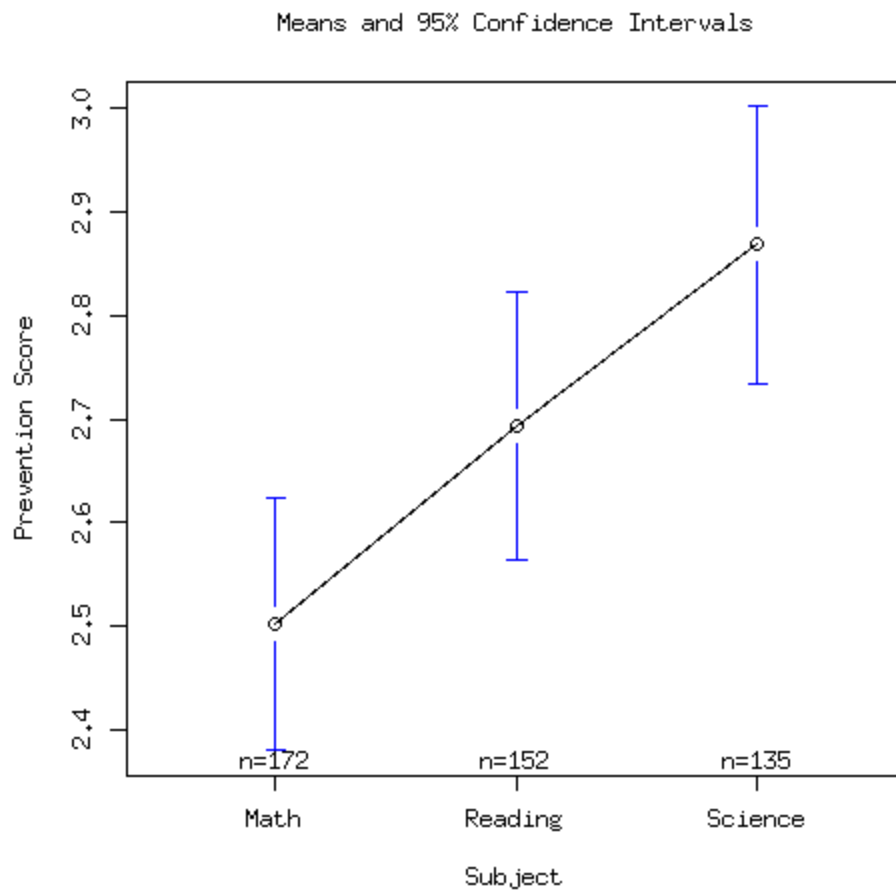
\*\*\* Mean differences are significant at the  $p < 0.001$  level.

\*\* Mean differences are significant at the  $p < 0.01$  level.

Participants in the science subject area scored a mean of 2.87, while the math subject area participants scored a mean of 2.50. The results in Figure 3 indicate statistically significant differences between the math and science subject areas within the Prevention Theme. Participants had more positive perceptions within the science classrooms than in the math classrooms regarding their teacher's ability to prevent or minimize future discipline problems and focus on class distractions and school-wide discipline problems.

Figure 3

*Subject Area within Prevention Theme*



The Tests of Between-Subjects Effects were performed for the Caring Theme with significance at the  $p < 0.01$  alpha level, (see Table 6). The Tukey's HSD revealed statistically significant interaction effects at the  $p < 0.01$  alpha level by subject area between reading and math subject area, as well as the science and math subject area as indicated in Table 10.

Table 10

*Tukey's HSD on Subject Area within Caring Theme for 5<sup>th</sup> and 6<sup>th</sup> Grade Combined*

	<b>Mean Difference</b>	<b>Lower</b>	<b>Upper</b>	<b>Adjusted <i>p</i></b>
<b>Reading-Math</b>	-0.204559364	-0.3489216	-0.06019713	0.0026812**
<b>Science-Math</b>	-0.202756245	-0.3518657	-0.05364679	0.0042289**
<b>Science-Reading</b>	0.001803119	-0.1515595	0.15516569	0.9995787

\*\*\* Mean differences are significant at the  $p < 0.001$  level.

\*\* Mean differences are significant at the  $p < 0.01$  level.

Table 11 indicates an interaction effect with statistically significant differences found for sixth grade science and fifth grade math; fifth grade science and sixth grade science; and sixth grade science and sixth grade math. In all three cases, sixth grade science was shown to have a significantly lower mean on the Caring Theme.

Table 11

*Tukey's HSD on Subject Area and Grade Interaction*

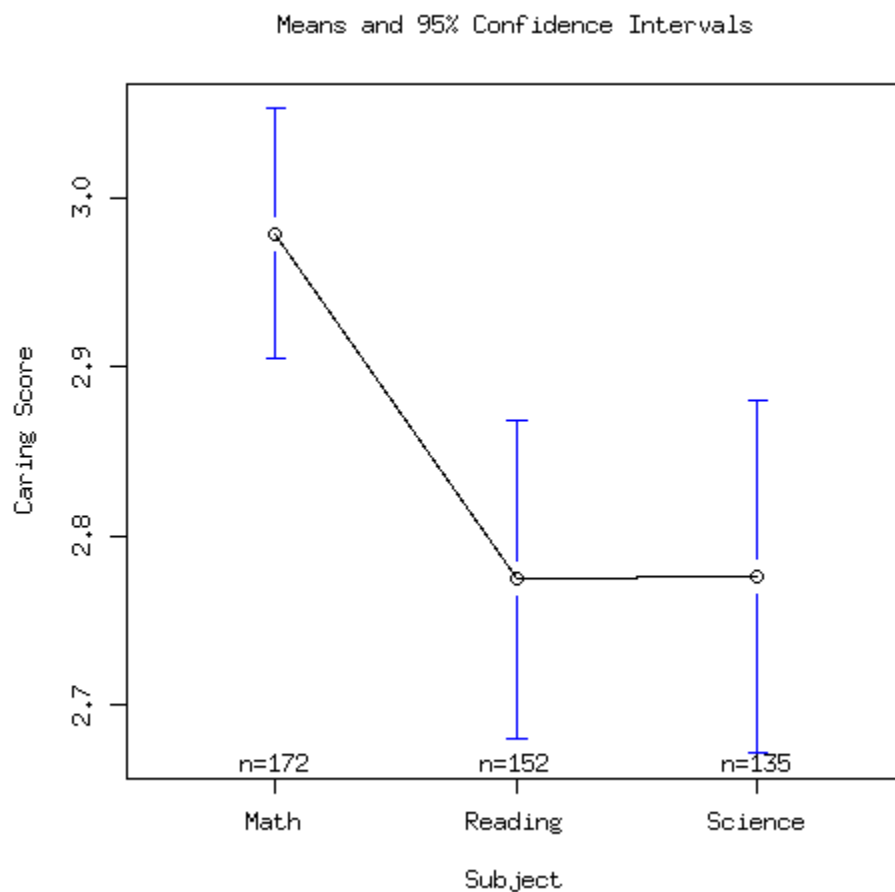
	<b>Mean Difference</b>	<b>Lower</b>	<b>Upper</b>	<b>Adjusted <i>p</i></b>
Reading: 5 – Math: 5	-0.256242753	-0.50867344	-0.003812063	0.0442956
Science: 5 – Math: 5	-0.006692729	-0.26433465	0.250949195	0.9999997
Math: 6 – Math: 5	-0.066474892	-0.30718678	0.174237000	0.9690884
Reading: 6 – Math: 5	-0.220902893	-0.46460255	0.022796763	0.1007253
Science: 6 – Math: 5	-0.454568885	-0.70900605	-0.200131725	0.0000070***
Science: 5 – Reading: 5	0.249550024	-0.02032429	0.519424339	0.0884778
Math: 6 – Reading: 5	0.189767861	-0.06399384	0.519424339	0.2685094
Reading: 6 Reading: 5	0.035339860	-0.22125770	0.291937420	0.9987679
Science: 6 – Reading: 5	-0.198326132	-0.46514265	0.068490384	0.2750051
Math: 6 – Science: 5	-0.059782163	-0.31872831	0.199163985	0.9860280
Reading: 6 – Science: 5	-0.214210164	-0.47593600	0.047515676	0.1793989
Science: 6 – Science: 5	-0.447876156	-0.71962818	-0.176124135	0.0000469***
Reading: 6 – Math: 6	-0.154428001	-0.39950609	0.090650087	0.4645141
Science: 6 – Math: 6	-0.388093993	-0.64385172	-0.132336266	0.0002506***
Science: 6 – Reading: 6	-0.233665992	-0.49223769	0.024905706	0.1027023

\*\*\* Mean differences are significant at the  $p < 0.001$  level.\*\* Mean differences are significant at the  $p < 0.01$  level.

The math subject area participants scored higher on the Likert than reading and science participants in the Caring Theme indicating that the math subject area participants had more positive perceptions than reading and science participants regarding their teacher's ability to listen, reflect, trust, and respect the learner and focused on student satisfaction and school satisfaction. The math subject area participants scored a mean of 2.98; reading subject area participants scored a mean of 2.77; and science subject area participants scored a mean of 2.78. Figure 4 displays the statistically significant differences found in the subject areas within the Caring Theme.



Figure 4

*Subject Area within Caring Theme*

The Tests of Between-Subjects Effects were performed for the Organization Theme with significance at the  $p < 0.01$  alpha level, as indicated in Table 9. The Tukey's HSD revealed statistically significant effects by subject area between math and reading subject areas on the Organization questions at the  $p < 0.01$  alpha level.

Table 12 displays the statistically significant differences between math and reading on the Organization Theme.

Table 12

*Tukey's HSD on Subject Area within Organization Theme for 5<sup>th</sup> and 6<sup>th</sup> Grade Combined*

	<b>Mean Difference</b>	<b>Lower</b>	<b>Upper</b>	<b>Adjusted <i>p</i></b>
<b>Reading-Math</b>	-0.16973449	-0.29751185	-0.04195712	0.0053925**
<b>Science-Math</b>	-0.08936262	-0.22134183	0.04261659	0.2500308
<b>Science-Reading</b>	0.08037187	-0.05537184	0.21611558	0.3457712

\*\*\* Mean differences are significant at the  $p < 0.001$  level.

\*\* Mean differences are significant at the  $p < 0.01$  level.

Math subject area participants scored higher on the Likert Scale than reading subject area participants in the Organization Theme indicating that the math subject area participants had more positive perceptions than reading subject area participants regarding the level of mutual responsibility between the teacher and students. Table 13 presents the survey questions compiled in the Organization Theme.

Table 13

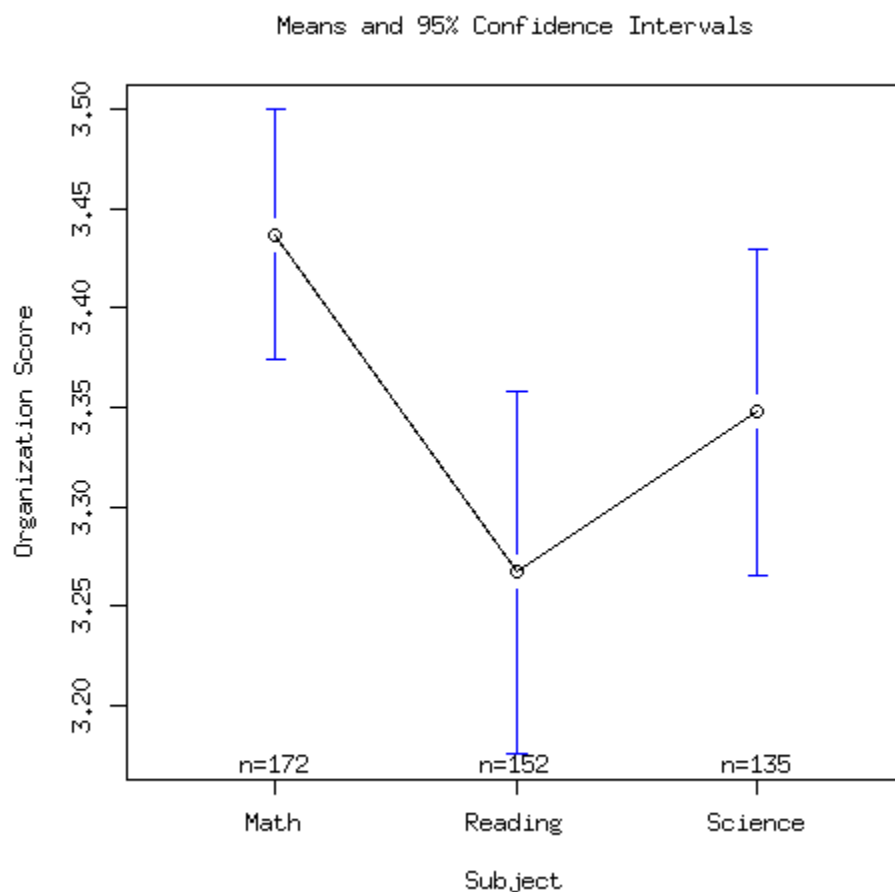
*Organization Theme Questions*

- |   |
|---|
| 2. The teacher for this class expects me to finish high school.<br>5. Learning is important at this school.<br>7. The teacher for this class expects me to finish college<br>12. The teacher for this class is fair in enforcing the rules.<br>13. I expect to make good grades in this class.<br>14. The teacher for this class encourages me to do my best.<br>16. The teacher for this class is prepared for class.<br>20. The teacher for this class listens to my ideas in class.<br>24. The teacher for this class trusts me.<br>26. The teacher for this class expects me to go to college.<br>27. I understand why I am in school.<br>36. The teacher for this class knows how to help me when I don't understand something.<br>37. I know I can learn. |
|---|

Math subject area participants scored a mean of 3.44, while reading subject area participants scored a mean of 3.27. Figure 5 displays the statistically significant differences found between math subject area participants and reading subject area participants within the Organization Theme.

Figure 5

*Subject Area within Organization Theme*



The MANOVA results indicated that at least one of the five dependent variables had significantly different means across the independent variables: Prevention, Caring, Cooperation, Organization, and Community. However, when the Tests of Between-Subjects Effects were performed for the Cooperation and Community Themes, there were no statistically significant results, so the Tukey's HSD was not necessary. The Tests of Between-Subjects Effects support the conclusion that the Cooperation and Community Themes were unaffected by a student's gender, grade level, and subject area. Tables 14

and 15 present the survey questions compiled in the Cooperation and Community Themes.

Table 14

*Cooperation Theme Questions*

- |  |
|--|
| 3. My classmates in this class help me<br>6. Students in this class respect me.<br>10. I like working with my classmates in this class to achieve goals.<br>17. I feel close to people at this school.<br>21. I like working in groups.<br>31. I have many friends at this school.<br>34. When my classmates and I have problems with each other we try to work them out together. |
|--|

Table 15

*Community Theme Questions*

- |  |
|--|
| 1. Sometimes my parents help me with my homework for this class.<br>9. My parents are interested in what I do in this class.<br>29. My parents often ask me about what I learned in this class.<br>30. My parents help in the school.<br>32. My parents attend parent meetings at the school.<br>35. The teacher for this class and my parents work together to help me learn. |
|--|

## Summary

The findings of the study were reported in this chapter. A summary of quantitative results was provided in the first section followed by the demographics and sample size. A detailed overview of the data analysis was provided before the quantitative results. The quantitative data were collected using the *Classroom & School Climate Survey For Students: Elementary Short Form* (Freiberg & Stein, 2003). The survey items were analyzed by assigning numerical values to the Likert Scales and

reviewing the five dependent variables: Prevention, Caring, Cooperation, Organization, and Community. The results were analyzed with a MANOVA, Tests of Between-Subjects Effects, and Tukey's HSD.

The MANOVA data revealed that the three independent variables (gender, grade level, and subject area) had statistically significant effects on the five dependent variables (Prevention, Caring, Cooperation, Organization, and Community) at the  $p < 0.05$  alpha level. Additionally, the interaction of subject area and grade level was found to have a statistically significant effect at the  $p < 0.01$  alpha level. The Tests of Between-Subjects Effects indicated statistically significant effects for gender within the Prevention Theme; grade level within the Caring Theme; and subject area within the Prevention, Caring, and Organization Themes. Furthermore, statistically significant differences were found for the Caring Theme for subject area and grade level interaction.

## Chapter V

### Discussion, Implications, and Recommendations

School and classroom climate instruments have been used in a variety of research to provide schools with data regarding the overall climate (Freiberg, 1999). However, school and classroom climate instruments have rarely been used to identify variations of climate perceptions among different groups of students to provide valuable data to administrators and teachers

Once data has been collected on the school or classroom climate, administrators and teachers can strategically plan interventions to reach the desired climate. A healthy school and classroom climate may be the most important asset of a transitional school from elementary school to intermediate or middle school due to the evidence that has shown a steady decline in student achievement and motivation in intermediate and middle school (Wigfield, Eccles, & Rodriguez, 1998).

The purpose of this study was to examine the effects of gender, grade level, and subject area on school and classroom climate at an intermediate school (fifth-sixth grade). The *School & Classroom Climate Survey For Students: Elementary Short Form* (Freiberg and Stein, 2003) was used to elicit students' perceptions of school and classroom climate. The study examined possible perceptual variations among gender, grade level, and subject area. This chapter will discuss the *Findings and Interpretations*, identify *Implications*, make *Recommendations for Future Research*, and provide a concluding *Summary* of the study.

## Findings and Interpretations

The *School & Classroom Climate Survey For Students: Elementary Short Form* (Freiberg and Stein, 2003) was the primary source of data for the study. The survey builds upon five themes from the CMCD program of Prevention, Caring, Cooperation, Organization, and Community. To evaluate the effects of multiple independent variables (gender, grade, subject area) on multiple dependent variables (five climate themes: Prevention, Caring, Cooperation, Organization, Community), a multivariate analysis of variance (MANOVA) was used. Since the three independent variables (gender, grade level, and subject area) had statistically significant effects on the dependent variables (Prevention, Caring, Cooperation, Organization, and Community) at the  $p < 0.05$  alpha level, a Tests of Between-Subjects Effects examined the dependent variables with a lower significance level of  $p < 0.01$ . A Tukey's HSD was performed for any independent variables with more than two levels to determine where the statistically significant differences existed.

Research Question 1: *Do students' perceptions of school and classroom climate significantly vary with gender?* The MANOVA indicated that gender had statistically significant effects on at least one of the five dependent variables: Prevention, Caring, Cooperation, Organization, and Community. A Tests of Between-Subjects Effects indicated statistically significant effects for gender within the Prevention Theme; males had more positive perceptions than females regarding their teacher's ability to prevent or minimize future discipline problems and focus on class distractions and school-wide discipline problems. Data regarding the school-wide discipline problems disaggregated by gender may shed some light on interpreting these findings. If school-wide discipline



problems were significantly higher amongst males, then one may conclude that the males are causing class distractions amongst the females. Interviewing female and male students may provide qualitative data on the differences among the males and females' perceptions regarding prevention and overall discipline within the school and classroom climate.

The difference in perceptions of school and classroom climate across gender was limited to the Prevention Theme, as no statistically significant differences were found for the four themes: Caring, Cooperation, Organization, and Community. The findings suggest that the gender of a student has limited effects on their perceptions of the school and classroom climate.

Research Question 2: *Do students' perceptions of school and classroom climate significantly vary with grade level (fifth-sixth grade)?* The MANOVA indicated that grade level had statistically significant effects on at least one of the five dependent variables: Prevention, Caring, Cooperation, Organization, and Community. A Tests of Between-Subjects Effects indicated grade level was associated with statistically significant differences within the Caring Theme: fifth grade participants had more positive perceptions than sixth grade participants regarding their teacher's ability to listen, reflect, trust, and respect the learner. The findings suggest that the fifth grade students felt more positively than sixth grade students regarding their schoolwork and are more actively involved in lessons. The lower CMCD survey scores amongst the sixth graders (compared to fifth graders) may support the evidence that there is a steady decline in student achievement and intrinsic motivation amongst students in middle school (Wigfield, Eccles, & Rodriguez, 1998; Alspaugh, 2001). This steady decline in

student achievement and motivation may be a result of the changes in the environment from elementary school to middle school and from middle school to high school. School and classroom climate data over many years from the transitions from elementary to middle school and middle school to high school may provide specific data on the decline of students' perceptions regarding the learning environment.

Research Question 3: *Do students' perceptions of school and classroom climate significantly vary with subject area (math, reading, and science)?* The MANOVA indicated that subject area had statistically significant effects on at least one of the five dependent variables: Prevention, Caring, Cooperation, Organization, and Community. A Tests of Between-Subjects Effects indicated subject area had statistically significant effects within the Prevention, Caring, and Organization Themes.

The Tukey's HSD revealed a statistically significant difference in means for the Prevention Theme between the science and math subject areas at the  $p < 0.01$  alpha level. Participants in the science subject area scored a higher mean than participants in the math subject area on the Prevention Theme questions. Students' perceptions of the climate in the science classrooms were more positive regarding their teacher's ability to prevent or minimize future discipline problems.

The Tukey's HSD revealed statistically significant effects by subject area between reading and math levels, as well as the science and math levels on the Caring Theme at the  $p < 0.01$  alpha level. The math subject area participants had more positive perceptions than reading and science participants regarding their teacher's ability to listen, reflect, trust, and respect the learner. Differences were found for sixth grade

science and fifth grade math; fifth grade science and sixth grade science; and sixth grade science and sixth grade math. Sixth grade science classrooms were shown to have a significantly lower mean than fifth grade math, fifth grade science, and sixth grade math. The data would suggest that the sixth grade students in science classes had significantly lower climate perceptions and may benefit from specific interventions targeted at improving the overall learning environment.

The Tukey's HSD revealed statistically significant effects by subject area between math and reading subject areas on the Organization Theme questions at the  $p < 0.01$  alpha level. Math subject area participants scored higher than reading subject area participants indicating that the math subject area participants had more positive perceptions than reading subject area participants regarding the level of mutual responsibility between the teacher and students. The data suggest that the math subject area classrooms are perceived as having a more positive climate than the reading and science classrooms in the Caring and Organization Themes. Overall, school and classroom climate did significantly vary with subject area; there was significance within the three climate themes on subject area: Prevention, Caring, and Organization. The findings suggest that student' perceptions of the school and classroom climate vary significantly with subject area (math, reading, and science).

The Tests of Between-Subjects Effects were performed for the Cooperation and Community Themes, and there were no statistically significant results. The data suggest that the Cooperation and Community Themes were uninfluenced by a student's gender, grade level, and subject area. The Cooperation Theme questions measured the extent to which the students share, participate, and work together in the learning environment.

Even with respect to the subject area variable, no significant difference was found. The Cooperation Theme may be the most stable theme because it is highly dependent on the students' actions and willingness to work together regardless of the different learning environments. The Community Theme was also unaffected by gender, grade level, and subject area. The Community Theme questions dealt with parent involvement and support, an area that is also highly dependent on the parents' actions and involvement regardless of their child's gender, grade level, or across subject areas. Cooperation and Community Themes seem to be unaffected by variations because both areas are highly dependent on the students and parents actions than the teachers' actions in the classroom or the climate in the school.

### **Implications**

The results of this study have potential implications for schools, classrooms, and teachers. The results and implications of this study are indicated in Table 16:

Table 16

*Results and Implications of Research Questions*

<b>Research Question</b>	<b>MANOVA Result</b>	<b>Between Subject Effects</b>	<b>Tukey's HSD</b>	<b>Implication</b>
Do students' perceptions of school and classroom climate significantly vary with gender?	Significant at $p < 0.05$ alpha level	Significant at $p < 0.01$ alpha level for the Prevention Theme; The Male mean was higher than the Female mean	Test not necessary	Science subject area participants had more positive perceptions when compared to the math and reading participants regarding their teacher's ability to prevent or minimize future discipline problems. The findings suggest that the gender of a student has limited effects on their perceptions of the school and classroom climate.
Do students' perceptions of school and classroom climate significantly vary with grade level (fifth-sixth grade)?	Significant at $p < 0.05$ alpha level	Significant at $p < 0.01$ alpha level for the Caring Theme; The fifth grade mean was higher than the sixth grade mean	Test not necessary	Fifth graders had more positive perceptions than sixth graders regarding their teacher's ability to listen, reflect, trust, and respect the learner. The fifth grade students felt more positively than sixth grade students regarding their schoolwork and were actively involved in lessons.
Do students' perceptions of school and classroom climate significantly vary with subject area (math, reading, and science)?	Significant at $p < 0.05$ alpha level	Significant at $p < 0.01$ alpha level for the Prevention, Caring, and Organization Themes	Science mean is greater than Math mean for the Prevention Theme; Math mean is greater than Reading and Science means for the Caring Theme; Math mean is greater than Reading mean for the Organization Theme at the $p < 0.01$ alpha level	Students' perceptions of the climate in the science classrooms were more positive when compared to the math and reading classrooms regarding their teacher's ability to prevent or minimize future discipline problems. However, the math subject area participants had more positive perceptions than reading and science participants regarding their teacher's ability to listen, reflect, trust, and respect the learner. The math subject area classrooms are perceived as having a more positive climate than the reading and science classrooms in the Caring and Organization Themes.

This study produced some contradictory results when compared to the limited research on gender and school climate. Previous studies indicated that males were less likely than females to have positive perceptions of the school climate, specifically the maintenance and safety of the school (Buckley, Storino, and Sebastiani, 2003). Males were also less likely to perceive the adults in the school climate as supportive. In the current study, males had more positive perceptions than females regarding their teacher's ability to prevent or minimize future discipline problems and focus on class distractions and school-wide discipline problems.

The grade level results of this study are consistent with the research that there is a steady decline in student achievement and intrinsic motivation amongst students in middle school (Wigfield, Eccles, & Rodriguez, 1998; Alspaugh, 2001). Additional research across the grade levels to explore if there is a steady decline in school and classroom climate suggests that this decline in the learning environment contributes to the overall decline in student achievement and motivation leading to the increased student drop-out rate.

The climate data disaggregated by subject area uncovers the most significant findings in this study with statistically significant differences in school and classroom climate between math, reading, and science subject areas. This study embarks on promising research that explores school and classroom climate disaggregated by gender, grade level (fifth-sixth grade), and subject area (math, reading, and science).

**Adult Learning Plan**

This study has shown the implications when school and classroom climate data is not solely analyzed as an aggregated totality, but rather disaggregated to determine the microcosm of issues that students see on a daily basis. After collecting school and classroom survey data, teachers and administrators can work together to target interventions aimed at directly impacting and improving the climate for the low means in the specific subject areas. Focus groups comprised of 10-15 students representing the diverse demographics of the school could begin collecting additional qualitative data through student interviews and discussion groups. Students can play an integral part of the school improvement plan by responding to the climate data with solutions alongside teachers and administrators. By working as a team, students can begin to shed light on the actual and preferred school and classroom climate that survey data alone does not capture.

Staff development should focus on the disaggregated survey data with an emphasis of improving specific low areas of climate within gender, grade level, and subject area. Teachers would benefit from workshops and trainings regarding school and classroom climate with the goal of improving individual classrooms and subject areas. Targeted interventions at the classroom level would tremendously benefit the climate in order to provide all students with a healthy environment that is conducive to learning.

In all schools, the disaggregated data would provide administrators and teachers with an accurate picture of the school and classroom climate to drive an action plan aimed at improving the low areas of perceptions among differentiated groups of students, whether across gender, grade level, and/or subject area. School and classroom climate

data should routinely be disaggregated at the level of sophistication as academic achievement data to provide administrators and teachers with valuable information that drives school-wide and classroom interventions. Targeted school and classroom interventions driven by disaggregated climate data are outlined in Table 17:

Table 17

*Interventions Targeted at Subject Area Climate Data*

<b>Implication</b>	<b>Intervention</b>
<i>Science subject area participants had more positive perceptions when compared to the math and reading participants regarding their teacher's ability to prevent or minimize future discipline problems.</i>	Collect observational data in math, reading, and science classrooms regarding the classroom management systems and level of student engagement. Implement a campus professional development plan focused on specific areas of weaknesses from observational and climate survey data. Professional development trainings should focus on a consistent management system with clear expectations, incentives, and consequences. Create individualized classroom climate improvement plans with strategies to improve perceptions, action steps, and evaluation process. Implement peer observations where teachers observe classrooms with positive climate perceptions and effective management systems.
<i>Math subject area participants had more positive perceptions than reading and science participants regarding their teacher's ability to listen, reflect, trust, and respect the learner.</i>	Collect qualitative data from math, reading, and science participants using focus groups and student interviews. Implement a campus professional development plan focused on improving qualitative data from focus groups and interviews, as well as quantitative climate survey data. Provide discussion and reflection opportunities amongst teachers regarding areas of improvement that are focused on a caring and healthy learning environment. Professional development trainings should focus on fairness, effective communication, student recognition, and healthy teacher-student relationships. Implement follow-up climate survey data to monitor improvement amongst individual classrooms.



<p><i>Math subject area participants had more positive perceptions than reading subject area participants regarding the level of mutual responsibility between the teacher and students.</i></p>	<p>Collect observational data in math, reading, and science classrooms regarding the implementation of cooperative groups, the role of the teacher, and student responsibility. Implement a campus professional development plan focused on specific areas of weaknesses from observational and survey data. Create individualized classroom climate improvement plans with strategies to increase student engagement and responsibility through cooperative groups. Professional development trainings should focus on cooperative grouping roles, teacher as a facilitator, responsibility for learning, and student choices. Monitor improvement with follow-up observations, student surveys, and conferences.</p>
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### **Recommendations for Future Research**

While the current study assists in shedding light on the different factors that may influence school and classroom climate, additional research is needed in this area.

Several recommendations may provide valuable insights when determining perceptual variations in school and classroom climate:

- 1) Longitudinal research should be conducted to determine students' perceptions of school and classroom climate over several years, especially between transitional schools (elementary to intermediate or middle school and middle school to high school). A snapshot of school and classroom climate one time a year does not provide a detailed picture of the changes in climate throughout the schooling years. Research has shown an academic decline beginning in middle school; research aimed at correlating climate with achievement over transitional grades would shed new light on the factors that may or may not influence academic achievement.

- 2) Further exploration of effects associated by the gender of the teachers in comparison with students' perceptions of the school and classroom climate when disaggregated by subject area.
- 3) A larger sample size comprised of more diverse student demographics would allow for broader generalizations and conclusions.
- 4) Survey data that compares observational environment data to that of the preferred environment by the students would provide additional information to determine how to target interventions to improve both school and classroom climate that is grade, subject and learner specific. Qualitative data from students would provide a more detailed picture to accompany the quantitative data to aid in establishing an action plan aimed at improving school and classroom climate.
- 5) Similar studies should be conducted to examine the possible variations among subject areas with correlations between the climate in subject area classrooms and academic achievement.
- 6) Build on the CMCD themes to provide professional development that could mediate school and climate classroom and provide potential areas of study in future research.

## **Summary**

The findings of this study produced new research on the factors that influence students' perceptions of the school and classroom climate. The study showed the influences of classroom climate perceptions by gender and grade level in specific subject areas. Males had more positive perceptions than females regarding their teacher's ability to prevent or minimize future discipline problems, and fifth graders had more positive

perceptions than sixth graders regarding their teacher's ability to listen, reflect, trust, and respect the learner. Statistically significant differences in means were revealed between climate and subject area suggesting that the climates in classrooms are statistically significant across math, reading, and science subject areas relating to the areas of Prevention, Caring, and Organization. This study has shown the implications when school and classroom climate data is not solely analyzed as an aggregated totality but is disaggregated to determine the microcosm of issues that students see on a daily basis. Longitudinal climate studies of British secondary schools (Freiberg, Stein, and Lamb, 2009) using disaggregated data, based on subject areas and grade levels supports the work of this study for the need to define school climate at its primary source- the classroom. Disaggregated data would provide administrators and teachers with a more accurate picture of school and classroom climate which could drive an action plan to improve the lower areas of perception among differentiated groups of students, whether across gender, grade level, and/or subject area. This study embarks on promising research that explores the learning environment of classrooms that potentially promote or hinder a student's ability to learn. Recommendations for future research involve implementing school climate instruments with a larger, more diverse sample size throughout the transitional grades to begin to uncover additional data to help educators, administrators, and policymakers begin to target interventions that are aimed at improving the overall climate in our nation's schools.

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## APPENDIX A

### STUDENT SURVEYS



**DRAFT: Sample**

## Classroom & School Climate Survey For Students

### Elementary Math Short Form

This is not a test. The items in this survey are meant to describe your Math class and your school. These items are separated into 2 sections. Section A needs you to rate the items on a scale of agreement from “Strongly Disagree” to “Strongly Agree”; and Section B items need your ratings on a scale of seriousness from “Not a problem” to “Serious Problem”. All ratings are to be completed by selecting your response using the mouse & clicking one time on the rating of your choice. If you click on a rating, for example “Strongly Agree” but change your mind and really want to choose the “Strongly Disagree” rating, then simply click on the “Strongly Disagree” bubble. The “Strongly Disagree” bubble will be filled in & the rating you did not want anymore, the “Strongly Agree” rating bubble will be clear again.

Your responses will be completely anonymous – **NO ONE AT YOUR SCHOOL WILL KNOW YOUR RESPONSES.** A school-wide summary of responses will be provided to your school.

### **Section A**

Click on the rating bubble that most closely reflects your level of agreement/disagreement with each statement in this section.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1 Sometimes my parents help me with my Math homework.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2 My Math teacher expects me to finish high school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3 My Math classmates help me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 I feel safe in my school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5 Learning is important at this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 Students in my Math class respect me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 My Math teacher expects me to finish college.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 I feel like I am part of this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9 My parents are interested in what I do in my Math class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10 I like working with my classmates in Math to achieve goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11 I like to read.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 My Math teacher is fair in enforcing the rules.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13 I expect to make good grades in Math.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14 My Math teacher encourages me to do my best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 The hallways in my school are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16 My Math teacher is prepared for class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17 I feel close to people at this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18 I enjoy my schoolwork.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Please continue on to the next page*

**DRAFT: Sample****Section A Continued**

		Strongly Disagree	Disagree	Agree	Strongly Agree
19	The outside areas of my school are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	My Math teacher listens to my ideas in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	I like working in groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	I like to help other students in my Math class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	I think this school has a good set of standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	My Math teacher trusts me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25	My school's bathrooms are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	My Math teacher expects me to go to college.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27	I understand why I am in school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28	I am actively involved in my Math lessons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29	My parents often ask me about what I learned in Math class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	My parents help in the school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31	I have many friends at this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32	My parents attend parent meetings at the school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33	The goals and priorities for this school are clear.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34	When my Math classmates and I have problems with each other we try to work them out together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35	My Math teacher and my parents work together to help me learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36	My Math teacher knows how to help me when I don't understand something.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37	I know I can learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38	I am proud of my work in my Math class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Section B**

Click on the rating bubble that most closely reflects how serious a problem you think each of the situations listed is in your Math class or school.

		Not a Problem	Minor Problem	Moderate Problem	Serious Problem
39	Noise from the hallways disturbing my Math class work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40	Students making noise in Math class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41	Students hitting adults in this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42	Students coming late to Math class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43	Students being sent out during Math class because they break the rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44	Students cutting Math classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45	Loud Speaker announcements disturbing my work in Math class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46	Students using illegal drugs or alcohol in this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47	Students bringing weapons to this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Please continue on to the next page*

**DRAFT: Sample****Section C**

Click on the bubble that indicates the appropriate response for you.

This Class is:    ☒ Math                      ☐ Reading                      ☐ Science  
I am a:            ☐ Boy            ☐ Girl  
My grade is:            ☐ 5            ☐ 6  
Today's month is: ☐ Jan   ☐ Feb   ☐ Mar   ☐ Apr   ☐ May   ☐ Jun  
                         ☐ Jul   ☐ Aug   ☐ Sep   ☐ Oct   ☐ Nov   ☐ Dec  
Today's year is:   ☐ 2011   ☐ 2012   ☐ 2013   ☐ 2014   ☐ 2015

***Thank You Very Much for Responding to This Survey!***

**DRAFT: Sample****Classroom & School Climate Survey For Students**

## Elementary Reading Short Form

This is not a test. The items in this survey are meant to describe your Reading class and your school. These items are separated into 2 sections. **Section A** needs you to rate the items on a scale of **agreement** from “Strongly Disagree” to “Strongly Agree”; and **Section B** items need your ratings on a scale of **seriousness** from “Not a problem” to “Serious Problem”. All ratings are to be completed by selecting your response using the mouse & clicking one time on the rating of your choice. If you click on a rating, for example “Strongly Agree” but change your mind and really want to choose the “Strongly Disagree” rating, then simply click on the “Strongly Disagree” bubble. The “Strongly Disagree” bubble will be filled in & the rating you did not want anymore, the “Strongly Agree” rating bubble will be clear again.

Your responses will be completely anonymous – **NO ONE AT YOUR SCHOOL WILL KNOW YOUR RESPONSES.** A school-wide summary of responses will be provided to your school.

**Section A**

Click on the rating bubble that most closely reflects your level of agreement/disagreement with each statement in this section.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1 Sometimes my parents help me with my Reading homework.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2 My Reading teacher expects me to finish high school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3 My Reading classmates help me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 I feel safe in my school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5 Learning is important at this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 Students in my Reading class respect me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 My Reading teacher expects me to finish college.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 I feel like I am part of this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9 My parents are interested in what I do in my Reading class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10 I like working with my classmates in Reading to achieve goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11 I like to read.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 My Reading teacher is fair in enforcing the rules.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13 I expect to make good grades in Reading.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14 My Reading teacher encourages me to do my best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 The hallways in my school are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16 My Reading teacher is prepared for class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17 I feel close to people at this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18 I enjoy my schoolwork.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Please continue on to the next page*

**DRAFT: Sample****Section A Continued**

		Strongly Disagree	Disagree	Agree	Strongly Agree
19	The outside areas of my school are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	My Reading teacher listens to my ideas in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	I like working in groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	I like to help other students in my Reading class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	I think this school has a good set of standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	My Reading teacher trusts me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25	My school's bathrooms are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	My Reading teacher expects me to go to college.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27	I understand why I am in school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28	I am actively involved in my Reading lessons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29	My parents often ask me about what I learned in Reading class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	My parents help in the school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31	I have many friends at this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32	My parents attend parent meetings at the school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33	The goals and priorities for this school are clear.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34	When my Reading classmates and I have problems with each other we try to work them out together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35	My Reading teacher and my parents work together to help me learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36	My Reading teacher knows how to help me when I don't understand something.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37	I know I can learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38	I am proud of my work in my Reading class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Section B**

Click on the rating bubble that most closely reflects how serious a problem you think each of the situations listed is in your Reading class or school.

		Not a Problem	Minor Problem	Moderate Problem	Serious Problem
39	Noise from the hallways disturbing my Reading class work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40	Students making noise in Reading class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41	Students hitting adults in this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42	Students coming late to Reading class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43	Students being sent out during Reading class because they break the rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44	Students cutting Reading classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45	Loud Speaker announcements disturbing my work in Reading class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46	Students using illegal drugs or alcohol in this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47	Students bringing weapons to this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Please continue on to the next page*

**DRAFT: Sample****Section C**

Click on the bubble that indicates the appropriate response for you.

This Class is:    ☒ Reading            ☐ Math            ☐ Science

I am a:            ☐ Boy            ☐ Girl

My grade is:            ☐ 5            ☐ 6

Today's month is:   ☐ Jan   ☐ Feb   ☐ Mar   ☐ Apr   ☐ May   ☐ Jun  
                                 ☐ Jul   ☐ Aug   ☐ Sep   ☐ Oct   ☐ Nov   ☐ Dec

Today's year is:   ☐ 2011   ☐ 2012   ☐ 2013   ☐ 2014   ☐ 2015

***Thank You Very Much for Responding to This Survey!***

**DRAFT: Sample****Classroom & School Climate Survey For Students**

## Elementary Science Short Form

This is not a test. The items in this survey are meant to describe your Science class and your school. These items are separated into 2 sections. Section A needs you to rate the items on a scale of agreement from “Strongly Disagree” to “Strongly Agree”; and Section B items need your ratings on a scale of seriousness from “Not a problem” to “Serious Problem”. All ratings are to be completed by selecting your response using the mouse & clicking one time on the rating of your choice. If you click on a rating, for example “Strongly Agree” but change your mind and really want to choose the “Strongly Disagree” rating, then simply click on the “Strongly Disagree” bubble. The “Strongly Disagree” bubble will be filled in & the rating you did not want anymore, the “Strongly Agree” rating bubble will be clear again.

Your responses will be completely anonymous – **NO ONE AT YOUR SCHOOL WILL KNOW YOUR RESPONSES.** A school-wide summary of responses will be provided to your school.

**Section A**

Click on the rating bubble that most closely reflects your level of agreement/disagreement with each statement in this section.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1 Sometimes my parents help me with my Science homework.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2 My Science teacher expects me to finish high school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3 My Science classmates help me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 I feel safe in my school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5 Learning is important at this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 Students in my Science class respect me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 My Science teacher expects me to finish college.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 I feel like I am part of this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9 My parents are interested in what I do in my Science class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10 I like working with my classmates in Science to achieve goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11 I like to read.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 My Science teacher is fair in enforcing the rules.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13 I expect to make good grades in Science.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14 My Science teacher encourages me to do my best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 The hallways in my school are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16 My Science teacher is prepared for class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17 I feel close to people at this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18 I enjoy my schoolwork.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Please continue on to the next page*

**DRAFT: Sample****Section A Continued**

		Strongly Disagree	Disagree	Agree	Strongly Agree
19	The outside areas of my school are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	My Science teacher listens to my ideas in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	I like working in groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	I like to help other students in my Science class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	I think this school has a good set of standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	My Science teacher trusts me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25	My school's bathrooms are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	My Science teacher expects me to go to college.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27	I understand why I am in school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28	I am actively involved in my Science lessons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29	My parents often ask me about what I learned in Science class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	My parents help in the school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31	I have many friends at this school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32	My parents attend parent meetings at the school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33	The goals and priorities for this school are clear.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34	When my Science classmates and I have problems with each other we try to work them out together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35	My Science teacher and my parents work together to help me learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36	My Science teacher knows how to help me when I don't understand something.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37	I know I can learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38	I am proud of my work in my Science class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Section B**

Click on the rating bubble that most closely reflects how serious a problem you think each of the situations listed is in your Science class or school.

		Not a Problem	Minor Problem	Moderate Problem	Serious Problem
39	Noise from the hallways disturbing my Science class work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40	Students making noise in Science class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41	Students hitting adults in this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42	Students coming late to Science class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43	Students being sent out during Science class because they break the rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44	Students cutting Science classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45	Loud Speaker announcements disturbing my work in Science class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46	Students using illegal drugs or alcohol in this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47	Students bringing weapons to this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Please continue on to the next page*



**DRAFT: Sample****Section C**

Click on the bubble that indicates the appropriate response for you.

This Class is:    ☒ Science                      ☐ Math                      ☐ Reading

I am a:            ☐ Boy            ☐ Girl

My grade is:            ☐ 5            ☐ 6

Today's month is: ☐ Jan    ☐ Feb    ☐ Mar    ☐ Apr    ☐ May    ☐ Jun

Today's year is:    ☐ 2011    ☐ 2012    ☐ 2013    ☐ 2014    ☐ 2015

***Thank You Very Much for Responding to This Survey!***

## APPENDIX B

### PERMISSION FORMS

## **UNIVERSITY OF HOUSTON**

### **Student Assent to Participate in a Research Study**

#### **PROJECT TITLE:**

#### **Student Perceptions of School Climate: Disaggregated by Gender, Grade Level, and Subject Area**

You are invited to participate in a research study conducted by Windy Clark a doctoral student at the University of Houston.

You can say no if you do not want to participate in this study. Adults cannot make you participate in this study if you do not want to. If you agree to participate in the study now, but change your mind about it later, you can stop being in the study, and no one will be mad at you.

#### **WHAT IS RESEARCH?**

Research is a way to learn information about something. Researchers study different subjects the way you study English or math as a subject in school. There are many reasons people choose to be in a research study. Sometimes people want to help researchers learn about ways to help people or make programs better. You should understand why you would say yes to being a research participant. Take the time you need to decide if you want to be in this study. You can ask Windy Clark and your teacher any question you have about the study.

#### **WHY ARE WE DOING THIS RESEARCH?**

In our research we want to learn about the effects of gender, grade level, and subject area on school and classroom climate at Rayford Intermediate.

#### **WHAT WILL HAPPEN DURING THE STUDY**

The study will take place during the regular instructional day. Information from the results of the study will be used for the research only if you provide consent. Please talk this over with your parents before you decide whether or not to participate. We will also ask your parents to give their permission for you to take part in this study. For the study, you will complete a school and classroom climate survey that consists of approximately 47 questions. The questions will require you to mark a bubble indicating your response to each question. The survey will take approximately 30 minutes to complete. You will complete the survey on a computer during the regular instructional day at the same time as other students with permission from your class. The climate survey contains items such as “Sometimes my parents help me with my reading homework”, “My math teacher knows how to help me when I don’t understand something”, and “I like working with my classmates in science to achieve goals.” The survey will be anonymous, so you will not be required to put your name on it.

#### **COULD GOOD THINGS HAPPEN TO ME FROM BEING IN THIS STUDY?**

You will be able to provide your views and perceptions on the school and classroom climate. The data from the survey will provide your classroom teachers and administrators with valuable information regarding the school and classroom climate. When we finish the research we hope to know more about your perceptions of school and classroom climate, which may provide areas for future improvement in the learning environment.

### **COULD BAD THINGS HAPPEN TO ME FROM BEING IN THIS STUDY?**

There are no risks or discomforts that are associated with this study. However, if at any time you do not feel comfortable answering a question on the survey or completing the survey, you may stop or skip a question. You can choose to discontinue answering the questions on the survey at any time.

### **DO I HAVE OTHER CHOICES?**

You can choose not to participate in this study, and you can decide you no longer want to be in the study at any time. You may choose to not answer any question that you are not comfortable with. If you choose not to participate at any time, you will not be penalized. You will not be graded if you participate in the survey or decline to participate.

### **WHAT IF I HAVE QUESTIONS?**

If you have any questions, you may contact the researcher, Windy Clark at 281- 985-7139 or her University of Houston faculty sponsor, Dr. Jerome Freiberg at 713-743-4953.

I agree to participate in this study: Student Perceptions of School Climate: Disaggregated by Gender, Grade Level, and Subject Area

Signature of minor participant (student): \_\_\_\_\_

Date: \_\_\_\_\_

Signature of Principal Investigator: \_\_\_\_\_

## **PARENT PERMISSION**

### **PROJECT TITLE: Student Perceptions of School Climate: Disaggregated by Gender, Grade Level, and Subject Area**

Your child is being invited to participate in a research project conducted by Windy Clark a doctoral student at the University of Houston. The research is being conducted as a part of a thesis study and is being conducted under the supervision of Dr. H. Jerome Freiberg.

### **NON-PARTICIPATION STATEMENT**

Your child's participation is voluntary and you or your child may refuse to participate or withdraw at any time without penalty or loss of benefits to which your child is otherwise entitled. Your child may also refuse to answer any question.

### **PURPOSE OF THE STUDY**

The purpose of this study is to examine the effects (if any) of gender, grade, and subject area on school and classroom climate. Data from the school and climate survey will be collected and disaggregated to explain variations in perceptions of school and classroom climate

### **PROCEDURES**

Your child will be one of approximately 750 subjects to be asked to participate in this project. The study will take place during the regular school day. The results of the study will be used for the research only if you and your child provide consent. For the study, each student will complete the *Classroom & School Climate Survey For Students: Short Form* (Freiberg, 2003) that consists of 47 questions. The survey will take your child approximately 30 minutes to complete. Your child will complete the survey on a computer. The climate survey contains items such as "Sometimes my parents help me with my reading homework" and "My math teacher knows how to help me when I don't understand something."

### **CONFIDENTIALITY**

Your child's participation is confidential and your child's responses will remain anonymous. The survey will not require your child to put his or her name on it. All participants will be directed not to write their name or other identifying information on the materials.

### **RISKS/DISCOMFORTS**

There are no risks or discomforts that are associated with this study. However, if any time your child does feel uncomfortable or distressed, he or she should contact his or her teacher or building principal. In addition, he or she may contact the researcher, Windy Clark at 281- 985-7139 or her University of Houston faculty sponsor, Dr. Jerome Freiberg at 713-743-4953. At any time, your child can choose not to answer a question on the survey or participate in this study. If your child chooses not to participate at any time, he or she will not be penalized.

### **BENEFITS**

Your child will be able to provide their views and perceptions on the school and classroom climate at Rayford Intermediate. The data from the survey will provide your child's classroom teachers and administrators with valuable information regarding the school and classroom climate. When we finish the research we hope to know more about your child's perceptions of Rayford Intermediate's climate.

### **ALTERNATIVES**

Participation in this project is voluntary and the only alternative to this project is non-participation.

### **PUBLICATION STATEMENT**

The results of this study may be published in professional and/or scientific journals. It may also be used for educational purposes or for professional presentations. However, no individual subject will be identified.

### **SUBJECT RIGHTS**

I understand that parental consent is required of all persons under the age of 18 participating in this project. I understand that my child (student) will also be asked to agree to participate.

All procedures have been explained to me and I have been provided an opportunity to ask any questions about the study.

Any risks and/or discomforts have been explained to me. Any benefits have been explained to me.

I understand that, if I have any questions, I may contact Windy Clark at 281- 985-7139. Or Dr. Jerome Freiberg, at 713-743-4953.

I have been told that my child or I may refuse to participate or to stop his/her participation in this project at any time before or during the project. My child may also refuse to answer any question.

ANY QUESTIONS REGARDING MY CHILD'S RIGHTS AS A RESEARCH SUBJECT MAY BE ADDRESSED TO THE UNIVERSITY OF HOUSTON COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (713-743-9204). All information that is obtained in connection with this project and that can be identified with my child will remain confidential as far as possible within legal limits. Information gained from this study that can be identified with my child) may be released to no one other than the principal investigator, Windy Clark and her faculty sponsor, Dr. H. Jerome Freiberg. The results may be published in scientific journals, professional publications, or educational presentations without identifying my child (student) by name.

I agree to allow my child \_\_\_\_\_ to participate in this research project:  
Yes \_\_\_\_\_ NO \_\_\_\_\_

Signature of Parent/Guardian: \_\_\_\_\_

Signature of Principal Investigator: \_\_\_\_\_

## APPENDIX C

### HUMAN SUBJECTS APPROVAL





# U N I V E R S I T Y *of* H O U S T O N

## COMMITTEES FOR THE PROTECTION OF HUMAN SUBJECTS

September 8, 2011

Ms. Windy M. Clark  
c/o Dr. H. Jerome Freiberg  
Curriculum and Instruction

Dear Ms. Clark:

The University of Houston Committee for the Protection of Human Subjects (1) reviewed your research proposal entitled "Student Perceptions of School Climate: Disaggregated by Gender, Grade Level, and Subject Area" on August 19, 2011, according to institutional guidelines.

At that time, your project was granted approval contingent upon your agreement to modify your proposal protocol as stipulated by the Committee. The changes you have made adequately respond to those contingencies made by the Committee, and your project has been approved. However reapplication will be required:

1. Annually
2. Prior to any change in the approved protocol
3. Upon development of the unexpected problems or unusual complications

Thus, if you will be still collecting data under this project on **August 1, 2012** you must reapply to this Committee for approval before this date if you wish to prevent an interruption of your data collection procedures.

If you have any questions, please contact Alicia Vargas at (713) 743-9215.

Sincerely yours,

Dr. Scott B. Stevenson, Chair  
Committee for the Protection of Human Subjects (1)

PLEASE NOTE: (1) All subjects must receive a copy of the informed consent document. If you are using a consent document that requires subject signatures, remember that signed copies must be retained for a minimum of 3 years, or 5 years for externally supported projects. Signed consents from student projects will be retained by the faculty sponsor. Faculty are responsible for retaining signed consents for their own projects; however, if the faculty leaves the university, access must be possible for UH in the event of an agency audit. (2) Research investigators will promptly report to the IRB any injuries or other unanticipated problems involving risks to subjects and others.

Protocol Number: 11470-01

Full Review   X  

Expedited Review