Does student status affect perceptions of school climate and bullying?

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Does Student Status Affect Perceptions of School Climate and Bullying?

by

Samantha L. Palladino

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Abstract

Students with disabilities are a diverse group of individuals who may experience the world in ways that are distinct from typical peers. Extant research suggests that these students are at risk for academic, social, and emotional challenges. Given the amount of time that students spend in school, their perceptions of the school climate and experiences with bullying have the potential to significantly impact their well-being academically, socially, and emotionally. While there is expansive literature related to school climate and bullying, few studies have investigated these topics simultaneously and specifically through the lens of students with disabilities. This was an archival study that examined self-reported perception of school climate and experiences related to bullying for students with disabilities compared to typical peers. Additional analysis revealed a significant relationship between school climate and academic achievement for all students. Using a sample of 205 students with disabilities and 205 students without disabilities, multiple statistical methods were employed to answer research questions. The findings of this investigation illuminate the differences in perceptions of school climate among students with disabilities compared to typical peers. Specifically, classified students rated the climate to be lower overall, and lower for four of the five school climate constructs derived from the instrument. Consistent with earlier research, school climate was found to be associated with achievement measured by grade point average (GPA); students who reported more favorable perceptions of their school also earned higher grades. Contrary to expectations, students with disabilities did not report significantly higher rates of bullying experiences compared to typical peers. Within the group of students with disabilities, however, gender differences were noted. While boys were more likely to report bullying others at school, girls reported higher rates of experiencing and witnessing bullying online. This study advanced
our understanding students with disabilities by providing some insight into their perception of
the school climate and bullying based on self-reported experiences. Furthermore, the results
highlight the need for school professionals to modify interventions targeted at school climate and
bullying in ways that will support these students.
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Chapter 1: Introduction

Currently, the issue of school climate and safety is extremely relevant in the field of education (National School Climate Council, [NSCC], 2010). Schools are held accountable for addressing bullying behaviors as awareness in this area has increased both in research and in the media. There is evidence of a bidirectional relationship between the climate of a school and the rates of bullying within that environment (Cohen & Freiberg, 2013). What is unclear is to what degree these issues are unique among the heterogeneous population of students with disabilities.

School Climate

Positive school climate is universally acknowledged as a critical element of effective schools (Cohen, McCabe, Michelli, & Pickeral, 2009; Lehr & Christenson 2002). As recently as this year, congress has amended the Elementary and Secondary Education Act of 1965 (now The Supportive School Climate Act of 2015), requiring states to develop policies on positive school climate and school discipline. Across existing studies, the concept of school climate and its underlying components have diverse names and definitions, and there is a lack of convergence on the exact elements that comprise school climate (Hung, Luebbe, & Flaspohler, 2014; Whitlock, 2006). All descriptions of school climate, however, generally refer to the attitudes, feelings, and behavior of those in a school (i.e., students, staff, and families), that are the result of the environmental influences of the institution (Franco, 2010). The National School Climate Council in collaboration with researchers, have identified: safety, teaching and learning, relationships, and institutional environment as the four essential dimensions of school climate (Cohen et al., 2009). Although described separately in the following paragraphs, there is a high degree of overlap among these constructs in the literature.

Extensive research has described the important role perceptions of safety play in contributing to the overall climate of the school (Bosworth, Ford, & Hernandaz, 2011; Centers
A safe school environment is one that is free from harassment and victimization; school personnel often focus safety efforts by establishing policies, rules, and prevention programs related to bullying (Rose, Espelage, & Monda-Amaya, 2009). A consistent discipline management system, coupled with staff that provide stable expectations, rules, and norms, has been associated with reduced rates of victimization and enhanced feelings of physical safety among students (Butcher & Manning, 2005; Gottfredson, Gottfredson, Payne, & Gottfredson, 2005). Enforcing behavioral standards to promote a physically safe environment also provides social and emotional security (Cohen, Pickeral, & McCloskey, 2008). The concept of safety may extend beyond physical and emotional well-being to include a broader range of behaviors among students and adults in the learning environment. Intellectual safety has also been described as highly important in order for students to feel comfortable enough to ask for help, express uncertainty, and voice opinions (Butcher & Manning, 2005). Taken together, research indicates there are multiple levels of safety in the educational setting and that feeling secure across all domains (physical, emotional, and intellectual) is a prerequisite for learning.

Teaching and learning is the second construct identified as an essential component to positive school climate, one in which students are provided quality education in social, emotional, and academic learning that is suited to their developmental level and needs (Cohen, 2006; NSCC, 2007). Given that the school is an educational environment, the dimension of teaching and learning is comprised of many components including teacher behavior, classroom, management, and curriculum (Cohen et al., 2009). Clearly defined norms, goals, and values are also important in this context to help shape a learning environment that promotes student achievement and development (Butcher & Manning, 2005).
Effective teaching methods combined with interesting and meaningful subject matter foster student involvement, which often results in enhanced bonding and connection to the learning environment (Reschly & Christenson, 2006; Sulkowski, Demaray, & Lazarus, 2012). Educators have the opportunity to not only target cognitive learning, but to also model social and emotional competencies at the school and classroom level through school-wide interventions and their own behavior (Sulkowski et al., 2012). When teachers acknowledge and appreciate unique strengths among students, they have the potential to promote a positive school climate by welcoming diversity and establishing an environment of respect (Cohen et. al, 2009).

Relationships between teachers and students as well as peer relationships play a key role in student development and have been highlighted as a third necessary construct for promoting a positive school climate (Sulkowski et al., 2012; Wilson, 2004). The concept of connectedness has emerged as a result of investigations examining and quantifying the relationships within a school (McNeely, Nonnemaker, & Blum, 2002). Wilson described connectedness as a sense of attachment and commitment to the school community, typically resulting from positive relationships with staff and peers. The Centers for Disease Control and Prevention ([CDC], 2009) suggested that connectedness is the result of students feeling as though adults care not just about their learning, but also about the students as individuals.

When students perceive support they are better able to build connections to the school, often becoming involved in extracurricular group activities and taking on meaningful roles that increase feelings of safety as well as academic engagement (Whitlock, 2006). When examining the relationship between school connectedness and behavioral outcomes, Catalano and colleagues (2004) found that students’ attachment to individuals within the school and the school as a unit contributed to academic performance and social competence. Adult support and
positive peer relations have been cited as two critical elements to promoting school connectedness, in addition to commitment to education and school environmental factors (CDC, 2009). These relationships and subsequent connections are vital to establishing a school climate that is welcoming and provides opportunities to engage in the learning process (Whiltock, 2006).

The physical and structural environment of the school (institutional environment) has also been linked to school climate and was identified as a fourth necessary construct in creating and sustaining a positive school climate (NSCC, 2007). School size, architectural layout, appearance of buildings, ratio of students to teachers, cleanliness, and comfort are all physical dimensions that may have an impact of student perceptions of climate (Cohen et al., 2009). Schools that are well maintained and clean have been associated with feelings of safety and increased respect for property among students, while physical comfort such as adequate furnishing, ventilation, and temperature are necessary for a favorable learning environment (Gottfredson et al., 2005; Piscatelli & Lee, 2011). The level of supervision within the school space has been shown to influence students’ perceptions of safety, and therefore is likely to affect overall climate. The potential impact of structural features is encouraging, as it may be more easily altered than other sub-constructs (Lehr & Christenson, 2002).

**School climate and bullying.** While examining bullying behaviors, scholars have found that it is necessary to examine the contexts and variables surrounding incidents, including school climate, rather than student behavior alone (Espelage & Swearer, 2004; Nickerson, Singleton, Schnurr, & Collen, 2014; Swearer, Espelage, Vaillancourt, & Hymel, 2010). Occurrences of bullying have a negative impact on perceptions of school climate and safety, particularly for perpetrators of bullying (Nickerson, Singleton et al., 2014), but also for the staff and bystanders (Weiner, Day, & Galvan, 2013). Schools that do not endorse and cultivate a positive, safe
climate report higher rates of aggression and bullying behaviors (Kasen, Berenson, Cohen, & Johnson, 2004). Therefore, school climate and bullying behaviors are closely related and may influence one another (Cohen & Freiberg, 2013).

**Bullying**

Olweus (1993) described bullying as repeated acts of aggression over time with the intention of causing physical harm, psychological stress, or humiliation to another who cannot defend themself due to an imbalance in power. Bullying can be physical, verbal, social, or electronic (Saylor & Leach, 2009).

Students may be involved in bullying incidents in a number of ways, either as perpetrators, victims, bully-victims, bystanders/witnesses, or defenders (Coloroso, 2011; Cook, Williams, Guerra, Kim, & Sadek, 2010; Evans, Fraser, & Cotter, 2014). A wide range of prevalence rates have been reported for bullying in its various forms, ranging from 13 to 75% (Espelage & Swearer, 2011; Nickerson, Allen, & Werth, 2014). While trends have been noted in some respects, such as grade level and gender, results are inconclusive across studies. This may be attributable to the variety of definitions provided for bullying behavior as well as the different measurement tools used for assessment (Underwood & Rosen, 2011).

Direct bullying and harassment as well as exposure to such behaviors are likely to reduce students’ sense of psychological, social, and emotional safety. Students involved in bullying may experience greater peer rejection and loneliness, have lower self-esteem, experience psychological symptoms, or be at heightened risk for suicidal behaviors (Brock, Nickerson, O’Malley, & Chang, 2006; Vaillancourt, Hymel, & McDougall, 2011). Severity and frequency of bullying must be taken into account, as even minor incidents may have negative outcomes. Mayer and Furlong (2010) found that low-level aggression and perceptions of incivility
contributed to levels of anxiety, fear, and avoidant behaviors, negatively impacting psychological well-being. A relationship was also found between bullying and commitment to school, which indicates that the negative consequences of bullying extend beyond individual victims’ experience to color the climate of the school (Mehta, Cornell, Fan, & Gregory, 2013).

**Students with Disabilities**

The significant amount of research focused on school climate and bullying underscores their importance in students’ lives. Although progress has been made in addressing these topics generally within schools, much less known about how pupils receiving special education services perceive their school climate and experience bullying. The National Longitudinal Transition Study-2 (NLTS2) provided important information about secondary students with disabilities and their perceptions of self, school, relationships, and the future based on a nationally representative sample of youth ages 15-19 (Newman et al., 2011). The majority of the information was provided directly by youth via telephone interview or self-administered mail survey, resulting in the first large scale data set of information directly collected from youth on these topics (Wagner, Newman, Cameto, Levine, & Marder, 2007).

**School climate.** The establishment of a positive school climate typically occurs through school-wide, or universal, supports and interventions with the intention of targeting all students. While the majority of students with disabilities may hold positive views of the school, there is evidence that strongly negative views are held by up to 11% of this population in regard to school problems, challenges, and enjoyment (Wagner et al., 2007). School climate perceptions may vary depending on the cognitive development of students and/or disability classification, and therefore may be vastly different, even among students within the same school (Hung et al.,
If students do not interpret school-wide supports in the same way as typical peers, they may also perceive their school environment differently (Irvin et al., 2011; Newman et al., 2011).

**Safety.** Lane, Wehby, Robertson, and Rogers (2007) examined students’ response to school wide positive behavior support interventions, a widely endorsed universal program to promote positive and safe school environments. Their findings revealed notable effect sizes among student groups when comparing students receiving general education to those receiving special education programming. There were also differences within the subgroup of students with disabilities, indicating that not all students reaped the same benefits from universal programming. Furthermore, numerous studies have determined that students with disabilities experience bullying victimization at rates higher than their non-identified peers, which is strongly related to perceptions of safety (e.g., Nickerson, Allen, et al., 2014; Rose, 2011; Rose &Espelage, 2012; Saylor & Leach, 2009).

**Teaching and Learning.** In order to promote optimal learning, teaching methods are often modified or accommodations are made for students with disabilities, depending on their classification and Individualized Education Program (IEP). Despite these interventions, students with disabilities average fewer credits than typical peers and obtain a lower GPA than the general student population (Newman et al., 2011). When comparing the classroom experience of students with disabilities to non-disabled peers, some researchers have found discrepancies in perceptions of decision-making and academic satisfaction (Ferguson, Hanreddy, & Draxton, 2011). Among students with disabilities, differences may also exist in perceptions of teacher support; O’Rourke and Houghton (2008) discovered that some students saw additional academic support as beneficial while others believed it had negative social repercussions. The environmental factors of a school and student commitment to learning are two strong predictors
of school connectedness (CDC, 2009), and special attention must be paid to engagement given that students with disabilities are at a heightened risk for dropping out (Reschly & Christiansen, 2006). Numerous risk factors may reduce engagement of students enrolled in special education, including increased absences, lower teacher expectations, and difficulties meeting academic and behavioral demands of the school setting (Newman & Davies, 2005).

Despite targeted efforts to enhance their educational experiences, some youth with disabilities report persistent difficulties in the classroom and a lack of enjoyment in school compared to typical peers (Wagner et al., 2007). Interventions that reduce barriers to participation and enhance teacher understanding of abilities and needs (i.e., providing meaningful roles and encouraging student input into accommodation decisions) may strengthen instruction and learning outcomes (Kramer, Olsen, Mermelstein, Balcells, & Liljenquist, 2011).

Taken together, the research indicates that students receiving special education services have unique learning experiences, and their level of involvement in the classroom as well as the intensity of their academic support is likely to influence their perceptions of school climate.

**Relationships.** As a student with a disability, one’s interactions with staff and peers may be influenced by characteristics of the disability or by services provided within the school context (Rose & Espelage, 2012). Saylor and Leach (2009) described social support as, “the perception that one has of being cared for, valued, and included by others within a network of parents, teachers, peers, and community members” (p. 71). This is a concept that is borne out of relationships with significant others in the environment, particularly teachers in the school setting (Sulkowski et al., 2012). Despite being a small subset of youth with disabilities, there are some students enrolled in special education who are more likely to report persistent feelings of loneliness and perceptions of being disliked (Wagner et al., 2007). Based on research from the
U.S. Department of Education (2003), two to six percent of students with disabilities report being cared about by friends “very little” or “not at all,” and only 40% of youth with disabilities report relying on friends “a lot” compared to 53% of the general population. Analyses indicate that youth with intellectual disabilities, autism spectrum disorder, and traumatic brain injury are particularly vulnerable to these perceptions (U.S. DOE, 2003). To attenuate risk factors, students with disabilities require mutual understanding and communication about their needs in order to receive the academic, social, and emotional support necessary for success (Kramer et al., 2011).

Respect for diversity is important in fostering positive relationships between individual students and their school (Cohen et. al, 2009). Promoting respectful and positive attitudes within the school culture (both of staff and students) is one avenue to increase connectedness and feelings of respect among students with disabilities (Milsom, 2006). While a nationally representative sample indicated positive findings in regard to relationships, a small minority of students with disabilities (e.g., autism spectrum disorder and emotional and/or behavioral challenges) reported significant negative views of personal relationships (Wagner et al., 2007). Awareness of diversity is particularly important when considering students with disabilities due to the broad continuum of abilities and services needed within and between different classifications (Wagner & Blackorby, 2005). Doren, Murray, and Gau (2014) found that relationships with teachers and peers were the strongest predictor of school completion among students with disabilities; not only were students with disabilities at greater risk of dropping out compared to typical peers, but those who did reported lower social skills and got along less well with teachers and peers compared to students with disabilities who completed school.

Interventions targeted at enhancing bonding have been correlated to increased commitment to school and desired behavior changes, providing further evidence that school
connectedness may promote academic success and reduce health and safety problems, which are risk factors for students with disabilities (Catalano et al., 2004). Feelings of connectedness stemming from supportive relationships are related to academic and behavioral student engagement, which are further associated with positive school climate (Wilson, 2004).

**Institutional Environment.** Section 504 of the Rehabilitation Act of 1973 is a civil rights law that ensures that all children with a disability have equal access to education; this law mandates that all students are provided with educational accommodations and modifications that meet their needs. Section 504 prohibits discrimination against individuals with disabilities and thus ensures that students are not excluded from nonacademic services and activities due to their disability. In other words, reasonable accommodations must be made for physical, recreational, and athletic activities; transportation; health; and special interests. Although federal regulations such as the Education for All Handicapped Children Act (1975) ensures that facilities are accessible and students are provided a Free and Appropriate Public Education (FAPE), there are many non-traditional school activities that may exclude students with disabilities, particularly those with physical impairments (Heller & Swinehart-Jones, 2003). Students with disabilities may perceive less opportunity depending on their level of ability and subsequently engage in fewer activities at school (Eriksson, 2005).

Existing structures may pose unique challenges for students with physical limitations (Egilson & Traustadottir, 2009), and environmental risk factors may put students with physical or medical concerns at greater risk for harm (Dagget, 2013). School personnel must also address the learning and sensory needs of students with disabilities in regard to furniture, seating arrangements, noise level, and lighting (Egilson & Traustadottir, 2009). When inclusive environments are not fully available, students with disabilities may perceive exclusion; therefore,
the extent to which the environment is made fully accessible (i.e., physically, instructionally, and psychologically) contributes to the school climate experience of students with disabilities (Heller & Swinehart-Jones, 2003).

**Summary.** There are a number of areas related to school climate that have been examined in relation to students with disabilities. Existing research suggests that perceptions of the instructional environment (Wagner & Blackorby, 2005), the level of safety and belonging, relationships with staff and peers (Sumi, Marder & Wagner, 2005), opportunities to connect to and engage in school (Newman & Davies, 2005), and acceptance of diversity (de Boer, Pijl, & Minnaert, 2012) may vary across populations of identified students with disabilities. There is also growing research indicating that students with disabilities may experience school differently in regard to their experiences with bullying.

**Bullying and students with disabilities.** Bullying is viewed as a dynamic process in which involvement is often based on interactions between individuals and multiple variables within the environment (Rose & Espelage, 2012). Researchers in the United Kingdom were among the first to review the differences in victimization rates for students enrolled in special education programs as compared to their non-disabled peers (Whitney, Smith, & Thompson, 1994). More recent studies conducted in the United States have had similar findings in which students who are classified are more often victims than students who are not classified with a disability (Rose et al., 2009; Rose, Swearer, & Espelage, 2012; Son & Peterson, 2012; Swearer, Wang, Maag, Siebecker, & Frierichs 2012). Across multiple settings, including special schools, self-contained classrooms, and general education settings, researchers have found that students with disabilities report being bullied at higher rates than typical peers (Rose et al., 2009).
Several researchers have sought to determine what factors place students at a greater risk for involvement in bullying. Students with disabilities may display lower rates of pro-social behavior, possibly resulting in increased involvement in bullying related incidents and higher rates of behavioral referrals (Swearer et al., 2012). Students with emotional and behavioral disorders may be involved in bullying as a function of heightened anger and aggression, while other students with disabilities may bully as retaliation to being victimized (Rosenberg, 2012). These subgroup differences (among different disability classifications) further suggest heterogeneous experiences among the population of students with disabilities, which calls for greater understanding of individualized needs as indicated by Kramer and colleagues (2011). Increased disciplinary actions coupled with lack of positive peer relations may create the perception of a negative school environment and impact other school climate sub-constructs such as school connectedness and learning engagement.

By definition, students with disabilities require individually designed instruction, which Rosenberg (2012) argued must include provision of violence prevention and non-academic school-wide supports so that they are delivered “in a manner that maximizes participation in the general curriculum and classroom, and minimizes separation and stigmatization” (p. 208). Targeting areas of positive school climate is one approach to reduce the rates of bullying in general and involving students enrolled in special education. For example, Saylor and Leach (2009) determined that perceived social support among students with disabilities may have an impact on the experience of bullying, helping to reduce victimization and improve quality of life. Sullivan and colleagues (2012) also found that students with disabilities who acknowledged that adults at their schools were available, receptive, and supportive were more likely to seek help when encountering negative peer behaviors and situations.
Aside from individual attributes, school-related factors have been cited as potential risks for student victimization. Specifically, the previously described areas related to school climate have the potential to increase or attenuate the experience of bullying for students, particularly those at heightened risk. It is also possible that bullying experiences impact the way students perceive the school climate. Therefore, these elements are an essential focus in understanding the experience of bullying behaviors among students in special education (Rose et al., 2012).

**Problem Statement**

Studies of students’ perceptions of school climate typically exclude specific analysis of students with disabilities (Mehta et al., 2013). Compared to bullying research in general, study of the interaction between bullying and student disability is still limited and further inquiry into the topic is needed (Raskauskas & Modell, 2011). Rose and colleagues (2012) predicted that school climate constructs may play a role in mediating these experiences for students enrolled in special education. However, there is also paucity of information regarding the relationship between disability status and the school climate constructs. Finally, even fewer studies to date have specifically examined the experiences of students with disabilities with cyberbullying.

**Purpose Statement**

The purpose of this study was to evaluate archival data related to perceptions of school climate and bullying experiences, as reported by students with disabilities. This secondary analysis compared and contrasted responses of students who were identified with a disability with their non-disabled peers. Specifically, the relationships between school climate perceptions and disability status were examined, in addition to whether differences in perceptions existed among students with disabilities based on gender and school level. Associations between school climate and achievement were also explored. Lastly, the relationship between disability status
and bullying was investigated, with follow up examination regarding students enrolled in special education based on gender and school level.

**Significance of the Study**

Educational reforms such as *The No Child Left Behind Act of 2001* (NCLB, P.L. 107-110) hold schools accountable for the academic performance of all students. This is consistent with federal legislation that requires schools to provide quality education and equal opportunity and participation for all students receiving services through special education as outlined in the Individuals with Disabilities Education Act (IDEA, 2004). According to the Office of Special Education Programs (OSEP, 2011), nearly 85,000 students ages 14-21 receiving special education services dropped out of school during the 2009-2010 school year, nearly 20% of students receiving special education services dropped out the following year. Compared to the 7% of public high school students enrolled in general education, the number of students receiving special education programming who dropped out was significantly higher (U.S. Department of Education, 2011). The U.S. Center for Disease Control and Prevention (2009) recommends school climate reform as a scientifically sound strategy that promotes healthy relationships, enhances school connectedness, and prevents school dropout.

The lack of knowledge for how to address the needs of students who do not respond to universal behavior systems may result in insufficient support needed to be successful academically and behaviorally. Therefore, Rosenberg (2012) suggested that special education teachers who are responsible for identifying the evidence-based strategies that support students’ academic success must also adapt and accommodate emotional and behavioral interventions. Kramer and colleagues (2011) conducted a metasynthesis to examine environmental barriers that may reduce special education students’ participation in the school community; they found that
adult and peer understanding of individual abilities and needs was rated by students who were classified as the most important factor.

A study of student perceptions of school climate and bullying was important for several reasons. Addressing individual needs of classified students is mandated by law and is also considered best practice in the field (Corno, 2008). Students with disabilities are considered at heightened risk for victimization, academic difficulties, disengagement, and dropout, and there is evidence that positive school climate may contribute to perceptions of safety, enhanced teacher-student and peer relationships, academic achievement, and school connectedness. Mehta and colleagues (2013) emphasized the importance of examining both direct and indirect effects of bullying on student engagement; even in a school where number of bullying incidents are low, students may see and feel the repercussions of those actions. Therefore, this research may assist schools in providing support and interventions based on the needs of their students, which is well-aligned with recommendations from the U.S. Department of Education Office for Civil Rights and Office of Special Education and Rehabilitative Services (Cantu & Heumann, 2000).
Chapter 2: Review of Relevant Literature

Overview

This study addressed whether students with disabilities in a given district differed significantly from their peers in perceptions of school climate and experiences with bullying. Also, it provided information about what areas of school climate were perceived as inadequate and which served as protective factors. Additional research questions supported the district in determining if school climate was related to achievement as measured by grade point average. Prior to conducting the study, a literature review was necessary.

The first section of this chapter will review three distinct topics of interest: school climate, bullying, and students with disabilities. Each subject has been examined in a variety of ways and therefore possesses a unique research history. First, the definitions of school climate and the constructs that have been identified as important to the concept will be reviewed. Evidence supporting the relationship of school climate to student development will also be discussed. Given that bullying behaviors may impact the climate of the school, a review of bullying in all its forms will be presented along with research regarding prevalence rates and differences that have been reported by research. Lastly, the heterogeneous population of students with disabilities will be discussed in terms of school experiences regarding climate and bullying.

The second section of this chapter outlines the problem statement identified subsequent to a review of the literature including a review of common limitations of previous research. The chapter concludes with the purpose of this study followed by the research questions that were addressed.

School Climate

Arthur Perry (1908) was one of the first educational professionals to examine the climate
of a school and its impact on learning. In his book, *The Management of a City School*, Perry described the importance of various aspects of the school environment including role of the principal, inclusion of parents, higher level administration, teaching staff, physical structure of the school building, student physical welfare, student academic progress, and student moral development. Dewey (1916) and Durkheim (1961) followed Perry’s lead in education reform by highlighting the impact a school’s climate can have on the academic success and overall well-being of students. Investigators began to apply organizational research in schools during the 1950s and ‘60s by systematically evaluating individual needs and organizational structures (Halpin & Croft, 1963; Van Houtte, 2005). Similar inquiries continued with the growth of organizational research and interest in school effectiveness in the 1980s, but often focused on observable characteristics within the school setting and use of physical resources (Anderson, 1982). More recent research on school climate typically examines teacher and student perceptions of the social climate and the effects of school organization, discipline, and policies on achievement and performance (Lleras, 2008; Nickerson, Singleton et al., 2014).

In the last 30 years, public interest and scientific exploration has grown in the area of school climate (Thapa, Cohen, Guffey, & Higgins-D’Allessandro, 2013). As a result of this research, school climate reform has been recognized by multiple organizations as an effective strategy to promote positive staff/student and peer relationships, enhance connectedness to school staff and school as an institution, and increase school safety (CDC, 2009; Dynarski, Clark, Cobb, Finn, Rumberger, & Smink, 2008; U.S. Department of Education, 2007). These improvements support the overarching educational goal of academic success and achievement, and may also reduce dropout rates (Dynarski et al., 2008). Particularly in the last decade, the United States government has focused on promoting socially, emotionally, and physically safer
schools as evidenced by creation of The Office of Safe and Drug Free Schools (United States Department of Justice, 2004) and the Supportive School Climate Act of 2015. Development and funding for programs such as the Safe and Supportive Schools project has influenced the local level by assisting states in developing school climate assessment systems to evaluate improvement over time within their school districts (Thapa et al., 2013). The Education Commission of the States and the National School Climate Center formed the National School Climate Council (NSCC) as a way to align school climate research with practice, policy, and teacher education (NSCC, 2007). The Council is comprised of policy and practice leaders who collaborate on a variety of education, policy, collaborative, and advocacy initiatives.

A review of the literature since Perry’s (1908) work reveals a continuity of themes. Across studies, researchers have identified a variety of similar constructs that make up the climate of the school and offer an assortment of definitions for the concept (Whitlock, 2006). School climate has been defined as: “the quality and character of school life” (Cohen et al., 2009, p. 182); “the quality and consistency of interpersonal interactions within the school community that influence children’s cognitive, social and psychological development” (Haynes, Emmons & Comer, 1994, p. 322); the way people feel about being in the school (Franco, 2010); and, social, emotional, civic, ethical, and academic aspects of school life as they are experienced by stakeholders (Thapa et al., 2013). Though these definitions vary to some degree, each indicates that school climate is a complex concept comprised of many interconnected constructs.

Although some have used the terms culture and climate interchangeably, Van Houtte (2005) argued that they are distinct, “Culture concerns values, meanings, and beliefs, while climate concerns the perceptions of those values, meanings, and beliefs” (p. 75); essentially stating that culture is a sub-component of climate. The climate of an environment can be
assessed as a “molar construct,” or an overarching concept made up of underlying related facets that interact to create the gestalt (Ostroff & Schulte, 2014, pp. 537). In their extensive review of school climate literature, Thapa and colleagues (2013) explained the interwoven nature of school climate research as being due to the fact that, “…both the effects of school climate and the conditions that give rise to them are deeply interconnected, growing out of the shared experience of a dynamic ecological system” (p. 3). This quote highlights the bidirectional influence of said constructs on one another as well as on the school’s climate. Therefore, the school climate constructs most frequently cited in research may be discussed separately, but with the understanding that the constructs often intersect with one another rather than being entirely unique from one another.

School climate constructs. While the broad themes emerging from school climate research have been consistent over decades, highly similar but specifically different language has been used to describe its interactive constructs. For the purposes of this study, the individual constructs that collectively comprise school climate are based on the recommendations from the NSCC including safety, teaching and learning, interpersonal relationships, and institutional environment (Cohen & Geir, 2010).

Safety. Feeling physically, socially, and emotionally safe is a prerequisite for optimal functioning and growth, whereas feeling unsafe is likely to inhibit the ability to listen, think clearly, and learn (Devine & Cohen, 2007). According to the NSCC’s articulation of the various school climate constructs, school safety includes rules and norms, sense of physical security, and sense of social-emotional security. Multiple researchers have identified the positive associations between perceptions of safety and students’ learning and healthy development (Bosworth et al., 2011; CDC, 2009; Devine & Cohen, 2007; Rivers et al., 2009). Safety is comprised of physical
safety and social-emotional safety, both of which contribute to perceptions of school climate.

**Physical Safety.** Physical safety can be considered the foundation for students’ feelings of overall safety (Devine & Cohen, 2007). Although severe violent crime is a rare occurrence in schools, less serious forms of crime (e.g., minor victimization, swearing, non-violent behaviors) have been common in schools over the past 30 years (Gottfredson et al., 2005). Bosworth and colleagues (2011) suggested that concrete statistics may not reveal the actual experiences within a school community, and therefore perceptions of danger and safety at school are more informative than reality in terms of the impact they may have on students. Schools that provide a safe school environment by establishing rules, norms, and policies may reduce harassment and victimization (Rose et al., 2009). By contrast, schools without these structures in place increase students’ risk for victimization and disciplinary action, which may result in increased absenteeism and decreased achievement (Astor, Guerra, & Van Acker, 2010; Lleras, 2008).

Gottfredson and colleagues (2005) utilized an existing data set from the National Study of Delinquency Prevention in Schools for their research. The original sample of student surveys was examined with the intention to classify, describe, and evaluate existing school-based prevention programs and identify national estimates of crime and violence in and around schools. In their analysis, researchers included 254 public, secondary, non-alternative schools from the larger sample that had both student and teacher survey participation. The surveys measured what the author characterized as school disorder (e.g., teacher victimization from teacher questionnaire; student victimization and student delinquency from student questionnaire) and school climate (e.g., fairness and clarity of rules from student questionnaire; organizational focus, morale, planning, administrative leadership from teacher questionnaire).

The authors found a contrast in results across measures of school disorder; in schools
where students perceived greater fairness and clarity of rules, lower rates of student delinquency and victimization were reported. Additionally, schools with more positive psycho-social climates were rated by teachers to have lower levels of victimization. This study revealed small between-school differences, suggesting that many schools will experience some degree of disorder; however, lower rates were reported when students perceived a school environment that is effectively managed with unbiased rules and clear discipline policies. These results were interpreted to suggest that the level of disorder experienced in schools may be influenced by overall school climate (Gottfredson et al., 2005).

Additional insights related to perceptions of safety and school climate were revealed by Bosworth and colleagues (2011). These researchers partnered with the Division of School Safety and Prevention of Arizona Department of Education (ADOE) to examine student and teacher perceptions of school safety. Using a representative sample from 12 schools, focus-group protocols were used to facilitate discussions that were later reviewed and transcribed for analysis. This approach provided qualitative insight into student and faculty perceptions and revealed three categories necessary for school safety based on stakeholder responses: physical characteristics and safety features, organization and school discipline, and school staffing and relationships. The importance of school reform efforts in promoting positive school climate was highlighted by the fact that the areas identified by students and staff (i.e., organization, discipline, and relationship) are amenable to change with administrative leadership.

Social and Emotional Safety. Butcher and Manning (2005) described a safe school as one that “allows students, teachers, administrators, staff and visitors to interact in a positive, nonthreatening manner that reflects the educational mission of the school while fostering positive relationships and personal growth” (p. 56). The U.S. Department of Education (2014)
recommended establishing high and positive expectations for student behavior across the school, coupled with explicit statements that violence, bullying, harassment, and problem behaviors are not acceptable in order to promote respect for others. At the classroom level, teachers can also provide a sense of intellectual safety so that students feel comfortable expressing themselves and taking risks in a secure environment (Butcher & Manning, 2005). Enforcing rules and norms to promote a physically secure environment is likely to reduce fear of victimization, which provides social and emotional safety (Butcher & Manning, 2005; Cohen et al., 2008).

Researchers have shown that witnessing bullying and physical aggression may have deleterious effects on student mental health, even more so than students who were directly involved in bullying (Rivers et al., 2009; Meyer-Adams & Conner, 2008). Students who witness even “low-level” acts of violence may perceive non-intervention by staff as approval of these behaviors (Meyer-Adams & Conner, 2008, p. 212). The negative outcomes associated with witnessing bullying may influence the way that students perceive the school climate. Rivers and colleagues found that the majority of students (63%) observed peer victimization, and students who witnessed bullying and peer aggression were more likely to report multiple indicators of mental health concerns. The impact on psychological functioning was noted in increased level of risk for anxiety and paranoid thoughts, increased interpersonal sensitivity, and internal conflict due to lack intervention. The authors controlled for co-occurring participant roles and directly assessed students who were witnesses/bystanders (and not perpetrators or victims). The outcomes suggested that exposure to victimization is associated with student risk for anxious and paranoid psychological states, which may alter perceptions of school climate (Rivers et al., 2009).

The school environment, and therefore student perceptions of school climate, may also be
negatively impacted by exposure to non-physical aggression (Goldstein, Young, & Boyd, 2009). Goldstein and colleagues defined ‘relational aggression’ as behavior that intentionally harms another individual through the manipulation of social relationships which may include rejection and/or exclusion (p. 642), and asserted that these behaviors may contribute to social, emotional and psychological climate of the schools. In their study, the authors examined the relationship between relational aggression and adolescents’ perceptions of school safety and the school social environment, after controlling for effects of overt aggression. A sample of adolescents in grades 7-12 attending a metropolitan public school responded to questionnaires that surveyed demographics, victimization, witnessing aggression, perceptions of school safety and climate, and weapon carrying.

Goldstein and colleagues (2009) found that exposure to relational aggression (as a victim or a witness) was associated with students’ beliefs that schools were less safe. Further, victims of relational aggression reported more negative overall social experiences at school. These results were found to be significant after controlling for exposure to overt aggression, indicating that relational aggression has a distinct impact on perceptions of school safety and school-based social experiences. The researchers also found that males who experienced relational aggression were more likely to report bringing a weapon to school. This provides preliminary insight into the impact of threats to social/emotional safety on school environment and how perceived hostility may lead to a physically unsafe school climate.

Summary. Taken together, the research indicates there are multiple levels of safety in an educational setting and that feeling secure across all domains (i.e., physical, social, and emotional) is important for student development. Physical and social/emotional safety are highly related and may influence one another, as well as contribute to the overall climate of the school.
Perceiving the school climate as safe is a prerequisite for effective teaching and optimum learning (Devine & Cohen, 2007).

**Teaching and Learning.** Teaching and learning as a construct of school climate involves support for academic, social, and civic learning that is high in quality and delivered in a developmentally appropriate way (Cohen, 2006; NSCC, 2007). This construct is comprised of many elements including: quality of instruction; social, emotional, and ethical learning; teacher expectations; close monitoring of student progress; professional development; and leadership (Cohen et al., 2009). A bidirectional relationship is evident, as research indicates that the elements listed above that contribute to school climate are also affected by the climate of the school (McNeely et al., 2011; Orpinas & Horne, 2006; Whitlock, 2006).

Teachers with strong instructional and motivational skills promote a positive classroom climate by reducing behavioral problems (Orpinas & Horne, 2006). The NSCC (2007) suggested that supportive teaching practices (i.e., classroom management) and opportunities for social-emotional learning (via instructional strategies and curriculum) are two key sub-constructs of teaching and learning; each impact whether and to what degree learning occurs (Howard, Howell, & Brainard, 1987).

**Classroom management.** Creating an atmosphere that is characterized by structure, routine, and opportunity is one way teachers may promote a positive school climate (NSCC, 2007). Clearly defined norms, goals, and values are important in this context to help shape a learning environment that promotes student achievement and development (Whitlock, 2006). In order to implement supportive teaching practices, educators must be able to effectively manage their classrooms. Sugai and Horner (2002) identified three critical elements for effective classroom management, including: maximized time allotted for instruction, activities designed to
increase academic engagement, and proactive behavior management strategies.

Simonsen, Fairbanks, Briesch, Myers, and Sugai (2008) conducted a literature review to identify evidence-based classroom management strategies. The authors included practices that were evaluated using sound experimental design and methodology, were demonstrated to be effective, and were supported by at least three empirical studies published in peer-reviewed journals. The review yielded 20 general practices that met the evidence-based criteria, and the researchers grouped these into five categories or “critical features” (p. 353) of effective classroom management. The five categories included: (a) maximize structure; (b) post, teach, review, monitor, and reinforce expectations; (c) actively engage students in observable ways; (d) use a continuum of strategies for responding to appropriate behaviors; and (e) use a continuum of strategies to respond to inappropriate behaviors.

Simonsen and colleagues (2008) defined structure as the amount of time activities are directed by adults, the degree that routines are explicit and defined, and the physical design and arrangement of the space. Literature revealed that classrooms with more structure are likely to enhance appropriate academic and social behaviors (Simonsen et al., 2008). In regard to behavioral expectations, the authors described the process of identifying and defining a small number of positively stated rules that are broad and encompass all desired behaviors. These expectations have a positive impact on student outcomes when they are posted, taught, supervised, and acknowledged. Engagement was used to describe students’ participation during instructional time which can be enhanced through a variety of instructional approaches. The authors provided a number of strategies to acknowledge appropriate and inappropriate behavior of students. Despite opposing goals (increasing v. decreasing a behavior), each of these categories describes the empirical support for using a variety of specific strategies in conjunction
A relationship exists between classroom management and a variety of student outcomes, including appropriate classroom behaviors, increased student satisfaction, decreased teacher and student distraction, conflict resolution, and feelings of connectedness (Cohen et al., 2009). The enhancement of student development and potential for success is likely to increase perceptions of the school climate as a positive learning environment (NSCC, 2007).

In addition to the volume of research supporting the positive impact of strong classroom management, there is literature indicating the lack of effective classroom management may lead to negative perceptions of the school climate. Researchers have found that difficulties with managing the classroom climate through teaching strategies and discipline were correlated to lower rates of school connectedness (McNeely et al., 2011). Feeling connected has been associated with students’ perceptions that teachers care about their learning and personal well-being (CDC, 2009). Research conducted by McNeely and colleagues revealed that two of the four school attributes that explained a significant percent of between-school variance in school connectedness were related to teacher behavior (classroom management and enforcement of discipline policies). The authors further indicated that harsh discipline policies were not viewed as supportive or empathetic, and were also associated with lower feelings of connectedness.

Lack of effective management and structure may also have a negative impact on student development and behavior. Way, Reddy, and Rhodes (2007) examined the change in students’ perceptions of school climate during the middle school years. Lack of clarity and consistency in school rules and reductions in feelings of support were strongly associated with reduced self-esteem, increased depressive symptoms, and problem behaviors. When researchers tested for direction of effects, results were found to be unidirectional. Way and colleagues highlighted the finding that student perceptions of school climate predicted adjustment more often than
adjustment predicted perceptions of school climate, suggesting that perceptions of school climate play an important role in student outcomes.

*Social/emotional pedagogy.* Strong and supportive instructional methods are critical in the mission to teach social, emotional, and civic competencies that enhance positive school climate (NSCC, 2007). The quality, content, and approach of instruction have the potential to directly improve the learning environment and student achievement (Thapa et al., 2013). Two well supported pedagogic methods that may promote social, emotional, and civic learning include conflict resolution and cooperative learning (NSSC, 2010). Additionally, using individualized approaches to meet the needs of all learners is essential to providing an intellectually safe environment (Butcher & Manning, 2005).

Conflict resolution education is an approach that provides a foundation of skills that increase attachment, promote critical thinking and cooperative interaction, and help to create a constructivist learning environment (Heydenberk & Heydenberk, 2007). Cooperative learning approaches that enable students to engage with one another within a well-managed environment promote a sense of academic intellectual safety (Butcher & Manning, 2005). Conflict resolution is a necessary supplement to cooperative learning strategies, because without these underlying skills, students are more likely to have disputes or distract one another when working together (Heydenberk & Heydenberk, 2007). Therefore, use of these strategies may increase students’ perceptions of school climate by increasing academic potential, encouraging leadership roles, and enabling students to effectively manage interpersonal relationships.

While group learning has many benefits, individual needs must also be considered within a diverse student population. Quality instruction leads to positive academic outcomes for students, which is likely to increase their perceptions of positive school climate (NSCC, 2007).
Conversely, instruction that does not meet student needs may lead to academic difficulties and an environment that is perceived as hostile (Lleras, 2008). Johnson (2006) examined perceptions of learning preferences and learning environment among ethnically diverse fifth grade students who attended six elementary schools in urban, suburban, and rural areas in the Mid-Atlantic United States. Across various geographic areas, the majority of students (73%) stated a preference for group learning and hands-on activities. Students identified the teacher, friends, classmates, and seat arrangement as important elements within their learning environment. Specifically, teacher support and an environment that allowed for interaction with peers to support learning were important to students. Johnson suggested that attending to student perspectives and cultural differences leads to more effective instruction and enhanced educational outcomes. Simonsen and colleagues (2008) also highlighted the importance of classroom structure (i.e., teacher-led activities, furniture and seating arrangements) across classroom management literature.

Social, emotional, and civic curriculum. The final sub-construct of teaching and learning is providing students resources and opportunities to develop social and emotional skills necessary to function as student citizens. Ample research supports the notion that providing students with explicit social, emotional, and civic learning experiences enhances the overall climate of the school (Collaborative for Academic, Social, and Emotional Learning, 2005; Durlak et al, 2011; Heydenberk & Heydenberk, 2007; Learning First Alliance, 2001; Zins, Weissberg, Wang, & Walberg, 2004).

The Collaborative for Academic, Social, and Emotional Learning (CASEL) was created with the goal of providing a high-quality evidence-based organization to promote Social Emotional Learning (SEL) from preschool through high school (Greenberg et al., 2003). SEL programming has been shown to significantly improve students’ social and emotional skills,
attitudes, behaviors, and academic performance (Durlak et al., 2011). Explicit training in social emotional skills is further associated with increased connectedness to school by promoting supportive and engaging classrooms (McNeely et al., 2002). The goals of SEL are to foster the development of five interrelated sets of cognitive, affective, and behavioral competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision making (CASEL, 2005). Teachers and school staff can utilize evidence-based, manualized programs or may choose to incorporate these learning experiences into existing curriculum (NSSC, 2007; Simonsen et al., 2008).

Durlak and colleagues (2011) conducted the first large-scale meta-analysis of universal school-based programs to promote students’ social and emotional development which included 213 programs involving students in grades K-12. The researchers examined effects across multiple outcomes (i.e., social emotional skills, attitudes towards self and others, positive social behavior, conduct problems, emotional distress, and academic performance), rather than focus on only one major area. They also examined the whole school population rather than a targeted group already exhibiting problem behaviors. Participants from included studies were students between the ages of 5 and 18 without any identified adjustment or learning problems, thus excluding the population of students with a special education classification. Results from this meta-analysis revealed that SEL programs yielded significant positive effects on targeted social-emotional competencies, attitudes, and academic performance. The largest effect size was found for social-cognitive and affective competencies such as emotion recognition, stress management, empathy, problem solving, and decision-making skills. Academic impact was examined through school records of grades and achievement scores, which revealed a performance gain indicating that social, emotional, and academic behaviors improved.
**Summary.** The mission of educational institutions is to enhance student knowledge, growth, and development; well-managed classrooms that provide social-emotional learning opportunities help create and sustain a positive school climate to achieve that mission (NSCC, 2007). Teacher/student relationships are another construct of overall school climate that both develop from and enhance the effectiveness of well-managed classrooms that actively promote social-emotional learning opportunities.

**Relationships.** While the previous section highlighted the importance of teaching practices to promote a positive school climate, the effectiveness of these strategies is somewhat dependent upon the relationships between students and staff (Whitlock, 2006). The NSCC (2007) identified respect for diversity and social support by both adults and peers as necessary sub-constructs of relationships. As researchers focused on examining relationships within schools, the concept of student connectedness emerged as a measure of their attachment to the school community, one that results from their overall social experience (McNeely et al., 2002; Wilson, 2004). Schools are innately social environments; positive teacher-student and peer relationships are critical to student outcomes and contribute to more favorable perceptions of school climate (Sulkowski et al., 2012; Thapa et al., 2013; Wilson, 2004).

**Connectedness.** Whitlock (2006) conceptualized connectedness as “a psychological state of belonging in which individual youth perceive that they and other youth are cared for, trusted, and respected by collections of adults that they believe hold the power to make institutional and policy decisions” (p. 15). Whitlock took a layered approach when examining quantitative and qualitative data in order to explore developmental supports associated with connectedness in older students (grades 8, 10, and 12).

Students’ survey responses indicated that perceptions of developmentally supportive
environments that provided meaningful roles, safety, and academic and creative engagement were associated with school connectedness. The qualitative information obtained revealed the high priority students placed on relevant and engaging educational strategies and feeling as though they have input into school policies within and beyond the classroom. Grade level differences suggested that older students were less likely to perceive connection to school and developmental support, which aligns with later research indicating that adolescents are at higher risk for disengagement (e.g., Donnegan, 2008). In order for students to acquire feelings of connectedness and benefit from the sense of belonging to their school, supportive relationships with staff and peers must be established.

**Teacher/student relationships.** Multiple researchers have found associations between positive relationships with school staff and student perceptions of school climate, particularly related school safety (Barchia & Bussey, 2011; Cortez & Kochenderfer-Ladd, 2014; Eliot, Cornell, Gregory, & Fan, 2010). Strong teacher-student relationships not only enhance students’ connection to school, but also increased engagement within the classroom and expanded opportunities to learn (Pianta & Hamre, 2009; Whiltock, 2006). Perceived support of teachers has also been associated with adaptation to school, as Demaray and Malecki (2002) found that students’ attitudes to school and teachers were correlated with perceptions of social support.

One way that teacher-student relationships are related to school climate is the impact they can have on perceptions of safety. Eliot and colleagues (2010) examined the relationship between student perceptions of support and their willingness to seek help for bullying and threats of violence. A sample of ninth-grade students from 291 high schools participated in the Virginia High School Safety Study and responded to questions about whether teachers and staff cared about them and treated them fairly and respectfully. The researchers found that students who
perceived school staff to be supportive also reported more positive attitudes towards seeking help for bullying and threats of violence. Students were also more likely to disclose peer issues when positive relationships with staff existed.

Eliot and colleagues (2010) also proposed that teachers and staff who normalize and accept student reporting will promote the likelihood of help-seeking behaviors from both genders, despite prior research indicating that males are less likely to do so. The authors suggested that these perceptions of support are particularly necessary for older students who are less likely to seek out help as a result of developmental attitudes regarding independence and autonomy. These outcomes are also relevant when considered in conjunction with research findings that ninth grade students are particularly vulnerable to academic disengagement and difficulties with social adjustment and achievement (Donnegan, 2008).

In addition to promoting feelings of safety, the connections to school built from positive relationships with teachers are likely to increase student involvement in extracurricular activities and school roles that enhance academic engagement (Catalono et al., 2004; Whitlock, 2006). Perdue, Manzeske, and Estell (2009) described the difficulty of studying a concept such as engagement due to the lack of a widely agreed-upon definition for the construct. In their research, Perdue and colleagues defined engagement as, “the affective (e.g., likes school), behavioral (e.g., finishing homework), and cognitive (e.g., self-efficacy, motivation) investments that a child makes in school at both the classroom and schoolwide level” (p. 1084). Teachers who initiate and sustain positive interactions with students may promote engaging classroom environments that improve the educational climate (Pianta & Hamre, 2009).

Hamre and Pianta (2001) collected longitudinal data on a sample of students who attended three schools (i.e., lower elementary, upper elementary, and middle school) from
kindergarten through eighth grade in a small city school district. Rating scales that measured classroom behavior and teacher-student relationships were completed by kindergarten teachers at the end of the school year for each student. Data collected in grades 1-8 consisted of academic and behavioral records including school grades, standardized test scores, teacher-rated work habits, and disciplinary records. Statistical results suggested that early teacher-student relationships may uniquely predict both academic and behavioral outcomes, with stronger associations noted for behavior (Hamre & Pianta, 2001). Relational Negativity (RN), as rated by teachers, predicted students’ grades, standardized test scores, and work habits in lower elementary school. In upper elementary and middle school students RN also predicted behavioral outcomes, although these were moderated by earlier performance. Relationships that were characterized by conflict and/or over-dependency significantly predicted lower academic outcomes and behavioral difficulties, particularly for male students.

In recognition of the frequency and importance of teacher behavior and teacher-student interactions, Pianta and colleagues (2007) developed The Classroom Assessment Scoring System (CLASS) observational tool and theoretical framework. Use of this tool has been recommended as a way to evaluate and improve teacher-student interactions due to their impact on the learning environment (Pianta & Hamre, 2009). This approach organizes critical features of teacher-student interactions into three domains: emotional support, classroom organization, and instructional support (Allen et al., 2013).

Allen and colleagues (2013) sought to identify specific features of teacher-student interactions that were associated with student achievement in secondary school classrooms. Using a revised version of the CLASS for secondary students (CLASS-S) the researchers determined that emotional support predicted student achievement even after controlling for prior
achievement. This is of particular importance for adolescent students who may require emotional engagement for academic motivation (Whitlock, 2006). Specifically, a positive emotional climate and teacher sensitivity to student needs (i.e., classroom structure and activities that promoted adolescent autonomy and control) were associated with higher student achievement (Allen et al., 2013).

Student behavior, in addition to perceptions of safety and engagement, is a third area that has been associated with teacher-student relationships. There is research evaluating the relationship between teacher-student interaction quality and later peer behavior in fifth grade classrooms. Luckner and Pianta (2011) posited that teachers, “…act as invisible hands in the classroom, influencing children’s behavior with their peers by modeling relational skills, organizing and facilitating opportunities for peer interaction, as well as teaching skills that indirectly relate to peer behavior” (p. 264). Their study provided early evidence that teacher-student interaction quality in fifth grade classrooms is related to peer relations (i.e., socialable and prosocial behavior, aggression, and relational aggression). Prosocial behavior was more often rated in classrooms characterized with warm, respectful, and responsive interactions. When teachers were assessed to be well organized in terms of time management and attention, students were also rated with more positive peer interactions and fewer negative peer behaviors. Students who perceive warmth (i.e., caring and support) from teachers also reported greater participation and higher achievement; therefore, the quality of teacher-student interactions and the influence of teacher behavior are significant and likely to contribute to more positive student views of school climate (Allen et al., 2013; Voekel, 1995).

Peer relationships. While relationships with supportive adults at school are highly valuable in terms of promoting feelings of respect, academic engagement, and participation in
school activities that lead to greater connectedness, peer relationships also play a critical role in school climate (Sulkowski et al., 2012). Throughout childhood and adolescence, peers have a significant influence on students’ social world. Supportive relationships with school staff may serve as a protective factor for students and have a positive impact on peer interactions (Barchia & Bussey, 2011; Sulkowski et al., 2012). Prosocial relationships among students are associated with feelings of safety, level of engagement, and social-emotional functioning, all of which contribute to favorable perceptions of school climate.

There is evidence that peer relationships are related to student perceptions of safety. While investigating the social cognitive processes associated with defending victims of peer aggression, Barchia and Bussey (2011) found that school-wide efforts related to the climate of the school had an impact at the more targeted levels of intervention for anti-bullying programs. Students who perceived improved and collaborative relationships with teachers reported feeling more encouraged and inclined to defend peers and seek staff support. This finding highlights the importance of providing a supportive environment where students believe that their efforts to defend peers will be reinforced by the school system. Further, an increase in prosocial behaviors is likely to increase positive relationships among students and decrease peer victimization (Barchia & Bussey, 2011; Rose et al., 2009).

Another area that has been associated with peer relationships is student engagement. Correlations have been found between positive peer relationships and school engagement, which is further associated with positive perceptions of school climate (Perdue et al., 2009). In an attempt to expand the research suggesting that peers support the development of school engagement and academic attainment, Perdue and colleagues examined the impact of social functioning with peers on school engagement. The researchers included individual child
characteristics (i.e., prior achievement, social skills, and parental relationships) to review these areas as well as control for them.

Perdue and colleagues (2009) utilized data from the National Institute of Child Health and Human Development’s Study of Early Child Care and Youth Development, consisting of a sample of 10 rural and urban sites. Data were collected on demographics, child characteristics, and relationship variables in third grade. In fifth grade, school engagement measures were completed by students, which included statements related to behavioral, affective, and cognitive components of engagement. The researchers found that students who reported higher levels of friendship quality and lower levels of overt aggression towards others reported higher levels of school engagement. This research demonstrated predictive associations between peer relationships and school engagement, given the representative sample as well as the time elapsed between data collection. While the researchers did not provide explanations regarding how relationships with peers may differ for at-risk student populations (e.g., students with disabilities), they did shed light on associations between peer relationships during early elementary school years and later elementary school outcomes.

The influence of peer relationships may extend beyond academics and school functioning; these relationships have also been associated with social/emotional well-being (Demaray & Malecki, 2002; Way & Reddy, 2007). Findings of a study conducted by Demaray and Malecki suggested that peer support is particularly important for adjustment and emotional symptoms. The researchers examined the relationship between adolescents’ perceived social support and self-reported level of maladjustment in a number of areas (i.e., clinical, school, and personal) among a group of students considered at-risk. The sample consisted of students in grades 6-8 from an urban middle school, whose population was largely “at-risk” due to factors
such as low socioeconomic status, minority group membership, and performance “Below Standards” on state testing (p. 307). Students completed rating scales that measured social support, personality, and self-perceptions.

Demaray and Malecki (2002) discovered a significant relationship between overall social support and clinical and school maladjustment, with parent and classmate support having the strongest association to clinical and interpersonal indicators. Peer support was also strongly correlated to personal adjustment indicators such as interpersonal relationships. The investigators found that classmate support was a significant predictor of both personal adjustment and emotional symptoms. The negative outcomes associated with lack of peer support are likely to impact student perceptions of school climate, while positive peer interactions may promote interpersonal adjustment that is predictive of positive school experiences and climate perceptions.

Summary. Collectively, researchers have found that teacher/student and peer relationships contribute to the perceived climate of the school, both positively and negatively (McNeeley et al., 2002; Thapa et al., 2013; Wilson, 2004). Within this construct, a common finding emerged suggesting that good relationships with staff and peers are affiliated with students’ positive perceptions of the school’s climate (Barchia & Bussey, 2001; Eliot et al., 2009; Perdue et al., 2009) as well as favorable student outcomes in terms of prosocial behaviors, achievement, and engagement in school activities (Thapa et al., 2013; Whitlock 2006).

Institutional environment. The relationship between the tangible school environment and school climate are intuitively apparent, as physical conditions of a setting are likely to influence and reflect the perceptions of those within it (Klein & Cornell, 2010; Uline & Tschannen-Moran, 2008). In addition to previously discussed sub-constructs such as school
connectedness and engagement, physical attributes and level of supervision within the school were deemed critical elements of the institutional environment by the National School Climate Council (2007). The physical environment may include size of school and classroom (based on student enrollment), layout, level of supervision, security measures, comfort level of school members, and resources and supplies within the school.

*Class and school enrollment.* One of the most widely debated sub-constructs of environment is the size of the school and number of students within classes. There is conflicting evidence regarding the relationship between school size and school climate (Blatchford, Bassett, & Brown, 2011). Some researchers have suggested that smaller schools have a more positive school climate (Bosworth et al., 2011; McNeely et al., 2002), while others have found that larger schools had fewer instances of bullying, which may be an indicator of a safe school climate (Klein & Cornell, 2010). McNeely and colleagues found that students in smaller schools reported feeling more attached to school, but found no association between school connectedness and class size. However, others have proposed that smaller class sizes lead to more frequent and meaningful teacher-student interactions (Blatchford et al., 2011). Devine and Cohen (2007) suggested that larger schools can provide the more stable environment and connections associated with smaller schools by creating smaller learning communities within the school.

Lleras (2008) examined data from a nationally representative sample of diverse tenth grade students (National Educational Longitudinal Survey; NELS) to determine what contributes to negative learning environments and whether certain student groups were more vulnerable to these perceptions. According to Lleras, a “hostile” school climate could be disruptive or threatening (p. 109); therefore, students were surveyed on experiences of disruptive classroom behavior of peers, physical hostility, and psychological and verbal abuse. Statistical analyses
indicated that larger urban classrooms were more often perceived as disruptive and hostile, while smaller schools and private schools were more likely to provide an environment that was perceived by students as physically safe. Larger schools may be more likely to have classrooms that are viewed as hostile or disruptive, and Lleras hypothesized that the larger the school, the more difficult it is to supervise student behavior; this contributes to the overall school climate and may result in fear of school or negative attitudes towards school.

**Level of supervision.** Later research reaffirmed the importance of supervision when considering the quality of a school’s climate, as physical elements that enhance or reduce the level of supervision may play a role in perceptions of safety (Astor et al., 2010; Bosworth et al., 2011). Participants included in Bosworth and colleagues’ focus-groups identified physical elements of the environment such as cameras, fences, and locked doors as important to providing a positive climate. This sub-construct is part of the organizational structure, including administrative practices and policies that govern a school (Lleras, 2008), which have been discussed in previous sections related to safety.

**Material characteristics.** Attributes related to maintenance, cleanliness, and comfort level of the school have also been associated with perceptions of the school climate and subsequent student achievement (Uline & Tschannen-Moran, 2008). Building features such as indoor air quality, temperature control, lighting, acoustics, and overall aesthetics have a variety of implications for student outcomes (Lleras, 2008; O’Neill & Oates, 2001; Uline & Tschannen-Moran, 2008).

Uline and Tschannen-Moran (2008) conducted an exploratory study to examine the relationship between the physical environment and social environment of the school, and how each is associated with student achievement. Teacher surveys that inquired about the quality of
school facilities, resource support, and school climate were analyzed in addition to data on student achievement from 80 Virginia middle schools. The authors found that facilities that were rated as inadequate were associated with unclear learning objectives and an environment that was perceived as less orderly and serious. Additionally, schools that were well-maintained in terms of cleanliness, graffiti removal, and that possessed lockers and furniture in good condition were found to have higher levels of student achievement. Furthermore, teachers who rated their schools as poor in quality also reported lower enthusiasm and motivation to exceed basic teaching expectations to support student learning. This result suggests that environment also contributes to teacher behaviors and attitude, which may positively or negatively impact student perceptions of school climate.

**Summary.** While many of the constructs discussed contribute to the tangible school environment, specific sub-constructs may have direct and distal implications for perceptions of school climate. The size of a school, the number of students enrolled in each class, the level of supervision, and physical characteristics such as arrangement of the building and utilization of resources all contribute to the climate of the school as it is experienced by students.

**School Climate Summary.** Since its earliest inception, research regarding the climate of the school has highlighted several key components of school life. These constructs, as stated by the NSCC (2007) include: safety, teaching and learning, relationships, and institutional environment. The high degree of interrelation among these constructs makes it difficult to calculate the unique contribution each makes to overall school climate; however, what is clear is that school climate is a complex concept that is not comprised of one construct alone, but is the sum of these interactional processes.

There is increasing research indicating that contextual variables, such as school climate,
must be examined in regard to student bullying behavior (Barboza et al., 2009; Brock et al., 2006; Cook et al., 2009; Espelage, Low, & Jimerson, 2014; Espelage & Swearer, 2004; Nickerson, Singleton et al., 2014). Creating and maintaining a positive school climate can serve as a bullying prevention strategy and may also enhance commitment to the implementation of more targeted prevention and intervention programs (Low & Van Ryzin, 2014). On the contrary, school-level risk factors that may contribute to bullying include an inadequate discipline system, deficient teaching skills, and poor classroom management (Orpinas & Horne, 2006).

**Bullying**

Bullying is a term that is frequently used interchangeably with words like violence or aggression; however, there are clear distinctions among these phenomena (Orpinas & Horne, 2006). According to Olweus (2010), bullying is “aggressive behavior with certain special characteristics such as repetitiveness and an asymmetric power relationship” (p. 11). Violence and aggression are more severe, often involving intentional threat or use of physical force against others that may cause physical or psychological harm (Orpinas & Horne, 2006).

Although early research identified bully and victim as the two people involved in these interactions, it was recognized over time that additional roles were present including those who are both a bully and a victim (bully-victim), bystanders, and defenders (Coloroso, 2011; Cook et al., 2009; Evans et al., 2014). Victims of bullying have further been classified as passive/non-aggressive or provocative/aggressive (Brock et al., 2006). While it is possible for these roles to remain consistent, Espelage and Swearer (2004) suggested that bullying behaviors operate on a continuum and individuals may change in their positions over time.

The knowledge base related to bullying has grown exponentially in recent years, with more than 600 articles published between 2000 and 2010, compared to less than 190 in the 20-
year span prior (Cook et al., 2010). Research trends indicate that bullying is a timely and relevant topic with important implications for student development, and that there are many avenues to consider when examining this topic. As stated by Espelage and Swearer (2011), “The reasons why children and adolescents bully one another are complex, multiply-determined, and differentially reinforced” (p.3).

**Types of bullying.** There are various ways that individuals may be victimized. Depending on the perpetrator’s approach, bullying may be classified as physical, verbal, social, or electronic (Saylor & Leach, 2009). Physical and verbal forms of aggression are considered overt, while social and relational methods are often covert (Brock et al., 2006). Due to the potential for anonymity via the internet, electronic bullying could be considered either direct or indirect. Based on research conducted by Olweus (1993), it appears that 35-40% of students who are bullied are victimized by a single student; however, bullying by several peers may occur and tends to have more significant negative effects. Different forms of victimization have distinct influence on student outcomes (Brock et al., 2006).

**Physical bullying and verbal bullying.** Traditional notions of bullying are often associated with direct physical and verbal forms of victimization. Physical bullying involves acts of deliberate physical aggression (Cook et al., 2010), and may include hitting, kicking, pushing, pinching, or restraining another (Brock et al., 2006; Olweus, 1993). Physical bullying may also involve property destruction, either by stealing or damaging a victim’s possessions, and tends to occur more among males (Evans et al., 2014; Limber & Olweus, 2013; Olweus, 1993). Verbal bullying is defined as spoken aggression that may include name calling, teasing, threats, or mocking the victim’s culture, disability, or sexual orientation (Cook et al., 2010; Eisenberg, Neumark-Sztainer, & Perry, 2003). Results of large-scale studies suggest that this is
the most frequently cited form of bullying (Limber & Olweus, 2013; U.S. Department of Education, 2013), and some researchers have found that females are more likely than males to engage in verbal bullying (Eisenberg et al., 2003; Limber & Olweus, 2013; Olweus, 1993).

**Social bullying.** Social bullying is also referred to as ‘relational bullying’ and may include socially isolating others, slandering, spreading rumors, and/or deliberately and harmfully manipulating peer relationships or friendships (Brock et al., 2006; Cook et al., 2010). Evidence suggests that females are more likely to perpetrate social bullying compared to males, and are also more often affected by this form of victimization (Brock et al., 2006; Eisenberg et al., 2003; Limber & Olweus, 2013; Olweus, 1993). Due to the importance of peer relationships during adolescence, this type of social exclusion is likely to damage individuals’ psychological well-being (Eisenberg et al., 2003). Social bullying and spreading rumors in particular, is the second most commonly experienced form of victimization (Limber & Olweus, 2013).

**Cyberbullying.** Cyberbullying is described across the literature with a variety of names as well as numerous definitions (Underwood & Rosen, 2011). This behavior is commonly defined as using electronic media including computers, cell phones, and other electronic devices to willfully and repeatedly inflict harm (Hinduja & Patchin, 2008, 2011). This form of bullying has also been called electronic bullying, e-bullying, online harassment, Internet bullying, and online social cruelty (Hinduja & Patchin, 2008).

Despite the use of electronics, cyberbullying shares the defining characteristics of traditional bullying such as dominance between individuals or groups and repeated malicious intentions (Wong-Lo & Bullock, 2014). While a power imbalance still exists, Underwood and Rosen (2011) argued that physical size and strength are less relevant in this type of perpetration, making it an important form of bullying to examine for peer differences.
Cyberbullying also allows for additional bullying behaviors not otherwise possible in face to face environments, including: outing, trickery, masquerading, happy slapping, and picture video clip bullying (Underwood & Rosen, 2011). Outing, trickery, or masquerading involve impersonating or fooling a victim into revealing personal information and then sharing that information with others, often in a public forum. Happy slapping refers to recording an incident of physical or verbal bullying and sharing it with others electronically, often via social media. The latter is an example of the bi-directional relationship described by Wong-Lo and Bullock (2014), in which traditional bullying carries over into the electronic form.

Cyberbullying is a relatively recent form of victimization that is increasing as a result of cultural trends, given that most youth today communicate with peers electronically in some form or another (Cook et al., 2010; Hinduja & Patchin, 2008; Underwood & Rosen, 2011; Williams & Guerra, 2007). In this case, the environment in which bullying takes place is non-traditional and digital, such as social media or personal technological devices. Due to the high rates of electronic use among young people as a main form of communication, youth are exposed to the potential for bullying at all times (Hinduja & Patchin, 2011). Therefore, this form of bullying may be particularly harmful, given that victims may not have an escape whereas traditional bullying typically ends when the victim retreats to a safe environment (e.g., home). Anonymity may also lend itself to more malicious attacks because perpetrators are less inhibited by moral and societal constraints and do not see the reactions of their victims first hand (Hinduja & Patchin, 2008; Underwood & Rosen, 2011). Despite the potential intensity of cyberbullying, it has been reported as one of the least common forms of victimization, even though national media attention may suggest otherwise (Limber & Olweus, 2013; U.S. DOE, 2013)
Summary. Whether perpetrated by an individual or a group, bullying behaviors can take several forms. More overt approaches include physical and verbal bullying, while social bullying has more covert characteristics. Electronic or cyberbullying can be either direct or indirect, depending on how individuals are victimized.

Prevalence rates of bullying. Multiple researchers have examined prevalence rates of bullying across the United States, which has resulted in a wide range of statistics from 13% to 75% (Nickerson, Allen, et al., 2014). The variability of findings in regard to the rates of bullying behaviors may be attributed to methodological differences in how researchers operationally define bullying in its different forms (Underwood & Rosen, 2011). In particular, cyberbullying is somewhat covert and can be difficult to study if it is not observed (Hinduja & Patchin, 2008). Most studies at the national level are conducted with samples of older students (middle and high school), whereas data for elementary school youth are frequently analyzed at state and local levels (Evans et al., 2014).

Nansel and colleagues (2001) surveyed a representative sample of students in grades 6-10 in both public and private schools in the United States. The researchers found a prevalence rate of roughly 30% for moderate to frequent involvement in bullying (13% reported bullying, 10.6% reported being bullied, and 6.3% reported both). Responses were rated on a five-point scale ranging from never to several times per week, and frequencies were combined for analysis. In contrast, when defining bullying as a frequent behavior that occurs several times per week, other researchers estimated that three percent of adolescents aged 11-14 are chronic and frequent bullies (Barboza et al., 2009). One study examining verbal and social victimization among students in grades 7-12 reported that most experience social victimization, with 10-17% reporting the occurrence at least weekly and another 14-22% indicating the behaviors occurred
several times per month (Eisenberg et al., 2003).

Bradshaw, Sawyer, and O’Brennan (2007) sampled over 15,000 students in grades 4-12 from a large Maryland public school district encompassing urban, rural, and suburban schools. In response to an anonymous web-based survey, nearly 50% of students reported being bullied during the previous month and 30.8% of students admitted to bullying during the same time period. When frequency was described as engagement in a bullying incident two or more times, roughly 40% of students reported some involvement. Specifically, 23.2% reported victimization, 8% reported bullying others, and 9.4% reported participation as both a bully and a victim more than twice over the previous month. Further, more than 70% of students reported being a witness to bullying in the previous month.

One national survey, the School Crime Supplement to the 2011 National Crime Victimization Survey, found that 28% of adolescents surveyed reported being victimized by bullying (Robers, Kemp, Truman, & Snyder, 2013). Limber and Olweus (2013) analyzed a stratified random sample of 2,000 questionnaires completed by students in grades 3-12. The purposeful sample was drawn from a nationally representative group of students attending schools that administered the Olweus Bullying Questionnaire but had not implemented any interventions or prevention programs. Of these students, an average 16% reported being bullied, however, this number decreased steadily with increasing age.

**Prevalence by age.** Similar to overall prevalence rates, the age at which students are most likely to be involved in bullying has varied across studies. Some researchers have found that students are most likely to report bullying in late elementary and early middle school grades (Eslea & Rees, 2001; Limber & Olweus, 2013). Of the students who reported being bullied in the 2011 School Crime Supplement, the largest percentage (37%) reported victimization in sixth
grade (Robers et al., 2013). One analysis found that students who were bullied during fifth grade reported similar levels during sixth grade (transitioning to middle school), and decreased rates by seventh grade (Gage, Prykanowski, & Larson, 2014). Other research revealed trends suggesting that bullying in general peaks during middle school years (Dinkes et al., 2009; Nansel et al., 2001; Rivers et al., 2009; Robers et al., 2013) and cyberbullying may also occur at higher rates during this time (Tokunaga, 2010). According to Limber and Olweus, statistics of students who reported bullying others was more stable across grades, with an average of seven percent and a peak during eighth through tenth grades. There are mixed results in terms of the interaction between sex differences and age (Astor et al., 2010).

**Prevalence by gender.** There have been contradictory findings in terms of gender differences for both perpetration and victimization. These statistics become even less clear when examining more covert forms of bullying such as social and electronic, likely due to the different definitions and methodologies across studies (Underwood & Rosen, 2011). In terms of roles in bullying behavior, it appears that girls are more frequently classified as uninvolved while boys are more likely to be in bully, victim, or bully-victim groups (Espelage & Swearer, 2011; Nansel et al., 2001). Other data have echoed this result, with the highest rate of physical bullying and injury represented among middle school males (Robers et al., 2013).

There are inconsistencies across studies, as some researchers have found insignificant gender differences (Card, Stucky, Sawalani, & Little, 2008) and others have found that certain genders are more likely to perpetrate specific types of bullying (i.e., females and cyberbullying as reported by Robers et al., 2013). Minimal gender differences were noted across grade levels for victimization but a higher number of males than females reported bullying others at every grade level with increased discrepancy over time (Limber & Olweus, 2013).
Prevalence by bullying type. Although the measurement of bullying behaviors is complex, there has been more consistency in findings regarding rates by type of bullying. Bradshaw and colleagues (2007) found that direct verbal bullying was the most commonly reported method of victimization, followed by relational and physical forms and the United States Department of Education reported similar findings (Robers et al., 2013). Based on the responses of victimized students, verbal bullying and being the subject of rumors were the most common forms of victimization (17.6% and 18.3%, respectively) particularly for females (Nansel et al., 2001). Rates of cyberbullying experiences among youth vary widely (10-40%) depending on participant age, measurement methods, and study design (Hinduja & Patchin, 2011). Study of this concept is further complicated by the numerous ways that cyberbullying is defined across studies (Sabella, Patchin & Hinduja, 2013). Despite recent media attention, however, studies have consistently shown that electronic bullying is the least common when compared to other more traditional forms of bullying (Limber & Olweus, 2013; Robers et al., 2013; Sabella et al., 2013;).

Impact of bullying. Direct involvement in bullying behaviors, witnessing these occurrences, or simply being aware of the issue at school may have deleterious effects on students’ sense of psychological, social, and emotional safety (Barboza et al., 2009; Rivers et al., 2009; Vaillancourt et al., 2011). In their review of the literature, Vaillancourt and colleagues indicated that victims often report lower self-esteem and self-worth; increased loneliness and withdrawal; and, heightened anxiety, depression, and somatic complaints (i.e., headaches and stomach aches). All students involved in peer victimization (including perpetrators) experience varying degrees of peer rejection (Brock et al., 2006). In the most extreme cases, victims of bullying who have comorbid risk factors may consider or follow through with suicide
Rivers and colleagues (2009) inquired about bullying at school, substance use, common student concerns, and mental health risk during a 9-week term. Researchers surveyed a representative sample of students between the ages of 12 and 16 years old from 14 public schools in the UK. The results of this study indicated that witnessing peer victimization can have a negative impact on student mental health including impaired psychological functioning and increased substance use, equal to or above rates reported by perpetrators and victims. The authors theorized that this may be the result of re-victimization from another time, fear of victimization, or internal conflict as a result of not defending peer victims.

The previously noted concept of bullying behavior as a continuum (Espelage & Swearer 2004) has been confirmed by subsequent research. For example, Barboza and colleagues (2009) found that victims of bullying are more likely to become perpetrators. Victims are also at heightened risk for developing negative attitudes towards school and engaging in unhealthy behaviors such as alcohol and tobacco use (Nansel et al., 2001). While threat or experience of physical harm has clear negative effects, recent research suggests that youth may respond similarly to non-physical methods of victimization, and that these forms may impact social and school functioning (Eisenberg et al., 2003; Gastic, 2008; Vaillancourt et al., 2011).

Neuroimaging studies have shown that adolescent brains react to social pain as if physical injury was sustained (Vaillancourt et al., 2011). Social exclusion and rejection have been found to activate brain structures associated with reward processing and emotion regulation, indicating that physical and social pain may share similar neural structures. This is particularly concerning given that bullying is characterized as repeated behavior, suggesting that victims may have heightened sensitivity to future victimization and pain due to chronically
activated neural regions (Vaillancourt et al., 2011). This could potentially lead to ambiguous behaviors perceived as threatening or subsequent avoidance behaviors (i.e., truancy or withdrawal) associated with disengagement. Eisenberg and colleagues (2008) found a relationship between victimization and school engagement. Upon investigating school experiences of 7th-12th grade students who attended public middle and high schools in the Midwestern United States, the authors revealed that most students experience some degree of social victimization (i.e., verbal or social aggression) and those with higher rates also reported lower connectedness and achievement.

There is a reciprocal relation between lack of engagement and other school behavior problems. Gastic (2008) utilized data from the U.S. Department of Education’s Educational Longitudinal Study of 2002 (ELS: 2002) to investigate the relationship between being bullied and having disciplinary and truancy problems at school. Students who reported being bullied more than twice in the past semester were classified as victims for this analysis, although it was not possible to distinguish those who were both perpetrators and victims.

The results revealed that victims were significantly different from non-bullied peers in their excessive absences, with a 58% greater likelihood of being absent. Students who were bullied also reported higher levels of disciplinary problems at school, including: getting into trouble excessively, experiencing harsher forms of discipline (e.g., 50-60% higher chance of suspensions), and being three times more likely to be transferred out of school for disciplinary reasons. Gastic (2008) provided strong evidence that victimization is linked to truancy and disciplinary issues, both of which may have significant negative effects on academic progress and completion; this disengagement may be a precursor to drop out. Bullying that takes place outside of school (or online) can also negatively impact students.
Adolescents today are born into a culture where electronic formats (i.e., instant messages, blogs, text messages, and social media) dominate as a way to interact and communicate socially. Experts suggest that it has become necessary to utilize these devices in order to develop social skills to relate in today’s culture (Hinduja & Patchin, 2011). In terms of cyberbullying specifically, Hinduja and Patchin (2008) described the negative impact in youths’ desire and ability to utilize valuable online resources to navigate daily life, “If adolescents are uncomfortable or unwilling to explore the Internet and take advantage of all its positive attributes, they will be sorely lacking in certain developmental qualities that others who do embrace cyberspace will naturally obtain” (p. 131). In other words, students who avoid this technology are missing out on current developmental trends, but using this form of communication opens up the potential for harm.

Cyberbullying has been shown to have a similar negative relationship to student outcomes as traditional bullying, including: reduced self-esteem, academic difficulties, school violence involvement, and delinquent behaviors (Hinduja & Patchin, 2011; Sabella et al., 2013). Youth who have been the victims of cyberbullying have also reported higher rates of suicidal thoughts compared to non-victimized peers (Hinduja & Patchin, 2011).

**Behaviors related to bullying.** In summarizing his many studies, Olweus (1993) identified several common characteristics among students who bully and are victims from multiple national and regional samples of Norwegian and Scandinavian students. In general, victims appear to be anxious and insecure, often suffering from low self-esteem and having few if any friends at school, although there is less research to support these traits among females. Passive victims were described as possessing, “an anxious or submissive reaction pattern combined (in the case of boys) with physical weakness” (Olweus, 1993, p. 32). Provocative
victims, on the other hand, were described by Olweus (1993) as possessing both anxious and aggressive reaction patterns. These students often display behaviors related to lack of concentration and increased energy that elicit negative reactions from other students. In contrast to their victims, students who bully are often characterized by, “an aggressive reaction pattern combined (in the case of boys) with physical strength” (Olweus, 1993, p. 35). It is important to note that these characteristics are associated with bullying, but do not imply a causal relationship. Meaning, it is unclear whether personal attributes increase susceptibility to bullying and/or victimization, or behaviors and experiences related to bullying influence personal traits.

More recently, researchers in the United States have sought to identify possible predictors of bullying and victimization. Cook and colleagues (2010) conducted a meta-analysis to examine individual and contextual variables that predicted status as a bully, victim, or bully-victim. Unique significant predictors were found for each group, including: externalizing behaviors, thoughts about others, and negative peer influence for bullies; internalizing behaviors and peer status for victims; and externalizing behaviors, social competence, self-related thoughts, academic performance, school climate, peer status, and negative peer influence for the bully-victim group. Shared patterns of predictors were also found among groups, indicating that a common etiology may lead to status in one of the groups (Cook et al., 2010). This could also be taken as further evidence of the continuum of bullying behaviors posited by Espelage and Swearer (2004).

Bradshaw and colleagues (2007) found that students who reported being bullied perceived the reasons for this to be the way they “look, talk, or dress” (p. 370), particularly in middle school. When examining correlates to cyberbullying, Hinduja and Patchin (2008) found that electronic proficiency and the amount of time spent online were both positively related to
cyberbullying. Online bullying behaviors were also related to traditional bullying, physical aggression, and substance use (Hinduja & Patchin, 2008).

When researchers investigated the impact of individual and social psychological variables in predicting change in bullying behavior over time, they found that an increase in internalizing problems predicted an increase in bullying perpetration and peer victimization (Turner, Reynolds, Lee, Subasic, & Bromhead, 2014). When these behaviors were examined in relation to school climate variables, Turner and colleagues found that as perceptions of academic and group support increased, bullying perpetration decreased over time. It appears that students who are experiencing inner turmoil may be more likely to present externalizing behaviors such as bullying, whereas students who perceive support in school are less likely to victimize others.

Brock and colleagues (2006) suggested a literature based theoretical model of interactions among variables potentially related to and/or influencing peer victimization. The authors posited that students who are viewed as different in some way (e.g., physical stature, verbal abilities, interpersonal skills) may interact with certain behavioral risk factors (e.g., irritable, inattentive, withdrawn, internalizing) within a particular school social context which is more likely to lead to chronic peer victimization. This is a model consistent with an earlier social-ecological perspective proposed by Espelage and Swearer (2004). In both models, it is the combination of student differences, behavioral risk factors, and social climate of the school that may increase potential for peer rejection and social failure. Therefore, the social context or climate of the school plays an important role in determining which students are at risk for victimization and whether that risk will be realized (Brock et al. 2006).

**Bullying and school climate.** Within the research literature a relationship between school climate and bullying has been established (Barboza et al., 2009; Brock et al., 2006; Cook
et al., 2009; Espelage et al., 2014; Espelage & Swearer, 2004; Nickerson, Singleton et al., 2014). Targeted efforts to enhance a safe and respectful school climate often echo stated goals of school-wide bullying prevention; school staff and students may also participate more effectively in bullying prevention efforts when they perceive a positive school climate (Low & Van Ryzin, 2014). Conversely, schools that are characterized by a negative school climate may have heightened levels of victimization and school members may be less likely to engage in anti-bullying efforts (Orpinas & Horne, 2006).

Results of Cook and colleagues’ (2010) meta-analysis indicated that school climate was a shared significant predictor for status as both a bully and a victim, and initiatives to enhance school climate have been endorsed by several government agencies and educational ministries as a way to prevent bullying and violence (Cohen & Freiberg, 2013). Schools that are not characterized by a positive school climate also report higher rates of bullying and aggression (Kasen et al., 2004). From a different perspective, high prevalence rates of bullying may lead to a school climate that is characterized by fear and insecurity (Mehta et al., 2013). Higher rates of bullying have been shown to negatively impact both students’ (Nickerson, Singleton et al., 2014) and staff (Weiner et al., 2013) perceptions of school climate. Students who are involved in bullying in any form are up to three times more likely to report disliking school (Limber & Olweus, 2013).

Lack of social support may be a risk factor for bullying behaviors among adolescents (Barboza et al., 2009; Zimmerman, Glew, Christakis, & Katon, 2005). Specifically, Barboza and colleagues found that students who had strong parental and teacher support were less likely to be perpetrators of bullying. Turner and colleagues (2014) also found that students’ bullying behaviors decreased over time when feelings of academic and social support increased. In their
longitudinal analysis, the authors found that an increase in school identification (i.e., connectedness; “students feel a psychological connection with the school and its members;” p. 330) was significantly related to a decrease in peer bullying and victimization. This factor was a stronger predictor than other variables examined related to internalizing symptoms. Conversely, social bullying has been found to have a negative impact on engagement and achievement (Eisenberg et al., 2003).

Recent work further indicates that relationships in school are important to bullying involvement and perpetration. One study used a latent growth model analysis to examine the association between school climate and school-based bullying (Gage et al., 2014). The researchers found that a group of students that were deemed at high-risk were present in elementary schools (37%), secondary schools (25%), and in the transition phase between elementary and middle school (28%). There were differences in which school climate subconstructs predicted decreased risk based on grade level, indicating that different aspects of school climate are more important for different age groups. The results suggested that peer support is a stronger protective factor in middle and high school while adults are more likely to play this role in elementary school. One caveat to this is the students who are transitioning to middle school (sixth grade), who also had adult support as a significant predictor for decreased bullying in addition to peer support and respect. Given that middle school students more frequently reported most forms of bullying (direct verbal, relational, and physical) which correlated with lower feelings of safety and belonging (Bradshaw et al., 2007), it is important for school staff to be aware of the critical role their support can play in minimizing these risk factors. Although relationships among bullying and school climate factors have been identified, causality cannot be determined from these studies.
Mehta and colleagues (2013) conducted a study to determine whether a climate of bullying could have school-wide implications for student engagement. Ninth-grade students were assessed using a self-report measure of perception of bullying climate and student engagement. Responses were analyzed at the individual and school level, and revealed that the negative association between bullying and school climate extended beyond the effects of individual victims and perpetrators. In other words, even students who did not report direct involvement or observing bullying behaviors reported lower levels of school commitment and engagement when the overall victimization rates for the school were high. Limber and Olweus (2013) also highlighted that the prevalence rate of uninvolved students who fear bullying (14%) speaks to the “omnipresence of bullying and how much it can affect even those not directly involved” (p. 14).

Taken together, the research suggests that bullying and school climate are interrelated issues that have the potential to impact one another, positively and negatively (Cohen & Freiberg, 2013). Also, “…that the effects of bullying prevention programs shape, and are shaped by, the school climate” (Low & Van Ryzin, 2014, p. 308). Limber and Olweus (2013) found that while 14% of all students are often afraid of being bullied at school, that number climbs to 40% for students who have been victimized in the past. This climate of fear is likely to have a negative impact on the learning environment and academic achievement for these students.

**Bullying summary.** Fortunately, extreme violence in schools is a rare occurrence (Devine & Cohen, 2007; Robers et al., 2013); however, bullying remains a common school issue in which students are victimized physically, socially, emotionally, or electronically. There are numerous risk factors that may predispose students to engage in or endure bullying behaviors; it is the responsibility of schools to establish a climate that is characterized by safety.
Students with Disabilities

The population of students with disabilities is comprised of a heterogeneous group of individuals who possess varying levels of abilities, skills, challenges, and needs. These students receive special education services for academic, behavioral, physical, or functional performance through an Individualized Education Program (IEP) or 504 Plan for a medical diagnosis (Rose, 2011). When examining the impact of school climate and experience of bullying, it is important to consider how students with a special education classification may have perceptions and experiences that differ from their typical peers. Students with disabilities have a number of elevated risk factors and may not respond to typical school-wide strategies (Farmer, Lane, Lee, Hamm, & Lamert, 2012; Nickerson, Allen et al., 2014). Students with disabilities may require modifications to the school climate as well as individualized approaches to bullying prevention programs in order to benefit from universal interventions.

Students with disabilities and school climate constructs. The philosophy of inclusive education proposes creating a supportive learning community where all students feel as though they belong (Pavri & Monda-Amaya, 2001), which is well-aligned with the goals of school climate initiatives (Coulston & Smith, 2013). Compared with the expansive literature related to school climate in general, few researchers have focused specifically on the perceptions of students with disabilities’ regarding school climate. As noted by Mehta and colleagues (2013), many existing studies that surveyed students excluded those with disabilities when obtaining samples. However, researchers have investigated the school experiences and perceptions of students with disabilities’ in several areas that align with school climate constructs.

Safety. As previously discussed, provision of a positive school climate typically occurs through universal supports or interventions with the intention of targeting all students. In
addition to whole-school policies to ensure safety and classroom practices to promote emotional and intellectual safety, special consideration must be taken for students with disabilities who have varied and individualized risk factors (Daggett, 2013).

The use of Positive Behavioral Interventions and Supports (PBIS) is recommended in the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) as a way to address behavioral difficulties of students with disabilities due to the evidence that this approach is effective in managing student behaviors to enhance the climate and safety of the school (Sugai & Horner, 2005). Lane and colleagues (2007) examined response to school wide positive behavior support among typical students with a variety of behavioral profiles and students with high incidence disabilities (i.e., specific learning disability, other health impairment, speech/language impairment). Student response was measured before and after implementation of programs via grade point average, attendance and discipline records, and referral data.

Although differences were not statistically significant, the researchers found that effect sizes indicated discrepancies in response to the program by specific student subgroups. Small-to-medium effect sizes were identified for differences between most groups. Students with disabilities (and comorbid difficulties) had small decreases in GPA (compared to other student groups with improvements or no change) and responded with lower magnitude decreases in tardiness compared to other categories (except externalizing). The small discrepancies may be indicative of students with high incidence disabilities interpreting and benefitting from school-wide safety initiatives differently than typical peers (Lane et al., 2007).

Based on Allodi’s (2002) research from Sweden, inclusive classrooms may be perceived as psychologically safer. This study was intended to determine whether integrated programming had an impact on the climate of the classroom. The psychosocial environment of the classroom
was rated by students in grades 3-6 from 16 different schools; classrooms that were integrated were characterized by lower levels of friction, competition, and individualism and higher levels of cohesiveness when compared to segregated classrooms. Further, Allodi noted that the higher ratio of staff to students in integrated classrooms was not necessarily the cause, as segregated learning environments with higher teacher ratios had higher levels of friction and competition by comparison. It appears that a diverse group of students within an accepting learning environment enhances the opportunity for prosocial learning and greater security within the classroom (Allodi, 2002; Baglieri & Knopf, 2004).

In a review of numerous legal cases, Daggett (2013) determined that students with disabilities are at heightened risk for significant physical injury at schools across the United States. Schools have a legal responsibility to protect all students from harm by providing adequate supervision, anticipating foreseeable risks, and abiding by specific safety provisions outlined in students’ Individualized Education Plans (Daggett, 2013). Additional risk factors may lead students with disabilities to perceive the safety of the school environment differently than typical peers, partly due to their heightened risk for victimization, which will be discussed in later sections.

**Teaching and learning.** Special education laws and regulations have targeted important components of teaching and learning for students with disabilities. Researchers have also focused on these areas when examining the learning experiences of identified students. Upon examining data from the National Educational Longitudinal Study (NELS) and conducting a survey to measure school engagement, Reschly and Christensen (2006) concluded that small but significant differences existed between students with disabilities and a comparison group of students performing within the average range on achievement measures. Even when compared
to students who not classified but were performing below average on achievement measures, students with learning disabilities were found to have significantly lower levels of achievement, academic self-efficacy, and sense of coherence (Lackaye & Margalit, 2006). These findings suggest students with disabilities may be at-risk for school dropout, with the highest incidence occurring among students with learning disabilities or emotional/behavioral disorders. In order to address the educational needs of students with disabilities, teachers and staff must consider instructional approaches as well as student participation.

Given the importance of engaging students with disabilities, researchers have analyzed preferred teaching strategies among this population to support learning and participation. Klingner and Vaugh (1999) reviewed a 20-year span of studies that evaluated student perceptions of teaching methods in their inclusive classrooms. Based on their findings, students with high incidence disabilities (i.e., learning disabilities) wanted access to the same materials, grading criteria, and instructional practices as their peers. All students reported that teachers who paced and reviewed material, taught learning strategies that applied to all students, encouraged mixed group work, and differentiated instruction as needed were the most effective.

Class-wide interventions that focus on process learning rather than content mastery, such as strategy instruction, may enhance academic self-perceptions and effort among students with learning disabilities (Meltzer, Katzir, Miller, Reddy, & Roditi, 2004). In general, students with disabilities reported less effort and inconsistent use of strategies when completing schoolwork they found challenging. After six months of classroom-based strategy instruction, students in grades 4-9 reported more frequent use of strategies in their schoolwork and rated themselves as performing better in several content areas; students with a learning disability (LD) reported greater benefit compared to typical peers. Although improvements were noted, students with LD
were still rated by their teachers as performing lower than typical peers, indicating the need for more intense and systemic approaches or an increased dosage (i.e., classroom and small group) to close performance gaps and increase positive self-perception and motivation.

These research findings highlight the importance of differentiated instruction, which can be designed to educate all students, with and without disabilities (Baglieri & Knopf, 2004). This approach may buffer risk factors by teaching at the students’ ability level and promoting group-learning. Cooperative relationships and peers as learning models are highly beneficial for students with special needs as well as typical peers (Heydenberk & Heydenberk, 2007). These approaches, coupled with teachers modeling positive language and attitudes regarding diversity, enable students to develop prosocial attitudes and increase engagement (Baglieri & Knopf, 2004).

In order for students with disabilities to benefit from educational programming, they must feel comfortable and encouraged to participate. Ferguson and colleagues (2011) expanded on prior research to determine whether students enrolled in an inclusive education program were active participants in their learning communities. The researchers interviewed students attending an urban elementary-level charter school in the western United States using a semi-structured format; questions pertained to their classroom participation and perceptions of classroom climate. The sample consisted of 27 students with disabilities and 163 non-classified students who participated in fully inclusive general education classrooms. While all students reported similar views in some areas (e.g., class environment, perceptions of self as learners), differences were noted in terms of student voice, academic satisfaction, and peer interactions. Compared to 70% of students who were not disabled, only 52% of students with disabilities reported feelings of decision-making authority within the classroom, an area that has been cited as important for
connectedness and engagement in earlier research (Whitlock, 2006). Further, students receiving special education support reported higher levels of academic difficulty and peer conflict coupled with lower levels of homework enjoyment (Ferguson et al., 2011).

Later research was conducted to determine the degree to which students with disabilities think they participate within their school environment (Kramer et al., 2012). Participation was found to be impacted by the degree to which teachers and peers understood individual students with disabilities and provided them with the appropriate support. While adequate support promoted participation and also mediated lack of resources, inadequate understanding and over- or under-estimation of youth abilities had harmful effects on participation. Meaningful engagement was perceived when students were able to actively participate with typical peers, compared to limited participation or doing a different activity, both of which led to perceptions of exclusion regardless of physical proximity.

Even when students endorse positive perceptions of teacher assistance for academics, these interventions may have mixed results in terms of supporting students socially (O’Rourke & Houghton, 2008). Students with mild disabilities in inclusive settings reported that teaching strategies such as group work promoted peer relationships; however, for older students in particular, the individualized support necessary for academic success may be perceived as negatively impacting acceptance and respect by peers. As noted previously, teacher-student and peer relationships play an important role in perceptions of school climate.

**Relationships.** Promoting respectful and positive attitudes within the school culture (both of staff and students) is one avenue to increase connectedness and respect perceived by students with disabilities, particularly because disability characteristics may have an impact on a student’s interactions with staff and peers (Milsom, 2006; Rose & Espelage, 2012). Awareness
of diversity is particularly important in regard to students in special education because classification, level of services, and varying abilities make these youth more unique than may be assumed (Wagner & Blackorby, 2005). By establishing positive rapport with their students to facilitate learning, teachers play a large part in developing an accepting and positive school climate (Pavri & Monda-Amaya, 2001). Providing education to students in the least restrictive environment is not only required by the Individuals with Disabilities Educational Act (IDEA, 2004), but has also been credited with enhancing social networks for students (Martínez, 2006).

Concentrated efforts at improving student-school connection through school bonding interventions have been associated with increased commitment to school and desired behavior changes (Catalano et al., 2004). Catalano and colleagues reinforced the importance of students feeling connected to school and the relationship between connectedness and academic success, health, and safety, all of which are areas of vulnerability for this population. Students with disabilities may possess characteristics or have prior experiences that make them more susceptible to disengagement; feeling welcome at school and being given opportunities and encouragement are likely to enhance engagement and connectedness, regardless of academic or behavioral disadvantages (Wagner & Blackorby, 2005). Whole-school approaches that respond to the needs of students with disabilities are necessary and can be implemented through awareness and education (Raskauskas & Modell, 2011). Teachers who engage in positive relationships with students are in a key position to monitor and support high-risk groups (i.e., students with disabilities) by providing attention and interventions to build skills that reduce additional risk factors (Son et al., 2014).

Students with disabilities, like their typical peers, are more likely to seek adult support at school when teachers and staff are perceived as willing, available, and supportive (Rosenberg,
Students with disabilities, however, may prefer different strategies for problem solving and require individualized support for developing and using appropriate coping strategies (Pavri & Monda-Amaya, 2001). Pavri and Monda-Amaya used both quantitative and qualitative methods to examine teacher and student perceptions regarding social support provided to elementary-level students with Learning Disabilities (LD). Students with learning disabilities reported, in rank-order, the highest degree of perceived support in instrumental support (i.e., assistance in problem solving, direct help with a task), followed by worth and self-esteem enhancement, companionship support, and intimacy. In other words, closeness in teacher-student relationships was rated lowest by these students.

One study that contrasted the friendship quality of students with disabilities found significant differences across different educational settings (Heiman, 2000). Israeli students with disabilities who were 12-15 years of age and were educated in self-contained classrooms in regular schools reported higher quality of peer relationships compared to those in special school settings. Even those educated within typical school buildings, however, reported lower quality of friendship compared to typical peers in general education classrooms. Increased implementation of inclusion has revealed some social challenges for students with disabilities, which has prompted the examination of student attitudes towards inclusive practices (de Boer et al., 2012). In their review of the literature, de Boer and colleagues found that while most students hold neutral attitudes about peers with disabilities, there are some individuals that expressed strongly positive or negative opinions regarding these students. The authors suggested that knowledge and understanding led to greater acceptance of differences and should be a target for interventions when inclusive education is implemented.

Martínez (2006) also examined perceived social support of students with multiple
learning disabilities (LD) in inclusive classrooms compared to peers without disabilities. Not only did this study address differences between students with and without LD, discrepancies between students with LD in one academic area compared to multiple LD were investigated. Based on this analysis, even when participating in inclusive settings, students with LD experienced insufficient social support from classmates and friends; students with multiple LD reported the least perceived support. These findings suggest differences between students in special education and general education, and also emphasize the heterogeneity within the group of students with disabilities.

**Institutional environment.** Despite the growth of inclusive practices in many parts of the world, most architectural design and construction of schools is created for the typically developing student population (Egilson & Traustadottir, 2009). When school improvement efforts are focused on environmental modifications (e.g., reducing class sizes or creating small learning communities), there is potential for special education students to be left out of the discussion (Dukes & Lamar-Dukes, 2007). When school-wide reforms are planned, it is important to determine how inclusion will be upheld and special education services can be incorporated into the restructuring of the classroom environment.

With the re-authorization of the IDEA (2004), most of the No Child Left Behind Act (2001) requirements for students with disabilities were incorporated; these emphasize that schools ensure students have access to, and are successful in, the regular education curriculum. It is important that students with physically handicapping conditions are able to access school buildings, but further intervention may be necessary at the more individual level (Dagnett, 2013). For students with physical disabilities, obstacles may include distance between school areas, heavy doors, steep ramps, and uneven surfaces (Egilson & Traustadottir, 2009). Within the
classroom, seating and furniture must be accommodating for students with limited mobility. The environment may also be perceived by students with processing or other “hidden” disabilities in ways that make it difficult for them to function such as unpredictable movements, noises, or lighting (Egilson & Traustadottir, 2009). Risks associated with environmental factors such as older buildings (common in urban and rural areas) may exacerbate challenges for students with disabilities who have sensory or motor impairments, or those with significant medical issues such as asthma or allergies (Dagget, 2013)

Available resources are also part of the tangible school environment and may play a role in students’ school experiences and perceptions. Eriksson (2005) investigated the relationship between participation in school activities of students with disabilities and the environment in Swedish schools. While the general school environment was not significantly related to participation, the availability of activities as perceived by students was related to their engagement in school activities.

**Summary.** Researchers who have compared the perceptions of students with disabilities to their typical peers have found contrasts between student groups in a variety of school areas. Depending on the individual characteristics of students and their degree of integration into the general education community, they are likely to experience the school environment differently. Although there is a scarce amount of literature specifically addressing the perceptions of school climate constructs among students enrolled in special education, differences in similar content areas have been found. These sub-group differences are important to synthesize and understand when disseminating universal efforts to improve the climate of the school for all students.

**Bullying and students with disabilities.** Although there is currently no federal law that directly addresses bullying, schools are obligated to address these behaviors under the
enforcement of education and civil rights laws (e.g., IDEA, 2004; Title II and Title III of Americans with Disabilities Act; Section 504 of the Rehabilitation Act of 1973) by the U.S. Departments of Education and Justice (U.S. DOH, 2014). Although states mandate programs and policies to reduce bullying among students, targeted approaches to address the needs of sub-group populations are often lacking (Rose, 2011). The paucity of knowledge regarding the best approaches to prevent bullying among students with disabilities is likely the result of limited research focused on this population (Raskauskas & Modell, 2011).

Although an early study conducted in the United Kingdom found that students receiving special education were more likely to be victims and perpetrators of bullying (Whitney et al., 1994), research in the United States is still relatively new (Rose et al., 2012). Though small in size, the literature base indicates that children with disabilities are more frequently involved in bullying, both as victims and perpetrators (Son et al., 2014). “Understanding this discrepancy involves attending to several variables that may place students with disabilities at a greater risk for involvement in bullying as both the victims and the perpetrators” (Rose, 2011, p. 34).

Prevalence rates. Researchers in recent years have attempted to determine the rates of bullying involvement for students with disabilities (Blake, Lund, Zhou, Kwok, & Benz, 2012; Carter & Spencer, 2006; Rose et al., 2009, 2012). Similar to studying bullying in general, there are several factors that make the phenomenon difficult to evaluate. For example, students with disabilities that are characterized by social and communication deficits may not recognize more covert forms of bullying or may perceive ambiguous behaviors as aggressive (Blake et al., 2012). While research on this subject is increasing, there is still a lag in the literature in terms of understanding of bullying experiences within the diverse population of students with disabilities (Raskauskas & Modell, 2011). While the term “disability” is often studied in a dichotomous way
(i.e., presence or absence), handicapping conditions exist on a continuum (Rose, 2011; Rosenberg, 2012). Those who have studied bullying behaviors among students with disabilities have often found increased rates of victimization (Blake et al., 2012; Estell et al., 2009; Nickerson, Allen, et al., 2014; Rose et al., 2009; Rose & Espelage, 2012). Rose and colleagues (2009) conducted a seminal literature review of bullying among children and adolescents with disabilities. A third of the studies included in their review used sample sizes of less than 100 students and rates of reported victimization ranged from less than 1% to 100%. These findings highlight the challenge in accurately determining prevalence rates. Rose and colleagues also noted that “disability” is a term that varies in definition based on language and culture, and only seven of the 32 studies reviewed were conducted in the United States. Despite these limitations, the literature suggested that students with disabilities were twice as likely to engage in bullying compared to students without disabilities (Rose et al., 2011).

It was hypothesized that the discrepancy may be the result of skills deficits in which students with disabilities have difficulty problem-solving negative peer interactions and/or have increased reactive aggression (Rose & Espelage, 2012). Carter and Spencer (2006) found similar results when reviewing bullying literature; students with disabilities reported experiencing all forms of bullying, and at least one study identified name-calling as the most common form of victimization. Saylor and Leach (2009) matched students with disabilities to peers from general education within an inclusive program and found that those with disabilities reported more frequent victimization as well as greater anxiety about potential harassment. Nickerson, Allen, and colleagues (2014) surveyed a variety of stakeholders in regard to the bullying experiences of individuals with disabilities. They found that parents of students with disabilities in grades 3-12 reported victimization at rates comparable to or greater than their peers, with heightened risk for
social vulnerability (i.e., believing things that are not true, deception). Parents who endorsed bullying experiences also reported that it most often occurred in schools.

After analyzing results from the Special Education Elementary Longitudinal Study and the National Longitudinal Transition study, Blake and colleagues (2012) found that prevalence rates for victimization among elementary school students enrolled in special education was approximately 24.5%, while middle school students reported roughly 34%, and high school students nearly 27%. Compared to the national average for students without disabilities, classified students were found to be one to one and half times more likely to experience bullying, particularly those identified with the classification of Emotional Disturbance (ED). Students across all grade levels with an ED classification were at a higher risk for victimization, with prevalence rates ranging from 39-52%. In elementary school grades, students classified as Other Health Impaired (OHI) were victimized at rates higher than the average for students with disabilities in that age group. Also of concern, the researchers found that students who were victims of bullying once were at a higher risk for repeated incidents. With the exception of students with hearing impairments, students with disabilities who were bullied were 5-7 times more likely to experience victimization almost two years later.

Gender may also play a role in the differential experiences of students with disabilities. Female students who received special education services are 3.9 times more likely to be victimized and 4.8 times more likely to be bully-victims when compared to typical peers (Farmer et al., 2012). While males were also at a greater risk than typical peers, they were found to be 2.4 times more likely to be a victim and 3.2 times more likely to be both a victim and perpetrator.

One area revealed little difference among students with disabilities compared to students who were not classified. Didden and colleagues (2009) investigated the occurrence of
cyberbullying within a sample of 12-19-year-old adolescents with intellectual disability and/or developmental disorders. Their study indicated that youth with disabilities experienced cyberbullying at rates similar to their peers without disabilities, reporting a range between 0-26%. Most commonly, students experienced bullying in the form of ignored or frequent phone calls or anonymous text messages.

**Subgroup Differences.** Characteristics or risk factors associated with certain disabilities (e.g., social and communication difficulties, attention deficits, aggressiveness, anger, hostility, low impulse control, hyperactivity) may lead students who are classified to be perceived as different or provocative by their typical peers, resulting in heightened risk for victimization (Blake et al., 2012; Rose & Espelage, 2012). While most existing literature regarding bullying among students with disabilities does not compare subgroups based on classification, those that do report varying rates of victimization (Rose et al., 2012). Although small in number, there are some studies that have examined differences within the group of students with disabilities.

Students with Attention Deficit Hyperactivity Disorder (ADHD) and those with emotional and behavioral problems have been shown to be at heightened risk for victimization (Blake et al., 2012; Rose & Espelage, 2012; Swearer et al., 2012). Blake and colleagues found some differences in repeated victimization among students with disabilities. Victimized students classified with autism (across all grade levels) and students with orthopedic impairments (in high school) were most likely to be bullied repeatedly over time. The analysis also revealed that middle and high school students who were classified as deaf-blind and high school students with visual impairments were the only groups that did not exhibit similar patterns of re-victimization.

Carter and Spencer (2006) reviewed a total of 11 studies conducted between 1989 and
2003, from which they grouped a sample of 609 students with disabilities into two categories: visible and non-visible. Visible disabilities were considered those that were easily observable and often of a physical nature. Non-visible disabilities were covert and at times behavioral, but requiring some time to observe. Based on the results of all 11 studies, Carter and Spencer found that students with both visible and non-visible disabilities experienced higher rates of bullying than their peers enrolled in general education. Gender differences indicated that boys were more often bullied than girls, but one study reported that girls with a Learning Disability (LD) were at greater risk than boys with a LD. Seven of the studies reviewed included students with non-visible disabilities and used a combination of interviews, rating scales, or questionnaires while two used only surveys. Results suggested that females were at greater risk for victimization and having difficulty interpreting social situations. Rose (2011) also summarized research comparing visible/non-visible handicapping conditions; results from the latter analysis indicated that students with unobservable disabilities reported similar victimization rates to non-disabled peers.

Rose and Espelage (2012) also sought to evaluate the degree to which students with and without disabilities differed on bullying and aggression-related variables among middle school students. They further examined how students with emotional and behavioral disorders (EBD) differed from other students with disabilities in terms of aggression. The researchers found that students with EBD reported elevated levels of bullying and these behaviors were predicted by increased levels of anger. For students with other disabilities, bullying perpetration was predicted by higher levels of victimization. It was suggested that aggressive behaviors exhibited by students with EBD may be related to their disability and would likely respond positively to individualized behavioral supports, whereas students with other disabilities may have reational aggression that could be reduced with effective school-wide approaches.
**Special Considerations.** There is a unique challenge that arises when students with disabilities perpetrate bullying. In particular, protecting the educational interests of students with EBD by maintaining them in school while manifest determination proceedings occur may cause safety and risk issues (Duke, 2002). Due process procedures are required when any student who is classified behaves in a way that is punished by suspension in order to determine that the misconduct was unrelated to his/her disabling condition (Jacob et al., 2011).

Educational placements must also be considered when addressing risk and protective factors for bullying involvement. Son and colleagues (2014) analyzed data from the Pre-Elementary Education Longitudinal Study (PEELS), which is nationally representative and contains information on more than 3,000 children with disabilities who were between 3 and 5 years old in 2004 and receiving special education services. When examining risk and protective factors associated with peer victimization, the authors found that time in a special education classroom was associated with both school adjustment (i.e., social behaviors) and developmental outcomes (i.e., language development). These outcomes were further associated with peer relationship difficulties including increased victimization.

Rose (2011) suggested that inclusive education practices may reduce the rates of bullying perpetration and victimization among students with disabilities, given that prevalence rates are lower within inclusive settings. It is possible, however, that the severity and type of disability which leads to more restrictive settings may actually be the cause of this discrepancy. Although inclusive environments have significant benefits for students with disabilities, differentiated instruction strategies and academic interventions are not always applied to universal behavior systems for students who do not respond to school-wide approaches (Rosenberg, 2012). There is a lack of conclusive research to determine whether placement in special education settings
predicts greater or reduced involvement in bullying (Nickerson, Allen et al., 2014).

**Summary.** There is ample research indicating that students with disabilities are at heightened risk for victimization and also may be more likely to perpetrate bullying compared to typical peers. While it is likely that numerous individual and environmental factors contribute to this discrepancy, the relationship between bullying and school climate suggests that specific attention must be paid to supporting students who are classified to attenuate risk of victimization.

**Literature Review Summary**

Although school climate, bullying, and students with disabilities are discrete areas of research, there is a high degree of interrelatedness across these topics. Expansive research has demonstrated the importance of promoting and maintaining a positive climate within schools and revealed ways that school-related constructs contribute to and are shaped by the school’s climate. Bullying is a topic that is also associated with school climate and has been shown to have a bi-directional relationship to the concept; schools with high rates of bullying may be perceived as more hostile environments while those with positive school climates may report lower rates of bullying. Compared to school climate and bullying in general, there is little research regarding these topics specifically examining students with disabilities. Existing research indicates that students with disabilities have reported significant differences in areas related to the climate of the school and have also been shown to experience higher rates of bullying-related incidents.

**Problem Statement**

Despite the important information provided by the vast research on the distinct topics of school climate and bullying, there are common limitations among these studies. For instance, dichotomizing the measurement of bullying reduces the ability to assess frequency of a behavior that is more often sustained than incidental; and lack of clear definitions can lead to different
interpretations of behaviors being evaluated (Barboza et al., 2009). Similarly, looking at individual areas identified as components of school climate limits the understanding of climate as the molar construct that it is. The specificity of populations or smaller sample size also minimizes generalizability (Gastic, 2008).

Many needs assessments completed prior to anti-bullying interventions do not include students with mild/moderate or moderate/severe disabilities. This may inhibit staff’s ability to respond to and meet the needs of students with disabilities in each of the areas targeted within whole-school approaches (Mehta et al., 2013; Raskauskas & Modell, 2011). Parent-report measures have been used to measure student experiences with bullying which has mixed results in terms of validity (Blake et al., 2012). The same is true for school climate studies that use teacher reports of student behaviors rather than opinions of the students, who are the largest group of stakeholders within a school. Methodological issues may also occur when the examination of the differential student experience is conducted with peer nomination; this approach may be particularly vulnerable to inaccurate results when classified students are not fully included in general education programming (Blake et al., 2012).

Despite the recommendations to target school climate in reform efforts and the mandates to include students with disabilities in the least restrictive setting, there is a gap in the literature regarding their perceptions of school climate. Also, the broad range of reported statistics for bullying indicates that school-level assessments are needed to provide an accurate picture within a given district. The majority of the literature examining the topics of school climate and bullying do not include students with disabilities. Studies that include all students may alter administration of data-gathering tools based on the ability level or classification of students, which may also unintentionally impact responses (Blaket et al. 2012).
Purpose Statement

The purpose of this study was to address the current lack of investigation of students with disabilities in school climate and bullying research. This intent was aligned with Blake and colleagues’ (2012) recommendation to include students with disabilities in school-wide assessments of bullying to measure their degree of exposure and involvement, as well as examine school-level characteristics to assess predictors and risks.

This study also addressed the limited examination of the perceptions of students with disabilities, rather than teacher or parent report of their experiences. Focusing on student perspectives allowed for deeper analysis, determining whether gender and grade-level differences existed among students with disabilities. In order to address the lack of clarity limiting some previous studies, the pre-administered survey stated the school board’s definition of bullying, which included the hallmark characteristics of power imbalance, intent to harm, and repetition. The pre-existing data collected from this research were further analyzed.

Research Questions

Students receiving special education services are at heightened risk for academic difficulties, social challenges, and bullying victimization. Given that these students are entitled to, and often require modifications to academic curriculum, it is likely that they would benefit from school climate and bullying prevention efforts that are similarly individualized. This study also addressed whether students’ (with and without disabilities) experiences of school climate were predictive of achievement. Determining which school climate factors that may be perceived by students with disabilities as adequate or deficient would highlight protective and risk factors. Therefore, the specific purpose of this study was to answer the following questions:

1) Are there significant group differences by education program (special education vs.
general education) in perception of school climate?

a. If significant differences exist, in what areas of school climate?

2) Among students with disabilities, are there significant differences by gender in perceptions of school climate?

a. If significant differences exist, in what areas of school climate?

3) Are there significant differences by group in perception of school climate between middle and high school students with disabilities?

a. If significant differences exist, in what areas of school climate?

4) Is there a correlation between perception of school climate and achievement?

5) Are there significant group differences by education program (special education vs. general education) in experiences of bullying?

6) Among students with disabilities, are there significant differences in experiences of bullying by gender?

7) Among students with disabilities, are there significant differences in experiences of bullying by school level (i.e., middle v. high school)?
Chapter 3: Methodology

Overview

This chapter provides details about the collection of pre-existing data that were used for this study. Given that the data were comprised of survey responses collected prior to this study, the setting and instrumentation are described based on the initial data collection process. The participants are described based on the sample that was used for this analysis. The chapter concludes with the data analysis procedures used for the current study.

Setting

The archival data that were analyzed for this study were collected within a suburban school district in the Northeastern United States with an enrollment boundary radius of 50.1 miles. During the year that the data were collected (2009-2010), the U.S. Census Bureau reported a population range of 32,688-35,303. According to the 2010 Census, there were approximately 14,160 households within the community, and the median household income in the school district’s service area was approximately $76,000 while the percentage of families whose income was below the poverty level was 4.4% (U.S. Census Bureau, 2013). The Center for Education Statistics (2010) reported an enrollment rate of 5,274 students in public school sites. According to the New York State Education Department (2010), 763 students enrolled were classified with a disability; a rate of 13.6% was reported. The drop-out rate for students with disabilities was reported to be 12.1% (NYSED, 2010). Special education programming was provided on a continuum and often included co-teaching methods to integrate students with disabilities into general education classrooms. The district has stated ongoing interest in tracking enrollment and promoting positive school climate through bullying prevention and school improvement committees.
Participants

Participants in this study were selected from an archival data set collected as part of a larger project. The original mission was a district-wide examination of school climate and experiences of bullying. Factor analyses were conducted based on the entire sample in a subsequent study (Nickerson, Singleton, et al., 2014). Data from the larger project were screened by district staff in order to determine which students were enrolled in Special Education programming and had an Individualized Education Program (IEP) for the 2009-2010 school year. From the sample, students with a special education classification were separated from the larger group to derive the population of interest. A second group of non-identified students were selected and matched with the identified students on birth date (by quarter) and gender; these students served as the comparison group. To maintain student confidentiality, the data were matched by a district staff member who provided the de-identified sample to this researcher.

Descriptive statistics for the 205 students in general education and 205 students in special education selected are provided in Table 1. Because of the matching procedures, groups were equivalent for education program, gender, and grade level. A Chi-square analysis for race/ethnicity revealed that there were more white students among the general education group compared to the special education group, and African-American students were more predominant in the special education group ($\chi^2(5, N = 410) = 12.91, p<.05$).

Instrumentation

Measures of school climate often include surveys of students, parents, staff, and sometimes community members on their opinions of their school, with response options often in the form of a Likert-type scale. While standardized assessments exist, Lehr and Christenson (2002) suggested that a locally developed instrument may provide individualized information
Table 1

Participant Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Educational Program</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Education</td>
<td>205</td>
<td>50.0</td>
</tr>
<tr>
<td>General Education</td>
<td>205</td>
<td>50.0</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>244</td>
<td>59.5</td>
</tr>
<tr>
<td>General Education</td>
<td>122</td>
<td>59.5</td>
</tr>
<tr>
<td>Special Education</td>
<td>122</td>
<td>59.5</td>
</tr>
<tr>
<td>Female</td>
<td>166</td>
<td>40.5</td>
</tr>
<tr>
<td>General Education</td>
<td>83</td>
<td>40.5</td>
</tr>
<tr>
<td>Special Education</td>
<td>83</td>
<td>40.5</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White (Caucasian)</td>
<td>325</td>
<td>79.3</td>
</tr>
<tr>
<td>General Education</td>
<td>174</td>
<td>84.9</td>
</tr>
<tr>
<td>Special Education</td>
<td>151</td>
<td>73.7</td>
</tr>
<tr>
<td>Black (African-American)</td>
<td>16</td>
<td>3.9</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Special Education</td>
<td>13</td>
<td>6.3</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>13</td>
<td>3.2</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Special Education</td>
<td>10</td>
<td>4.9</td>
</tr>
<tr>
<td>Asian</td>
<td>26</td>
<td>6.3</td>
</tr>
<tr>
<td>General Education</td>
<td>13</td>
<td>6.3</td>
</tr>
<tr>
<td>Special Education</td>
<td>13</td>
<td>6.3</td>
</tr>
<tr>
<td>American Indian/Alaskan Native</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>General Education</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Special Education</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
<td>6.6</td>
</tr>
<tr>
<td>General Education</td>
<td>11</td>
<td>5.4</td>
</tr>
<tr>
<td>Special Education</td>
<td>16</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>School Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle (Grades 6-8)</td>
<td>178</td>
<td>43.4</td>
</tr>
<tr>
<td>General Education</td>
<td>89</td>
<td>43.4</td>
</tr>
<tr>
<td>Special Education</td>
<td>89</td>
<td>43.4</td>
</tr>
<tr>
<td>High School (Grades 9-12)</td>
<td>232</td>
<td>56.6</td>
</tr>
<tr>
<td>General Education</td>
<td>116</td>
<td>56.6</td>
</tr>
<tr>
<td>Special Education</td>
<td>116</td>
<td>56.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>410</td>
<td>100.0</td>
</tr>
</tbody>
</table>
based on the identified climate issues and needs of a specific district. The district that was used in this study established a Safe and Respectful Schools Committee made up of representatives from school and community stakeholder groups. Committee members developed the survey as a needs assessment in order to obtain baseline measures of several aspects of school climate and variables related to safety. Experts in the field including educators, administrators, and board members, as well as individuals with knowledge of content areas and instrumentation (i.e., school psychologists and data analysts) consulted established measures of school climate when developing the instrument.

The development stages involved: identifying school climate and bullying areas of focus, generating and collating questions to be answered, and reviewing existing school climate surveys (Nickerson, Singleton et al., 2014, p. 162). Once the initial questions were created by the committee, a smaller sub-committee consolidated the information into a survey format and compared the content to other published measures. The drafts of the survey were returned to the entire committee for further revision. The constructs included in the survey were developed through a collaborative effort and teachers involved read the survey to determine readability for all age groups. The entire process took approximately 14 months and concluded with a survey targeting two distinct student experiences: school climate and bullying (See Appendix A).

**Bullying in school and online.** Twenty-four questions from the survey addressed the prevalence, chronicity, effects, and coping related to bullying that occurred in school or on the way to school and online. Students responded with yes/no and multiple item responses (i.e., “check all that apply”) to provide more specific information about such occurrences. Items identified whether or not bullying occurred (e.g., “I have been bullied in school or on the way to or from school;” “I have been bullied online”) as well as frequency (e.g., “How many times have
you been bullied in the last year?;” “How would you describe the incidents of bullying you have experienced?”) For the purpose of this investigation, only 6 of 24 items were included in the data analyses. These six items were selected because they specifically addressed the research questions related to bullying in the current study.

**School climate.** Students reported their perceptions about school climate based on 43 items related to safety, relationships, teaching and learning, and the environment. A Likert-type scale was provided (strongly disagree, disagree, agree, and strongly agree) for student responses. In collaboration with a local university researcher, the committee conducted an exploratory factor analysis to determine whether the survey assessed the constructs of interest (See Nickerson, Singleton et al., 2014 for details). The final content analysis identified five factors that related to school climate as it was intended to be measured. These constructs include: Instructional and Emotional Environment (e.g., “My school cares about me,” “My school knows me well”); Safety and Belonging (e.g., “Students at this school like me,” “I feel safe at this school”); Respectful and Responsive Staff (e.g., “My teachers treat me with respect,” “Teachers and administrators are approachable”); Academic Self-regulation (e.g., “I like to learn,” “I feel successful at school”), and Welcoming and Diverse Environment (e.g., “My school helps me learn about other cultures and diversity,” “My school welcomes individuals of varying cultures, ethnicities, and abilities”). For the purpose of this study, Likert-type response options ranging from “Strongly Disagree” to “Strongly Agree” were coded on a scale from 1-4 in order to derive scores, with the lowest agreement being 1 and the highest being 4.

**Data Collection Procedure**

Informed consent for all participants was obtained during the original data collection. There was minimum risk to all participants, as students only had to complete a survey. The
survey was distributed anonymously in the schools’ computer labs to 2,350 students (76% response rate) via Survey Monkey during Social Studies for the middle school and advisory periods in the high school (Nickerson, Singleton et al., 2014). The survey sections were separated into segments within Survey Monkey (e.g., school climate, bullying, cyberbullying, demographics), and took approximately 20-25 minutes to complete. Students were given the choice to assent, and were not required to participate. No incentives were provided for participation. Teachers supervised survey completion when the link was accessed and the number of responses was compared to the number of students within the classroom to ensure that students did not complete surveys more than once.

**Data Analysis Procedure**

Data collected from middle school and high school students were analyzed. Due to the variety of questions, multiple analyses were conducted in order to determine significant findings. For questions one, two and three, a series of bivariate (independent samples t-test) and Multivariate Analysis of Covariance (MANCOVA) techniques were used to analyze the data; three separate One-Way MANCOVAs were conducted. Given that there was one independent variable with two levels (special education or regular education; males or females; middle or high school, respectively) and a continuous dependent variable (school climate) with multiple sub-scales (Instructional and Emotional Environment; Safety and Belonging; Respectful and Responsive Staff; Academic Self-regulation, and Welcoming and Diverse Environment), this approach was appropriate for questions one through three. When significant differences were found between groups, univariate analyses (ANCOVAs) were conducted to determine which areas of school climate were significantly different between the two populations.
In order to determine whether perceptions of school climate were related to achievement, correlation analyses were conducted for question four. A bivariate correlation (Spearman’s Rank) was conducted for the relationship between school climate and GPA for the entire sample as well as for the population of students with disabilities. Student achievement was measured by unweighted grade point average (GPA) for the school year during which the survey was administered to students (2009-2010). Unweighted averages do not take into account the difficulty of courses (e.g., advanced placement), and therefore no extra credit was given for students in such classes. Due to the different scale used to determine achievement, these data are presented separately from other demographic variables. Of the 205 students enrolled in general education, the average GPA was 91.07 with a standard deviation of 6.21. The average GPA for the 205 students enrolled in special education was 83.58 with a standard deviation of 9.04. For the total sample (n=410), the average GPA was 87.32 with a standard deviation of 8.61.

After conducting bivariate analyses, two different statistical analyses were used to answer questions five, six, and seven. To determine whether there were differences between student groups, bullying was examined as a dichotomous dependent variable using Chi-square analyses. To determine whether membership to a group (education program, gender, school level) was predictive of bullying experiences, logistic regression analyses were conducted for each of the six items pertaining to bullying.
Chapter 4: Results

Overview

This study was conducted to determine whether significant differences existed between students with disabilities and students without disabilities with regard to their perceptions of school climate and experiences related to bullying. Results of the data analyses are presented in this chapter, with the specific analyses related to each research question.

Descriptive Statistics

Descriptive statistics for the dependent variables are presented for the total participant population in Tables 2 and 3. Minimum and maximum possible scores (range), means, and standard deviations are reported for continuous variables; frequencies are reported for categorical variables. Included in Table 2 are the descriptive statistics for each of the school climate constructs derived from the survey. Minimum and maximum possible scores differed between scales, and the means for each are relative to the total scores of the sample in each area. The number and percentage of students’ responses to items related to bullying are displayed in Table 3. Items that do not include the entire sample \(n < 410\) are due to students’ failure to complete the item. For the purpose of this study, only complete records were used. In other words, when computing the constructs, only observations with answers to all of the items in that construct were included.

Analyses

Each research question will be addressed, in order, in the following sections. Correlation analyses were conducted in order to ensure each sub-scale related to school climate was independent of one another (see Table 4). While Pearson correlations were moderate, that is to be expected given that the sub-scales are contributing to the higher level construct of overall
Table 2

*Descriptive Statistics for School Climate Constructs*

<table>
<thead>
<tr>
<th>School Climate Construct</th>
<th>n</th>
<th>Range</th>
<th>Total Possible</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety and Belonging</td>
<td>389</td>
<td>7-28</td>
<td>28</td>
<td>21.39</td>
<td>4.04</td>
</tr>
<tr>
<td>Respectful and Responsive Staff</td>
<td>400</td>
<td>6-24</td>
<td>24</td>
<td>18.44</td>
<td>3.45</td>
</tr>
<tr>
<td>Academic Self-Regulation</td>
<td>391</td>
<td>5-20</td>
<td>20</td>
<td>15.11</td>
<td>3.08</td>
</tr>
<tr>
<td>Welcoming and Diverse Environment</td>
<td>402</td>
<td>6-24</td>
<td>24</td>
<td>17.90</td>
<td>3.41</td>
</tr>
<tr>
<td>Instructional/Emotional Environment</td>
<td>393</td>
<td>7-28</td>
<td>28</td>
<td>20.57</td>
<td>4.41</td>
</tr>
</tbody>
</table>
Table 3

*Students’ Responses to Bullying-Related Items*

<table>
<thead>
<tr>
<th>Items Related to Bullying</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullied in or on the way to/from school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>263</td>
<td>64.1</td>
</tr>
<tr>
<td>Yes</td>
<td>146</td>
<td>35.6</td>
</tr>
<tr>
<td>Total</td>
<td>409</td>
<td>99.8</td>
</tr>
<tr>
<td>Witnessed others bullied in or on the way to/from school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>130</td>
<td>31.7</td>
</tr>
<tr>
<td>Yes</td>
<td>276</td>
<td>67.3</td>
</tr>
<tr>
<td>Total</td>
<td>406</td>
<td>99.0</td>
</tr>
<tr>
<td>Bullied others in or on the way to/from school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>328</td>
<td>80.0</td>
</tr>
<tr>
<td>Yes</td>
<td>79</td>
<td>19.3</td>
</tr>
<tr>
<td>Total</td>
<td>407</td>
<td>99.3</td>
</tr>
<tr>
<td>Bullied online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>329</td>
<td>80.2</td>
</tr>
<tr>
<td>Yes</td>
<td>77</td>
<td>18.8</td>
</tr>
<tr>
<td>Total</td>
<td>406</td>
<td>99.0</td>
</tr>
<tr>
<td>Witnessed others bullied online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>238</td>
<td>58.0</td>
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<tr>
<td>Yes</td>
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<tr>
<td>Total</td>
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<td>99.0</td>
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<tr>
<td>Bullied others online</td>
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<td></td>
</tr>
<tr>
<td>No</td>
<td>363</td>
<td>88.5</td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>10.0</td>
</tr>
<tr>
<td>Total</td>
<td>404</td>
<td>98.5</td>
</tr>
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</table>
Table 4

_Correlations between School Climate Sub-scales_

<table>
<thead>
<tr>
<th>Sub-Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Safety &amp; Belonging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Respectful &amp; Responsive Staff</td>
<td>.752</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Academic Self-Regulation</td>
<td>.675</td>
<td>.723</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Welcome &amp; Diverse Environment</td>
<td>.696</td>
<td>.816</td>
<td>.708</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5. Instructional &amp; Emotional Environment</td>
<td>.665</td>
<td>.794</td>
<td>.714</td>
<td>.766</td>
<td>1</td>
</tr>
</tbody>
</table>
school climate. In order to determine whether there were relationships between education program status and school climate and bullying, bivariate analyses were conducted to address each research question. This approach helped ensure that there was sufficient overlap of potential confounders and significant relationships among variables prior to conducting multivariate analyses (Katz, 2011).

After conducting bivariate analyses to examine differences between groups in perceptions of school climate and experiences with bullying, further statistical analysis was necessary to answer research questions. Multivariate statistical tests were conducted in order to determine whether significant differences existed in perceptions of school climate overall and within each construct between students with and without disabilities. Additional tests were conducted to determine if significant gender and school level differences existed among students with disabilities. In order to answer question four, a bivariate correlation analysis was conducted. Research questions five through seven were addressed using a series of regression analyses in order to evaluate whether there were significant differences in perceptions of bullying when comparing special education and general education students, and among subgroups of students with disabilities. Each of the six survey items related to bullying were analyzed, with race/ethnicity adjusted for each regression due to the bivariate analyses indicating that race was a potential confounding variable.

**Question 1: Are there group differences by education program (special education vs. general education) in perceptions of school climate?**

Preliminary analyses were performed as a first step in answering this research question. The first bivariate test was conducted to examine differences between student groups (general education and special education) for each school climate construct derived from the survey.
administered. Independent samples t-tests were used to compare student groups; results are presented in Table 5. Student groups for special education and general education were abbreviated in the table as SE and GE, respectively.

All of Levene’s tests for equality of variances were accepted based on the insignificant p-values. On all constructs, except one, students enrolled in general education had a higher average score. On the Instructional and Emotional Environment construct, no significant difference between groups was noted (p>.05).

To further examine group differences, a one-way multivariate analysis of covariance (MANCOVA) was conducted. The fixed categorical independent variable was education program with two levels (special education and general education) and the five continuous dependent variables were the school climate constructs. Race variables were created as a covariate, as previously mentioned significant differences were found in the race distribution of both groups, necessitating adjustment (Tabatchnik & Fidel, 2012).

The Box’s M test was used to check the null hypothesis that the observed covariance matrices of the dependent variables were equal across groups. Examination of the results indicated that the assumption of homogeneity was not met (p<.05). When looking at the overall significance of group, the Pillai’s Trace was reported, which is known to be more robust than the commonly reported Wilks’ Lambda (Tabatchnik & Fidel, 2012). Significant differences were found between special education and general education students in regard to their overall perceptions of school climate (Pillai’s Trace=.042, F (5,337) =2.93, p<.05). Due to the significance of the multivariate test, an Analysis of Covariance (ANCOVA) for each of the school climate constructs was also conducted as follow-up tests.
Table 5

*School Climate Constructs Descriptive Statistics by Group and Independent Samples T-Test*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Belonging</td>
<td>GE</td>
<td>191</td>
<td>21.95</td>
<td>4.01</td>
<td>.290</td>
<td>2.71</td>
<td>.007</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>198</td>
<td>20.85</td>
<td>4.00</td>
<td>.284</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respectful/Responsive Staff</td>
<td>GE</td>
<td>201</td>
<td>18.80</td>
<td>3.31</td>
<td>.234</td>
<td>2.083</td>
<td>.038</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>199</td>
<td>18.09</td>
<td>3.55</td>
<td>.252</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Self-Regulation</td>
<td>GE</td>
<td>198</td>
<td>15.92</td>
<td>2.80</td>
<td>.199</td>
<td>3.173</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>193</td>
<td>14.95</td>
<td>3.27</td>
<td>.235</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welcoming/Diverse Env.</td>
<td>GE</td>
<td>202</td>
<td>18.32</td>
<td>3.20</td>
<td>.225</td>
<td>2.491</td>
<td>.013</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>200</td>
<td>17.48</td>
<td>3.57</td>
<td>.252</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional/Emotional Env.</td>
<td>GE</td>
<td>198</td>
<td>20.94</td>
<td>4.10</td>
<td>.291</td>
<td>1.676</td>
<td>.095</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>195</td>
<td>20.19</td>
<td>4.69</td>
<td>.336</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Levene’s test of homogeneity of variances for each ANCOVA was not significant 
\((p>.05)\), which indicated that the equality of variance assumption was met. The between-subject 
effects of the five ANCOVAs are presented in Table 6. Education program was significant for 
perceptions of school climate across four constructs; however, no significant difference was 
noted on the Instructional and Emotional Environment construct. Students enrolled in general 
education reported, on average, higher scores compared to students enrolled in special education 
for each of the four statistically significant constructs of school climate. These results were 
consistent with outcomes found through the bivariate analysis and are shown in Table 7.

**Question 2: Among students with disabilities, are there significant differences by gender in perceptions of school climate?**

In order to determine whether there were significant sub-group differences in perceptions 
of school climate among special education students based on gender, a preliminary bivariate 
analysis was conducted. To first address this question, independent samples \(t\)-tests were 
performed; results of these tests are presented in Table 8. No significant differences by gender 
were identified across any of the school climate domains for students with disabilities \((p>.05)\). 
To further explore whether gender differences existed among students enrolled in special 
education, race distribution was first examined to determine whether there was a significant 
difference within the population of interest. The Fisher’s exact test revealed that there were 
significant differences at a 10% level \((\text{Fisher’s Exact Test}=9.26, p=.079)\), therefore race was 
included as a covariate in the multivariate analysis.

A multivariate analysis, MANCOVA, was conducted to determine whether there were 
gender difference among students enrolled in special education. Results of Box’s M indicate no
### Summary of Analysis of Covariance of School Climate Perceptions by Education Program

<table>
<thead>
<tr>
<th>School Climate Construct</th>
<th>Univariate F (df=1, 341)</th>
<th>Strength of Association&lt;sup&gt;1&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special x General Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety/Belonging</td>
<td>9.60&lt;sup&gt;*&lt;/sup&gt;</td>
<td>.027</td>
</tr>
<tr>
<td>Respectful/Responsive Staff</td>
<td>4.69&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.014</td>
</tr>
<tr>
<td>Academic Self-Regulation</td>
<td>8.89&lt;sup&gt;*&lt;/sup&gt;</td>
<td>.025</td>
</tr>
<tr>
<td>Welcome/Diverse Environment</td>
<td>4.22&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.012</td>
</tr>
<tr>
<td>Instructional/Emotional Environment</td>
<td>1.70</td>
<td>.005</td>
</tr>
</tbody>
</table>

<sup>*</sup><sub>p<.01</sub>,  <sup>**</sup><sub>p<.05</sub>

<sup>1</sup>Strength of Association is measured by the Partial Eta Squared
<table>
<thead>
<tr>
<th>Construct</th>
<th>Group</th>
<th>Mean</th>
<th>Std. Error</th>
<th>LB</th>
<th>UB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety/Belonging</td>
<td>General</td>
<td>22.193</td>
<td>.301</td>
<td>21.601</td>
<td>22.785</td>
</tr>
<tr>
<td></td>
<td>Special</td>
<td>20.867</td>
<td>.299</td>
<td>20.78</td>
<td>21.455</td>
</tr>
<tr>
<td>Respectful/Responsive Staff</td>
<td>General</td>
<td>18.849</td>
<td>.267</td>
<td>18.325</td>
<td>19.373</td>
</tr>
<tr>
<td></td>
<td>Special</td>
<td>18.029</td>
<td>.265</td>
<td>17.508</td>
<td>18.550</td>
</tr>
<tr>
<td>Academic Self-Regulation</td>
<td>General</td>
<td>15.980</td>
<td>.229</td>
<td>15.529</td>
<td>16.431</td>
</tr>
<tr>
<td></td>
<td>Special</td>
<td>15.008</td>
<td>.228</td>
<td>14.560</td>
<td>15.457</td>
</tr>
<tr>
<td>Welcome/Diverse Environment</td>
<td>General</td>
<td>18.366</td>
<td>.261</td>
<td>17.853</td>
<td>18.879</td>
</tr>
<tr>
<td></td>
<td>Special</td>
<td>17.604</td>
<td>.259</td>
<td>17.094</td>
<td>18.114</td>
</tr>
<tr>
<td>Instructional/Emotional</td>
<td>General</td>
<td>20.918</td>
<td>.334</td>
<td>20.261</td>
<td>21.575</td>
</tr>
<tr>
<td>Environment</td>
<td>Special</td>
<td>20.298</td>
<td>.332</td>
<td>19.645</td>
<td>20.952</td>
</tr>
</tbody>
</table>

*Covariates appearing in the model are evaluated at the following values: white = .7989, black = .0374, Latino = .0316, Asian = .0661, American Indian/Alaskan Native = .0029.
**Table 8**

*Mean of School Climate Constructs by Gender and Independent Samples T-Test*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Belonging</td>
<td>Male</td>
<td>117</td>
<td>21.01</td>
<td>4.31</td>
<td>.399</td>
<td>0.676</td>
<td>.500</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>81</td>
<td>20.62</td>
<td>3.51</td>
<td>.390</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respectful/Responsive Staff</td>
<td>Male</td>
<td>118</td>
<td>17.89</td>
<td>3.93</td>
<td>.362</td>
<td>-0.937</td>
<td>.350</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>81</td>
<td>18.37</td>
<td>2.93</td>
<td>.325</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Self-Regulation</td>
<td>Male</td>
<td>114</td>
<td>14.88</td>
<td>3.63</td>
<td>.340</td>
<td>-0.362</td>
<td>.718</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>79</td>
<td>15.05</td>
<td>2.68</td>
<td>.302</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welcoming/Diverse Env.</td>
<td>Male</td>
<td>119</td>
<td>17.29</td>
<td>4.03</td>
<td>.370</td>
<td>-0.909</td>
<td>.365</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>81</td>
<td>17.75</td>
<td>2.75</td>
<td>.306</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional/Emotional Env.</td>
<td>Male</td>
<td>117</td>
<td>20.09</td>
<td>5.26</td>
<td>.486</td>
<td>-0.367</td>
<td>.714</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>78</td>
<td>20.35</td>
<td>3.71</td>
<td>.420</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
statistical significance ($p<.05$), therefore the null hypothesis of equality of covariance matrices could not be accepted and the Pillai’s tests results are reported. Overall, there were no significant differences between male and female students who were classified with a disability (Pillai’s test=.055, $F (5,164) =1.89$, $p>.05$).

**Question 3: Are there significant differences by group in perceptions of school climate between middle and high school students with disabilities?**

As in previous questions, a bivariate analysis was conducted to begin answering the third research question. Independent samples $t$-tests were performed to determine whether group differences existed among students with disabilities based on school level (middle vs. high); statistics and results of this analysis are presented in Table 9.

Examination of the $t$-test $p$-values indicates that there were significant differences between middle and high school students enrolled in special education programming for each of the school climate constructs. Middle school students rated the school climate higher across all constructs compared to high school students with disabilities.

To further explore the third research question, school-level differences in perceptions of school climate among students enrolled in special education were examined. Results of Fisher’s exact test (Fisher’s Exact Test=18.9, $p=.001$) indicated that there were significant race differences across middle and high school students with disabilities. Therefore, MANCOVA estimates were adjusted for race/ethnicity. The null hypothesis of Box’s M test of equality of covariance matrices could not be accepted ($p<.05$). The multivariate test indicated that school level was significant (Pillai’s Trace=.065, $F (5, 164) =2.27$, $p<.05$). Therefore, individual constructs of school climate were further tested.
### Table 9

*Group Statistics for Students with Disabilities by School Level and Independent Samples T-Test*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Belonging</td>
<td>Middle</td>
<td>89</td>
<td>21.93</td>
<td>3.37</td>
<td>.357</td>
<td>3.546</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>109</td>
<td>19.96</td>
<td>4.26</td>
<td>.408</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respectful/Responsive Staff</td>
<td>Middle</td>
<td>87</td>
<td>19.05</td>
<td>3.01</td>
<td>.323</td>
<td>3.451</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>112</td>
<td>17.34</td>
<td>3.77</td>
<td>.356</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Self-Regulation</td>
<td>Middle</td>
<td>84</td>
<td>15.92</td>
<td>2.84</td>
<td>.310</td>
<td>3.735</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>109</td>
<td>14.20</td>
<td>3.39</td>
<td>.325</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welcoming/Diverse Env.</td>
<td>Middle</td>
<td>86</td>
<td>18.38</td>
<td>2.75</td>
<td>.297</td>
<td>3.199</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>114</td>
<td>16.79</td>
<td>3.95</td>
<td>.370</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional/Emotional Env.</td>
<td>Middle</td>
<td>86</td>
<td>21.40</td>
<td>3.77</td>
<td>.406</td>
<td>3.368</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>109</td>
<td>19.25</td>
<td>5.13</td>
<td>.491</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The homogeneity of variances was met for each individual ANCOVA; results shown in Table 10 indicate that school level differed significantly for each of the five constructs of school climate. Further examination of the estimated marginal means, presented in Table 11, revealed that for each school climate construct, middle school students with disabilities reported more positive perceptions of school climate compared to those in high school.

**Question 4: Is there a correlation between perceptions of school climate and achievement?**

To assess whether there was a relationship between students’ perceptions of school climate and students’ achievement levels, correlations were examined for the overall sample as well as the population of interest, students with disabilities. The overall score for school climate was calculated by summing the individual scores for each of the five constructs. Achievement was measured by unweighted grade point average (GPA).

Normality cannot be assumed based on the Shapiro-Wilk tests for each of the school climate constructs and achievement, all of which were significant ($p<.01$). Therefore, Spearman’s rank correlation coefficient was used rather than the Pearson’s correlation. The Spearman’s correlation indicates whether two variables are monotonically related (Muijs, 2004).

All correlations between GPA and school climate constructs for the entire sample were positive and significant, though they were weak to moderate. Higher grade point averages were associated with more positive perceptions of school climate overall, as well as for each of the five constructs. Similar outcomes for students with disabilities were noted; as shown in Table 12, all correlations were positive.

**Question 5: Are there significant differences by group in experiences of bullying between special education and general education students?**

In order to determine whether experiences related to bullying were significantly different
### Table 10

**Summary of Analysis of Covariance of School Climate Perceptions by School Level**

| School Level                  | Univariate $F$  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>------------------------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td></td>
<td>$(df=1, 168)$</td>
<td>Strength of Association</td>
</tr>
<tr>
<td>Safety/Belonging</td>
<td>$7.77^{**}$</td>
<td>.044</td>
</tr>
<tr>
<td>Respectful/Responsive Staff</td>
<td>$9.28^*$</td>
<td>.052</td>
</tr>
<tr>
<td>Academic Self-Regulation</td>
<td>$9.58^*$</td>
<td>.054</td>
</tr>
<tr>
<td>Welcome/Diverse Environment</td>
<td>$9.33^*$</td>
<td>.053</td>
</tr>
<tr>
<td>Instructional/Emotional Environment</td>
<td>$8.76^*$</td>
<td>.050</td>
</tr>
</tbody>
</table>

*p<.01, **p<.05*
Table 11

*Estimated Marginal Means for School Climate Constructs by School Level of Special Education Students*

<table>
<thead>
<tr>
<th>DV</th>
<th>Group</th>
<th>Mean</th>
<th>Std. Error</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety/Belonging</td>
<td>Middle</td>
<td>21.849</td>
<td>.463</td>
<td>20.935</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>20.086</td>
<td>.400</td>
<td>19.291</td>
</tr>
<tr>
<td>Respectful/Responsive Staff</td>
<td>Middle</td>
<td>18.989</td>
<td>.417</td>
<td>18.165</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>17.521</td>
<td>.363</td>
<td>16.535</td>
</tr>
<tr>
<td>Academic Self-Regulation</td>
<td>Middle</td>
<td>15.882</td>
<td>.378</td>
<td>15.135</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>14.282</td>
<td>.329</td>
<td>13.633</td>
</tr>
<tr>
<td>Welcome/Diverse Environment</td>
<td>Middle</td>
<td>18.531</td>
<td>.407</td>
<td>17.729</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>16.835</td>
<td>.353</td>
<td>16.137</td>
</tr>
<tr>
<td>Instructional/Emotional Environment</td>
<td>Middle</td>
<td>21.490</td>
<td>.539</td>
<td>20.426</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>19.310</td>
<td>.468</td>
<td>18.386</td>
</tr>
</tbody>
</table>

*Covariates appearing in the model are evaluated at the following values: White= .7429, Black= .0517, Latino= .0514, Asian= .068, Native American/Alaskan Native= .0057*
Table 12

Spearman’s Rank Correlations between GPA and School Climate Constructs

<table>
<thead>
<tr>
<th>Sample</th>
<th>GPA</th>
<th>SC</th>
<th>SB</th>
<th>RR</th>
<th>ASR</th>
<th>WD</th>
<th>IE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( r )</td>
<td>1.00</td>
<td>.203*</td>
<td>.173*</td>
<td>.178*</td>
<td>.340*</td>
<td>.169*</td>
<td>.163*</td>
</tr>
<tr>
<td>( N )</td>
<td>407</td>
<td>345</td>
<td>386</td>
<td>397</td>
<td>388</td>
<td>399</td>
<td>390</td>
</tr>
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<td>Special Education</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( r )</td>
<td>1.00</td>
<td>.164**</td>
<td>.149**</td>
<td>.143**</td>
<td>.290*</td>
<td>.147**</td>
<td>.149**</td>
</tr>
<tr>
<td>( N )</td>
<td>204</td>
<td>174</td>
<td>197</td>
<td>198</td>
<td>192</td>
<td>199</td>
<td>194</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.01 level (2-tailed)

**Correlation is significant at the 0.05 level (2-tailed)

Footnote: Constructs abbreviated in Table 11 include: overall School Climate (SC), Safety and Belonging (SB), Respectful and Responsive Staff (RR), Academic Self-Regulation (ASR), Welcoming and Diverse Environment (WD), and Instructional and Emotional Environment (IE).
among students with disabilities compared to students without disabilities, a Chi-square analysis was conducted for each of the six survey questions pertaining to experiences with bullying. Asymptotic significance levels were used due to the fact that sample sizes were considered adequate (Tabatchnik & Fidel, 2012). Significance levels were not adjusted because each analysis was looked at separately rather than collectively to answer this research question. There was a hypothesis for each question 5 through 7; acceptance/rejection of each hypotheses was not based on having at least one of the individual tests significant, therefore it was unnecessary to correct the \( p \)-value (Saville, 1990).

When comparing the bullying experiences of students enrolled in general education (GE) to peers in special education (SE) at or on the way to/from school, no significant differences were noted. Similar results were found for online bullying, where no significant differences were found between student groups. Results of the Chi-square analyses for each of the six items related to bullying are presented in Table 13.

To further examine the relationship between education program and bullying experiences, a logistic regression analysis was performed including race as covariate. All regression results across six items indicated that education program was not a significant predictor for bullying experiences, either at or on the way to/from school or online (\( p > .05 \)).

**Question 6: Among students with disabilities, are there significant differences in experiences of bullying by gender?**

To address question six, bivariate analyses were first performed. The results indicated that on five of the six items related to bullying no statistically significant gender differences were noted. Of the three bullying roles surveyed (victim, perpetrator, witness) across two settings (in or on the way to/from school or online), only one was found to be statistically significant among
Table 13

Prevalence (%) of Students’ Experiences with Bullying by Education Program

<table>
<thead>
<tr>
<th>Item</th>
<th>GE</th>
<th>SE</th>
<th>$\chi^2$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullied on the way to/from school</td>
<td>32.4</td>
<td>39.0</td>
<td>1.98</td>
<td>.180</td>
</tr>
<tr>
<td>Witnessed bullying on the way to/from school</td>
<td>70.4</td>
<td>65.5</td>
<td>1.13</td>
<td>.287</td>
</tr>
<tr>
<td>Bullied others on the way to/from school</td>
<td>15.8</td>
<td>22.9</td>
<td>0.07</td>
<td>.071</td>
</tr>
<tr>
<td>Bullied online</td>
<td>16.1</td>
<td>21.9</td>
<td>2.22</td>
<td>.137</td>
</tr>
<tr>
<td>Witnessed bullying online</td>
<td>41.5</td>
<td>41.3</td>
<td>0.00</td>
<td>.972</td>
</tr>
<tr>
<td>Bullied others online</td>
<td>8.8</td>
<td>11.6</td>
<td>0.85</td>
<td>.355</td>
</tr>
</tbody>
</table>
students with disabilities. Results of the Chi-square tests for each item are presented in Table 14. A significant association was found between witnessing others being bullied online and gender, where 58% of female special education students reported witnessing others being bullied online compared to 30% of males enrolled in special education.

Experiences related to bullying were further examined within the population of students with disabilities. Logistic regressions were conducted for each of the items to determine whether gender differences existed among students enrolled in special education. There were no statistically significant gender differences found related to being bullied ($\beta = 1.56, t(6) = 4.478, p > .05$) or witnessing bullying ($\beta = 1.450, t(6) = 6.203, p > .05$) at or on the way to/from school. A significant gender difference was noted, however, for perpetrating bullying. Specifically, females enrolled in special education reported fewer instances of bullying others compared to males with disabilities (OR<1, $p<.05$).

Examination of gender differences among students with disabilities also revealed significant results for two of the three items related to online bullying. Gender was a significant predictor for experiencing ($\beta = 2.656, t(6) = 10.256, p < .05$) and witnessing ($\beta = 1.820, t(6) = 8.303, p < .05$) online bullying. In both cases, females reported higher rates of cyberbullying compared to males (OR>1, $p<.05$). Among students with disabilities, no gender differences were found for perpetrating online bullying ($\beta = 1.093, t(6) = 7.252, p > .05$).

**Question 7:** Among students with disabilities, are there significant differences in experiences related to bullying by school level (i.e., middle v. high school)?

In order to address the final research question, bivariate tests were completed as in previous questions. There were no statistically significant differences found between middle and high school students in regard to experiences related to bullying, either in-school or online;
Table 14

*Prevalence (%) of Students with Disabilities’ Experiences with Bullying by Gender*

<table>
<thead>
<tr>
<th>Item</th>
<th>Male</th>
<th>Female</th>
<th>$\chi^2$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullied on the way to/from school</td>
<td>33.9</td>
<td>30.1</td>
<td>.319</td>
<td>.572</td>
</tr>
<tr>
<td>Witness on the way to/from school</td>
<td>72.5</td>
<td>67.5</td>
<td>.596</td>
<td>.440</td>
</tr>
<tr>
<td>Bullied others on the way to/from school</td>
<td>18.2</td>
<td>12.3</td>
<td>1.240</td>
<td>.266</td>
</tr>
<tr>
<td>Bullied online</td>
<td>12.3</td>
<td>21.7</td>
<td>3.226</td>
<td>.072</td>
</tr>
<tr>
<td>Witnessed online</td>
<td>30.3</td>
<td>57.8</td>
<td>15.385</td>
<td>.000</td>
</tr>
<tr>
<td>Bullied others online</td>
<td>10.7</td>
<td>6.0</td>
<td>1.323</td>
<td>.250</td>
</tr>
</tbody>
</table>
results are presented in Table 15.

To address the final research question regarding school level differences among students with disabilities, a series of logistic regressions was also performed with school level (middle vs. high) as the main predictor among student with disabilities. Race/ethnicity was once again adjusted for in these analyses. No statistically significant differences were found between middle and high school students with disabilities for bullying experiences in or on the way to/from school ($p > .05$). Similar results were found for the models related to online bullying, where school level was not a significant predictor for bullying experiences online among students enrolled in special education ($p > .05$).
### Table 15

**Prevalence (%) of Students with Disabilities’ Experience with Bullying by School Level**

<table>
<thead>
<tr>
<th>Item</th>
<th>Middle</th>
<th>High</th>
<th>$\chi^2$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullied at/on the way to/from school</td>
<td>33.7</td>
<td>31.3</td>
<td>.132</td>
<td>.716</td>
</tr>
<tr>
<td>Witnessed Bullying at/on the way to/from school</td>
<td>67.0</td>
<td>73.0</td>
<td>.861</td>
<td>.353</td>
</tr>
<tr>
<td>Bullied others at/on the way to/from school</td>
<td>19.3</td>
<td>13.2</td>
<td>1.414</td>
<td>.234</td>
</tr>
<tr>
<td>Bullied Online</td>
<td>18.0</td>
<td>14.7</td>
<td>.412</td>
<td>.521</td>
</tr>
<tr>
<td>Witnessed Online Bullying</td>
<td>39.3</td>
<td>43.1</td>
<td>.296</td>
<td>.586</td>
</tr>
<tr>
<td>Bullied Others Online</td>
<td>7.9</td>
<td>9.5</td>
<td>.165</td>
<td>.685</td>
</tr>
</tbody>
</table>
Chapter 5: Discussion

Overview

Whether students with school-identified disabilities and their peers experience school climate and bullying differentially largely remains an empirical question. Therefore, an investigation of this nature is timely and relevant. The main purpose of this investigation was to determine if significant differences existed between students enrolled in special education compared to peers enrolled in general education, both in their perceptions of school climate and their experiences with bullying. This study also sought to determine whether within-group differences were significant in these areas for students with disabilities based on gender and school level. School climate was also examined to investigate whether a relationship existed with student achievement. Recent trends in education and the field of school psychology have emphasized the importance of school climate and its potential impact on students’ school experiences (Cohen & Freiberg, 2013).

This chapter presents a discussion of the study results, beginning with comparing and contrasting the current results with findings in the existing literature. Then, implications of the results for the field of school psychology and education are reviewed. Lastly, limitations and directions for future research are presented.

School Climate

The first research question in this study addressed whether students with disabilities differed significantly from their typical peers in perceptions of school climate. This question was of particular interest due to the limited related extant literature (Mehta et al., 2013). Given that school climate initiatives are typically school-wide and students with disabilities may possess risk-factors that reduce their response to such universal interventions (Farmer et al.,
2012; Nickerson, Allen et al., 2014), it was hypothesized that these students may not perceive the school climate as favorably as their peers. Based on results of the data analysis, students with disabilities in this sample reported lower perceptions of school climate compared to students in general education overall. Further investigation revealed that differences were significant in the areas of safety and belonging, respectful and responsive staff, academic self-regulation, and welcoming and diverse environment. There were no significant differences noted in students’ perceptions of their instructional and emotional environment.

**Safety and Belonging.** Students enrolled in special education programming reported lower feelings of safety and belonging at school. Items for this construct included liking and feeling liked by peers, feeling respected by peers, liking the school and feeling safe at school and on the bus. This result is consistent with prior research which indicated that perceived social support and peer interactions were rated less favorably (i.e., greater peer conflict) among students with disabilities compared to typical peers (Ferguson et al., 2011; Lackaye & Margalit, 2006; Martinez, 2006). Wagner and colleagues (2007) also found that a small subset of youth with disabilities reported persistent feelings of loneliness and perceptions of being disliked. Moreover, deBoer and colleagues (2012) reported that a small number of general education students in their study indicated they held strong negative views of students with disabilities. Although such views were not assessed in the current study, the presence of students with similar views within the participant sample may account for why students with disabilities reported feeling less safe and having a lower sense of belonging than their peers who were not disabled.

It is also possible that the less hospitable environment, as perceived by students with disabilities, is related to the risk factors identified by Dagget (2013) such as sensory, mobility, or medical issues. In her review, the author found an elevated risk for physical injury among
students enrolled in special education, especially when staff or substitute staff was unaware of more discrete difficulties experienced by students enrolled in special education. Although schools are required to be accessible for individuals with handicapping conditions, the disabilities of students may go beyond physical limitations. For example, students who experience sensitivity to light, sounds, or other environmental stimuli may experience feelings of distress within the school.

**Respectful and Responsive Staff.** With regard to the respectful and responsive staff construct, students rated their perceptions of the respect and support they received from teachers, office staff, and administrators; whether their concerns were addressed by staff; and whether they felt encouraged to reflect on their work. Results of this investigation suggested that students enrolled in special education reported less respectful and responsive staff compared to peers who were not classified. Ferguson and colleagues (2011) also found that students with disabilities in inclusive settings reported significantly different perceptions of “student voice,” which was described as “...students participate in meaningful decision-making and dialogue regarding their learning environment and classroom climate...” (p. 55). These results are concerning given that school climate researchers have established correlations between support from (and relationships with) staff and students’ involvement in activities, engagement, and academic success (Reschly & Christenson, 2006; Sulkowski et al., 2012; Whitlock, 2006).

Researchers have proposed that reduced connectedness to school staff may stem from disability characteristics impacting students’ interactions with staff and peers (Milsom, 2006; Rose & Espelage, 2012). It is also possible that students perceived a lack of understanding from staff who are not attuned to their needs, as Wagner and Blackorby (2005) found among secondary students with disabilities. Other studies have examined students’ need for social
support delivered in non-traditional approaches (Pavri & Monda-Amaya, 2012), which may be necessary in order for students with disabilities to perceive teachers as willing and available to help (Rosenberg, 2012).

**Academic Self-Regulation.** The survey items that created the academic self-regulation scale consisted of students’ opinions about their school success, enjoyment of learning, and whether they had control over their school performance. Students enrolled in special education reported lower levels of academic self-regulation compared to peers who were in general education. This is not surprising given that examination of a national sample indicated that students with disabilities averaged fewer credits and obtain a lower GPA than the general student population despite receiving interventions (Newman et al., 2011).

The difference noted in the current study echoed prior research conducted by Reschly and Christenson (2006), which indicated students with disabilities were less academically engaged compared to typical peers performing in the average range of academic achievement. Similar research compared students with Learning Disabilities to peers without disabilities performing at various levels of achievement (including low achievement) and continued to find lower levels of achievement, academic self-efficacy, and sense of coherence among those students with a disability (Lackaye & Margalit, 2006). Ferguson and colleagues (2011) also found that students with disabilities who participated in general education classrooms had lower levels of academic satisfaction compared to non-classified peers.

Although the restrictiveness of educational placements of study participants is unknown, it is fair to assume that most participated in inclusive classes because the vast majority of students with disabilities within the district receive a preponderance of their instruction in the general education classroom. Klinger and Vaughn (1999) found that students in special
education who participated in inclusive learning environments wanted access to the same materials, grading criteria, and instructional practices as their peers. Therefore, mainstreamed students in this sample may have perceived unequal division of resources or were aware of differential grading and instruction, which may have impacted levels of academic self-regulation.

It is also possible that teachers in this district failed to utilize process learning and strategy instruction, which have been shown to enhance students’ self-perceptions of academic performance among students with disabilities (Meltzer et al., 2004). Students in this sample may also perceive lower levels of decision-making authority in the classroom, which has been associated with academic engagement and school connectedness (Ferguson et al., 2011; Whitlock, 2006). However, in addition to the prior finding, Ferguson and colleagues (2011) also discovered that all students (regardless of program) reported similar views in perceptions of class environment and perceptions of themselves as learners. The difference in findings between Ferguson et al. (2011) and the current study may be attributed to the methodology used (semi-structured interview), setting (urban charter school) or sample population (elementary level).

Welcoming and Diverse Environment. The perceptions of the school environment are interwoven with school climate perceptions. This construct, as defined by the factor analysis, is somewhat different compared to the institutional environment construct outlined by the National School Climate Council (2007). Items included in this scale related to perceptions of diversity being valued, nurtured, and welcomed as well as students being educated about cultural diversity. Intellectual safety (e.g., academic risk-taking and opinions being valued) and opportunities for participation were also rated for this scale. Students with disabilities view the school climate as less welcome and diverse compared to their typical peers. Prior research has
indicated a general lack of recognizing diversity among students in special education due to their dissimilar profiles of abilities and needed services (Wagner & Blackorby, 2005).

As noted in previous chapters, there is commonly a gap in specifically addressing students with disabilities when providing school-wide approaches to improve the environment and enhance diversity (Dukes & Lamar-Dukes, 2007). Students thinking that the school values and nurtures diversity and educates all students on such topics is important in ensuring that students of various ability levels feel welcome. This is also related to the NCLB Act’s (2001) focus on ensuring students have access to and are successful in general education settings; if students do not feel welcome or valued they may be more inhibited in accessing educational opportunities (Eriksson, 2005).

**Instructional and Emotional Environment.** Of the five constructs identified in the prior survey factor analysis, no significant difference between student groups was noted for the instructional and emotional environment. This scale included items related to feeling cared for at school, perceiving support in the learning environment, and viewing teachers as excited about teaching and understanding of students’ personal problems. Based on their responses, students in both general and special education programming reported similar perceptions of their instructional and emotional environment. This finding was contrary to earlier research that indicated that students receiving special education services (ages 13-21) were more likely to report feeling disconnected from the school environment (Brown, Higgins, Pierce, Hong, & Thoma, 2003). This finding is also inconsistent with Reschly and Christenson’s (2006) finding that eighth graders with disabilities (Learning Disability and Emotional Disabilities, specifically) reported significant differences in school engagement compared to typical peers.
Many (though not all) students with disabilities are provided additional academic support. These students are also reviewed on a yearly basis and (typically) re-examined every three years; these encounters and assessments may account for students with disabilities perceiving staff who know them, care, provide needed attention and assistance, and support academic confidence. Students with disabilities, like their typical peers, are more likely to seek adult support at school when teachers and staff are perceived as willing, available, and supportive (Rosenberg, 2012). It is possible that students enrolled in special education have more individual contact with teachers and/or ongoing relationships with service providers that would enhance their perceptions of the instructional and emotional environment.

An alternate explanation is that teachers educating this sample of students were providing differentiated instruction, which may buffer risk-factors associated with having a disability and account for the similar perceptions across groups (Baglieri & Knopf, 2004). If teachers were to provide instruction at each student’s ability level, it can be assumed that students felt cared for, understood, and supported, reducing the harm that under-estimation or over-estimation of student abilities my cause (Kramer et al., 2012). The investment of time may also have been perceived as teachers being invested in and excited about teaching.

**Summary.** This investigation aimed to determine whether significant differences existed in the perceptions of school climate when comparing students enrolled in general education to students in special education programs. Results indicate that there are indeed differences, both for school climate overall, and on four of the five constructs included in the survey. In this sample, students with disabilities reported less positive perceptions of school climate, safety and belonging, respectful and responsive staff, welcoming and diverse
environment, and academic self-regulation. No significant differences were found in perceptions of the instructional and emotional environment.

**Within-group differences among students with disabilities.**

Compared to extant literature on school climate in general, relatively few studies have examined constructs or components of school climate with the specific intention of comparing general and special education students. To further explore the school experiences of a group of students with disabilities, analyses were conducted to determine whether gender and school-level differences were statistically significant among students enrolled in special education. While previous studies have examined various aspects of school climate from the perspective of students with disabilities, no study to date has compared within-group differences among special education students regarding their perceptions of overall school climate and its associated constructs. Therefore, the results of this investigation are a unique contribution to the field.

Ultimately, the statistical analyses (both bivariate and multivariate) revealed no significant differences between males and females enrolled in special education. Based on these results, it may be assumed that although each student possessed distinct characteristics that contributed to unique school experiences, gender was not significantly related to the perception of the school climate among students with disabilities.

School-level differences were also evaluated within the group of students with disabilities. Results of multivariate analyses suggested that middle school students enrolled in special education reported or rated a more favorable school climate compared to high school students with disabilities. Whitlock (2006) also found that older students were less likely to perceive connection to school and developmental support. Hypotheses for these differences are discussed below.
Previous research has indicated that students in secondary grades are more likely to disengage from and drop out of school (Donnegan, 2007; Dynarski et al., 2008), which may explain lower levels of safety and belonging reported by high school students in this study. Connectedness and engagement are associated with feelings of safety and belonging at school, and the relationship may be bidirectional (Butcher & Manning, 2005; McNeely et al., 2002; Wilson, 2004). Adolescents may desire greater independence and think that they no longer require the type of support and attention mandated by Individualized Education Programs (IEPs). When accommodations or modifications are implemented, students may perceive the interventions as lack of respect and/or understanding, if they do not change and grow along with the student. For example, O’Rourke and Houghton (2008) found that older students indicated individualized support as negatively impacting acceptance and respect by peers.

Academic self-regulation is also related to engagement in the classroom and investment in learning. Ninth grade, in which the sample in this study entered high school, has been called “the lynch-pin year” where the process of dropping out through disengagement over time may begin (Donnegan, 2008, p. 54). As school work becomes more challenging and students are developing their own identities, staff members have an important role in supporting students academically while simultaneously encouraging autonomy. It is possible that students enrolled in middle school were open to the support and feedback provided by teachers due to the change in school structure from primary grades. The willing acceptance of support may account for higher ratings for respectful and responsive staff among middle school students. Additionally, the resulting success may have led to greater academic self-regulation among middle school students with disabilities.
There are several hypotheses as to why students attending high school reported lower perceptions for welcoming and diverse environment. One explanation is the need for increasing separation and individuation that adolescents experience as they grow older. Most items pertained to the school valuing, welcoming, and educating students about various cultures and diversity. The middle school curriculum may have provided greater exposure and opportunities to explore various cultures, and learning activities may also have had a greater focus on students’ cultures (i.e., presenting projects or items from one’s own culture to share). Johnson (2006) found that learning preferences among an ethnically diverse student group included incorporating and understanding of cultural differences as well as group learning; there may be less of this at the high school level.

It is also possible that older students’ developmentally appropriate desire to express opinions and feel heard was not satisfied by school administrators within this district. Further, the responses to items related to taking risks in the classroom and having opportunities to participate may be related to the structure of class periods as well as adolescents’ need for peer approval. Students must re-establish their identities within the enlarged, more demanding milieu of high school, which has been associated with a decrease in personal competence, self-confidence, and increased sensitivity to social evaluation (Lackaye & Margalit, 2006). Additionally, research with typically developing populations suggests that students’ levels of satisfaction with school decline as they progress through the school grades (King et al., 2006).

In response to survey items regarding the instructional and emotional environment, students in high school again reported lower levels compared to middle school students. Students in high school may be less connected to their teachers and therefore report fewer feelings of being cared for or known by their school. High school instruction that is designed as
preparation for post-secondary education and/or vocational training may also reduce students’ perceptions of fun learning experiences and/or reduce their confidence in learning ability. During adolescence, family, friends, and teachers begin to expect more from children who are beginning to resemble adults (Kuperminc, Leadbeater, Emmons, & Blat, 1997). Challenging work coupled with larger classes may impact students’ perceptions of individual attention and understanding in high school compared to middle school students. The classroom environment may be perceived as more hostile when students’ needs are not met (Lleras, 2008).

School Climate and Achievement.

Some of the earliest school climate researchers investigated the reciprocal relationship between climate and students’ academic success (Dewey, 1916; Durkheim, 1961; Perry, 1908). The results of this study reinforce the notion that there is a correlation between perceptions of school climate and students’ academic achievement. Perceptions of school climate overall, as well as for each individual construct identified were significantly correlated to achievement as measured by GPA. Although the strength of the relationships were weak to moderate, students who reported more positive perceptions of school climate also had higher grade point averages. This relationship was found both when examining the entire sample as well as the subgroup of students with disabilities.

In addition to the relationship identified, it should be noted that the overall sample had an average GPA of 87.32 (approximately B+) and the sample of 205 students with disabilities had an average of 83.58 (approximately B). Although students with disabilities typically earn grades lower than typical peers (Lackaye & Margalit, 2006; Meltzer et al., 2004; Reschly & Christenson, 2006), both groups of students in this sample achieved grades within the average range. As previously noted, school climate and achievement are positively related. Therefore,
the comparable GPAs between groups is not surprising given that instructional and emotional environment was not rated significantly different by students in special education compared to general education. What we were unable to determine due to the design of the current study was whether the overall climate of the school has contributed to the academic success of the student population, or students’ academic success enhances their perceptions of the school climate.

**Bullying and Students with Disabilities**

Examination of the responses for bullying-related survey items were encouraging, as far fewer students reported being bullied or bullying others. Any bullying, however, is cause for concern and indicates an area in need of improvement. Approximately 36% of students in the entire sample reported being bullied in or on their way to/from school, which falls within the broad range of 13-75% reported in existing literature (Bradshaw, et al., 2007, Nansel et al., 2001, Nickerson, Allen, et al., 2014, Robers et al., 2013). The wide variability reported across studies may be the result of diverse definitions of bullying provided, use of different measurement tools, and/or differing participant samples.

Similar to findings by Bradshaw and colleagues (2007), who found that 70% of students reported witnessing bullying in the previous month, more students in this sample reported being a witness to bullying (67%) than being a victims or a perpetrator (36%). This may be the result of multiple students witnessing the same incidents, or students being unwilling to acknowledge their roles and victims and/or perpetrators. The high number of students who reported witnessing bullying is disconcerting, given what is known about the deleterious effects that exposure to victimization can have on students’ feelings of psychological, social, and emotional safety (Barboza et al., 2009; Rivers et al., 2009; Vaillancourt et al., 2011).
Fewer students experienced or perpetrated cyberbullying than those who had involvement. Fewer students (41%) also reported witnessing online bullying than those who had not (58%). This is consistent with research findings, which indicate that cyberbullying is not as frequent or prevalent as media may suggest (Hinduja & Patchin, 2008). Regardless of the smaller percentages of students reporting involvement or witnessing of online bullying, it is a behavior that is difficult to observe and yet still must be carefully monitored. As in traditional forms of bullying, electronic bullying has been associated with negative student outcomes academically, behaviorally, and emotionally (Hinduja & Patchin, 2011; Sabella et al., 2013).

**Group differences by educational program.** Despite the significant variability reported across bullying research, numerous studies have found that students with disabilities are more likely to be involved in these incidents (Nickerson, Singleton et al., 2014; Rose et al, 2012; Son et al., 2014; Whitney et al., 1995). Furthermore, multiple researchers have identified a relationship between bullying and school climate (Barboza et al., 2009; Brock et al., 2006; Cook et al., 2009; Espelage et al., 2014; Espelage & Swearer, 2004; Nickerson, Singleton et al., 2014). Given that significant differences were found between groups for most areas of school climate, it was suspected that these differences would also be found for experiences related to bullying. As previously noted, mandated bullying programs and policies rarely address students with disabilities specifically or are targeted to meet individual needs (Rose, 2010). For the purpose of this study, survey items related to bullying were analyzed separately, as each item addressed distinct aspects of bullying experiences.

Multiple studies have indicated that students with disabilities are more likely to be both victims and perpetrators of bullying (Rose et al, 2012; Son et al., 2014; Whitney et al., 1995). Therefore, it was somewhat surprising that students within this sample did not report
significantly different rates of victimization, witnessing others being bullied, or perpetrating bullying in or on the way to/from school. For each of these items, educational program (special vs. general) was not a significant predictor for involvement with bullying.

Students’ responses related to online bullying were also not significant, which was more aligned with existing research. Similar to a previous investigation of cyberbullying (Didden et al., 2009), the current study also found no significant differences between groups (special vs. general education) for any experiences with online bullying (victim, perpetrator, or witness). Although the percentage of students overall indicated a need for revised/improved bullying prevention and intervention, the lack of group differences within this district is encouraging.

Based on these results, it is possible that all students in this sample received education about safety, respect, and problem solving in a way that was useful and understandable, therefore reducing the negative aggression described by Rose and Espelage (2012). Interventions by the safe and respectful schools committee who initially developed the survey may have played a role in supporting students with and without disabilities. It should be noted, however, that there is also the possibility that students with disabilities may have experienced or witnessed bullying, but were unable to recognize the behaviors as victimization, depending on the characteristics of their disability (Blake et al., 2012)

**Group differences by gender among students with disabilities.** It was believed, based on the literature review, that gender may contribute to differential experiences with bullying among students with disabilities. However, there was also variability across studies examining bullying and gender, where some researchers found significant gender differences (Farmer et al., 2012, Robers et al., 2013) while others did not (Card et al., 2008). The results of this study
aligned with Card and colleagues’ (2008), in which gender did not significantly predict whether students experienced or witnessed bullying at or on the way to/from school.

Gender was, however, a significant predictor for perpetrating bullying; the data analysis revealed that males reported higher rates of bullying others compared to female students in special education programming. The result of this analysis was consistent with bullying literature examining typical populations, where boys have been identified in multiple studies as more likely to be involved in bullying (Espelage & Swearer, 2011; Nansel et al., 2001). However, these results contradicted Farmer and colleagues’ (2012) finding that female students in special education were more likely to be victimized and to perpetrate bullying compared to males enrolled in special education.

For this study, there was no hypothesis regarding cyberbullying due to the wide variability reported across existing studies in rates of electronic bullying (Hinduja & Patchin, 2011). In the current findings, gender among special education students was found to be a significant predictor for two of the three items related to online bullying. Females were more likely to report being victims of cyberbullying and also to witness others being bullied online. This reflects the findings of prior research indicating that females are more likely to participate in social and electronic bullying rather than direct verbal or physical bullying (Brock et al., 2006; Eisenberg et al., 2003; Limber & Olweus, 2013; Olweus, 1993; Robers et al., 2013). Gender was not a significant predictor for perpetrating online bullying, which may be an accurate result or could be due to students’ self-report biases (attempting to provide desirable responses).

The results in distinct aspects of bullying reflect the difficulty and variability of measuring this phenomenon described in existing research (Carter & Spencer, 2006). Various studies have reported contradictory results in terms of gender differences; some reporting higher
rates of victimization among males (Espelage & Swearer, 2011; Nansel et al., 2001) and others reporting females as at greater risk (Farmer et al, 2012; Robers et al., 2013). Still, other researchers have found no significant gender differences within typical populations (Card et al., 2008). Thus, overall findings on relationships between these variables are equivocal and further research is needed to clarify this area.

**Group differences by school level among students with disabilities.** No relationship was found when examining whether school level (middle versus high school) was a significant predictor for involvement in bullying among students with disabilities. Similar to overall prevalence rates, the age at which students were most likely to be involved in bullying has varied across studies, most of which did not focus specifically on students with disabilities. Limber and Olweus (2013) found that rates of victimization decreased as grade level increased. Others have identified specific grade levels as having the highest rates of victimization (Astor et al., 2010; Robers et al., 2013); however, considerable differences exist across studies.

One study did evaluate school-level differences among students with disabilities and found lower rates among high school students compared to middle school students. Blake and colleagues (2012) analyzed the results of two nationally representative studies and found significant differences in victimization rates when comparing students with disabilities in elementary, middle, and high school. Blake et al.’s results may lead one to predict that significant differences would be found when comparing middle and high school students in this sample. However no such difference was discovered and, in fact no significant differences were noted for any of the items related to bullying either in school or online when comparing school levels for students with disabilities.
Implications for Practice

The findings of this study have important implications for practice in the fields of school psychology and education. Existing research highlights the importance of school climate reform, which has been recognized by multiple organizations as an effective strategy to promote positive staff/student and peer relationships, enhance connectedness to school staff and school as an institution, and increase school safety (CDC, 2009; NSCC, 2007; U.S. Department of Education, 2007). These improvements support the overarching educational goal of academic success and achievement, and may also reduce dropout rates (Dynarski et al., 2008). The National Association of School Psychologists (NASP, 2015) recently announced their current focus on improving school climate through their “Connect the Dots” campaign, further indicating professional focus on this important topic across the county.

Students with disabilities are at-risk for academic and relationship difficulties, as well as school disengagement; therefore, it is necessary to focus on this population’s perceptions of the climate of their school. Inclusive education must go beyond physically shared classrooms to support social climates that promote emotional connections to the learning community through interaction between students with peers and adults (Coulter & Smith, 2013).

The results of this study indicate the need for greater attunement to the perceptions of students enrolled in special education regarding perceptions of school climate. Although differences were small, they were statistically significant and therefore indicated that students in general education are experiencing something that the population of students with disabilities are reportedly not. Efforts to enhance school climate must be tailored to meet the needs of all students and steps should be taken to ensure the participation and inclusion of students with disabilities. Responding to the needs of students with disabilities by modifying school-wide
approaches has been recommended as a way to enhance awareness and education regarding individual differences (Raskauskas & Modell, 2011). School psychologists in this district (and others) can take the lead in further assessing school climate in relation to students with disabilities and in initiating interventions or advocating for change when appropriate (Milsom, 2006).

Although findings were equivalent when comparing students with and without disabilities in regard to bullying, significant differences were found within the population of students with disabilities (i.e., gender). These findings suggest that school personnel should consider bullying prevention/interventions in multiple ways in order to identify at-risk groups that may need additional monitoring, support, or individualized interventions. Son and colleagues (2014) suggested that school staff that possess positive relationships with students have the ability to monitor and support high-risk groups such as those with disabilities, and are in a position to provide attention and interventions that attenuate those risks. Providing problem-solving strategies and conflict resolution skills may support at-risk students with skills deficits in these areas (Rose & Espelage, 2012). This is another task that could be undertaken by the school psychologist, who may already have an established relationship with the students enrolled in special education. Additionally, it has been recommended that special education teachers who are responsible for identifying the evidence-based strategies that support students’ academic success must also adapt and accommodate emotional and behavioral interventions (Rosenberg, 2012). In order for educators to provide such monitoring and support, school psychologists can utilize their unique training in interventions and consultation to provide necessary resources and training to teachers and support staff. Professional development activities, such as pre-service
and in-service training, have been described as a critical intervention related to creating a positive school climate for students with disabilities (Milsom, 2006).

Educating all students regarding the various forms of bullying, including those that they may not be familiar with or recognize as victimization (i.e., happy-slapping, deception) may pay dividends. Providing students with this knowledge and monitoring these less common methods of bullying behavior may provide greater insight into the variety of experience students may have related to bullying. A first step to achieve this goal may also be professional development for staff so that all adults in school are aware of the various forms of potential bullying, how to identify them, and how to address them. School psychologists are in a unique position to access professional resources and consume and disseminate the literature related to these topics in order to provide training to teachers and staff, as well as intervene at the school and individual level.

The relationship between bullying and school climate has been previously established (Barboza et al., 2009; Brock et al., 2006; Cook et al., 2009; Espelage et al., 2014; Nickerson, Singleton et al., 2014). The call for interventions targeting school climate and bullying illustrate the significant impact these areas have on students and schools at a systems-level (NASP, 2015). Research such as this study, which looked specifically at the climate and bullying within a school/district, is an important first step in conducting needs-assessments to better inform the use of evidence-based interventions. This process also bridges the gap between research and practice, which is an overarching goal in the field of school psychology. Given what we have learned about students with disabilities’ perceptions of school climate as well as the relationship between school climate perceptions and academic achievement, it is important to focus efforts on enhancing the climate of the school across all areas in order to provide the greatest learning opportunities for these students.
Limitations and Directions for Future Research

There are several noteworthy limitations of this study. The first involves using a small sample of students within a single suburban school district in the northeastern United States, which reduces the external validity of findings. Whether these results generalize to students in different regions of the country, or to schools that serve students with more diverse demographics cannot be determined. Future research examining differences between students with and without disabilities with regard to school climate and bullying would benefit from utilizing samples across schools and districts. External validity would be improved if sampling was expanded to include a variety of demographics, therefore enhancing the generalizability of results. In terms of instrumentation, future studies may be better informed by using an existing measure with established psychometric properties to assess the climate of the school and bullying experiences. Use of a survey that has been used in other districts or national samples would enhance the validity of findings and would allow for better comparison across samples.

Additionally, the sub-scales for school climate were highly correlated in this survey, therefore it is possible that they were not truly distinct from one another. In other words, we cannot be confident that each construct is independent and contributes unique variance to assessed school climate overall. However, given the previously discussed interrelatedness of school climate constructs, this is not particularly surprising. Again, this issue may be addressed by the use of a previously established school climate measure that has more independent sub-scales.

Another limitation is that this survey was not repeated, which reduces confidence in the internal validity of the study. Repeating the measure would provide information on the perceptions of students’ over time and whether individual development, program changes, or
interventions impacted these results. Going forward, use of repeated measures would increase internal validity and enable researchers/schools to evaluate their progress in these areas when interventions are put in place to address local needs. As noted by Espelage and Swearer (2004), bullying behaviors operate on a continuum and individuals may change positions over time; this would be better reflected in repeated measures.

The current research was also limited by solely examining students’ self-reported perceptions of school climate and bullying behaviors. There is no way of knowing whether their reported perceptions accurately reflect actual events within the school. Obtaining and analyzing data from other stakeholders or from different data sources (i.e., discipline records, attendance) would provide a deeper analysis. Furthermore, future research may also be enhanced by specifically focusing on roles in bullying behavior; examining differences between bystanders/witnesses and defenders may assist in intervention planning. Using interviews, behavioral observations, or incident reports may also allow for categorization of victims (Brock et al., 2006) that would lend itself to individualized support and skills training. Although some qualitative information was gathered for the initial survey, students’ responses were not used for the purpose of this analysis.

The sample of students provided for this study was de-identified by district staff in order to protect confidentiality and was limited to status, grad level, and gender. Therefore, this study was limited in its ability to examine sub-group differences by special education classification type or level of inclusion. Similar to other studies, this research was limited by studying “disabilities” in a dichotomous way, when handicapping conditions actually exist on a broad continuum (Rose, 2011; Rosenberg, 2012). Comparing students with learning disabilities to students with intellectual disabilities, or students with physical disabilities to students with
social-emotional disabilities may highlight unique factors that were overlooked in this investigation. Lack of information regarding the restrictiveness of students’ placements also limits the depth of analysis that might have provided a greater understanding of the impact of environmental setting on perceptions of school climate and bullying. Given the unique profiles of students with disabilities, it would be useful to expand upon existing research that has looked at the school experiences of students with disabilities by disability type (Blake et al., 2012; Rose & Espelage, 2012; Rose et al., 2012; Swearer 2012). Identifying high-risk groups based on classification, or comparing students with visible vs. non-visible disabilities might better inform strategies and interventions to support these youth.

Lastly, although the results of the bivariate and multivariate analyses indicated statistically significant differences for four of the five school climate constructs derived from this survey, it must be noted that between-group differences in students’ average responses on these constructs were fairly small. Students’ average scores indicated that there were more agreeable responses than disagreement with the positively worded statements to rate; although the results were statistically significant it is not clear whether the differences are practically significant. This finding may be due to the overall climate of the school where the survey was administered, as well as the staff and administrators promoting a positive school climate in a way that most students were able to benefit, however causation cannot be determined.

**Conclusions**

This investigation was conducted with the intention of enhancing understanding of the school experiences of students with disabilities. This was accomplished by analyzing archival data in order to compare responses between students enrolled in special education and their typical peers on measures of school climate and bullying. Results indicated that between-group
differences were significant; students with disabilities reported less favorable perceptions regarding the overall climate of their school and on 4 of 5 subscales of school climate.

Analyses of the students with disabilities identified no gender differences, however, school level differences were significant. High school students with disabilities reported significantly lower perceptions of school climate compared to students in middle school.

With regard to students’ experiences with bullying (both in school and online), no group differences were noted between students enrolled in special education to those in general education. Further examination of bullying among students with disabilities indicated that gender differences existed in some areas. Boys were more likely to report bullying others at school, while girls reported experiencing and witnessing electronic bullying at higher rates. No significant differences were noted for school level within the special education sample.

The findings of this study indicate the need for continued research regarding students with disabilities and their unique experiences of the school climate. Numerous agencies and education organizations consider school climate reform as a way to increase student learning and connectedness to school while also decreasing bullying and dropout rates (Coulter & Smith, 2013). Targeted efforts must be made so that interventions meet the needs of students in special education in order to mitigate some of the challenges associated with disability status. Adults who are responsible for significantly contributing to the climate of the school have a duty to provide supports that have been associated with reduced victimization and increased school connectedness (Saylor & Leach, 2009; Sullivan et al., 2012). These efforts cannot stop until all students feel emotionally and physically safe and respected in their school community.


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Organizational Climate and Culture (pp. 532-552).

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Section 504 of the Rehabilitation Act of 1973, 34 C.F.R. Part 104


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Appendix A

Survey

**How much do you agree?**

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

I feel safe at this school

I feel safe on the school bus.

I feel like I belong at this school.

I have opportunities to choose my own projects.

Teachers encourage me to assess the quality of my work.

My teachers treat me with respect.

My school administrators treat me with respect.

The office staff treats me with respect.

Other students at this school treat me with respect.

I find what I learn in school to be relevant to real life.

I feel successful at school.

I like this school.

This is a good school.

I like the students at this school.

Students at this school like me.

I like to learn.

Doing well in school makes me feel good about myself.

Working hard will make me do well in school.

I am doing my best in school.

Participating in extracurricular activities is important to me.
Teachers and administrators are approachable.

My opinions are valued by the administration.

My school helps me learn about other cultures and diversity.

My school values and nurtures a culturally diverse environment.

It is safe for me to take academic risks in the classroom.

I am satisfied with the number of opportunities for participation.

My school accepts me for who I am.

My school welcomes individuals of varying cultures, ethnicities, and abilities.

My school provides a community where no student is alienated because of differences.

I have at least one adult in my school that I can speak with if I feel unsafe or vulnerable.

I have at least one adult in my school that I can speak with about my successes and difficulties.

The work I do in school makes me think.

**My School:**

expects students to do their best.

expects me to do my best.

is understanding and helpful when students have personal problems.

sets high standards for learning in their classes.

helps me gain confidence.

knows me well.

cares about me.

makes learning fun.

is excited about the subjects they teach.

gives me individual attention when I need it.
The next section has to do with bullying. It is divided into two sections:
- bullying at school or on the way to school
- on-line bullying

Bullying is defined as a hostile activity which harms or induces fear through the threat of further aggression. Bullying may be premeditated or a sudden activity. It may be subtle or easy to identify, done by one person or a group. Bullying may include:

1. Power imbalance - occurs when a bully uses his/her physical or social power over a victim.
2. Intent to harm - the bully seeks to cause physical or emotional harm and/or takes pleasure in this activity.
3. Threat of further aggression - the bullying and the victim believe the bullying will continue.


I have been bullied in school or on the way to or from school.
__Yes
__No

I have witnessed others bullied in school or on the way to or from school
__Yes
__No

I have bullied others in school or on the way to or from school
__Yes
__No

I have been bullied online (email, internet, text message, IM, Facebook, etc.)
__Yes
__No

I have witnessed others being bullied online (email, internet, text message, IM, Facebook, etc.)
__Yes
__No

I have bullied others online (email, internet, text message, IM, Facebook, etc.)
__Yes
__No