Spring 2019

Teacher Attunement to Bullies and Victims: Effects on Percpetion of Bullying, Social-Emotional Well-Being and Academic Outcomes

Lauren Elaine McGuire

TEACHER ATTUNEMENT TO BULLIES AND VICTIMS: EFFECTS ON PERCPETION OF BULLYING, SOCIAL-EMOTIONAL WELL-BEING AND ACADEMIC OUTCOMES

By

Lauren Elaine McGuire

Bachelor of Science
Georgia College & State University, 2007

Master of Education
Winthrop University, 2013

Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Philosophy in

Educational Psychology and Research

College of Education

University of South Carolina

2019

Accepted by:

Molly Dawes, Major Professor

Matthew Irvin, Committee Member

Christine DiStefano, Committee Member

Gregory Trevors, Committee Member

Cheryl L. Addy, Vice Provost and Dean of the Graduate School

DEDICATION

This dissertation is dedicated in loving memory to my brother, Brian Patrick McGuire. Your story has inspired me to devote my life to helping others.

ACKNOWLEDGEMENTS

First, I would like to express my appreciation for my advisor, Dr. Molly Dawes, who has provided continual guidance and support throughout this process. Her expertise in the area of teacher attunement and student's social development has been invaluable to me during this research. Her patience and gentle guidance was always there to keep me moving forward. I will also forever be grateful for Dr. Christine DiStefano's expertise in structural equation modeling, as well as her guidance throughout my entire program of study. Additionally, I would like to thank my other committee members as well, Dr. Matthew Irvin and Dr. Gregory Trevor's, for their insights and support.

This PhD process would not have been the same without my classmates, especially in struggling through some of the challenging assignments we had over the years. The comradery will always be remembered and deeply appreciated. My coworkers and my supervisors at the Research Evaluation and Measurement Center also greatly added to not only my learning experience, but also to the enjoyment of it all.

I also thank those who have been my supporters throughout my entire life, my mother, Denise, my father, Michael, and my grandmother and grandfather, Elaine and Neal. There are no words to truly express how grateful I am to have had your love and support throughout not only the good times, but the extremely challenging ones as well. It is your unconditional love that has helped me each step of the way. I love you all oh so very much.

ABSTRACT

With students spending so much of their time in schools, and bullying negatively affecting many students in a multitude of ways, this study examined the relationship between teacher attunement during the fall term of the students sixth-grade year, to academic competence through the way students perceive the bullying ecology within their school, and how the students report their social-emotional well-being. This study used structural equation modeling in order to assess the relationship between these variables with a subsample of student and school data from twenty schools that participated in the Rural Early Adolescent Learning (REAL) project. The results demonstrated how high attunement to bullies led to higher levels of the student perception of the bullying ecology as protective, and also how higher levels of the perceived bullying ecology predicted higher levels of student social-emotional well-being. Implications of these findings is discussed.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

As a nation, we are in a never-ending search to find what will make our K through 12 students well-balanced and successful. With students spending approximately 175 to 180 days at school within the academic year, it is important for them to feel as if they are in a welcoming place (U.S. Department of Education, 2008) where the environment is perceived as safe, where healthy social-emotional development is promoted, and where they are able to flourish academically. Students who attend schools where safety, emotional well-being, and social well-being are promoted are less likely to engage in behavioral problems, less likely to have mental health issues, and are more likely to demonstrate academic success (Phillips, 1997; Zins, Weissberg, Wang, & Walberg, 2004; Cornell, & Gregory, 2008). While there are many factors that influence student achievement, two significant ones, particularly for early adolescents, are (1) teachers and (2) peers, including bullying experiences with peers (Gest, Madill, Zadzora, Miller, & Rodkin, 2014; Newman, Lohman, & Newman, 2007; Goldweber, Waasdorp, & Bradshaw, 2013). The extent to which these factors contribute to students' academic success is determined in part by how these relationships contribute to the students' interactions with one another and the influence students exhibit over other's social behavior (Farmer, Xie, Cairns, & Hutchins, 2007).

Teachers act as role models within the classroom, and often set expectations regarding norms for student behavior and interaction (Hughes, Zhang, & Hill, 2006). Peers also guide what behavior will be accepted or rejected, and what social norms, roles and processes are established (Cairns & Cairns, 1994). Teachers and peers are critical to students' overall classroom experience, and this experience can either aid or hinder students' sense of safety, their social-emotional well-being, and their academic attainment (Hamre & Pianta, 2005; O'Connor, 2010). For example, teachers can structure peer cultures to be less supportive of bullying and more supportive of individual students (Farmer, Lines, & Hamm, 2011; Rodkin & Gest, 2011). In fact, when teachers display a high ability to manage not only the instructional portion of their classroom, but the behavioral climate as well, students are more likely to be engaged and to obtain academic competence (Bradshaw, Zmuda, Kellam, & Ialongo, 2009).

The ability for teachers to impact their students' peer experiences relies upon how aware they are of the social structures within the classroom (e.g., if bullying is affecting the social structure of the classroom; Guerin & Hennessy, 2002; Peskin, Tortolero, & Markham, 2006), and their attunement to the social roles of their students (e.g., who is a victim; Hamm et al., 2011). The extent to which teachers are *attuned* to their students ultimately determines their ability to act as an *invisible hand* within their classroom, assisting in the development of well-structured classrooms where students are supported in their social development (Farmer et al., 2011; Rodkin et al., 2011). For example, increased teacher attunement allows teachers to notice and respond to behavior within their classroom, and this in-turn may allow for the students to feel safe (Norwalk, Hamm, Farmer, & Barnes, 2016). High levels of teacher attunement also increase the sense of

belonging and school connectedness for victims of bullying (Norwalk et al., 2016). Norwalk and colleagues (2016) suggest that teachers with higher attunement to their students' needs are better able to assist students who may need help but who are not directly asking for assistance with the bullying they are experiencing. However, there are no current studies which examine both attunement to bullies and to victims, and how this attunement influences other areas, such as how the students perceive the bullying ecology within their school or their academic achievement. The purpose of this study is to examine how attunement impacts students' academic achievement via the influence on student's perceptions of the bullying ecology, their social-emotional and behavioral well-being.

1.1 THEORETICAL FRAMEWORK

Two main theoretical frameworks relevant to this study include Bronfenbrenner's ecological systems theory (1979) and Deci and Ryan's self-determination theory (2000). The school context plays a crucial role in how a student develops as it is part of the student's microsystem, the system closest to the child according to Bronfenbrenner's Ecological systems theory (1979). It is this system in which a child/adolescent learns to trust others or not, and two specific factors within the school, teachers and peers, either help or hinder this process. There is a bidirectional relationship between the child/adolescent and all other elements within their microsystem (Bronfenbrenner, 1979). If the elements within the microsystem fail, such as the relationships they experience with others (e.g., caregivers and peers) are not supportive, they may react with a negative response such as through exhibiting bad behavior or demonstrating low motivation (Bronfenbrenner, 1979). As this relationship continues in its reciprocal manner with each

continuously affecting the other, it is apparent how schools serve as such an important context for social-emotional, behavioral, and academic adjustment (Eccles & Roeser, 2011). For instance, when teachers have a positive relationship with a student, the student tends to have more positive relationships with other students (Hughes, Luo, Kwok, & Loyd, 2008; Hughes, et al., 2006). In contrast, when teachers demonstrate a stress-filled relationship with a student, the student may have lower levels of social-emotional adjustment and, may also be more likely to be involved in bullying behavior (Murray-Harvey & Slee, 2010). Students who have a positive and supportive relationship with their teacher tend to have greater academic success as compared to their peers who do not have such a positive relationship (Rimm-Kaufman & Sandilos, 2017).

Another relevant theory for understanding students' adjustment at school is Deci and Ryan's (2000) self-determination theory. Their theory focuses on three innate needs that exist and also need to be fulfilled in order for a person to achieve optimal growth: competence, autonomy, and relatedness. Of those three needs, the need for relatedness, particularly with peers for early adolescents, can tremendously influence adjustment across a number of domains (e.g., social-emotional well-being, behavior, and academic achievement). Relatedness is achieved through obtaining secure and satisfying connections with one's peers (Deci et al., 1991). In fact, it has been demonstrated that peers act as a foundation for an adolescent's validation, such as sense of self-worth, as well as sense of safety (Wentzel, 2005), and influence a student's health, happiness, and academic competence (Bukowski, Buhrmester, & Underwood, 2011). These results may be due to students' increased sense of belonging, which leads to greater school engagement (Wentzel & Asher, 1995) as well as the perceptions that peers expect

positive classroom behavior and positive academics outcomes (Hamm, et al. 2011). This is especially true in early adolescents as this is a developmental period where students have an increased desire to be accepted by peers and to have supportive relationships with peers (Eccles et al., 2011; LaFontana & Cillessen, 2010). Peer support has been shown to positively predict both behavioral and emotional school engagement, and the strength of this relation may increase during the middle school years (Li, Lynch, & Kalvin, 2011). In sum, both theoretical and empirical support highlight the significant influence of both teachers and peers over the lives of adolescents. Therefore, these two aspects of students' social context guided this proposed study, which utilized a developmental science perspective in order to view how specific parts of these relationships (e.g., attunement and bullying) relate to student outcomes (e.g., perception of the bullying ecology, social-emotional and behavioral outcomes, and academic success).

1.2 DEVELOPMENTAL SCIENCE AS A LENS

According to the developmental science perspective (Magnusson & Cairns,1996; Cairns, 2000), all domains of functioning are interrelated. Specifically, there is a bidirectional relationship between a person's behavior, environmental factors, and their personal factors (e.g., cognitive, affective, and biological). Thus, students' academic success cannot be considered in isolation; instead gaining an understanding of their social abilities, experiences and how they respond both emotionally and behaviorally must also be taken into consideration. If we are trying to make school a place where students are academically successful, we must also promote success in other domains. This dissertation reflects this holistic view of development by assessing how the bullying

context relates to multiple domains of functioning including their social, emotional, and behavioral well-being as well as their academic success.

1.3 GAPS IN THE CURRENT LITERATURE

Prior research has demonstrated that teachers often do not show high levels of teacher attunement regarding bullying behavior (Ahn, Rodkin, & Gest, 2013; Demaray, Malecki, Secord, & Lyell, 2013). Specifically, teacher reports of bullying and victimization do not align well with student self-reports and peer reports of these same behavior (Ahn, et al., 2013; Demaray, et al., 2013). However, a significant gap in the current literature involves teacher attunement to bullies and victims within their school, and how their attunement levels relate to students' perception of the bullying ecology (e.g., whether their peers would encourage or protect against bullying behavior, and whether they themselves would intervene), their social-emotional and behavioral well-being, and their academic competence with all of these variables interacting with each other. Thus, this study extends prior research by examining the strength of the relationships that may exist between these four areas.

1.3.1 Research Questions.

The goal here is to examine whether or not teacher attunement can influence academic outcomes via effects on perceived bullying ecology and social-emotional well-being.

Research question 1. Do higher levels of teacher attunement to students who are victims and bullies predict higher levels of student social-emotional well-being for all students?

Research question 2. Does social-emotional well-being act as a mediator between teacher attunement and academic competence?

Research question 3. Do higher levels of teacher attunement to students who are bullies and victims predict higher levels of students perceived supportive peer ecology against bullying?

Research question 4. Does perceived supportive peer ecology against bullying act as a mediator between teacher attunement and academic competence?

Research question 5. Does perceived supportive peer ecology against bullying act as a mediator between teacher attunement and student social-emotional well-being and in turn, academic competence?

To address the research questions, this dissertation used a sub-sample from a national study of sixth grade students and their teachers within twenty schools. The measures included student self-reports, peer reports, and teacher reports on various elements in order to examine the relationship between the different perspectives. Specifically, this study examined the effects of teacher attunement during the fall semester of sixth-grade on students' academic competence in the spring semester, through both perceptions of the bullying ecology as well as students' social-emotional and behavioral well-being. Given that the study's design included examining multiple complex relationships simultaneously, structural equation modeling (SEM) was determined as an appropriate analytic technique (Kline, 2016). These models not only examine direct effects, but also indirect effects and reciprocal causation (Jöreskog & Sörbom, 1993). SEM also allows the researcher to test these paths while accounting for multi-level analysis of nested data, such as students within schools (Kline, 2016, pp: 9-12; Leth-Steensen & Gallitto, 2016; Heck, 2016). Thus, with the complexity of these relationships, and also the potential reciprocal nature, structural equation modeling was

determined as the most appropriate technique in order to understand more fully how these different areas may affect one another.

1.4 SIGNIFICANCE OF THE STUDY

Examining the relationship between teacher attunement to bullies and victims within their schools and the complex relationship attunement has with the three specified areas of perception of the bullying ecology, social-emotional well-being, and student academic competence is an important area for research. Understanding how teacher attunement can influence academic competence via students' perceptions of the bullying ecology and their social-emotional well-being will expand the literature on teacher attunement. Specifically, seeing how teacher attunement influences student academic competence through both perceived bullying ecology as well as through social-emotional well-being will highlight the ways in which these areas interact and may clarify the mechanisms through which teachers' attunement to peer social dynamics influences students' academic competence. For example, low levels of teacher attunement may lower the likelihood in which students perceive their school environment as safe. Whether a student perceives their environment as safe may further the impact of teacher attunement on student academic competence. Low levels of teacher attunement may also negatively impact a student social-emotional well-being, such as students being more aggressive and having more internalizing problems. Whether a student is socially and emotionally healthy may further the impact of teacher attunement on student academic competence. If teachers are more attuned, they are more likely to be able to support their students in all of these areas together instead of separately. Teachers who are more attuned may also assist these students who are involved in bullying behavior by altering

the social structures within their classrooms, and guiding students who may be on the fringe back into a supportive peer structure. If students do not receive these supports the bullying-related behavior may continue and the symptoms of the bullies, victims, and by-standers may all worsen. As prior research and theory suggests, each of these domains may be significantly related to students' academic competence, and as our primary drive in education is to ensure this it is necessary for us to understand these dynamics.

Results of this study can inform teacher training and professional development. Given the enormous role of teachers in students' social and academic experiences, it is imperative for teachers to have an awareness of this role and understand how they can best assist their students by being more attuned. This knowledge about the importance of attunement to peer social dynamics can be taught during teacher preparation programs in order to assist teachers in developing this skill. It may also take the form of professional development trainings for those who are currently working in the field of education. Helping teachers understand the importance of teacher attunement to peer social dynamics and develop their attunement may yield more positive adjustment outcomes for students. For example, higher levels of teacher attunement may help students perceive a classroom context within their classrooms that is unsupportive of bullying, help them develop healthy social-emotional skills, and increase their academic competence.

CHAPTER 2

LITERATURE REVIEW

Successful adjustment at school is heavily influenced by the educational context (Midgley, Middleton, Gheen, & Kumar, 2002). For instance, in order for students to achieve, they need to feel as if they are being appropriately challenged and supported by their environment (Wigfield, & Eccles, 2000). This environment at school includes their peers, teachers, and the overall school climate. There is a reciprocal relationship among all of these elements and of all the factors within the education setting, teachers and peers who represent the microsystem and have daily interactions with students, have a central role in students' adjustment at school (Bronfenbrenner, 1979).

Teachers impact student outcomes through their relationships with students, the standards and expectations they set, and the ways in which they guide their students' peer experiences in the classroom (Gest et al., 2014; Rimm-Kauffman & Sandilos, 2017; Hamm et al., 2011; Farmer et al., 2011). For example, teacher-student relationships impact a student's ability to connect with others within the classroom and may allow for higher levels of school bonding (Gest et al.,2014). This relationship invites the students into the learning process and aids in their desire to learn (Rimm-Kauffman et al., 2017). Students who have this supportive relationship often have greater academic success in comparison to their peers who lack this connection (Rimm-Kaufman, et al., 2017). Teachers also play a critical role within the classroom through the ways in which they set standard and expectations for their students. This goes beyond grades and academic

goals, and extends to students' interactions with one another. For example, teachers can establish classrooms where the dynamics among classmates support academic engagement and productive behavior. Teachers act as an invisible hand which may guide students and provide them with opportunities for successful peer interactions (Farmer et al., 2011; Gest & Rodkin, 2011; Hamm et al., 2011).

There are various factors which contribute to whether and how teachers build positive relationships with their students and orchestrate constructive social interactions between their students. One such factor is *teacher attunement*. Teacher attunement refers to knowledge and understanding of their students which is a form of teacher involvement (Hamm et al., 2011; Skinner & Belmont, 1993). More specifically, teacher attunement is often relating to the awareness a teacher has regarding the social dynamics between their students in the classroom (Dawes, et al., 2017; Hoffman et al., 2015). For example, studies have examined teacher attunement to aggressive youth (Dawes, et al., 2017) and also students who are victims of bullying (Norwalk et al., 2015). This attunement is important as teachers who are more attuned to their students who may need additional assistance, such as students who may be on the fringe of the peer network within their classroom, may be better able to facilitate positive peer interactions for that student, thereby increasingly the likelihood that the student may experience positive peer relationships (Cairns et al., 1994). In fact, it has been demonstrated that teachers who were more attuned to their students promoted a more positive school climate, and had students that reported enhanced sense of belonging (Hamm, Farmer, Dadisman, Gravelle, & Murray, 2011).

Within the past ten years, several large studies have examined teacher attunement and its impact on various student outcomes (Dawes et al., 2016; Dawes et al., 2017; Farmer et al., 2010; Farmer et el., 2011; Hamm et al., 2011; Hamm et al., 2015; Kindermann, 2011). These studies have illuminated the ways in which teacher attunement may impact a student such as having less bullying in the classroom, having students who are bullied feel safer and more supported, and helping to bring students who are on the social fringe back into healthy relationships with their peers (Hamm et al., 2014; Kindermann, 2011). The results of one study which focused on students' transition to middle school examined if professional development provided to teachers could assist them in increasing their attunement to peer social dynamics (Hamm, et al., 2011). The outcomes indicated that teachers who received professional development training in peer social dynamics and could be taught specific strategies to assist students in their social, academic, and behavioral adjustment, and that teachers who were more attuned promoted a more positive school climate where their students noted an enhanced sense of belonging (Hamm et al., 2011). With outcomes such as these, and with an ever-increasing focus on students social-emotional development within the classroom, it is beneficial to review studies which have focused on this area, and to have a comprehensive understanding of how critical teacher attunement actually is to students' adjustment.

However, before exploring the literature regarding teacher attunement, it is important to first consider the theoretical perspectives which explain how teachers can influence their students' adjustment in general, and more specifically, on their peer relationships. Toward that end, this chapter consists of two major sections. In the first section the importance of teachers is discussed, including the theoretical basis, as well as

how teachers impact student's adjustment at school. In the second section, the concept of peer social dynamics is defined and discussed in relation to its importance to our understanding of adolescents' development. Further, theoretical perspectives and empirical findings on teachers' role in peer social dynamics, specifically their attunement to these dynamics, are discussed.

2.1 IMPORTANCE OF TEACHERS

2.1.1 Theoretical Support. Bronfenbrenner's Ecological systems theory (1979) focuses on the influence a child's context may have on their development. This theory describes different nested systems and the potential influences within each system. In the *microsystem* (the system closest to the child) is the child's family and school. It is in this system that an individual learns to develop (or not**)** trust in others. There is a bidirectional relationship where the child interacts with their environment. If the structures in the microsystem break down the child will not be able to explore the other structures in the environment and may not develop to their full potential. This theory demonstrates how children react in negative ways (bad behavior, low motivation) when parts of their microsystem are failing them. For instance, when the family or school environment is not supporting the child some of the negative reaction have included increased aggression, depressed affect, and even school drop-out (Bukowski, et al., 2011).

The importance of the teachers in the school is highlighted in Bronfenbrenner's theory, and is even further emphasized in Drs. Cairns' metaphor (1994) of the *invisible hand* of teacher (see Farmer et al. 2011 for discussion). This concept explicitly describes the role of the teacher within the classroom, and the influence teachers have on their student's development. The reference to the invisible hand lays its foundation as one in

which the teacher is the leader of the classroom and of the social system that lies within it (Farmer, 2000). Effective teaching practices appear to include organizing the structure of student interaction in order to promote engagement in learning (Baker et al., 2008; Wentzel, 2002). However, these teaching practices extend beyond engagement and include managing the ways in which students interact, assisting students who are experiencing social difficulties, and promoting positive views of peers (Baker, Clark, Crowl, & Carlson, 2009; Cairns et al., 1994; Farmer, Stuart, Lorch, & Fields, 1993; Wentzel, 2003). This theory highlights the ways in which teachers can use routine management strategies in order to support healthy social, behavioral, and academic engagement (Farmer & Xie, 2007). The use of this invisible hand is a critical element in students' social and emotional well-being as it aids in establishing healthy peer relationships and promoting positive social development.

2.2 HOW TEACHERS IMPACT STUDENTS' ADJUSTMENT AT SCHOOL

Developing an environment of mutual respect includes many moving parts as schools have their own culture which includes "unwritten rules, traditions, norms, and expectations" (Deal & Peterson, 1990, p.3) which are often stable and act as the motivating factor which contribute to student's beliefs and behavior over time (Deal et al., 1990). While some prefer the term culture (Deal & Peterson, 2009), it is also recognized that school *ethos* and school *climate* are often used to describe the same organizational functions of a school. The National School Climate Council (2012) extends the definition of school climate beyond the character and structure of a school to include specific criteria that must be met in order for a school climate to be considered positive. Some of the measures include an environment that promotes social, emotional,

and physical safety in an engaging and respectful atmosphere. This again is a reciprocal relationship between the students and their peers and the students and their teachers. For instance, Lee and Song (2012) found that a positive school climate is significantly associated with less bullying behavior. Goldweber, Waasdorp, and Bradshaw (2013) found that students who are involved in bullying behavior perceive the school to be less safe and adults as less willing to intervene. Another study found that school climate explained 66% of the variance in youth risk behavior such as displays of physical aggression and getting into fights (Klien, Cornell, & Konold, 2012).

To extend this even further, there is empirical support for how teachers also manage the relationships students have with one another, and how peer social dynamics are influenced through teacher's classroom management strategies (Farmer, et al., 2011; Gest, & Rodkin, 2011). To better understand how teachers can manage these dynamics, I first review theoretical perspectives explaining the importance of peers and peer social dynamics in student's ability to succeed academically, behaviorally, and socially. Therefore, the following sections review the theoretical and empirical support for the importance of peers.

2.3 IMPORTANCE OF PEERS

2.3.1 Theoretical Support.

In order to better understand how peers, impact the development of children and adolescents during their k-12 years, it is important to consider the theoretical perspectives on the importance of peers. Sullivan's (1953) theory is widely used to help guide our understanding of how interpersonal needs, particularly with peers, shift as youth develop. Relevant to this proposed dissertation is understanding the interpersonal needs of adolescence. Specifically, during these years Sullivan

discussed the ways in which children are learning how to trust and love others and how interactions with peers can either support or hinder this process. For instance, Sullivan (1953) states that if a child experiences self-doubt, uncertainty, and ridicule from others during this time period that these interactions can lead to an increase in anxiety and a loss of self-esteem. Similarly, Maslow's hierarchy of needs (1962) theory describes how different basic levels of need must be met in order for an individual to develop fully and reach their potential. This theory focuses on belonging as one of the core needs to be met after food and shelter have been secured. Support for this theory has been found with student's believing they will succeed academically (Goodenow, 1993), experiencing increased motivation, and putting forth more effort academically when they have felt supported and as if they belonged within their classroom (Goodenow & Grady, 1993).

Self-determination theory (Deci & Ryan, 2000) also aligns with these theories in that it describes three innate needs: competence, autonomy, and psychological relatedness. This theory posits that students cannot experience optimal growth without these three needs being met. One of the key outcomes is the degree to which a student is motivated and this is influenced by whether or not a student experiences relatedness. Relatedness is defined as the presence of "secure and satisfying connections with others in one's social milieu" (Deci et al., 1991, p. 327). If a student feels related to others and has a sense of belonging, they are more likely to be motivated within that environment and to be more autonomous as they have a greater sense of security. It is within these three theories that the impact of peers may be seen through the innate need of supportive reciprocal relationships.

2.3.2 Empirical Support. As emphasized in both Maslow's theory (1943) as well as in Deci and Ryan's theory (2000), having a sense of belonging is critical to how a child/adolescent develops. Building this sense of belonging is directly related to the support they experience from those around them and the reciprocal interactions that exist between them, such as with their peers and teachers (Sullivan, 1953; Bronfenbrenner, 1979). Children/adolescents need to have close relationships with others in order to learn how to interact, trust, and love (Sullivan, 1953). Gest and Rodkin (2011) have noted that within the classroom students interact, influence, and socialize with one another, and that this microsystem is where much of a student's development occurs (Bronfenbrenner, 1996). It is within this system that social regularities are defined (Seidman, 1988) that assist in organizing and stabilizing student interpersonal behavior. Developing these relationships is also associated with the social reputation the child will take on (Cauce, 1986), the self-esteem they will have (McGuire & Weisz, 1982), and how well they can psychologically adjust to their environment (Buhrmester, 1990). For example, students who have a positive sense of belonging often experience less internalizing (i.e. anxiety and depression) and externalizing (e.g. acting out) problems (Newman et al., 2007). Peers can be a source of validation and safety at school (Wentzel, 2005) as they often assist in navigating through social problems that may arise (Altermatt, 2007). This social support is also needed in order for students to be intrinsically motivated and academically engaged (Skinner, Furrer, Marchand, & Kindermann, 2008; Wentzel et al., 1995).

In fact, peers influence academic engagement even when teacher and parental influences are controlled for (Kindermann, 2007). For example, it has been shown that negative interactions with peers is related to increased academic difficulties (Juvonen,

Graham, & Schuster, 2003; Sourander, Helstela, Helenius, & Piha, 2000). However, the existence of positive peer relationships can greatly impact a student's academic outcomes as even the perception of having supportive peer relationships is associated with higher academic competence and the display of prosocial behavior (Wentzel, 2005). When students have a high-level academic reputation with their peers it is predictive of the student's self-concept, effort, and GPA (Gest et al., 2008). This may be due not only to what peers think of their academic abilities but also of the level of emotional support received by peers, such as found by Wentzel, Muenks, McNeish, and Russle (2017), as this increases a student's self-efficacy.

Students need support from their peers in order to have a sense of belonging and community and to be able to navigate the various social situations that may arise at school, such as instances of bullying. There is significant evidence which has revealed the impact that peer social interactions within the school has on children's emotional and social well-being (Cairns et al., 1988; Farmer, 2000; Farmer et al., 2007). These experiences may either facilitate positive outcomes such as increased overall happiness, health, and academic competence, or may lead to negative outcomes such as increased aggression, depressed affect, and school dropout (Bukowski, et al., 2011). There are also certain periods in a student's school experience across Kindergarten through twelfth-grade where peers may be particularly influential, such as the early adolescent development period. It is during this period that attention to the importance of peers often falls short as teaching methods and school schedules begin to shift in varying directions.

2.3.3 Importance of Early Adolescent Developmental Period. The transitional period from elementary to middle school is an important area to study for a multitude of

reasons, such as the interpersonal changes (e.g., relationships) and intrapersonal (e.g., changes the school environment) that occur during this time. For example, the transition to middle school increases the need for peer support as students have to form new friendships with new peers and there is increased intimacy and reliance on the companionship of friends (Brown, Bakken, Ameringer, & Mahon 2008). The reasoning for this shift in need is due to the physical, emotional, and cognitive changes that occur during the early adolescent developmental period, and how the environment may not best support these shifting needs (Eccles & Wigfield, 1997; Jackson & Davis, 2000; U.S. Department of Education, 2008). For example, recommendations from a longitudinal study have called for an increased focus on the academic core which includes more opportunities for critical thinking, an emphasis on school belonging through the development of a caring and supportive environment, and for additional support in mental health efforts (Carnegie Council on Adolescent Development, 1989). Adolescents at this point need these additional supports as they are developing their critical thinking skills, their sense of autonomy, sense of self, and they are often in a strained relationship with their families (Eccles et al, 1993; Erikson, 1959, Jackson et al., 2000; Smetana, 2000). They become more sensitive to, and begin to rely more heavily on, their relationships with peers (Mehta & Strough, 2009; Rubin et al., 2006). Peer groups also start to include those of the opposite sex more (Mehta et al., 2009), and concern with popularity begins to increase during the transition to middle school (Dawes & Xie, 2016; Lafontana et al., 2010). These shifting dynamics can lead to increased use of social manipulation and acts of aggression (Juvonen et al., 2004). Adolescents often suffer a loss of motivation, connection to their school environment, and academic performance

during this time (Eccles & Midgley, 1989). Some students face obstacles which may make developing the much-needed sense of belonging even more challenging. For example, rejected and withdrawn youth often have difficulty finding supportive friendships and thus have less opportunity to develop and refine their social skills (Bagwell, Coie, Terry, & Lochman, 2000; Goldbaum, Craig, Pepler, & Connolly, 2003). Continued peer rejection can lead to less classroom participation, and the student ultimately suffering both socially and academically, but these negative effects can be reversed when the peer rejection is stopped (Ladd, Herald-Brown, & Reiser, 2008; Juvonen, Wang, & Espinoza, 2011). Thus, peer interactions and relationships, which are part of the overall peer social dynamics, play a key role in adjustment and development during this time.

2.4 PEER SOCIAL DYNAMICS

Peer social dynamics is a term that encompasses the way peers interact with one another through building relationships, establishing norms, and influencing one another (Kindermann, 1993; Ryan, 2001). Under the umbrella of peer social dynamics include topics such as the formation of peer groups, the importance of social roles and reputations (e.g., popular), and what resources are gained and sought after. Understanding how peer groups are formed and maintained is critical for teachers as they can use this knowledge to help promote positive behavior and interactions within their classrooms (Bronfenbrenner, 1970; Farmer et al., 2011). A key term that is useful for understanding how youth form relationships, groups, and develop roles and reputation is *social synchrony* (Cairns, 1979). Social synchrony is the process by which social behavior is elicited, established, supported, and adjusted whereby the behavior of one individual

support the actions of another during an interaction (Cairns, 1979). There are three types of social synchrony: (a) *imitation* where students model their behavior after another's; (b) *reciprocity* where students respond to each other's behavior in a reciprocal relationship; and (c) *complementarity* where students act different from one another, but in ways which compliment or support the other (e.g., leader and follower(s); Cairns, 1979). Within the classroom, students' behavior becomes synchronized, leading to the formation of unique social structures and dynamics between peers (Cairns, Leung, Buchanan, & Cairns, 1995), which influence the maintenance of behavior over time (Cairns et al., 1994). Thus, examining peer social dynamics is a key component of understanding the extent in which peers influence development and social adjustment.

2.4.1 Social Roles and Reputations. As youth interact, they sort themselves into various roles (e.g., leader, follower) and develop associated reputations (e.g., popular, rejected; Farmer et al., 2011) These reputations can dictate how others interact with and respond to an adolescent, so knowing a student's reputation can provide key insight into how they might adjust at school (Sandstrom & Cillessen, 2003). Roles may include bully, victim, aggressive, affiliative. Reputations may include popular, rejected, withdrawn, and students who fall into neither of those categories and are near the average rating for the class (Farmer, et al., 2011). Relevant to this study, I focused on teacher attunement to student roles of bully and victim, and also examine student social-emotional states such as affiliative and aggressive. These roles and reputations are important components of a student's experience and outcomes at school as they influence their social status, behavior towards peers, and peer behavior towards them (e.g., whether they are victimized or not; Rodkin & Ryan, 2012; Sandstrom, et al., 2003).

2.4.1.1 Social Status. A driving concern for youth at this age is who is popular and how they can become popular (Adler & Adler, 1998). How youth obtain status is not always through the same approaches, and students who are reported as popular are not necessarily similar even in the form of their popularity (Cillessen & Rose, 2005). For instance, there are two common indicators of social status: there are youth who are sociometrically popular (i.e., peer preference; see Cillessen & Marks, 2011), and youth who are perceived to be popular (Adler et al., 1998). *Peer preference* is the extent to which youth are liked by peers (Cillessen et al., 2005; Parkhurst & Hopmeyer, 1998) and is assessed through a peer-nomination technique in which students are asked to list by name their peers within their grade who they like most (peer acceptance) and like least (peer rejection). These nominations are counted and adjusted for grade size so that the results may be compared, and the individuals score for being least liked is subtracted from their score of being most liked (Coie, Dodge, & Coppotelli, 1982). The social preference for each student is represented by this score which is on a continuous scale and those with the highest scores are considered sociometrically popular. Similarly, the method for obtaining a score which indicates *popularity* is gathered through asking students who is popular. This distinction between peer preference and popularity is critical as students who are well-liked are not necessarily perceived popular and visa-versa (Cillessen et al., 2005; Parkhurst et al., 1998).

Those who are preferred by their peers often score very low on aggressive behavior (Rubin et al., 1998). They are also typically more prosocial and academically inclined (Cillessen et al., 2005; Cillessen et al., 2011). The students who are voted as popular are often seen as popular but may not be necessarily well liked. These

adolescents have a combination of prosocial and aggressive behavior (Cillessen et al., 2005; Parkhurst et al., 1998). They tend to experience the benefits of being well-liked (Hawley, 2003) without the negative outcomes their non-popular aggressive peers have (Rodkin et al 2000). The popular students often have more dominance and are seen as more aggressive and self-important than their sociometrically popular peers (Parkhurst et al., 1998). Other characteristics associated with popular students include being athletic, cooperative, and displaying leadership qualities (Farmer & Rodkin, 1996). While some have noted that not much overlap exists between these groups (Parkhurst et al., 1998), it has been suggested that much overlap may exist between these groups and that it diverges at a certain point. Xie, Li, Boucher, Hutchins, and Cairns (2006) found that the divergence between these two groups begins to take place between second and fourth grade. Those who are popular tend to remain so over time and even across school transitions (Cillessen & Mayeux, 2004). However, those who are well liked may or may not continue to be so as this type of popularity depends on the group of students voting and whether or not the group remains the same (Cillessen & Borch, 2006).

2.4.1.2 Behavior. Another aspect of peer social dynamics is the adolescent's behavior, such as whether they are known as using aggressive behavior or being disruptive and displaying low levels of self-regulation. Youth may engage in a combination of behavior strategies (that are related to their status as mentioned above) including the use of aggressive and prosocial behavior. These various combinations of behavioral traits may label a student as either a prosocial controller or a bi-strategic controller (Hawley, 2014; Roseth et al., 2011). The prosocial adolescents are typically friendly, morally astute, and well-liked by peers, thus enabling their ability to control

certain aspects of their environment. The bistrategic controllers are prosocial, socially competent, and they control their aggression in order to get what they want. The rejected group may be seen as mostly comprised of coercive controllers which are impulsive, unskilled, and not liked by peers. The withdrawn or neglected adolescents are seen as non-controllers, as they are not in control of influencing their environment.

2.4.1.3 Peer Victimization. A key part of students' social lives is whether they are being victimized by peers (Rigby, 2000). Many students face challenges, such as being on the fringe of the social group, being an outcast, and even being a target of bullying. Each of these situations presents unique challenges the student must navigate, and the outcomes can potentially be severe if the student does not receive assistance or guidance through these socially difficult situations. For instance, children and adolescents who experience bullying or victimization often face behavioral and emotional health challenges including, externalizing and internalizing symptoms such as depression, anxiety, and aggression (Hawker & Boulton, 2000; Rigby, 2003; Swearer, Espelage, Vaillancourt, & Hymel, 2010). Specifically, the negative side effects differ depending upon which bullying-related category the student is involved with. Students who are victimized often experience anxiety, depression, loneliness and poor school adjustment (Hawker et al., 2000; Rigby, 2003; Fried & Fried, 1996). Students who are bullies often suffer academically, experience substance abuse issues, and have higher reports than others of violent acts (Center for Disease Control, 2015). Students who participate both as a victim and as a bully may experience issues such as at an increased risk for dropping out of school, suffering from depression, and committing suicide (Espelage & Holt, 2010, Arseneault et al., 2010; Wolke, Copeland, Angold, & Costello, 2013).

As shown through various studies, students who participate in bullying behavior experience a multitude of negative side effects, and this is a significant concern as bullying is an epidemic within the United States (Schoen & Schoen, 2010). Current research estimates that bullying-related behavior affects significantly more students than teachers are aware of. In fact, in a recent large-scale study more than 20 percent of students self-reported as being bullied (National Center for Educational Statistics, 2016). Although the rates of bullying vary across studies, when a mean prevalence rate is examined, 35 percent of students have been found to be involved in some form of traditional bullying-related behavior (either as a bully or as a victim; Modecki, Minchin, Harbaugh, Guerra, & Runions, 2014). Rates of bullying are especially high during the transitional period from elementary school to middle school (Espelage, Hong, & Thornberg, 2015; Pellegrini, 2004) as students become increasingly focused on popularity and gaining social resources (LaFontana et al., 2010).

Whether or not youth become involved with peer victimization is associated with other aspects of peer social dynamics. Their social standing and associated social behavior can increase their risk for involvement in bullying. For instance, students who are not interested in, or willing to compete for, social resources (e.g., social influence, social credentials) may become ignored or rejected by their peers (Hawley, 2014). Peer-rejected youth often display characteristics of being aggressive, shy, or withdrawn, and are at greater risk for becoming victims of bullying behavior as such (Rubin, Bukowski, & Parker, 2006). However, some differences may be demonstrated between these groups of as aggressive students typically are able to establish friendships with other aggressive peers. The withdrawn-rejected students tend to experience more difficulty in developing

supportive friendships and also receive less opportunities to develop their social skills (Bagwell, et al., 2000; Goldbaum, et al., 2003). Of the friends they do make, these friends tend to be less well-adjusted socially (Scholte et al, 2008), again limiting the opportunities to gain more positive social skills. These rejected and withdrawn adolescents who are bullied have a low social status within their peer network (Bagwell & Schmidt, 2011 & Scholte et al 2008).

The students who perpetuate the bullying may actually be well-liked and popular. For example, studies have shown both overt (e.g., physical aggression) and covert (e.g., relational aggression) forms of aggression as associated with well-liked, popular students (LaFontana et al., 2002; Rose et al., 2004). These students typically utilize a mixture of both aggressive and prosocial behavior in order to manipulate their peers (Hawley, 2003). However, the students who display more relational aggression as compared to overt aggression appear to have more popularity as compared to the reverse (Cillessen et al., 2004; Rose et al., 2004). Typically, children/adolescents who bully others have social capital (Pellegrini, 2002), and bullies are often viewed as popular but not well liked (Rodkin & Berger, 2008; de Bruyn, Cillessen, & Wissink, 2010).

All of these features of peer social dynamics, roles, behavior, victimization, work together to either constrain or promote student's positive development. For example, negative interactions (experiencing aggression and bullying) can lead to incredibly detrimental outcomes for these students (Hawker et al., 2000; Rigby, 2003; Swearer, et al., 2010) and jeopardize their success at school, including their academic competence (Juvonen, et al., 2011; Lacey & Cornell, 2013). In the following section, I discuss the

process by which peer social dynamics can influence development, outcomes, and success across multiple domains.

2.5 FACTORS INFLUENCED BY PEER SOCIAL DYNAMICS

These various domains of adolescent development and functioning are inter-related according to the developmental science perspective (Magnusson et al.,1996; Cairns, 2000). For instance, the environment in which the student is in (e.g., whether bullying is noticed, supported, or intervened) has a bidirectional relationship between that students' personal factors (e.g., internalizing and externalizing emotions and behavior, and motivation). Thus, these cannot be considered in isolation from one another; instead examining adolescents' social abilities, peer interactions and how they respond both emotionally and behaviorally must also be taken into consideration in order to understand the potential impact on academic success. The following sections display a holistic view of development through the review of various aspects that contribute to a student's perception of the bullying ecology, their social-emotional and behavioral well-being, and also their academic achievement.

2.5.1 Perceptions of the Bullying Ecology.

Positive interactions with peers can provide a sense of validation as well as safety at school (Wentzel, 2005), and these interactions can be key for developing a sense of the environment as safe (Cowie, 2011). Aligning with Bandura's social cognitive theory (1991, 2001), students' perceptions of the environment play a critical role in their future thoughts and behavior. Specifically, perceptions of the bullying context in the classroom (including experiences of bullying and victimization) plays an important role in establishing a sense of whether the environment is safe and supportive, such as whether or not peers will defend a victimized

student or support the bully. There are also a variety of potential emotional issues students may face when dealing with bullying behavior (Blake, Lund, Zhou, Kwok, & Benz, 2012), and these in turn shape the student's general perceptions of their ability/lack of ability to connect to their school (Orpinas, & Horne, 2006). Students know what the social norms are and for students who are victims and feel that bullying is a socially accepted behavior, they may have less motivation to go to school (Juvonen, Wang, Espinoza, 2011). In fact, in classrooms where reinforcing the bully's behavior is a norm and standing up for the victim is not, bullying incidents are higher as it is seen as a social reward (Salmivalli, Voeten, & Poskiparta, 2011). It is difficult for a student to feel as if they are connected to their school when they are involved in bullying behavior, and even more so when they feel that other students support it. However, schools that provide a safe and welcoming place for their students, and also maintain less hierarchical classrooms, often have less bullying occurring and students with better attendance, study habits, cooperative learning, and academic success (such as higher grades and test scores; Garandeau, Lee, & Salmivalli, 2014; Phillips, 1997; Zins, et al., 2004; Cornell et al., 2008). Thus, in providing an environment that does not support bullying behaviors, it may be expected that students would not perceive that as a social norm, and also may reap the benefits experienced when they feel safe and connected to their environment.

2.5.2 Social-emotional Well-being. The ways in which adolescents interact with one another, form friendships, and form groups all affect the way they perceive themselves within their environment and how socially competent they feel within that environment (Rubin, et al., 2006). Developing close peer relationships is also related to self-esteem (McGuire & Weisz, 1982), and psychological adjustment (Buhrmester,

1990). These social interactions also psychological adjustment (Buhrmester, 1990). The diathesis stress model (Spielman, Caruso, & Glovinsky, 1987) aligns well with Bandura's social cognitive theory (1991) in that it takes into account both the personal factors of an individual (such as their biological traits) as well their environmental (such as experiences and stressors) in order to demonstrate how an individual's reaction to the world and their surroundings may vary depending upon these various factors and how they interact with one another. Specifically, children and adolescents with predisposing factors (e.g., physical or psychological differences), when confronted with precipitating factors (e.g., stressors such as bullying), may have a higher likelihood of developing further problems in response to these triggers (Fung, Lunsky, & Weiss, 2015; Sideridis, 2006). These maladaptive responses are then then maintained through other continuous factors such as behavioral (e.g., social withdrawal), cognitive (e.g., worrying), and environmental (e.g., lack of positive social exchanges; Martin, 1994;). The findings regarding outcomes for students who experience bullying support this theory as it has been shown that those who experience bullying or victimization often face behavioral and emotional health challenges including, externalizing and internalizing symptoms such as depression, anxiety, and aggression (Hawker et al., 2000; Rigby, 2003; Swearer, et al., 2010). Specifically, the negative side effects differ depending upon which bullying-related category the student is involved with. Students who are victimized often experience anxiety, depression, loneliness, poor health, and poor school adjustment (Hawker et al., 2000; Rigby, 2003; Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vanhorick, 2006; Fried et al., 1996). The more repeated and severe the bullying the more severe the long-term effects are for the victim (Van der Plog, Steglich, Salmivalli, &

Veenstra, 2015). It has even been shown that students who are victims of bullying have higher reports of suicidal ideation (Holt et al., 2015). Students who are bullies often experience later substance abuse issues, have higher reports than others of violent acts and criminal behavior, and may also suffer from psychotic symptoms (Center for Disease Control, 2015; Ttofi, Farrington, Lösel, & Loeber, 2011). Students who participate both as a victim and as a bully may experience issues such as suffering from depression and committing suicide (Espelage et al., 2010, Arseneault et al., 2010; Wolke, et al., 2013).

2.5.3 Academic Competence. Peer social support impacts the extent to which students are intrinsically motivated and academically engaged (Skinner, et al., 2008). This holds true even when controlling for both teacher and parent influences (Kindermann, 2007). Both the diathesis stress model (Spielman et al., 1987) as well as Bandura's social cognitive theory (1991) also explain why students who are involved in bullying may suffer academically as well as both theories emphasize the importance of social and environmental experiences in a child and adolescents' responses to their environment. For example, based on these two theories it may be hypothesized that when students are involved in bullying, they may experience heightened stress, they then may react by withdrawing from their environment, and this then limits their exposure to positive interactions and opportunities to experience success. Current research supports this as it has been demonstrated that students who are involved in bullying have exhibited lower academic competence, and social difficulties (Beran, Hughes, & Lupart, 2008; Glew, Fan, Katon, Rivara, & Kernic, 2005). Specifically, adolescents who are bullied miss more time in school and show less academic competence as compared to students who are not bullied (Nakamoto & Schwartz, 2009). One longitudinal study which

followed children from kindergarten through high school found several different trajectories for students who are bullied (Ladd, Ettekal, & Kochenderfer-Ladd, 2017). Those that suffered chronic or moderate levels of bullying during their k-12 years had a greater dislike of school, felt less confident in their academic abilities, and had lower academic competence. The students who experienced a decrease in the bullying they experienced were able to recover to some extent and showed fewer academic long-term effects. Students who are bully-victims may also be at an increased chance for dropping out of school (Townsend, Flisher, Chikobvu, Lombard, & King, 2008), as they often experience at least some of the same internalizing issues as students who are strictly victims (Espelage et al., 2010; Arseneault et al., 2010; Wolke, et al., 2013) and may also perceive the school environment as less safe.

These key areas of perceptions of the bullying ecology, social-emotional well-being, and academic competence may act as *correlated constraints* if the interactions continue in a negative direction, as the various elements appear to promote constancy in each other and stability in an adolescent's behavioral expression (Magnussun & Cairns, 1996). For example, researchers have supported the idea that student's academic performance may suffer if they do not feel safe to attend school or feel confident in their ability to ask questions and seek help when needed (Juvonen & Nishina, 2005). It has also been noted that students who are victims of bullying suffer increased loneliness and depression and in turn feel even more susceptible to bullying (Juvonen et al., 2005). So, the students who are bullied feel an increased sense of loneliness and feel as if the bullying will increase, they lose motivation to attend school, and also lose their ability to feel confident in their academic potential.

While it has been demonstrated that correlated constraints can lead to detrimental outcomes if multiple factors work together to support problematic adjustment, it is important to note that the context is malleable. Depending on the direction of these elements, the continuous interactions may influence the student's development in either a positive or negative manner (Gest, Mahoney, & Cairns, 1999). To alter the impact of problematical constraints, it is necessary for the entire system to be adjusted. The restructuring of a system such as this is not likely to occur without multiple-level interventions that thoroughly examine and target the interconnectedness among factors (Farmer, Farmer, & Gut, 1999). One potential approach to this is to alter norms around behavior in ways that increase the student's perception of a climate that does not support bullying, where social-emotional well-being is emphasized, and where a student's academic competence is approached in a developmentally appropriate way. One key component of shifting these norms is through the teacher as they may act as an invisible hand within the classroom, and may manipulate the environment in positive ways (Farmer, et al., 2011).

2.6 TEACHERS INFLUENCE ON PEER SOCIAL DYNAMICS

Teachers act as a role model within the classroom, and students may mirror the actions and responses to other students which they observe. For example, Hughes and fellow researchers found that when the teacher has a positive relationship with a student their peers tend to be more accepting of them and also to have more positive interactions with them (Hughes, et al., 2008; Hughes, et al., 2006). The student behavior a teacher either accepts or rejects can also influence what behavior their peers will accept or reject. Chang et al (2003) study with adolescents found that when teachers expressed aversion to

aggression the students were more rejecting of aggressive behavior. It was also found that when the teacher demonstrated empathy toward withdrawn children, the withdrawn children's self-perceptions were enhanced. Thus, the engagement of the teacher with the withdrawn children appeared to be a protective factor. These studies demonstrate how powerful the teacher may be as a role model within the classroom in keeping students motivated, engaged, self-regulated, and rejecting of negative behavior. Ultimately, these studies highlight the reciprocal relationship that exists between teachers and students, and how the teacher may impact the overall classroom climate through individual interactions with students.

Even though teachers have a role in peer interactions, unfortunately, many teachers may be unaware of the overall dynamics occurring between students in their classrooms (Leff, Kupersmidt, Patterson, & Power, 1999), or even the overall peer social dynamics that exist. As Gest (2006) found in one study examining teacher and student ratings on friendships and peer group affiliations where some teachers had little to no knowledge regarding the peer ecology within their classrooms. Other studies have noted that teachers may be more easily aware of what is occurring with some students, such as teachers being able to identify the friendships between popular students but not nearly as well with other students (Pearl, Leung, Van Acker, Farmer, & Rodkin, 2007). It is important for teachers to be aware of the peer structures within their classrooms to the greatest extent possible, and for all students as it has been shown that when teachers are aware of peer affiliations within the classroom, more positive peer environments are found (Hamm, et al., 2011). Teachers can use their awareness of peer ecologies to foster more positive interactions between peers such as in developing friendships and

decreasing the motivation to aggress against one another (Gest, et al., 2011; Farmer, et al., 2011).

2.6.1 Teachers and the Classroom Environment. The environmental context lay the foundation for how students will react to the change from elementary school to middle school. Eccles & Midgley's (1989) stage environment fit theory describes how adolescents are in a unique transitional phase as not only are their social contexts changing but so are their developmental needs. The environment needs to adjust to meet and support these needs so that the students can have successful outcomes. However, if the students' needs are not supported through their environment the development of the adolescents may suffer. This theory is based on both Lewin's (1935) person-environment fit theory and Hunt's (1975) thesis which highlighted the restrictions of Lewin's theory. Midgley and Eccles theory focuses on the person-environment fit while also considering developmental stages. In one study Midgley & Eccles (1989) found that students transitioning to middle school were affected by both positive and negative environmental factors. For example, student success could be affected by the quality of the student-teacher relationship as well as by the prevalence of student-led decision making. Anderman's 2003 study of sixth and seventh grade students also supports Midgley & Eccles theory as it was shown that students' sense of belonging decreased during this time, but that they felt a greater sense of belonging when they perceived their academic tasks as useful. The students also showed less decline in their sense of belonging when their teachers promoted an environment of mutual respect.

2.6.2 Teacher Attunement. The first step towards managing peer social dynamics is teachers' attunement to those dynamics. Studies regarding teacher awareness of student

social dynamics have been published as early as the 1940's (Bonney, 1943). The term teacher attunement is often used in newer studies and it is described as teachers being involved with their students through obtaining and demonstrating knowledge and understanding of their students (Hamm et al., 2011; Skinner et al., 1993). Early studies of attunement examined the agreement between student reports (self-reports of their preferences) and teacher reports (reporting on the preferences they thought the students had). This line of research later expanded to focus on social networks within the classroom and included testing the agreement between teacher's reports and peer reports on student's social status (Gronlund, 1957). The theory behind these experiments was that peers had insight into the social system within the classroom that the teacher may only have to a certain extent (Gronlund, 1957). However, it was believed that with proper teacher training, the teachers would be able to have more insight, and that the teachers could use this insight to employ more effective teaching and classroom management strategies (Gronlund, 1955). These initial studies argued for the importance of teacher awareness of social dynamics within their classroom and provided a basis for continued research regarding teacher attunement.

Recent studies have explicated this research even further and have demonstrated that teachers are often not attuned to the students in their classrooms, that some students receive more attention and awareness than others, such as popular and athletic students (Pearl, et al., 2007), and that when teachers are more aware of the social structures within their classrooms there is often a more positive environment (Hamm et al., 2011).

2.6.2.1 Are teachers attuned? Teachers may have varying degrees of attunement to their classrooms (Ahn et al., 2013; Ahn & Rodkin, 2014; Gest et al., 2014; Neal et al.,

2011), and attunement has been assessed in a variety of ways. Specifically, there is broad attunement, such as to the entire classroom, and precise attunement such as to specific students (Hamm et al., 2011). While broad attunement levels may be moderate, precise attunement levels tend to be quite low (Hamm et al., 2011). There are certain groups of students for which attunement may be particularly low. For instance, it has been demonstrated that teachers may be largely unaware of victimization occurring within their classroom (Norwalk et al., 2015), and not as attuned to aggressive students as compared to non-aggressive students (Farmer, Hall, Petrin, Hamm, & Dadisman, 2010), and students displaying risk behavior (Marucci, Oldenburg, & Barrera, 2018). These are critical areas as it has been demonstrated that when students are victimized, they have a lower sense of school belonging and feel that peers are less likely to intervene in a bullying-related situation. However, when the teachers were more attuned to the victimized students, the students reported a greater sense of school belonging.

2.6.2.2 What influences attunement? It has been suggested that perhaps teachers' perceptions are influenced by the students' academic, behavioral, and social characteristics, and therefore limits their initial ability to be attuned to certain students (Dawes, Chen, Zumbrunn, Mehtaji, Farmer, & Hamm, 2016). Pearl et al. (2007) found that teachers could reliably identify the popular groups of children, but not so well with the others. Teachers have also been shown to be less attuned to aggressive students who were rated as popular, but more attuned to students who classified as Olympians (good at sports, wins a lot, and good looking) (Dawes et al., 2016). This demonstrates how some students, such as shy and withdrawn students and students who may be the victims of bullying, those who may need assistance the most, may not be receiving it as teachers are

not as attuned to them (Hawker et al., 2000). However, it has also been shown that more experienced teachers have higher levels of attunement, and that teachers with fewer students in their classroom also have higher levels of attunement (Marucci et al., 2018; Neal et al., 2011). This may indicate that more experience can help teachers increase their attunement and that newer teachers may need smaller classrooms (Marucci et al., 2018). It also highlights the importance of specific training in this area, especially for new teachers (Marucci et al., 2018).

As resources are often limited, it may be crucial to focus on the areas of the greatest need, and some studies have shown success in teaching teachers to be more attuned to their students. Specifically, within the past ten years one large study (including six middle schools in various regions of the U.S.) focusing on student transition to middle school, teachers' professional training in order to increase attunement, and improved student experiences has occurred (Hamm, et al., 2011). Results indicated that teachers could be taught specific strategies to increase their attunement with their students. Subsequently, additional studies have followed and provided further support for teacher training in attunement (Farmer, et al., 2010; Hamm et al., 2011; Motoca et al., 2014). For example, teacher trainings which have focused on social dynamics (e.g., understanding social hierarchies within peer groups and recognizing which peers are in groups together), has been demonstrated as increasing teacher attunement (Motoca et al., 2014).

2.6.2.3 Impact of attunement on student outcomes. Having an awareness and attunement to peer social dynamics of all students is critical as teachers can use information on peer group status to manage social hierarchies and support multiple pathways to social success (Farmer, 2000; Gest et al., 2011). Specifically, in being

attuned to their students they can assist in student's social adjustment (Farmer, 2011), and in developing friendships (Gest et al., 2011). Higher levels of attunement can also decrease motivation to aggress against peers (Gest et al., 2011), cause boys who aggress to lose their social status (Ahn et al., 2014), create an environment where students view their peers as more willing to intervene if bullying were to occur, and also be willing to intervene themselves on the behalf of others (Hamm, et al., 2011). In classrooms where teachers are more attuned students report having a greater sense of belonging within the classroom (Norwalk et al., 2016). This illustrates how the teacher may set the tone for the classroom (Hoffman, Hamm, & Farmer, 2015).

2.6.2.4 Next steps for attunement literature. Prior research has demonstrated that teachers often do not show high levels of teacher attunement regarding bullying behavior (Ahn, et al., 2013; Demaray, et al., 2013). Specifically, teacher reports of bullying and victimization do not align well with student self-reports and peer reports of these same behavior (Ahn et al., 2013; Demaray et al., 2013). However, a significant gap in the current literature involves teacher attunement to bullies and victims within their school, and how their attunement levels relate to students' perception of the bullying ecology within their school, their social-emotional well-being, and their academic performance with all of these variables interacting with each other. Thus, the proposed study will extend prior research by examining the strength of the relationships that may exist between these four areas.

2.7 OVERVIEW OF CURRENT STUDY AND HYPOTHESES

The goal of this dissertation is to examine the relationships that exist between teacher attunement to bullies and victims, the student's perception of the bullying

ecology, the students social-emotional well-being, and the student's academic competence using a sample of 6th graders. This dissertation examines (a) the extent to which teachers are attuned to their students who are involved in bullying-related behavior within their school; (b) the relationship between teacher attunement and student's perception of the bullying ecology; (c) the relationship between teacher attunement and student's social emotional well-being; (d) the mediated path from teacher attunement to academic competence through both a student's perception of the bullying ecology as well as a student's social-emotional well-being. More detail regarding the design of the study will be provided in chapter three. This study answers the following:

Research question 1. Do higher levels of teacher attunement to students who are victims and bullies predict higher levels of student social-emotional well-being?

Research question 2. Does social-emotional well-being act as a mediator between teacher attunement and academic competence?

Research question 3. Do higher levels of teacher attunement to students who are bullies and victims predict higher levels of student's perception of the bullying ecology?

Research question 4. Does student perception of the bullying ecology act as a mediator between teacher attunement and academic competence?

Research question 5. Does student perception of the bullying ecology act as a mediator between teacher attunement and student social-emotional well-being and in turn, academic competence?

The hypotheses for this study are as follows:

Hypothesis 1. Higher levels of teacher attunement to students who are victims and bullies will predict higher levels of student social-emotional well-being.

Hypothesis 2. Student's social-emotional well-being will act as a mediator between teacher attunement and academic competence. Such that higher levels of attunement will lead to increased social-emotional well-being, and this in turn will increase academic competence.

Hypothesis 3. Higher levels of teacher attunement to students who are bullies and victims will predict higher levels of student's perception of the bullying ecology.

Hypothesis 4. Higher attunement will be related to a higher student perception of the bullying ecology which in turn will be related to higher academic competence.

Hypothesis 5. Higher attunement will be related to a student perception of the bullying ecology which will be related to higher academic competence through better social-emotional well-being.

CHAPTER 3

METHOD

3.1 DATA

This study assessed the relationship between teacher attunement, perceptions of the bullying ecology, students' social and emotional well-being and academic competence. The current study used data collected during the Rural Early Adolescent Learning (REAL) project which was a study conducted across multiple states within the U.S. that examined the effectiveness of a professional development training program for sixth-grade teachers to enhance their capacity to create a supportive learning environment for early adolescents.

The REAL project followed a cluster randomized control trials design. The design included matched pairs of schools from rural areas across the nation. The schools were first selected based on their urban-centric locale codes (which are established by the National Center for Education Statistics, NCES) with the majority of the schools (75%) being located in rural-distant and rural-remote areas, while the rest were located in rural-fringe, town-distant, and town-remote areas. The schools were also selected based on their ability to reflect the dominant school configuration of the state (K-8, K-12, or 6th-8th grades). The schools were then grouped based on proximity and shared geographic areas. Pairs of school were created based on demographic information including the school size, percentage of minority students, the percentage of students receiving free/reduced lunch, test scores, and annual yearly progress status. Schools that were

considered a possible match were provided a description of the study and asked to participate. Within the matched pairs each was randomly assigned to either the control or intervention groups.

The intervention for the experimental group consisted of training for sixth-grade teachers who received professional development in order to enhance their capacity to create a supportive learning environment for early adolescents. The professional development component utilized a professional development program (SEALS: Supporting Early Adolescents Learning and Social Success) which is a universal intervention program designed to assist teachers in using strategies to bring together instructional, behavioral and social facets of their classrooms. During this training, teachers learn to identify peer groups, understand the ways in which student's social dynamics contribute to classroom behavioral problems, and management techniques to assist in student engagement and peer encouraged positive classroom behavior. A complete description of the SEALS program can be found in Motoca et al. (2014). Schools that were part of the control group operated as usual during this study.

A total of 36 schools were included in the full sample; however, analyses for this dissertation were conducted on a subsample of 20 schools consisting of ten matched pairs where each school had peer nomination data. Peer nomination data was essential to the research questions posed due to teacher attunement relying on peer reports as peers are seen as the experts in regards to the social structures within the classroom (Cairns et al., 1994; Gest, 2006). The original study spanned five waves starting from 5th grade spring semester to 7th grade spring semester but the current study utilized data collected in the

fall semester of 6th grade (Time 1) and the spring semester of 6th grade (Time 2) as the focus here is on the critical period when adolescents transition into middle school.

3.2 PARTICIPANTS

Data collection occurred between 2005 and 2008. The subsample consisted of ten school which received the intervention and ten schools who were assigned to the control group. The average percentage of minority students was 40.3% for the intervention group, and 42.2% for the control group. Approximately 60% of students in schools in both groups were on free and reduced lunch. There were between 50 and 60% of students in both groups who were proficient in math and reading. The average school size was just above 300 students for both groups.

3.2.1 Teachers.

All sixth-grade regular education teachers within the twenty middle schools were invited to participate, and all 115 agreed (100% consent). Most of the teachers were White females (72.7%). All of the teachers were licensed, and most held licensure in the area they were teaching (96.5%). The majority (61.4%) had over ten years of teaching experience, and about 54.5% had a master's degree. Additional details about the participating teachers in Project REAL can be found in Hamm et al. (2014).

The professional development (intervention) for the experimental groups began in August during the summer before the student's sixth grade year began. By the fall collection point (October-November) the teachers had received two to three months of the professional development training. The training continued throughout the academic year and by the spring collection point (March-April) the teachers receiving the intervention had experienced approximately eight months of professional development.

3.2.2 Students. A total of 1575 students in the subsample of 20 schools consented to participate at Time 1 which reflects an average participation rate of 64.1% for those schools. At Time 2 a total of 1591 students consented to participate (64.7% participation rate). Across both time points, a total of 1512 students consented to participate, yielding a final sample of 1512 students which this study has been limited to. Approximately 53.0% of the sample were girls (n = 8027) and the ethnic composition was 63.2% White, 22.2% African American, 8.3% Hispanic, 4.8% American Indian, and 0.6% Asian/ Other/ or multi-racial. This means that 63.2% of the sample were ethnic majority (i.e., White) students and 36.8% were ethnic minority students.

To compare whether there were any gender or minority differences between consented participants in the subsample (n = 1512) to participants from the other schools (n = 814; yielding a total of 2326 students who consented at both time points from the full sample of 36 schools), a series of chi-square tests were performed. There were no significant gender differences between consented students in the subsample versus consented students from the other schools, $\chi^2 = 1.516$, $p = .218$. There was a significant difference regarding minority status ($\chi^2 = 8.437$, $p = .004$) as there were fewer minority students in the final sample of 20 schools than was expected. The chi-square tests were performed in order to demonstrate the equivalency of the two groups. In order to account for these differences both gender and minority status were controlled for in this analysis.

3.2.3 Procedures. This study was approved by a university's Institutional Review Board (IRB). Students were recruited from participating schools. Signed parental consent forms were required for participation. Student data was collected using group administered survey procedures. The survey protocol was read aloud by a research

assistant while other research assistants were available to answer student question and to monitor the completion of the survey. Participants were assured their responses would be kept confidential and that they could withdraw at any time. Students who completed forms were given a choice of a school supply item (e.g., pens and notepads) for participating. All teachers of participating students were also asked to complete survey packets about participating students. These packets included individual assessments of students' academic, social-emotional, and behavioral skills. Teachers were provided with financial compensation for their time. Both student and teacher data were collected on a similar schedule in the fall and spring semesters of the students sixth-grade year.

3.3 VARIABLES

3.3.1 Peer Nominations.

To capture peer-reported *bullying* and *victimization*, this study used peer nominations collected using standard peer nomination procedures (e.g., Farmer, Rodkin, Pearl, Van Acker, 1999). Peer nominations are used to assess classmates' perceptions of peers' social and behavioral characteristics. Students were provided descriptors of certain social roles and behaviors and are asked to nominate an unlimited number of peers on each of these reflecting recommend practice for middle school settings with larger voting populations (Cillessen, et al., 2011). They were allowed to nominate a peer for more than one category and were able to nominate themselves. For this study, bully was measured with a single item: *bully* (i.e., "This person bullies others. This person is always hurting or picking on others."). To measure victimization, the single item *picked on* was used (i.e., "This person is picked on by others.").

In order to score the items, the total number of nominations participants received for each item on the peer behavioral assessment was divided by the total number of

possible nominators (all participants in the grade). In order to make mean differences clearer the proportion scores are multiplied by 1000 (e.g., Farmer et al., 1999; Rodkin et al., 2000; Estell, Farmer, & Cairns, 2007). The peer nominations have been found to have mediate to high test-retest reliability (e.g., .46-.88) in previous studies (Farmer, Van Acker, Pearl, & Rodkin, 1999).

3.3.2 Teacher Ratings. Teacher-reported *bullying* and *victimization* was measured using the Teacher Assessments (TASS; Estell et al., 2007). Teachers responded to two items, one measuring bullying and the other measuring victimization. These questions use a seven-point scale with three anchors at the end points and middle (*frequently*, *sometimes*, and *never*). For example, in order to measure victimization a teacher may respond on the scale by selecting "Frequently bullied by peers", or "Never bullied by peers". The TASS has been shown to have high reliability in a three-week test-retest examination with items ranging from .72 to .93 (Farmer et al., 2003), and moderate test-retest reliability (.60-.70) in a three-month test-retest review (Farmer et al., 2009).

3.3.3 Teacher Attunement. Teacher attunement was calculated for both bullies and victims at the school level as students in sixth-grade may be exposed to multiple classroom teachers throughout their school day. Thus, understanding teacher attunement at the school level is more appropriate as compared to individual classroom teachers. Cutoff scores for peer nominations of bully and victim were used to identify students who are either a bully or a victim.

For this study, I used the same cutoff used by Norwalk, Hamm, Farmer, and Barnes (2016) to identify the top 15% of students which coincides with those who are marked to receive Tier II and Tier III intervention. Scores were then dichotomized so

that a student who scores in the top 15% for either victim or bully nominations was given a code of 1 and those who were below (i.e., not a bully/victim) were given a code of 0.

Teacher ratings were sorted the same way by first establishing cutoff criteria to represent the top 15% which was based on whether a student received a score from 4 (*sometimes*) to 7 (*frequently*) on the being bullied by peers (victim) or bullying peers (bully) questions. Those who have a high frequency were again be coded as 1, and those with low frequencies were coded as 0. In order to address the agreement between peer reports and teacher reports, when peer reports indicated high frequency (coded as 1) and a teacher report indicated high frequency (coded as 1) for a student on either the bully or victim categories, then there was an agreement (attunement score = 1). Otherwise, any discrepancy between the teacher and peer reports were coded as 0 for the attunement variable (attunement score = 0). The scores were aggregated and summed so that they represent what is occurring at the school level by calculating a Jaccard similarity coefficient between the summed scores within each school by:

$$\frac{A}{A + B + C'}$$

Within this formula: A = number of agreements of high frequency of behavior (either bullying or being a victim) between teachers and students; B = the number of students reporting high frequency of the behavior, but rated as low by the teacher; and C' = number of students reporting low frequency of behavior, but rated as high by the teacher. This Jaccard similarity coefficient accounts for errors such as omission or commission, and has been used in prior research studying attunement (Gest et al., 2014; Norwalk et al., 2016). These scores may range from 0 to 1, and represent the level of teacher

attunement to bullies and victims within a school. Within the analysis attunement to bullying has been labeled *AttBul*, and attunement to victims has been labeled *AttVic*.

3.3.4 Social and Emotional Well-being. The social-emotional well-being of the students was measured using factors from the Interpersonal Competence Scale and a measure of school belonging. The Interpersonal Competence Scale - Self (ICSS; Cairns, Leung, Gest, & Cairns, 1995) is a 21-item (including 3 distractor items) self-report assessment of six factors of interpersonal competence. This study specifically examined the three categories of: *aggression, affiliative,* and *internalizing behavior*. Lower levels of aggression and internalizing and higher levels of affiliation indicate greater levels of social-emotional well-being for the students. Each factor consists of between two to three items: *aggression* factor consists of three items (argues, trouble at school, fights); affiliative consists of two items (smile, friendly), and *internalizing* consists of three items (shyness, sad, and worry). The possible scores for each item are averages of the items within each factor and range between 1 to 7, with higher scores being indicative of the student displaying that characteristic. The factor scores were computed by averaging the scores of the 2 or 3 items that comprise the factor. Within the analysis the internalizing average score is represented by *IntAvg*, the aggression average score is represented by *AggAvg*, and the affiliative average score is represented by *AffAvg*.

The reliability coefficients using Cronbach's alpha for each of the three areas used within this study ranged from .53 (wave 2) to .59 (wave 3) for aggression, .44 (wave 2) to .37 (wave 3) for affiliative, and .53 (wave 2) to .56 (wave 3) for internalizing.

Additionally, student's sense of belonging has been included to indicate their social-emotional well-being. Specifically, Hagborg's (1998) Psychological Sense of

School Membership-Brief (PSSM-B) scale was used to measure belonging. The PSSM-B consists of 11 items where the students rate each item on a 5-point response scale ranging from 1 (completely false) to 5 (completely true). Examples of the questions included are "*Other students like the way I am*" (a measure of belongingness as provided by peers within the school), and "*Most teachers at my school are interested in me*" (a measure of belongingness as provided by teachers within the school).

The score for belonging is an average of the student's responses to the 11 items on this scale with higher scores indicating higher levels of belonging. Within this sample this assessment had high internal consistency with Cronbach's alpha at .84 (wave 2 and wave 3) The belonging average score was represented by *SchBel* within the analysis.

3.3.5 Perceptions of the Bullying Ecology. In order to measure students' perception regarding the bullying ecology within their school, the three subscales of the Peer Protective Ecology Scale (Song, 2005) were used**:** *peer protection, peer encouragement of bullying, and peer protector.* Students responses are based on a five-point scale ranging from *never* to *always*. The Peer Protection and Peer Encouragement subscales are on a five-point scale ranging from *never* to *always*, but all in response to the prompt "If I'm being bullied…". The Peer Protection subscale focuses on the extent to which the student feels others would intervene with eight different items (e.g., "my peers would tell others to stop the bullying,"). The Peer Encouragement subscale contains five different items regarding the likelihood of peers encouraging bullying (e.g., "my peers would laugh"). The protector subscale assesses a student's likelihood to protect others from bullying by posing five different questions. The prompt began with "If I know that someone in my school is being bullied….". Sample items include "I would stick up for

them" and "I would try to make the others stop bullying." Each of the subscales are computed as an average of the responses to each of the questions within that subscale. The items included on the encouragement subscale were reverse scored so that higher scores on all three subscales would indicate a protective peer ecology against bullying. These variables were represented as follows within the analysis: protection average *PrtnAvg*, encouragement average *EncrAvg*, and protector average *PtcrAvg.*

The overall scale has demonstrated adequate internal consistency (coefficient alpha .86), and the subscales relate both significantly and in the expected directions with the latent constructs (Song & Siegel, 2006). The subscales have also demonstrated high internal consistency with Cronbach's alpha on the Peer Protection subscale ranging from .85 (wave 2) to .93 (wave 3), the Peer Encouragement subscale ranging from .87 (wave 2) to .89 (wave 3), and the Peer Protector at .85 (wave 3) to .86 (wave 2).

3.3.6 Academic Competence. Students' academic competence was measured by their academics' factor score on the Interpersonal Competence Scale-Teacher (ICS-T; Cairns et al., 1995). This factor consists of two questions, one regarding the student's ability in spelling (*good at spelling*) and the other based on their mathematic ability (*good at math*). Each of these two questions have responses on a seven-point scale with three anchors; one on each extreme and one in the middle (*Never, Sometimes, Always*). The factor scores are the computed averages of these two questions and have demonstrated internal consistency and adequate reliability (coefficient alpha .77 at wave 2 and .76 at wave 3). The academic competence factor was represented as *AcdCmp* within the analysis.

3.3.7 Measurement Covariates. Additionally, covariates (control variables) were added to the model. The student specific variables (gender and minority status) were collected at time point 0, during the fall of their fifth-grade year. The school specific variables (treatment and matched pairs) were collected at time point 1, during the fall of their sixth-grade year. These variables were used to assess how demographic and study-design related information related to the other variables used within this model. There was no missing data on any of these covariates.

3.3.7.1 Gender. The variable used to indicate a student's gender was *Gen*. This variable was coded as females = 0 and males = 1.

3.3.7.2 Minority. The variable was used to indicate whether a student was of minority status (non-white) or not and was labeled *Min*. This variable was coded as non-minority =0, minority =1.

3.3.7.3 Treatment. Since half of the schools did receive an intervention, intervention was included as a control variable. The label used to indicate the treatment group was *Tx*. Schools that received an intervention were coded as 1, and schools that did not were coded as 0.

3.3.7.4 Matched pairs. The matched pairs variable was used as a control variable with the worst matched pair used as the reference group. The labels used to indicate matched pairs was *p1-p9 (Pair1 through Pair 9),* and were dummy coded in order to identify which schools were pairs.

3.3.7.5 Time one. All variables that were used as indicators for the mediation variables, as well as the one variable used as the outcome variable, were also measured at time one (fall of the student's sixth grade year). There was less than 10% missing for

these variables and they were included in the multiple imputation process which created five full data sets.

3.3.8 Missing Data. SPSS was used in order to examine the data set. There was less than 10% missing for each variable that was used in this analysis. Chi-square tests were run in order to examine potential differences between students with missing data and those without for items that were used as indicators for the mediating variables as well as for the measured outcome variable of academic competence. There were no significant differences for any of the variables which were used to indicate student social-emotional well-being. However, there was a significant difference between males and females on two of the variables used to indicate student perception of the bullying ecology (protection: $\chi^2 = 4.214$, $p = .040$, and encourage: $\chi^2 = 4.193$, $p = .041$) with males having more missing data than females (the missing data consisted of 55.55% males and 44.44% females). Thus, while the data cannot be assumed as missing completely at random (MCAR), it may be considered as missing at random (MAR) as opposed to not missing at random (NMAR) as there did not appear to be any basis for believing there were systematic reasons for the missing data on these variables (such as because a student is male, he is expected not to respond to these prompts). The total count, minimum, maximum, mean, and standard deviation for each of the variables used within this analysis can be seen in Table 3.1.

When data is MAR it is possible to have more biased estimates if the data is not imputed as compared to if these cases are deleted (such as in listwise deletion). Mplus provides several options to impute data, with imputation meaning the missing variables are estimated based on the values of the covariates within the model. For this study an

unrestricted H1 model with maximum likelihood as the estimator was used in order to impute five complete data sets.

3.4 ANALYTIC APPROACH

In order to address the research questions, a quantitative study utilizing structural equation modeling as the analytic technique was used to examine the relation between teacher attunement, student perception of the bullying ecology, student perception of their social emotional well-being, and teacher perception of student academic competence. The data was analyzed in both SPSS (IBM, version 24.0, 2016) and Mplus (Muthén & Muthén, 2017). The data management software SPSS was used to create new variables such as z-scores, correlations, and the Jaccard Similarity Coefficient. The software Mplus was used to analyze both the measurement model and the full structural model.

3.4.1 Data Screening. Before running the analysis, data was screened in order to determine if assumptions were met, as well as to examine any other potential issues that may have existed. All variables were examined for missingness, normality, outliers, linearity, multicollinearity, and homoscedasticity. SPSS (IBM, version 24.0, 2016) and R (R Core Team, 2013) were used to test these assumptions.

3.4.1.1 Normality. Both univariate (skew and kurtosis) and multivariate normality (Mardia's test) was assessed for this data set. In viewing the results from Mardia's test, it appears the data is not multivariate normal (skewness = 1758.19, $p \leq .001$, kurtosis = 16.23, $p \leq .001$). However, the factorability of the data depends on both the sample size as well as degree to which the variables are correlated. The Kaiser-Meyer-Olkin measure (KMO) test was used to determine if the sample size was large enough, and it was

determined sufficient (KMO = .661, values below .6 indicate the sampling is not adequate; Cerny & Kaiser, 1977). Bartlett's Test of Sphericity also indicated at least moderate correlation between items ($p < .001$).

The skewness and kurtosis of each of the variables was also inspected and presented in Table 3.2. The level of skewness demonstrates the symmetry of the distribution while the measure of kurtosis demonstrates the peakedness or flatness of the distribution (Hair, Anderson, Tatham, & Black, 1998). Variables with values greater than 3 on the skewness index are considered extremely skewed, and values greater than 10 on the kurtosis index indicate potential problems (Kline, 2005). All of the variables are within normal limits in regards to both skew and kurtosis.

3.4.1.2 Outliers. Multivariate outliers may occur if a student has extreme scores on multiple variables to be used within the model. In order to examine the data in terms of multivariate outliers, Mahalanobis distance was used. Mahalanobis distance is a measure of distance in multidimensional space of each observation from the mean center of multidimensional centrality (Hair et al., 1998). The results indicated that a total 412 cases had extreme values on multiple variables, and 1098 were identified as non-outliers.

3.4.1.3 Linearity. The assumption of linearity states that the conditional means of Y fall in a straight line, with the conditional referring to the mean being conditioned on a value of a regressor(s) in the model (Darlington & Hayes, 2017). Linearity was examined via scatterplots with all other regressors controlled for. In examining the scatterplots, the assumption of linearity appeared to be met.

3.4.1.4 Multicollinearity. Multicollinearity may occur when there is an exact, or close to exact, linear relationship between independent variables within a model (Farra &

Glauber, 1967). Multicollinearity was examined through both the tolerance of each variable and the variance inflation factor (VIF) scores for each variable. The tolerance is an indicator of how much of the variance in the dependent variable cannot be accounted for by the other variables in the model. The tolerance for each of the variables was at acceptable levels as none were below 0.2 (below 0.2 indicates potential multicollinearity), and all above .5 except for the attunement variables which were just below .4 (bully attunement .336 and victim attunement .338). The VIF provides an index which measures how much variance of an estimated regression coefficient is increased by collinearity between the variables, and utilizes the tolerance within the estimation. The VIF scores for each variable were also at acceptable levels as they were well below 10 (where 10 indicates a multicollinearity issue) with all variables having a VIF score below 2.0, except for the attunement variables which were just below 3.0.

3.4.1.5 Homoscedasticity. The assumption of homoscedasticity refers to the conditional distributions of Y having equal variances (Darlington et al., 2017). The homogeneity of variance regarding the residuals was checked using scatter plots where the standardized values of the residuals were regressed on the standardized values of the outcome variable. The residuals varied randomly around zero, and therefore the assumption of homogeneity of variance appeared to be met.

3.4.2 Model Testing. Structural equation modeling (SEM) was appropriate for this analysis as it is a commonly used statistical technique to analyze complex relationships between latent variables (Kline, 2016). Structural equation modeling consists of two parts: the measurement model and the structural model. The measurement model is the same as for confirmatory factor analysis where a multivariate regression model estimates

the relationships between a set of observed variables and the latent (theoretical) variable they are dependent upon. The observed variables are known as factor indicators, and the latent variables are known as the factors. As described by Muthén & Muthén (2017) the structural model analyzes three different relationships within one set of multivariate regression equations: the relationships between the factors (latent variables), the relationships between the observed (indicator) variables, and the relationship between the factors and observed variables that are not indicators (covariates). The measurement model of the structural equation model must be identified first, then the structural model may be examined. Structural models are specifically meant to account for latent variables, measurement errors, direct and indirect effects, reciprocal causation, simultaneity, and interdependence (Jöreskog et al., 1993). Thus, with the complexity of this data and the model proposed, structural equation modeling was determined as the most appropriate technique.

As all variables were able to occur at any point within a set range (all except one variable were averages) they were identified as continuous variables and maximum likelihood parameter estimates which provide standard errors that account for the mean and variance differences with non-normal data (MLMV) was utilized in order to test both the measurement and structural portions of the structural equation models hypothesized for this study. All model analysis was conducted using Mplus version 8 (Muthén & Muthén, 2017).

In order to address research questions one through five, structural equation modeling (SEM) was used in order to examine the relationships between the variables of interest. Since the primary research question was whether or not teacher attunement

effects the school context and the student's academic competence, longitudinal data was utilized to test these associations over time. Thus, pathways from time one scores (beginning of sixth grade) to time two scores (end of sixth-grade) were estimated for the mediating and outcome variables. Specifically, the model tested was whether teacher attunement during time one (fall term of sixth-grade) was related to the students' academic competence toward the end of their sixth-grade year as mediated by both student perception of the bullying ecology as well as student's social-emotional well-being at time two (spring term of sixth-grade year).

3.4.2.1 Mediation. The purpose of including mediation variables in this model is that it allows the causal process between a predictor variable and an outcome variable to be more fully defined. Specifically, the mediating variable(s) accounts for the relation between independent (predictor) and dependent (outcome) variables (Baron & Kenny, 1986). A simple model including a mediating effect would display three variables where the independent variable has an effect on the mediator variable, which in turn affects the outcome variable. Additionally, other mediating variables may be included, thus demonstrating even more complex relationships. The goal of mediation analysis is to examine how a predictor variable affects an outcome variable such as through the impact on other relevant variables.

This mediation model concurrently tested the following pathways: (a) the direct effect of fall term teacher attunement to student perception of the bullying ecology (path H3), (b) the direct effect of fall term teacher attunement to student social and emotional well-being (path H1), (c) the direct effect student perception of the bullying ecology has on academic competence (path H4), (d) the direct effect social and emotional well-being

has on academic competence (path H2), (e) the indirect effects of fall term attunement to academic competence as mediated by student perception of the bullying ecology (paths H3+H4), (d) the indirect effects of fall term teacher attunement to academic competence as mediated by students social emotional well-being (paths H1+H2). One additional path was also estimated, the indirect effects of fall term teacher attunement on academic competence as mediated by both social-emotional well-being and student perception of the bullying ecology (paths H3+H5+H2).

3.4.2.2 Nested data. The nested nature of the data was also taken into account. The importance of nested data is that when individuals are within a particular group, they are more likely to share group characteristics and to receive the same effects from a group environment as compared to others who belong to a different group. In educational research it is typical to have students nested in their classroom or school. In order to assess the dependency of individuals within a group, intra class correlation (ICC) values may be examined. These values (ICC values) demonstrate the proportion of variance in the outcome that is between groups or schools (Raudenbush & Bryk, 2002). However, even if the values are quite small (e.g., below .10) there may still be a need to account for the group effects as most statistical analysis assumes the independence of the data to be analyzed. In typical mediation models, if the assumption is violated and the group effects are not taken into account, inefficient estimate and biased standard errors are likely to result (Raudenbush et al., 2002; Preacher et al., 2011).

The ICC values were calculated at the school level for all of the variables within this model and they were all 0.00. With the ICC values at 0.00 multi-level modeling is not appropriate as the covariance matrix cannot be decomposed into between and within

components as there is not enough variation between the schools regarding these variables. Therefore, this model was estimated using single-level structural equation modeling.

3.4.3 Model Estimation. The model was estimated using Mplus (Version 8; Muthén & Muthén, 2017) with maximum likelihood mean variance (MLMV) estimation. Mplus provides the ability to build models with a wide variety of data (e.g., continuous, ordered categorical). Mplus also provides a modification index output which allows the examination of best suited modifications to the model to easily be determined. Mplus is specifically designed for either single level or multilevel modeling and can be used for EFA/CFA and SEM models. The commands used in Mplus are streamlined syntax that facilitates access to not only simple latent variable models, but also complex models as well. The estimator MLMV was chosen due to the fact the data was not multivariate normal (MVN) and MLMV accounts for both the mean and variance differences during estimation procedures. Mplus was used in all model estimation procedures.

3.4.3.1 Preliminary analysis. The measurement portion of the SEM was first assessed in order to determine the best model structure that fits the data well and is also based in theory. Specifically, all of the indicator variables were examined to determine if they had significant loading values on the latent variables. The modification indices were also examined at this point. As Mplus does not provide modification indices across imputed data files, one imputed file was used for all preliminary analysis procedures. This file was compared to the imputed data in order to ensure it was representing the imputed data well. Specifically, the mean and standard deviation of each variable within the proposed model was examined and the files were near an exact match.

3.4.3.2 Assessing local fit. In examining the loading values and residual variances one main concern occurred, the attunement to bullies (*AttBul*) and attunement to victims (*AttVic*) did not appear to be representing the latent factor of Attunement well. The attunement to bullies presented a Heywood case (negative residual variance) for both the indicator variable of attunement to bullies (*AttBul*) as well as for the social-emotional latent factor (*SE*). These two measures have not been used in prior studies together, and in considering the effects these variables had when estimated simultaneously (creating two Heywood cases) it was determined that the best approach was to treat them as separate indicators, such that the models of interest would be how attunement to victims affects student academic competence through both the student perception of the bullying ecology as well as student social-emotional well-being, and then how this relates or differs from how attunement to bullies affects these same variables. Theoretically it is possible that attunement to victims and attunement to bullies may act differently. For example, it is possible that teachers being attuned to victims may help students feel safer, thereby increasing their sense of school belonging (Norwalk et al., 2015) while attunement to bullies may not have the exact same effect as the reasoning for the attunement may differ. However, this has not previously been tested, so the differences are currently not known. As attunement to victims has been previously studied and found as significantly relating to student outcomes (e.g., belonging) this was posed as model one. All models within the preliminary analysis did not include time one measures as covariates, as adding multiple covariates can make estimation procedures more difficult, and can alter the global fit indices as many additional paths have to be estimated. The

time one control variables were added in the final analysis for both the attunement to victims' model and the attunement to bullies model.

One additional variable did not act as expected within the model. The indicator variable of internalizing average (*IntAvg*) for the social-emotional well-being latent factor had a low loading value (.225), and in examining the correlation matrix it was noted that this variable also had almost zero correlation with several other variables within the model (below .1 with all variables except the affiliative factor). Students social-emotional well-being is comprised of two main broad band factors as described within tools used for psychological assessment, and these include internalizing and externalizing. These two factors differ through expression such that externalizing behaviors often include the way in which a student is acting toward others, such as if they are aggressive or friendly, internalizing behaviors include depression, anxiety, and shyness, (Achenbach, Howell, Quay, & Conners, 1991). The variable used here may not align well with belonging, affiliative, and low aggression as those three variables may be more of an externalizing piece of social-emotional well-being, and as the name states, internalizing is solely that. As this variable did not appear to relate well with the other variables it was considered for a potential drop from the final model. The modification indices also noted that allowing two pairs of indicators to have residual variances that were set free to covary may improve model fit. Specifically, allowing the residuals to covary between the protection average (*PrtnAvg*) and the encouragement average (*EncrAvg*) on the Bullying Ecology (*BE*) factor was a suggested modification, as well as the aggression average (*AggAvg*) and the affiliative (*AffAvg*) average on the Social-Emotional Well-being factor (*SE*). The differences in model fit based on these modifications can be seen in Table 3.3.

Given the results of the preliminary analysis, internalizing was dropped from the model as it did not appear the latent factor of social-emotional well-being well within this model. Following this, two nested models were developed for comparison to the full model so that a final model which represented the relationship between these variables could be chosen, and attunement to victims and attunement to bullies could then be examined. Model one is the original model for attunement to victims after dropping the internalizing (*IntAvg*) variable. Model two allows Protection (*PrtnAvg*) and Encouragement (*EncrAvg*) to have residuals that covary as these two sub scales are asking a student's opinion on what they think others would do regarding bullying behavior while the third subscale is asking what they themselves would do (protection and encouragement). It appears reasonable to assume that a mistake made on one of these sub scales could easily be related to a mistake on the other as the student is guessing what other students could possibly do in a hypothetical situation for each of these. In understanding peer's actions adolescents have to encode the social cues and interpret the social cues, while when thinking of their own potential action there is no interpretation (Dodge & Crick, 1990). Model three was the same as model two but also allowed the residuals to covary between aggression (*AggAvg*) and affiliative (*AffAvg*) as both of these measures are asking about a student's own behaviors acting on their social environment (aggression and affiliative) while the other indicator variable (belonging) is more of a reflection regarding the social environment's impact on the individual. The nested model was tested for significance of improvement using the DIFFTEST procedure in Mplus. The DIFFTEST procedure provides an accurate chi-square test of differences when using MLMV as the estimator. The chi-square test for model improvement demonstrated that

each less restricted model provided a better fit to the underlying covariance matrix (M2-protection and encouragement residuals covarying: $\chi^2 = 27.025$, $p < .001$, M3-affiliative and aggression residuals covarying: $\chi^2 = 72.501$, $p < .001$). The global fit criteria as well as the relative model fit indices were also examined in order to examine the effect of the modifications.

3.4.3.3 Assessing global fit. In assessing the goodness-of-fit for the overall model, many indices exist which allow the model fit to be examined. Typically, a chi-square statistic is provided, but it has been noted that this is a sensitive statistic depending on sample size and other means of examining fit may be more appropriate. Typical method used include examining the CFI, TLI, SRMR, and RMSEA. The comparative fit index (CFI) shows the proportion of improvement of the overall fit relative to the independence model. The Tucker-Lewis index (TLI) is similar but it also includes a correction for the model's complexity. The standardized root-mean-square residual (SRMR) is the average of the standardized residuals after the hypothesized model is fit to the observed covariance matrix. The root mean square error of approximation (RMSEA) is an absolute measure of fit based on the non-centrality parameter. (Hu & Bentler, 1999; Kline, 2016). In viewing the model fit as an approximation as opposed to an exact fit, the RMSEA value is often described as assessing how well a given model approximates the true model. If the RMSEA is less than 0.05, the approximation is considered good (Hox & Bechger, 1998). The relative model fit criteria include both Akaike information criteria (AIC) and Bayesian information criteria (BIC), with both of these criteria being to some extent based on the likelihood function. Lower AIC and BIC values may indicate better fit as greater unexplained variation in the dependent variable and the number of

independent variables increases the value of these criteria. All of these indices were used in order to assess the fit of the models. Table 3.3 displays both the acceptable values for all of the previously described fit-indices as well as the results for each of the models used within the preliminary analysis. These results indicate that model three, allowing two pairs of residuals to covary (one pair on each moderating variable) best represents the data within this model.

Following the preliminary analysis, the two models of interest (attunement to victims and attunement to bullies) were both built to align with model three (M3) of the preliminary analysis. Specifically, each model specified attunement as the exogenous variable with one indicator variable to represent it (*AttVic* and *AttBul*), and the endogenous variables of bullying ecology perception (*BE* - mediator) with three indicator variables, social-emotional well-being (*SE* – mediator) with three indicator variables, and academic competence (*AcdCmp* – outcome) with one indicator variable. The models also were initially specified for allowing two pairs of the indicator variables residuals to covary based on theory and model fit. These models were also examined with Mplus with MLMV as the estimator.

Table 3.1

Variables in Model

Variable	N	Missing (%)	Min	Max	Mean	SD
Attunement to Bullies	1512	0	.00	.50	.28	.12
Attunement to Victims	1512	0	.10	.42	.22	.10
Encourage	1400	7.41	1	5	1.66	.95
Protection	1402	7.28	1	5	3.68	1.05
Protector	1404	7.14	1	5	3.65	1.00
Belonging	1410	6.75	1	5	3.61	.77
Affiliative	1408	6.88	1	7	5.25	1.14
Aggressive	1408	6.88	1	7	3.22	3.22
Internalizing	1409	6.81	1	7	3.14	1.56
Academics	1477	2.31	1	7	4.49	1.52

Table 3.2

Skew and Kurtosis

Variable	Skew	Kurtosis
Attunement to Bullies	-.114, .063	-.495, .126
Attunement to Victims	.679, .063	-.683, .126
Encourage	-1.758, .066	2.662, .132
Protection	-.636, .065	-.354, .131
Protector	-.512, .065	-376, .131
Belonging	-.491, .065	-.158, .130
Affiliative	-.363, .065	-.071, .130
Aggressive	-.479, .065	.089, .130
Internalizing	.229, .065	-.132, .130
Academics	-.208, 064	-.528, .127

Table 3.3

Fit Indices, Thresholds, and Results

Indices	Threshold	M1	M2	M3
CFI	>.95 great, >.90 okay	.887	.902	.925
TLI	>.95 great, >.90 okay	.794	.816	.855
SRMR	<.09 okay	.038	.034	.033
RMSEA	<.05 great, .05-.10 okay	.070	.067	.059
AIC	< is better	26759.955	26721.148	26664.289
BIC	< is better	26988.766	26955.280	26903.743

Note. M1 is a model without any modifications, M2 allows the residuals between protection and encouragement indicator variables to covary, and M3 allows the residuals of the affiliative and aggression indicator variables to covary.

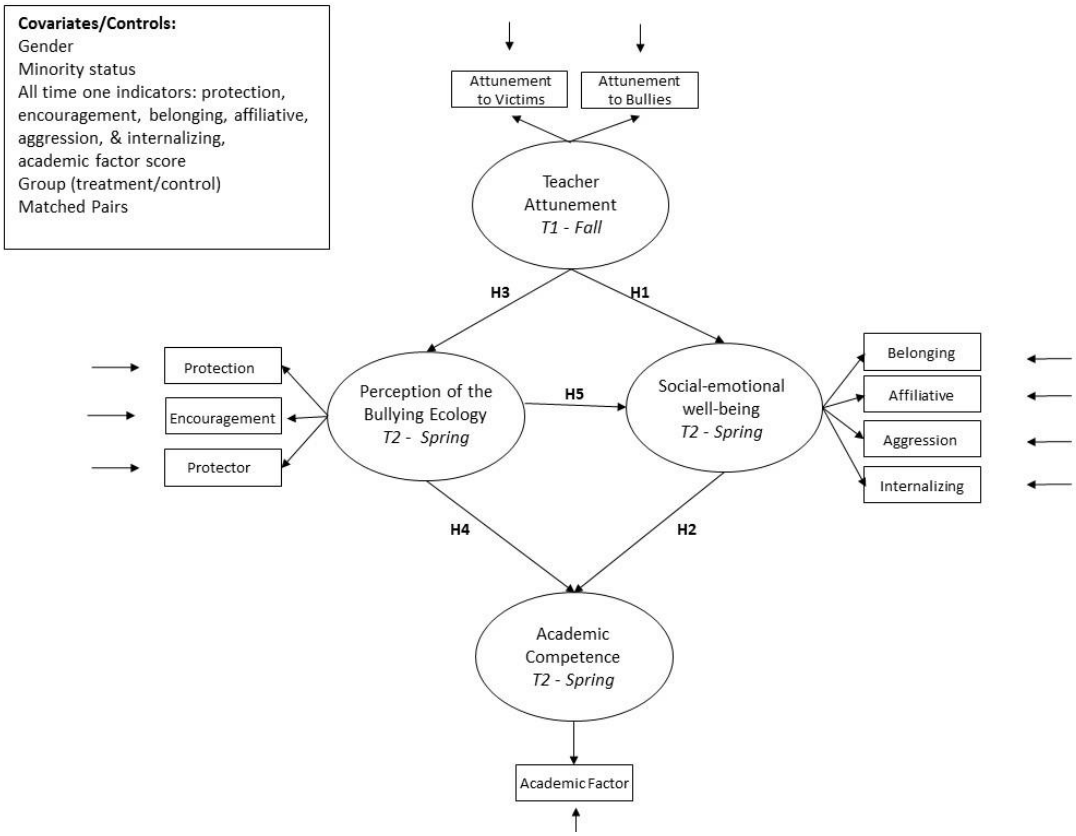

Figure 3.1 Full Structural Model of Teacher Attunement Effects on Student Academic Competence.

CHAPTER 4

RESULTS

This study examined the relationships between teacher attunement to victims and bullies, student perception of the bullying ecology, student social-emotional well-being, and student academic competence. This chapter examines the results of the two structural equation models which were analyzed in order to better understand the relationships between these variables. First, the measurement model of each will be reviewed, which includes the examination of the loading values for each indicator variable, and also the R-squared values as these areas demonstrate the contribution of that indicator to the latent variable. Second, both structural models will be reviewed, including the direct and indirect paths that were estimated.

The two models which were used for this study included one model (M1) which examined the relationships between teacher attunement to victims (*AttVic*), the student's perception of the bullying ecology (*BE*), student social-emotional well-being (*SE*), and academic competence (*AcdCmp*). These models were built to align with the model deemed as the best fitting model from the preliminary analysis while also including time one measures for the mediator variable's and outcome variable as controls. However, adding these control variables made the model more complex and allowing any pair of residuals to covary resulted in an incomplete analysis of the imputed data sets, with the analysis occurring over only two of the five.

Allowing residuals to covary is also a disputed practice with disagreement existing regarding whether it is an accepted practice or not. Therefore, it was decided that the model would be specified without any residuals covarying, while keeping all other elements of the model the same.

4.1 ATTUNEMENT TO VICTIMS MODEL (M1)

4.1.1 Measurement Model. The local fit representing the relationship between the observed indicator variables and the latent variables was examined first. As displayed in table 4.1, the results demonstrated decent loading values for all indicators (lowest is 0.476) where all were also significant (p-value < .001). While loading values of 0.6 are or higher are typically desired, loading values of 0.4 are considered acceptable. The global fit indices were lower than the models tested during the preliminary analysis as additional covariates were added and multiple additional paths had to be estimated. The global fit indices for the attunement to victims model were as follows: RMSEA = .114, CFI = .66, TLI = .46, and SRMR = .07.

For the latent factor of the bullying ecology perception all variables have loading values above 0.5, with protection having the highest loading value of 0.819. The R-squared values are for each of the three variables differs greatly with protection having the highest R-squared value of 0.670, while encouragement has the lowest value of 0.263. It appears that protector and protection may represent the bullying ecology perception better than the encouragement indicator. This may be due to the indicator of encouragement having high skew and most students reporting that their peers would not encourage bullying.

The social-emotional latent factor does not appear to be represented well by the three indicators chosen for this model as it only has one indicator loading above 0.6 with

and R-square value above 0.4 (belonging average). The aggression and affiliative factors have an acceptable loading value (above 0.4), but the R-squared values are quite low (affiliative at 0.269 and aggression at 0.227) demonstrating that they are not contributing much in representing the latent factor. This may be due to belonging acting as an overarching umbrella for student social-emotional well-being and incorporating more than what aggression and affiliative represent alone.

4.1.2 Structural Model. Next the relationships (paths) between the latent variables was examined. While in the preliminary analysis (not including time one observed variables as controls) there was a significant relationship between the outcome of academic competence and both social-emotional well-being and the bullying ecology perception. However, in adding in time one controls there was no significant relationship between outcome and mediating variables. In both the preliminary analysis and in the final analysis there was a significant relationship between social-emotional well-being and the bullying ecology perception (0.696, $p < .001$). There was no significant relationship between mediating latent variables and attunement in the final analysis for attunement to victims, however a significant relationship did exist between attunement to bullies and the student perception of the bullying ecology in the final analysis.

The relationships between the latent variables and primary control variables were also examined. There was a significant relationship between the bullying ecology perception and gender (-0.351, $p < .001$) indicating male students had lower perception of the bullying ecology as protective. There was also a significant relationship between both the bullying ecology perception and treatment (0.125, $p = .010$) indicating that the

schools in the treatment group had students reporting a more positive perception of the bullying ecology. None of the indirect effects were significant.

4.2 ATTUNEMENT TO BULLIES MODEL (M2)

4.2.1 Measurement Model. The local fit representing the relationship between the observed indicator variables and the latent variables was examined first. As displayed in table 4.3, the results demonstrated decent loading values for all indicators (lowest is 0.477) where all were also significant ($p < .001$). While loading values of 0.6 are or higher are often desired, loading values of 0.4 are considered acceptable. The global fit indices for the attunement to bullies model were as follows: RMSEA = .09, CFI = .72, TLI = .56, SRMR = .06.

Similar to the results for the attunement to victims' model, for the latent factor of the bullying ecology perception all variables have loading values above 0.5, with protection having the highest loading value of 0.820, and encouragement having the lowest loading value of 0.514. The R-squared values are for each of the three variables differs greatly with protection having the highest R-squared value of 0.672, while encouragement has the lowest value of 0.264.

As seen in the results for the attunement to victims' model, the social-emotional latent factor has only one indicator loading above 0.6 with and R-square value above 0.4 (belonging average). The aggression and affiliative factors have an acceptable loading value (above 0.4), but the R-squared values are again quite low (affiliative at 0.271 and aggression at 0.228).

4.2.2 Structural Model. Similar to the attunement to victims' model, there was a significant relationship between social-emotional well-being and the bullying ecology perception (0.684, $p < .001$). There was also one additional significant relationship,

which was between the perception of the bullying ecology and attunement to bullies (0.052, p = .025). There were no significant relationships between the outcome of academic competence and the mediating variables of social-emotional well-being and the perception of the bullying ecology. The path between social-emotional well-being and attunement to bullies was also non-significant.

The relationships between the latent variables and primary control variables were also examined. As seen in table 4.4, there was a significant relationship between the perception of the bullying ecology and gender (-0.350, p < .001) indicating male students had lower perception of the bullying ecology as protective. There was also a significant relationship between both the bullying ecology perception and treatment (0.121, p = .014), indicating that the schools in the treatment group had students reporting a better perception of the bullying ecology. None of the indirect effects were significant.

4.3 HYPOTHESES AND RESULTS

Hypothesis 1. Higher levels of teacher attunement to students who are victims and bullies will predict higher levels of student social-emotional well-being. This hypothesis was tested with both the attunement to victims' model as well as the attunement to bullies model. There were no significant results in either model.

Hypothesis 2. Student's social-emotional well-being will act as a mediator between teacher attunement and academic competence. Such that higher levels of attunement will lead to increased social-emotional well-being, and this in turn will increase academic competence. As there was no significant relationship between the social-emotional latent factor and either the predictor of attunement or the outcome of academic competence, no significant mediation was found in either model.

Hypothesis 3. Higher levels of teacher attunement to students who are bullies and victims will predict higher levels of student perception of the bullying ecology. Attunement to bullies was a significant predictor of student perception of the bullying ecology. Specifically, with every one-unit increase in teacher attunement an increase of 0.052 is expected for the student's perception of the bullying ecology (p = .019). However, attunement to victims was not significantly related to student perception of the bullying ecology.

Hypothesis 4. Higher attunement will be related to higher levels of student perception of the bullying ecology which in turn will be related to higher academic competence. In neither of the model was there a significant relationship to academic competence and the other variables. Therefore, no mediation paths were significant either.

Hypothesis 5. Higher attunement will be related to higher student perception of the bullying ecology which will be related to higher academic competence through better social-emotional well-being. Within the attunement to bullies model teacher attunement was a significant predictor of the student perception of the bullying ecology (0.052, p = .025). The perception of the bullying ecology was also a significant predictor of the student's social-emotional well-being with every one-unit increase in the student perception of the bullying ecology predicting 0.684 (p < .001) of an increase for the students social-emotional well-being. However, since none of the latent factors had a significant relationship with academic competence, none of the mediation paths were significant either. Within the attunement to victims model the perception of the bullying ecology was also a significant predictor of the student's social-emotional well-being with

every one-unit increase in the student perception of the bullying ecology predicting 0.696 ($p < 0.001$) of an increase for the students social-emotional well-being. Within this model that was the only significant relationship.

All tables and final path diagrams are presented on the following pages.

Table 4.1

Local Fit Indices for Model 1: Teacher Attunement to Victims

Variable	Estimate	SE	*p*-value
Attunement to Victims by			
Attunement to Victims	1.000	0.000	< .001
Bullying Ecology by			
Protection Avg.	0.819	0.017	< .001
Encouragement Avg.	0.513	0.025	< .001
Protector Avg.	0.582	0.022	< .001
Social-Emotional by			
Belonging Avg.	0.711	0.018	< .001
Aggressive Avg.	0.476	0.028	< .001
Affiliative Avg.	0.518	0.025	< .001
Academic competence by			
Academic competence Avg.	1.000	0.000	< .001

Note. These are the standardized (STDYX) values

Table 4.2

Parameter Estimates for Model 1: Teacher Attunement to Victims

Parameter	Estimate	SE	*p*-value
Academic Competence on			
Bullying Ecology Perception	-1.314	3.011	.662
Social-Emotional Well-being	1.873	4.027	.642
Social-Emotional Well-being on			
Bullying Ecology Perception	0.696	0.023	**< .001**
Attunement to Victims	0.011	0.023	.529
Bullying Ecology Perception on			
Attunement to Victims	0.023	0.023	.336
Full Indirect Effect (Mediation) of			
Social-Emotional Well-being	0.304	0.269	.259
Bullying Ecology Perception	-0.472	1.346	.726
Double Mediation Path	0.480	1.350	.722
Academic Competence on			
Gender	-0.197	0.392	.615
Minority	0.131	0.236	.578
Treatment	0.040	0.142	.780
Social-Emotional Well-being on			
Gender	0.077	0.056	.169
Minority	-0.023	0.075	.759
Treatment	-0.023	0.047	.616
Bullying Ecology Perception on			
Gender	-0.351	0.051	**< .001**
Minority	0.070	0.073	.339
Treatment	0.125	0.050	**.010**
Residual Variance			
Academic Competence	0.340	0.155	.028
Social-Emotional Well-being	0.028	0.037	.452
Bullying Ecology Perception	0.459	0.030	< .001
Attunement to Victims	0.000	999.0	999.0

Note. These are the standardized (STDYX for continuous & STDY for binary) values.

Table 4.3

Local Fit Indices for Model 2: Teacher Attunement to Bullies

Variable	Estimate	SE	*p*-value
Attunement to Bullies by			
Attunement to Bullies	1.000	0.000	<0.001
Bullying Ecology by			
Protection Avg.	0.820	0.017	<0.001
Encouragement Avg.	0.514	0.025	<0.001
Protector Avg.	0.580	0.022	<0.001
Social-Emotional by			
Belonging Avg.	0.713	0.019	<0.001
Aggressive Avg.	0.477	0.028	<0.001
Affiliative Avg.	0.520	0.026	<0.001
Academic Competence by			
Academic Competence Avg.	1.000	0.000	<0.001

Note. These are the standardized (STDYX) values

Table 4.4

Parameter Estimates for Model 2: Teacher Attunement to Bullies

Parameter	Estimate	SE	*p*-value
Academic Competence on			
Bullying Ecology Perception	-0.723	1.563	.644
Social-Emotional Well-being	1.065	2.048	.603
Social-Emotional Well-being on			
Bullying Ecology Perception	0.684	0.070	< **.001**
Attunement to Bullies	0.007	0.016	.675
Bullying Ecology Perception on			
Attunement to Bullies	0.052	0.023	**.025**
Full Indirect Effect (Mediation) of			
Social-Emotional Well-being	0.007	0.014	.636
Bullying Ecology Perception	-0.039	0.093	.676
Double Mediation Path	0.040	0.093	.666
Academic Competence on			
Gender	-0.124	0.208	.551
Minority	0.112	0.151	.460
Treatment	0.011	0.091	.904
Social-Emotional Well-being on			
Gender	0.074	0.055	.184
Minority	-0.023	0.075	.762
Treatment	-0.028	0.048	.558
Bullying Ecology Perception on			
Gender	-0.350	0.051	< **.001**
Minority	0.067	0.073	.354
Treatment	0.121	0.049	**.014**
Residual Variance			
Academic Competence	0.370	0.084	< **.001**
Social-Emotional Well-being	0.040	0.040	.318
Bullying Ecology Perception	0.461	0.030	< **.001**
Attunement to Bullies	0.000	999.0	999.0

Note. These are the standardized (STDYX for continuous & STDY for binary) values.

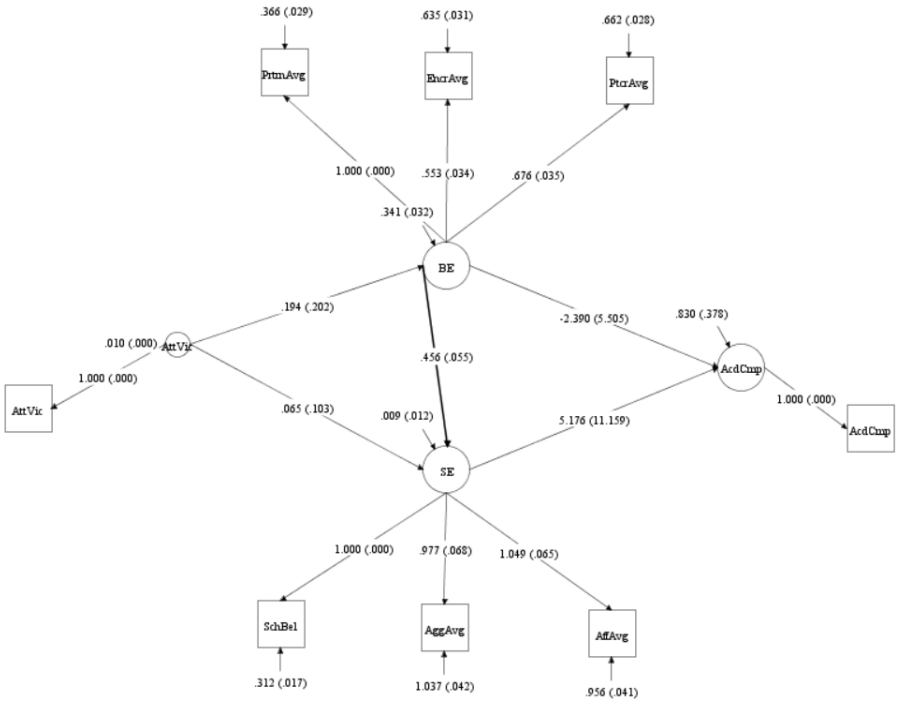

Figure 4.1 Model 1: Path Diagram of Teachers' Attunement to Victims and Student Academic Competence as Mediated by Student Perception of the Bullying Ecology and Student Social-Emotional Well-being. The paths in bold indicate significance between the latent factors. Covariates are not shown for space and clarity. Information regarding the relationships between covariates and latent constructs, covariates and dependent variables can be found in Table 4.1.

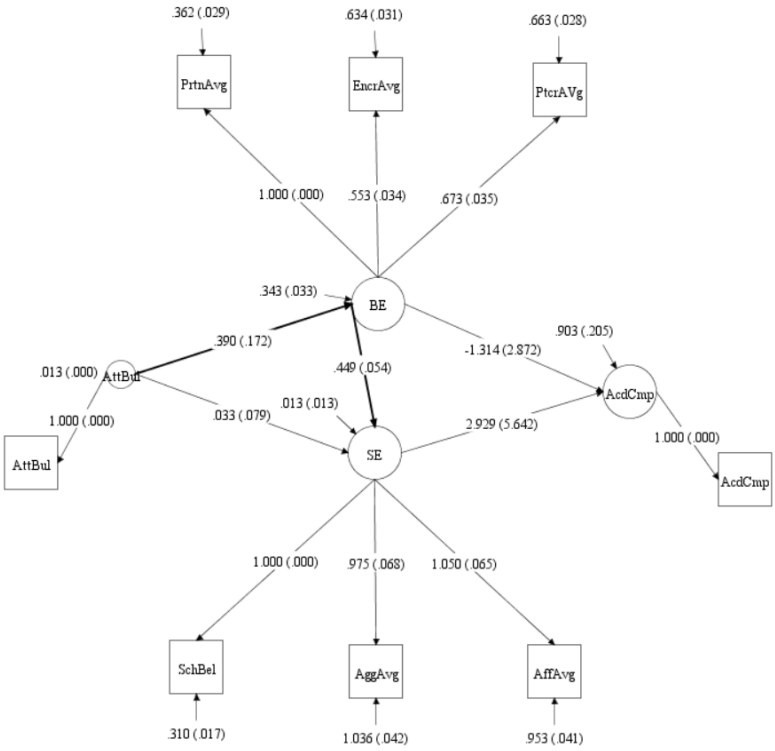

Figure 4.2 Model 2: Path Diagram of Teachers' Attunement to Bullies and Student Academic Competence as Mediated by Student Perception of the Bullying Ecology and Student Social-Emotional Well-being. The paths in bold indicate significance between the latent factors. Covariates are not shown for space and clarity. Information regarding the relationships between covariates and latent constructs, covariates and dependent variables can be found in Table 4.4.

CHAPTER 5

DISCUSSION

This study contributed to the literature by examining teacher attunement to both bullies and victims using the developmental systems perspective and based on the theories of both Bronfenbrenner's ecological systems theory (1979) and Deci and Ryan's self-determination theory (2000). The findings from this study demonstrate how attunement to students with peer reputations as a victim or as a bully creates a class climate that influences students' perceptions of the bullying ecology, and student social-emotional well-being. These findings provide a more complete picture of how attunement is related to students' perception of their environment and also how these perceptions in turn relate to students' social-emotional well-being. This study sought to address five research questions: 1) If higher levels of teacher attunement to students who are victims and bullies would predict higher levels of student social-emotional well-being, 2) If social-emotional well-being would act as a mediator between teacher attunement and academic competence, 3) If higher levels of teacher attunement to students who are bullies and victims would predict higher levels of students perceived supportive peer ecology against bullying, 4) If the perceived supportive peer ecology against bullying would act as a mediator between teacher attunement and academic competence, 5) If the perceived supportive peer ecology against bullying would act as a mediator between teacher attunement and student social-emotional well-being and in turn, academic

competence (double mediation). The main findings from this study demonstrate a difference between whether and how attunement to victims and attunement to bullies relates to the other variables of interest. Specifically, teacher attunement to victims was not found to be significantly related to students' perceptions of the bullying ecology or students' social-emotional well-being (both proposed as mediating variables), and neither of the proposed mediating variables were significantly related to student academic competence. However, teacher attunement to bullies was significantly related to students' perceptions of the bullying ecology. Also, in both models, students' perceptions of the bullying ecology were related to the student's social-emotional well-being. This chapter will discuss the findings and implication as well as the limitations of the study and possibilities for future research.

5.1 DO HIGHER LEVELS OF TEACHER ATTUNEMENT TO STUDENTS WHO ARE VICTIMS AND STUDENTS WHO ARE BULLIES PREDICT HIGHER LEVELS OF STUDENT SOCIAL EMOTIONAL WELL-BEING?

The results of these two analyses, with one model examining attunement to victims and the second examining attunement to bullies, yielded similar results. In both models, attunement was not significantly related to student social-emotional well-being. The expectation of higher levels of attunement to both victims and bullies leading to more positive outcomes regarding student social-emotional well-being was based on both theory and prior research demonstrating that teachers can have a significant impact on student's social experiences within the classroom as well as their emotional well-being (Cairns et al., 1988; Farmer, 2000; Farmer et al., 2007). Theoretically, teachers can act as the invisible hand within the classroom in order to promote developmentally productive

peer experiences for their students and also assist students that may need additional social help (such as students being bullied; Farmer et al., 2011). Empirically, prior research demonstrated that higher levels of attunement to victims of bullying was related to students having a better perception of the bullying ecology (e.g., feelings of protection) which was associated with a higher sense of belonging for students (Norwalk et al., 2015). Having a sense of belonging is critical to student social-emotional well-being as students who have a strong sense of belonging experience less anxiety, depression, and behavioral issues (Newman et al., 2007). Thus, it was hypothesized that higher levels of attunement would lead to higher levels of social-emotional well-being, though this relationship may be more complex than it seems as other factors are also involved.

However, the results of this study suggest the relationship between attunement to peer-nominated bullies and victims and students' social emotional well-being is more complex. For instance, though attunement is suggested (and has been shown) to positively impact students, being attuned itself, may not be enough. For instance, this role of the teacher in student's peer interactions is often an unrecognized one, where teachers are not fully aware of their ability to manage the social roles and outcomes of their students (Rodkin et al., 2010). Not all teachers view managing student interactions as part of their job, and even if they do teachers bring with them their own prior experiences and will have varying levels of empathy for the students involved in bullying (Troop-Gordon & Ladd, 2015; Craig, Henderson, & Murphy, 2000). Those with less empathy are also less likely to intervene (Craig et al., 2000). However, even if they do notice the act, have empathy, and want to intervene they may not feel as if they have the efficacy to do so (Ryan, Kuusinen, & Bedoya-Skoog, 2015). Teachers may require

training in order to fully understand and utilize the most appropriate and effective ways to manage these challenging social interactions (Bauman, Rigby, & Hoppa, 2008). Therefore, while a teacher may be attuned to the victim of bullying or even the bullies themselves, they may not recognize their role or responsibility in intervening. So, these results indicate that just being attuned may not be enough to positively impact students' emotional and social well-being.

Another point to consider is that just because a teacher is attuned does not mean the teacher will act on that attunement. Research on bystander interventions show that noticing an inappropriate act (e.g., bullying or harassment) does not necessarily mean the person will intervene. For example, the bystander intervention model developed by Latané and Darley (1970) suggests that five steps that must occur for intervention: (a) notice the event, (b) interpret the event as an emergency that requires help, (c) accept responsibility for intervening, (d) know how to intervene or provide help, and (e) implement intervention decisions. Thus, in order for a teacher to impact student social-emotional well-being, one might expect that similar steps may need to take place. First, if the teacher is aware of a student being a victim or a bully then they may be considered attuned to that student. Second, the teacher would need to interpret the situation as something that needed to be stopped. Third, they would then need to see it as their responsibility to act. The teacher would also need to know the appropriate steps to take, and then take them. With these many steps involved, and prior research demonstrating potential issues in these areas (Troop-Gordon, 2015), it is possible that somewhere within this process teachers do not complete the entire process. Thus, while attunement itself was not related to students' social-emotional well-being, it is the first step in the process

of managing peer social dynamics which should be examined in more detail in future research.

Another possible explanation for these findings includes the various indicator variables which were used to represent the latent variable of social-emotional well-being, including student self-report of their level of belonging, their display of affiliative behaviors, and their display of aggression. While these variables all had decent loading values (above .4, with $p < .001$), the loading values were not ideal (at least .6 or greater). These measures were chosen due to the connection between high aggression and low affiliative behaviors and overall adolescent social-emotional well-being, as when students have higher rates on aggressive behaviors and lower rates on affiliative behaviors, they then receive lower scores on social-emotional well-being assessments (e.g., the Child Behavior Checklist; Achenbach & Rescorla, 2001). These areas have also been linked to academic outcomes such that students who display higher levels of aggression (depending on the type of aggression and popularity) often have lower academic competence (Bukowski et al., 2011; Cillessen et al., 2005; Cillessen et al., 2011), and students who have less sense of belonging also experiencing difficulties with their academics (Bukowski, et al., 2011). However, students' social-emotional well-being is a broad construct and the indicators used in this study do not assess many other internalizing and externalizing areas such as depression, anxiety, and other forms of acting out or problematic behaviors which would reasonably be linked to bullying and victimization dynamics (Hawker et al., 2000; Rigby, 2003; Swearer, et al., 2010) Future research in this area could use more comprehensive measures of student social-emotional well-being such as factor scores from assessments such as the Achenbach System of

Empirically Based Assessment, Youth Self Report (ASEBA-YSR; Achenbach & Rescorla, 2001).

5.2 DOES SOCIAL-EMOTIONAL WELL-BEING ACT AS A MEDIATOR BETWEEN TEACHER ATTUNEMENT AND ACADEMIC COMPETENCE?

The results of both of the models indicated that there was no significant mediation path, as there was no significant relationship between the proposed mediating variable (social-emotional well-being) and academic competence. The reasoning behind the insignificant findings could be due to several factors, such as the measurement of academic competence, the timing of the measurement, and the use of control variables in order to assess change. It may also be of note that previous studies on attunement have not included this combination of variables, and the hypothesis of the potential existing relationship was based on research demonstrating more specific areas, such as depression and anxiety leading to poor grades (Quiroga, Janosz, Lyons, & Morin, 2012; Mazzone et al., 2007). This study took a more encompassing approach by combining multiple variables together in order to assess these relationships.

The measurement of academic competence was initially proposed as the student's overall grade at the end of their sixth-grade year. However, more than 30% of the cases had this variable missing, and it would have been against best practices within the field to impute data when so much was missing (as 20% missing is often the acceptable cut-off, e.g., Kline, 2016). Therefore, another measure of academic competence was adopted, and this was the students' factor score of academic competence as measured by the teachers report of the student's math and spelling performances. This was determined as an appropriate measure of student academic competence as teachers are tasked with

assessing their student's academic abilities and demonstrations of knowledge throughout the academic year. Teacher judgements of student knowledge has been shown to account for at least 40 percent of variation in student achievement (Herman & Choi, 2008), and a 2012 meta-analysis regarding the accuracy of teacher judgements and student academic competence to have a mean effect size of .63 (Südkamp, Kaiser, & Möller). However, prior research has shown that teacher judgements of students' knowledge may be inaccurate more than 50 percent of the time (Südkamp et al., 2012), and is subject to bias (Rosenthal, 1994). These discrepancies may be due to the various influences on teacher perception. For example, teachers bring with them into the classroom their own prejudice and biases, and their perceptions of student abilities are shaped by this (Friedrich, Flunger, Nagengast, Jonkmann, & Trautwein, 2015; Rosenthal, 1994). One example of this may in how teachers tend to favor and have more belief in students who are more similar to them, which leads to better interactions, and even higher grades (Gehlbach, et al., 2016). Future studies might benefit from having multiple indicators to represent academic competence, such as teacher reports, student reports, and state-level exams.

Another important consideration is the timing in which the data was collected. In mediation analysis typically, the independent variable (i.e., attunement) occurs during one time point (e.g., fall of sixth-grade), the mediator variable(s) occur at a later time point (e.g., middle of the sixth-grade year), and the dependent/outcome variable is measured at an even later time point (e.g., the end of the sixth-grade year; Fairchild & McDaniel, 2017). While this was the initial set-up as student overall grades were at the end of their sixth-grade year, this variable could not be used and another had to be substituted. The issue in having to choose another variable to represent academic

competence was that all of the variables were either measured at time one (fall) or time two (spring), so other outcome variables were very close in time to the mediating variables during the collection period. This could hamper the ability of the mediating variables to influence the outcome variable, and it is possible that if the outcome variable was measured at a later time that significant findings could exist. Ideally, the grade outcome would have been used as it was further in time from the measurement of both mediating variables.

5.3 DO HIGHER LEVELS OF TEACHER ATTUNEMENT TO STUDENTS WHO ARE BULLIES AND VICTIMS PREDICT HIGHER LEVELS OF STUDENT PERCEPTION OF THE BULLYING ECOLOGY?

The results from the two models yielded different results. In model one, attunement to victims was not significantly related to student perception of the bullying ecology. However, in model two, examining teacher attunement to bullies, attunement was significantly related to the student perception of the bullying ecology, demonstrating that as teacher attunement to bullies increases so does student's perception of a supportive peer ecology against bullying. These results may differ as attunement to these two groups appears to differ. While the mean and standard deviation between these two variables were quite similar (attunement to victims: $M = .22$, $SD = .12$; attunement to bullies: $M = .28$, $SD = .10$), one school had a rating of zero for attunement to bullies and none of the schools had a rating of zero for attunement to victims. There are several potential reasons for the different outcomes, such as (1) the unique differences between students who are bullies and students who are victims, (2) the differences in how teachers

may interact with these students (once attuned to their social needs), and (3) how these interactions affect the perceptions of their peers.

In terms of the unique differences between students who are bullies versus students who are victims, it is first important to note that the attunement variable was calculated based on the agreement between peer-reports and teacher-reports of whether or not (or how frequently) students were either a victim or perpetrator of bullying. Therefore, understanding the characteristics of these students and what others may or may not notice about them is critical in interpreting these findings. Students who are seen by their peers to be victims of bullying (i.e., have the reputation of a victim) are often those who do not have many friends and may be neglected or completely socially rejected by their classmates (Bagwell et al., 2011 & Scholte et al 2008). These students are also often socially withdrawn, develop friendships with peers who are not socially well-adjusted and may lack social skills (Sholte et al., 2008; Goldbaum, et al., 2003). They also tend to have a low social status within their peer network (Bagwell et al., 2011 & Scholte et al 2008). Students who are seen by their peers to be bullies (i.e., have the reputation of a bully) display quite different characteristics and may actually be popular (Cillessen, et al., 2005; LaFontana & Cillessen, 2002; Rose et al., 2004). They may utilize a mixture of both aggressive and prosocial behavior in order to manipulate their peers (Hawley, 2003), and gain social capital (Pellegrini, 2002). Students who are bullies are often considered popular but not necessarily well liked (Rodkin et al., 2008; de Bruyn, et al., 2010).

As these two groups of students display different characteristics, the way in which a teacher would notice and respond to their behaviors may differ quite drastically. It has

been shown that teachers have low levels of attunement to victims when attunement is measured as the agreement between teacher-reports and students' self-reports (Norwalk et al., 2015). When they are aware and attuned, they may take one of several approaches to address the bullying. In using a questionnaire specifically designed to assess teacher responses to hypothetical instances of bullying, the ways in which a teacher might respond were classified into the categories of: working with the victims, working with the bully, ignoring the incident, asking for outside assistance, and disciplining the bully (Bauman et al., 2008). The teachers reported they were most likely to discipline the bully, and were unsure whether they would work with the victim. An additional follow-up study (Rigby & Bauman, 2010) found similar results. While it was not directly assessed in the current study, it is reasonable to assumed that teachers may not want to draw more attention to the students who are being victimized, and may also not know exactly how to work with the victim. As the most frequently chosen approach appears to be in disciplining the bully, it may also be more obvious to the other students in the classroom. If it is more obvious to the students that bullying is not accepted, that could help them in feeling as if the environment was more protective against bullying. This relates to the literature which has shown that when teachers demonstrate a disapproval of aggression, that students then are also less likely to support aggression (Chang et al., 2003). Thus, when teachers are attuned to bullies, this may help in developing student perceptions that their peers are less supportive of bullying, which is what was found within the results of this study.

Some additional support for the idea that there is a difference between these two forms of attunement was found when trying to run the model. For example, when these

two variables were both used as indicator variables in order to represent the latent variable of overall attunement to bullying/victimization the inclusion of attunement to bullies created a Heywood case (negative residual variance) for both attunement to bullies as well as for the hypothesized mediating variable of social-emotional well-being and model estimation was not able to occur over all five imputed data sets (model estimation was only able to occur over two of the imputed data sets which also included warning of incomplete analysis). As Heywood cases indicate that one variable is more than likely being forced into a model in which it does not belong (Kolenikov & Bollen, 2010), the two attunement variables were analyzed separately, and it appears that they also relate to the student perception of the bullying ecology differently.

However, the results here do indicate that attunement to bullies was positively related to the student perception of the bullying ecology. These findings suggest that when teachers are attuned to students who have a reputation for bullying within their peer network, teachers may then be using classroom management strategies that help create a classroom environment that leads to students perceiving a more positive peer ecology against bullying.

5.4 DOES THE STUDENT PERCEPTION OF THE BULLYING ECOLOGY ACT AS A MEDIATOR BETWEEN TEACHER ATTUNEMENT AND ACADEMIC COMPETENCE?

Similar to the previous mediation analysis examining social-emotional well-being as a mediator, the results of both of the models indicated that there was no significant mediation path, as there was no significant relationship between the proposed mediating variable (student perception of the bullying ecology) and academic competence. The

hypothesis of the potential existing relationship was based on theoretical support stating a safe environment is a prerequisite for learning (Maslow 1970; Piaget 1936) as well as prior research demonstrating a relationship between peer disorder (including bullying) leading to poor academic outcomes (Arseneault et al., 2006; Glew et al., 2005). However, prior studies on attunement have not included this exact combination of variables, and the results of these two models did not support this hypothesis. There are several reasons why the expected mediation was not found.

Two potential explanations could be the length of the time studied as well as how academic competence was assessed. In the first instance, the change in teacher perceptions of a student's academic competence was assessed over just a few months' time. It is possible that teacher perceptions are unlikely to change to a great or noticeable extent over such a short period. Or potentially and even more likely, is that teachers bring with them their own sets of beliefs, perceive the students through these lenses, and interact with the students in such a way as to perpetuate or support their pre-existing beliefs (Rosenthal & Jacobson, 1963, Hamre et al., 2005). For example, prior research has demonstrated that teachers interact differently with students they believe to be academically competent, and their interactions encourage those students to succeed (Rosenthal et al., 1963, Hamre et al., 2005). In the same ways, when teachers perceive a student to be unlikely to succeed the interactions will more than likely reflect this as well (Hamre et al., 2005; Allen, Gregory, Mikami, Lun, Hamre, Pianta, 2013). Additionally, there has been some evidence highlighting that the accuracy of teacher's perceptions regarding student academic ability may vary based on the student's actual ability level. For example, Begeny, Eckert, Montarello, & Storie (2008) found that teacher's

judgement accuracy was strongest when asked to judge students with strong reading fluency, but was not as accurate for students performing at average or low levels. Additionally, teacher's may misjudge some students based on the student's personality characteristics and not their ability or performance, such as underestimating students who appear insecure or immature (Alvidrez & Weinstein, 1999; Bonvin & Genoud, 2006). Together, these results may support the use of different measures in future studies, such as using multiple indicators of student academic competence.

Further, it is possible that students' positive perceptions of the bullying ecology may show other positive effects on academic variables that were not considered in this study. For example, greater attunement levels could potentially lead to better perceptions of the bullying ecology, and in turn increase areas such as academic effort and valuing school (Hamm, Farmer, Lambert, & Gravelle, 2014) all of which positively relate to academic outcomes over (Carbonaro, 2005; Meltzer, Katzir-Cohen, Miller, Roditi, 2001). Perhaps only examining this within one school year was not enough time to demonstrate these nuances. Future studies should try to extend this investigation to consider whether there are mediation paths across longer time periods.

5.5 DOES THE STUDENT PERCEPTION OF THE BULLYING ECOLOGY ACT AS A MEDIATOR BETWEEN TEACHER ATTUNEMENT AND STUDENT SOCIAL-EMOTIONAL WELL-BEING AND IN TURN, ACADEMIC COMPETENCE?

While no significant mediation paths existed in the results from this study on the academic outcome, student perceptions of the bullying ecology were significantly related to student social-emotional well-being in both models. Specifically, in model one (attunement to victims) a significant positive relationship demonstrated that as student

perception of the bullying ecology increased (students felt peers would not support bullying) student social-emotional well-being also increased. In model two (attunement to bullies) the relationship between the two variables was almost exactly the same but with a slightly lower estimate for change (difference of -.28). Also, in model two, teacher attunement was significantly related to students' perceptions of the bullying ecology. These results could indicate that students' perceptions of the bullying ecology may act as a mediator between teacher attunement and student social-emotional well-being. Although this was not hypothesized in this model, as social-emotional well-being was not the outcome variable, it is potentially an existing relationship.

These findings are in some ways similar to findings from Hamm, Farmer, Dadisman, Gravelle, and Murray's (2011) study which utilized hierarchical linear regression analysis to examine the relationship between teacher attunement to students' social groups, student's sense of belonging, and student's perception of the bullying ecology individually during the student's sixth-grade year. The results of their study indicated a significant positive relationship between teacher attunement to peer social groups and student's sense of belonging. They also found a significant positive relationship between teacher attunement to student's peer groups and students' willingness to protect peers being bullied and students' expectations for protection from peers if they were being bullied (Hamm et al., 2011). While this study examined attunement to bullying and victimization, the results indicating a positive linear relationship between attunement to bullies and the positive peer ecology against bullying align with Hamm et al.'s results. The difference however, is that attunement to either bullies or victims was not significantly related to student's sense social-emotional well-

being (which included belonging) yet students' perception of the bullying ecology was. The different outcomes could be due to difference in Hamm et al's study versus the current study such as (1) type of attunement being measured (attunement to peer groups in Hamm and colleagues' study vs. attunement to peer-nominated bullies and victims in the current study), (2) how school belonging was included in the model (as a stand-alone variable vs. included one of many indicator variables for the latent factor of social-emotional well-being), and (3) different forms of analysis being utilized (multilevel linear regression vs. SEM framework with multiple paths analyzed simultaneously within this study). It is possible that if a different set of indicator variables were used, or if any of these were analyzed alone without the other indicator variables, that similar results may be found. However, the reasoning for using multiple indicator variables for the latent factors is that not only is it a more encompassing approach (e.g., examining many pieces of the student's well-being at once), but it is also in best practice within structural equation modeling to have at least two indicator variables for each latent variable (Kline, 2016).

5.6 IMPLICATIONS

This study demonstrates how teacher attunement relates to student perception of the bullying ecology, and how the student perception of the bullying ecology relates to student social-emotional well-being with sixth-grade students during a time when bullying typically increases (Guerin et al., 2002; Peskin et al., 2006) and students may be vulnerable to adjustment difficulties across the transition to middle school (Eccles et al., 1989; Cauley & Jovanovich, 2006; Wigfield, et al., 1997). Results from the attunement to bullies structural equation model align with current literature that describes how teacher

attunement positively impacts student perception of their environment as protective against bullying. However, the attunement to victim's structural equation model did not have the same results and this may be due to how teachers respond to these two separate groups as well as how these variables were measured within this study. Future studies should continue to examine potential differences between teacher attunement to bullies, teacher attunement to victims, and how varying levels of attunement affect student outcomes such as their perception of the bullying ecology, sense of belonging as well as other social-emotional components, and academic competence.

Within the attunement to bullies model, significant positive relationships were found between teacher attunement and student perceptions of the bullying ecology as well as between the perception of the bullying ecology and social-emotional well-being. These findings indicate that, when controlling for these variables during the fall of sixth grade year, higher levels of attunement at the beginning of sixth grade leads to students' perceiving a more positive peer ecology around bullying (i.e., perceiving less support for bullying among peers) during the spring of their sixth-grade year. Additionally, an increase in student perception of the bullying ecology leads to an increase in the student's social-emotional well-being.

Understanding student perceptions of their environment is a key piece when examining their adjustment and functioning at school. For example, Bronfenbrenner's ecological systems theory highlights the degree of influence a child/adolescent's microsystem has on their development, and in turn, the ways in which they will respond back to that environment (Bronfenbrenner, 1979). In transitioning to middle school, adolescents need to be able to develop an environment of mutual respect with their

teachers and peers which includes the expectations they have for each other as well as the norms that will be established (Deal & Peterson, 2009). It is these norms and expectations which will serve as the motivating factors that contribute to student's beliefs and behavior over time (Deal et al., 1990). In developing a positive climate where students feel they can trust and respect their peers, it is expected that less bullying, physical aggression, and other risky behaviors will occur less (Lee et al., 2012; Klien et al., 2012). This allows for the bidirectional effects between the student and their environment to evolve in a positive nature which can benefit and support their development.

These results, along with prior results demonstrating increased teacher attunement leading to positive outcomes for students (Norwalk et al., 2016), support the need for teacher training in attunement to students involved in bullying as bullying is currently seen as an epidemic in the U.S. (Schoen et al., 2010), and the outcomes for students involved in bullying can be so severe (Hawker et al., 2000; Rigby, 2003; Fried et al., 1996; Espelage et al., 2010, Arseneault et al., 2010; Wolke, et al., 2013). This study suggests that if teachers are taught to be more attuned to bullies specifically, and this can assist the students within the school as perceiving their environment as less supportive of bullying behaviors, then other positive outcomes may also be experienced. One potential positive outcome could be an increase in social-emotional well-being of the students as well as other related areas (e.g., better engagement, higher attendance). Fortunately, there are intervention programs designed to train teachers in this area, which have been shown to increase teacher attunement to the social dynamics of students within their classrooms (Farmer, 2011, Motoca et al., 2014, Farmer et al., 2016; Farmer et al., 2018). For example, a scouting report method developed to help teachers keep track of the changing

peer dynamics (Farmer, 2011) can help teachers keep track of their students' social roles and reputations, such as who is a bully, which may help teachers manage the peer interactions within their classroom in more positive ways and has shown success in various schools (Farmer & Hamm, 2016).

In fact, this study tested the effects of an intervention designed to help teachers. The results indicate that the students in the treatment (e.g., intervention) group, in which teachers received professional development training to increase teacher skills in various areas including attunement, perceived a more positive peer ecology against bullying compared to students in control schools where teachers did not receive training. This again aligns with Hamm et al.'s (2011) results which demonstrated a statistically significant impact of teacher training on student's perception of both protector and protection from bullying. This indicates that the training assisted teachers in establishing more positive classroom climates (as evidenced by impacts on perception of the bullying ecology) and suggests that the intervention program would benefit other teachers and students.

Given that attunement to bullies was related to perceptions of the bullying ecology, and the perceptions of the bullying ecology were related to the students social-emotional well-being, there is support for teacher training in this area. These findings also align with the theoretical basis for this study as well as prior research. Bronfenbrenner's ecological systems theory (1979) highlights the importance of the child/adolescent's immediate relationships, such as those with teachers and peers. The unique ways in which teachers and peers have influence over development help to highlight the extent to which schools serve as a critical component for social-emotional,

behavioral, and academic adjustment (Eccles et al., 2011). Deci and Ryan's (2000) self-determination theory, also focuses on the importance of relatedness, specifically through secure interactions with peers (Deci et al., 1991). Peers act as a foundation for an adolescent's validation as well as sense of safety (Wentzel, 2005), and influence a student's health, happiness, and academic competence (Bukowski et al., 2011). Even the perception of what peers expect influence a student's behavior and academic outcomes (Hamm, et al. 2011). Additionally, when adolescents attend schools where safety and social-emotional well-being are promoted they are less likely to engage in behavioral problems, have mental health issues, and are more likely to achieve academic competence (Phillips, 1997; Zins, et al., 2004; Cornell et al., 2008). Thus, this study adds to the body of research that underscores the importance the student's environment has on their development and adjustment during this time.

5.7 LIMITATIONS

The implications of this study should be understood in light of a few of the study's limitations. One limitation of the study is that the attunement variable did not capture attunement at the classroom level for one teacher but rather reflects attunement at the school level, averaging across all of the teachers. This was necessary in order to reflect the fact that students in middle school typically have multiple teachers throughout the day (Dickinson & Butler, 2015) as was the case in the current study's sample. Thus, this study cannot speak to attunement at the classroom level between one teacher and his or her students which is a more detailed level of analysis. Rather, this study provides a picture of how students' overall level of attunement across all of their teachers in sixth-grade relates to their outcomes. Future research could examine the differences in

attunement in elementary school as compared to middle school, and consider the additional challenges middle school teachers may face when getting to know their students and the social circles they reside in, especially when most middle school teachers interact with different groups of students each class period (Dickinson et al., 2015). What was not captured in the measure of attunement used in the current study was the range of teachers' attunement: it is possible that some teachers could have been more attuned than others within the school. It would be of interest to examine if the variance in attunement within a school matter. For instance, is it more important or better for students if at least one teacher is highly attuned while others are not? Or it is better for all teachers to be somewhat attuned? These considerations were not part of this research project and thus this study cannot speak to whether the range of teachers' attunement (from nonexistent to very attuned) matters in students' outcomes. However, it is reasonable to expect that potential differences may exist between schools where there are large amounts of variation between the teachers within a school. However, both of these issues are part of the challenge in trying to capture aspects of the school context within middle schools where numerous teachers contribute to the school context.

Additionally, this study is limited in its ability to contribute to the literature on attunement to students' self-reported experiences with victimization, either as a victim or a bully. While this choice was deliberate as the primary question of interest was whether teachers were attuned to peer social dynamics (e.g., students' social roles and reputations) which have been shown to be important for student adjustment and functioning (Cairns et al., 1988; Farmer, 2000; Farmer et al., 2007), this limits the generalizability of the study. Student self-reports and peer reports do not always align (Graham, Bellmore, & Juvonen,

2003). For example, peers may hold onto the idea of one of their fellow classmates being either a bully or a victim due to prior experiences with that person, although their actual behaviors may have changed over time (Dawes, Chen, Farmer, & Hamm, 2017; Scholte, Burk, & Overbeek, 2013). The reverse is also true as some students report being frequently bullied while their peers do not (Dawes et al., 2017; Scholte et al., 2013). Future studies may consider incorporating attunement to both self-report as well as peer-report to examine differential pathways and effects.

The generalizability of these results is also restricted due to the sample consisting of only schools in rural areas. It has been noted that these schools may have certain characteristics which make implementing the SEALS training more effective as compared to urban schools. For example, there is often less teacher turnover in rural schools, less students enrolled or attending, and more supportive teacher-student relationships (e.g., Burney & Cross, 2006). These differences may all impact the effects demonstrated within these specific schools. Therefore, as prior attunement studies have also pointed out, this should be a consideration for future studies (e.g., Hamm et al., 2014).

5.8 FUTURE RESEARCH

Another potential area of research might be to assess how students diverge into various groups and how these groups adjust over time, such as if victims of bullying have different reactions and adaptations in comparison to being one similar group. One way to approach this might include a different type of analysis, such as latent profile and latent transition analysis. Utilizing methods such as these could demonstrate how students' group together and transition across time based on low or high levels of teacher

attunement. This method may be a beneficial addition as latent class analysis is a subset of structural equation modeling and utilizes the same methodology while allowing for groups of students to form based on certain characteristics (McCutchen, 1987). This would aid in a deeper understanding of how exactly attunement affects different groups of students and their progress during an academic year. For example, it may be found that students who are aggressive do not all belong in the same group. Perhaps the students diverge into separate groups based on popularity and centrality (e.g., Hamm et al., 2011) and varying levels of attunement may affect these groups of students differently (such as high attunement assisting the social-emotional well-being in one group but not the other). These are just a few of the possibilities for further research in this area.

Future research on the steps that link attunement to actually doing something about it (e.g., managing the peer ecology) may also be beneficial. Some efforts have been made in this direction. For example, Norwalk et al (under review) are currently examining this area of research to better understand how teachers manage the peer social dynamics within their classrooms. This is important because again, just because teachers are attuned, doesn't mean they then know what to do or how to help. In fact, it is a common complaint among teachers that they are often unaware of the bullying, and that even when they are made aware, they do not know what to do to help bullied youth or stop bullies (Troop-Gordon, 2015). It has also been found that various teacher aspects relate to their ability to manage the peer social dynamics within their classroom, such as the teacher's self-efficacy (Ryan et al., 2015). The teacher's self-efficacy for managing peer relations was also associated with classroom quality, such that when teachers were confident that they could positively influence the classroom social climate, assist their

students in developing and managing friendships and in handling social problems it was observed that they also provided better instructional supports (Ryan et al., 2015). Future research that includes not only attunement, but also teacher factors (e.g., self-efficacy) ad how these relate to the teacher's ability to actually act on what they are attuned to could aid in a deeper understanding of what is needed for teachers to take action.

Given the multifaceted nature of academic adjustment at school, it would be important for future research to consider other indices of academic competence and achievement such as students' end of year grade could lead to a better understanding of how these variables might relate to academic competence on a more encompassing level as compared to teachers' perceptions of students' competence in math and spelling. Additionally, examining the role of the perception of the bullying ecology as a mediator between attunement and social-emotional well-being could examined. If the results of such as study indicated that student perception of the bullying ecology did mediate this relationship this could potentially be a focus for professional development training for teachers.

The broad goal of this study was to better understand teacher attunement and how it affects various student outcomes. Studies such as this can inform teacher training and professional development. As teachers play such a crucial role not only in students' academic experiences but in their social opportunities and success with peers as well, it is important for them to understand the influences they may have as well as how they may affect the student's experiences through their attunement. Teachers may learn the importance of this area as well as how to improve their own abilities to be attuned through their training during their undergraduate studies as well as through continued

professional development trainings. These trainings could assist teachers in developing attunement to bullies, which could lead to the students in their classrooms and schools feeling more protected and protecting against bullying. This may also lead to students who are more social-emotionally well-adjusted. Although this study did not indicate that these areas have a significant impact on student academic success, it is still a potential area which may benefit from this sort of training as well.

5.9 CONCLUSION

This study made a contribution to the literature in several ways. First, the results of this study revealed differences between teacher attunement to bullies and teacher attunement to victims. This highlights the unique ways in which teachers may be attuned, and how different areas of attunement may lead to different outcomes for students. Second, it supported previous findings that teacher attunement relates to student perceptions of the bullying ecology. This continues to support the important role of teacher attunement in enabling students to feel safer from bullying within their classrooms and schools. Third, it demonstrated how students' perceptions of the bullying ecology relates to students' social-emotional well-being. As we strive to have happy and healthy students who feel as if they belong at school, are friendly towards others, and display little to no aggression toward their peers, we can place an emphasis on creating an environment for students where they feel they are protected against bullying and are also willing to protect others against bullying. Creating an environment where bullying is not seen as socially acceptable can lead to students having more positive interactions with one another and more positive feeling toward their school environment.

Given that bullying within the United States has been described as an epidemic deserving national concern (Schoen et al., 2010), it is critical for teachers to be attuned to students who may be the perpetrators of bullying within their classroom and school as teachers play a key role in efforts to reduce bullying (Yoon, 2004). Studies such as this highlight the need for professional development and even policy changes regarding the training teachers are required to receive in order to support their students. As prior studies have shown, in order for teachers to have the greatest impact over their students' social interactions with peers they must be first be aware of the social structures within the classroom (Guerin et al., 2002; Peskin et al., 2006), and have a certain degree of attunement to the social roles of their students (Hamm et al., 2011). When teachers are more attuned, they are abler to notice and respond to behavior within their classroom, and assist their students in feeling safe (Norwalk et al.2016). This sense of safety can lead to students being more socially and emotionally well adjusted, and provide a better overall schooling experience for students. The need for change is imperative as we seek to not only protect our students, but to also see them flourish.

REFERENCES

Achenbach, T. M., Howell, C. T., Quay, H. C., & Conners, C. K. (1991). National survey of problems and competencies among four- to sixteen-year-olds: Parents' reports for normative and clinical samples. *Monographs of the Society for Research in Child Development, 56*(3), 225. doi:10.2307/1166156

Achenbach, T.M., & Rescorla, L.A. (2001). *Manual for the ASEBA school-age forms & profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families.

Adler, P. A., & Adler, P. (1998). *Peer power: Preadolescent culture and identity*. Piscataway, NJ, US: Rutgers University Press.

Ahn, H. J., & Rodkin, P. C. (2014). Classroom-level predictors of the social status of aggression: Friendship centralization, friendship density, teacher–student attunement, and gender. *Journal of Educational Psychology, 106,* 1144-1155. doi:10.1037/a0036091

Ahn, H. J., Rodkin, P. C., & Gest, S. (2013). Teacher–student agreement on "bullies and kids they pick on" in elementary school classrooms: Gender and grade differences. *Theory Into Practice, 52*, 257-263. doi:10.1080/00405841.2013.829728

Allen, J. P., Gregory, A., Mikami, A. Y., Lun, J., Hamre, B. K., & Pianta, R. C. (2013). Observations of effective teaching in secondary school classrooms: Predicting student achievement with the CLASS-S. *School Psychology Review, 42*(1), 76-98.

Altermatt, E. (2007). Coping with academic failure: Gender differences in students' self-reported interactions with family members and friends. *The Journal of Early Adolescence, 27*, 479–508. doi:10.1177/0272431607302938

Arseneault, L., Walsh, E., Trzesniewski, K., Newcombe, R., Caspi, A., & Moffitt, TE. (2006). Bullying victimization uniquely contributes to adjustment problems in young children: a nationally representative cohort study. *Pediatrics, 118*, 130–138.

Arseneault, L, Bowes, L., & Shakoor, S. (2010). Bullying victimization in youths and mental health problems: 'Much ado about nothing'? *Psychological Medicine 40*(5), 717-29. doi:10.1017/S0033291709991383

Alvidrez, J., & Weinstein, R. S. (1999). Early teacher perceptions and later student academic achievement. *Journal of Educational Psychology, 91*(4), 731-746.

Bagwell, C. L., & Schmidt, M. E. (2011). *Guilford series on social and emotional development. Friendships in childhood and adolescence*. New York, NY, US: Guilford Press.

Bagwell, C. L., Coie, J. D., Terry, R. A., & Lochman, J. E. (2000). Peer clique participation and social status in preadolescence. *Merrill-Palmer Quarterly, 46*(2), 280-305.

Baker, J. A., Clark, T. P., Crowl, A., & Carlson, J. S. (2009). The Influence of Authoritative Teaching on Children's School Adjustment: Are Children with

Behavioural Problems Differentially Affected? *School Psychology International*, *30*(4), 374–382. doi:10.1177/0143034309106945

Bandura, A. (1991). Social cognitive theory of moral thought and action. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Handbook of moral behavior and development* (Vol. 1, pp. 45-103). Hillsdale, NJ: Lawrence Erlbaum.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*,1-26.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. doi:10.1037/0022-3514.51.6.1173

Bauman, S. A., Rigby, K., & Hoppa, K. (2008). US teachers' and school counsellors' strategies for handling school bullying incidents. *Educational Psychology, 28*(7), 837-856. doi:10.1080/01443410802379085

Begeny, J. C., Eckert, T. L., Montarello, S. A., & Storie, M. S. (2008). Teachers' perceptions of students' reading abilities: An examination of the relationship between teachers' judgments and students' performance across a continuum of rating methods. *School Psychology Quarterly, 23*(1), 43-55. doi:10.1037/1045-3830.23.1.43

Beran, T. N., Hughes, G., & Lupart, J. (2008). A model of achievement and bullying: Analyses of the Canadian national longitudinal survey of children and youth data. *Educational Research, 50*(1), 25-39.

Blake, J. J., Lund, E. M., Zhou, Q., Kwok, O., & Benz, M. R. (2012). National prevalence rates of bully victimization among students with disabilities in the united states. *School Psychology Quarterly, 27*(4), 210-222.

Bonney, M. E. (1943). The constancy of sociometric scores and their relationship to teacher judgments of social success, and to personality self-ratings. *Sociometry, 6*, 409–424. doi:10.2307/2785220

Bonvin, P., & Genoud, P. A. (2006). *Teacher perceptions of student characteristics: "Halo effects" between behavioural and social perceptions, and expectations for academic achievement.* Paper presented at European Conference on Educational Research (ECER), Geneva, September 2006.

Bradshaw, C.P., Zmuda, J.H., Kellam, S.G., & Ianlongo, N.S. (2009). Longitudinal Impact of Two Universal Preventive Interventions in First Grade on Educational Outcomes in High School. *Journal of Educational Psychology, 101*(4), 926-937. doi:10.1037/a0016586

Brodersen, R. M., & Randel, B. (2017). *Measuring student progress and teachers' assessment of student knowledge in a competency-based education system* (REL 2017–238). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Central. Retrieved from http://ies.ed.gov/ncee/edlabs.

Bronfenbrenner, U. (1992). Ecological models of human development. In *International Encyclopedia of Education, Vol. 3, 2nd Ed*. Oxford: Elsevier.

Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design.* Cambridge, Massachusetts: Harvard University Press. ISBN 0-674-22457-4

Brown, B. B., Bakken, J. P., Ameringer, S. W., & Mahon, S. D. (2008). A comprehensive conceptualization of the peer influence process in adolescence. In M. J. Prinstein & K. Dodge (Eds.), *Understanding peer influence in children and adolescents* (pp. 17–44). New York: Guilford Press.

Buhrmester, D. (1990). Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Development, 6*(4), 1101-11.

Bukowski, W. M., Buhrmester D, Underwood M. (2011). *Peer relationships as a developmental context*. In: Underwood M, Rosen L, editors. Social development. New York: Guilford; 153–179.

Burney, V. H., & Cross, T. L. (2006). Impoverished Students with Academic Promise in Rural Settings: 10 Lessons from Project Aspire. *Gifted Child Today, 29*(2), 14–21. https://doi.org/10.4219/gct-2006-200

Cairns, R. B, & Cairns, B. D. (1994). *Lifelines and risks: Pathways of youth in our time.* New York, NY: Cambridge University Press.

Cairns, R. B., Leung, M.-C., Gest, S. D., & Cairns, B. D. (1995). A brief method for assessing social development: Structure, reliability, stability, and developmental validity of the Interpersonal Competence Scale. *Behaviour Research and Therapy, 33*, 725–736. doi:10.1016/ 0005-7967(95)00004-H

Cairns, R. B. (1979). *Social development: The origins and plasticity of interchanges.* Oxford, England: W. H. Freeman.

Cairns, R.B., Leung, M.C., Buchanan, L., & Cairns, B.D. (1995). Friendships and social networks in childhood and adolescence: fluidity, reliability, and interrelations. *Child Development, 66*(5), 1330-45.

Cairns, R.B. (2000). Developmental science: Three audacious implications. In L.R. Bergman, R. B. Cairns, L. G. Nilson & L. Nystedt (Eds.), *Developmental science and the holistic approach* (pp. 49-62). Mahwah, NJ: Lawrence Erlbaum Associates.

Carbonaro, W. (2005). Tracking, Students' Effort, and Academic Achievement. *Sociology of Education, 78*(1), 27-49. doi:10.1177/003804070507800102

Carnegie Council on Adolescent Development (1989). *Turning Points: Preparing American Youth for the 21st Century—Report of the Task Force on Education for Young Adults*. Washington DC: Carnegie Council on Adolescent Development.

Cauce, A. M. (1986). Social networks and social competence: Exploring the effects of early adolescent friendships. *American Journal of Community Psychology, 14*, 607-628.

Center for Disease Control, 2015. *Understanding Bullying Factsheet 2016*. Retrieved from https://www.cdc.gov/violenceprevention/pdf/bullying_factsheet.pdf

Cerny, C.A., & Kaiser, H.F. (1977). A study of a measure of sampling adequacy for factor-analytic correlation matrices. *Multivariate Behavioral Research, 12*(1), 43-47.

Chang, L. (2003). Variable effects of children's aggression, social withdrawal, and prosocial leadership as functions of teacher beliefs and behavior. *Child Development, 74*, 535–548.

Cillessen, A. H. N., & Marks, P. E. L. (2011). Conceptualizing and measuring popularity. In A. H. N. Cillessen, D. Schwartz, & L. Mayeux (Eds.), Popularity in the peer system. New York: Guilford.

Cillessen, A. H. N., & Borch, C., (2006). Developmental trajectories of adolescent popularity: a growth curve modelling analysis. *Journal of Adolescence*, *29*(6), 935-59. doi:10.1016/j.adolescence.2006.05.005

Cillessen, A. H. N., & Rose, A. J. (2005). Understanding Popularity in the Peer System. *Current Directions in Psychological Science*, *14*(2), 102-105. doi:10.1111/j.0963-7214.2005.00343.x

Cillessen, A. H. N., & Mayeux, L. (2004). From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development*, 75(1), 147-163. doi:10.1111/j.1467-8624.2004.00660.x

Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology, 18*(4), 557-570. doi:10.1037/0012-1649.18.4.557

Cornell, D., & Gregory, A. (2008). *Virginia High School Safety Study: Descriptive report of survey results from ninth grade students and teachers.* Charlottesville: University of Virginia.

Cowie, H. (2011). Peer support as an intervention to counteract school bullying: Listen to the children. *Children & Society, 25*(11), 287-292. doi:10.1111/j.1099-0860.2011.00375.x

Craig, W. M., Henderson, K., & Murphy, J. G. (2000). Prospective Teachers' Attitudes toward Bullying and Victimization. *School Psychology International, 21*(1), 5–21. https://doi.org/10.1177/0143034300211001

Darlington, R. B. & Hayes, A. F. (2017). *Regression analysis and linear models: Concepts, application, and implementation.* New York: The Guilford Press

Dawes, M., Chen, C., Zumbrunn, S. K., Mehtaji, M., Farmer, T. W., & Hamm, J. V. (2016). Teacher attunement to peer-nominated aggressors. *Aggressive Behavior, 43*(3):263-272. doi:10.1002/ab.21686.

Dawes, M., Chen, C-C., Farmer, T. W., & Hamm, J. V. (2017). Self- and peer-identified victims in late childhood: Differences in perceptions of the school ecology. *Journal of Youth and Adolescence, 46*, 2273-2288. doi:10.1007/s10964-017-0688-2

de Bruyn, E. H., Cillessen, A. H. N., & Wissink, I. B. (2010). Associations of peer acceptance and perceived popularity with bullying and victimization in early adolescence. *The Journal of Early Adolescence*, *30*(4), 543-566. doi:10.1177/0272431609340517

Deal, T. E., & Peterson, K. D. (2009). *Shaping school culture: Pitfalls, paradoxes, and promises*. New York, NY: Wiley

Deal, T. E., & Peterson, K. D., (1990) *The Principal's Role in Shaping School Culture.* Washington, DC: Office of Educational Research and Improvement.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268. doi:10.1207/S15327965PLI1104_01

Deci, E.L., Vallerand, R.J., Pelletier, L.G., & Ryan, R.M. (1991). Motivation and education: The Self-determination perspective. *Educational Psychologist, 26*(3&4), 325-346. doi:10.1080/00461520.1991.9653137

Demaray, M.K., Malecki, C.K., Secord, S., & Lyell, K. (2013). Agreement among Students', Teachers', and Parents' Perceptions of Victimization by Bullying. *Children and Youth Services Review, 35*, 2091–2100.

Dickinson, T. S., & Butler, D. A. (2001) Reinventing the Middle School. *Middle School Journal, 33*(1), 7-13. doi:10.1080/00940771.2001.11495571

Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. *Journal of Research on Adolescence, 21*, 225-241. doi:10.1111/j.15327795.2010.00725.x

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Iver, D. M. (1993). Development during adolescence. The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist, 48*(2), 90-101. doi:10.1037/0003-066X.48.2.90

Eccles, J. S., & Midgley, C. (1989). Stage– environment fit: Developmentally appropriate classrooms for young adolescents. In C. Ames & R. Ames (Eds.), *Research on motivation in education: Vol. 3. Goals and cognitions* (pp. 13– 44). New York: Academic Press.

Erikson, E. H. (1959). Identity and the life cycle. *Psychological Issues, 1*, 18 –164.

Espelage, D., Holt, M., & Poteat, P. (2010). The school context, bullying, and victimization (pp. 146-160). In Meece, J.L. & Eccles, J.S. (Eds.), *Handbook of*

Research on Schools, Schooling, and Human Development. New York: Routledge.

Espelage, D., Holt, M**.,** & Poteat, P. (2010). The school context, bullying, and victimization (pp. 146-160). In Meece, J.L. & Eccles, J.S. (Eds.), *Handbook of Research on Schools, Schooling, and Human Development*. New York: Routledge.

Espelage, D.L., Hong, J.S., Rao, M., & Thornberg, R. (2015). Social-ecological factors associated with bullying perpetration among early adolescents across the elementary-middle school transition. *Violence & Victims, 30*, 470-488. doi: 10.1891/0886-6708.VV-D-14-00046

Estell, D. B., Farmer. T. W., & Cairns, B. D. (2007). Bullies and victims in rural African American youth: Individual characteristics and social network placement. *Aggressive Behavior, 33*, 145-159. doi:10.1002/ab.20176

Fairchild, A. J., & McDaniel, H. (2017). Best (but oft-forgotten) practices: mediation analysis. *The American Journal of Clinical Nutrition, 105*(6), 1259-1271. doi: 10.3945/ajcn.117.152546

Farmer, T. W., Farmer, E. M. Z., & Gut, D. (1999). Implications of social development research for school based interventions for aggressive youth with EBD. *Journal of Emotional and Behavioral Disorders, 7*, 130-136. doi:10.1177/106342669900700301

Farmer, T. W. (2000). The social dynamics of aggressive and disruptive behavior in school: Implications for behavioral consultation. *Journal of Education and Behavioral Consultation, 21*, 194-208. doi:10.1207 /S1532768XJEPC1113&4_02

Farmer, T. W., Leung, M.-C., Keagy, K., Boudah, D. J., Akos, P., McDonough, E., & Hall, C. M. (2009). Social preference choices in late elementary school: Within and across group nominations. *Psychology in the Schools, 46*, 362–374. doi:10.1002/pits.20381

Farmer, T.W., & Xie, H. (2007). Aggression and school social dynamics: The good, the bad, and the ordinary. *Journal of School Psychology,45*, 461–478. doi:10.1016/j.jsp.2007.06.008

Farmer, T. W., Estell, D. B., Bishop, J. L., O‟Neal, K. K., and Cairns, B. D. (2003). Rejected bullies or popular leaders? The social relations of aggressive subtypes of rural African American early adolescents. *Developmental Psychology, 39*, 992-1004. doi:10.1037/0012-1649.39.6.992

Farmer, T. W., Estell, D. B., Leung, M-C., Trott, H., Bishop, J., & Cairns, B. D. (2003). Individual characteristics, early adolescent peer affiliations, and school dropout: An examination of aggressive and popular group types. *Journal of School Psychology, 41*, 217-232. doi:10.1016/S0022-4405(03)00046-3

Farmer, T. W., & Rodkin, P. C. (1996). Antisocial and prosocial correlates of classroom social positions: The social network centrality perspective. *Social Development*, *5*(2), 174-188. doi:10.1111/j.1467-9507.1996.tb00079.x

Farmer, T. W., Van Acker, R. Pearl, R., & Rodkin, P. C. (1999). Social networks and peer-assessed problem behavior in elementary classrooms: Students with and without disabilities. *Remedial and Special Education, 20*, 244-256. doi:10.1177/074193259902000408

Farmer, T. W., Hall, C. M., Petrin, R., Hamm, J. V., & Dadisman, K. (2010). Evaluating the impact of a multicomponent intervention model on teachers' awareness of social networks at the beginning of middle school in rural communities. *School Psychology Quarterly, 25,* 94-106. doi:10.1037/a0020147

Farmer, T. W., Hamm, J. V., Leung, M.-C., Lambert, K., & Gravelle, M. (2011). Early adolescent peer ecologies in rural communities: Bullying in schools that do and do not have a transition during the middle grades. *Journal of Youth and Adolescence, 40*, 1106-1117. doi:10.1007/s10964-011-9684-0

Farmer, T. W., McAuliffe Lines, M., & Hamm, J. V. (2011). Revealing the invisible hand: The role of teachers in children's peer experiences. *Journal of Applied Developmental Psychology, 32,* 247-256. doi:10.1016/j.appdev.2011.04.006

Farmer, T.W. & Xie, H.L. (2007). Aggression and school social dynamics: The good, the bad, and the ordinary. *Journal of School Psychology, 45,* 461-478. doi:10.1016/j.jsp.2007.06.008

Farmer, T. W., Xie, H., Cairns, B. D., & Hutchins, B. C. (2007). Social synchrony, peer networks, and aggression in school. P. Hawley, T. Little, & P.C. Rodkin (Eds.), *Aggression and adaptation: The bright side to bad behavior* (209-234). Mahwah, NJ: Lawrence Erlbaum Associates.

Farmer, T. W., Stuart, C., Lorch, N., & Fields, E. (1993). The social behavior and peer relations of emotionally and behaviorally disturbed students in residential treatment: A pilot study. *Journal of Emotional and Behavioral Disorders, 1*(4), 223-234. doi:10.1177/106342669300100404

Farmer, T. W., Chen, C. C., Hamm, J. V., Moates, M. M., Mehtaji, M., Lee, D., & Huneke, M. R. (2016). Supporting teachers' management of middle school social dynamics: The scouting report process. *Intervention in School and Clinic, 52*(2), 67-76. doi:10.1177/1053451216636073

Farmer, T. W., & Hamm, J. V. (2016). *Promoting supportive contexts for minority youth in low-resource rural communities: The SEALS model, directed consultation, and the scouting report approach*. In Rural ethnic minority youth and families in the United States (pp. 247-265). Springer, Cham.

Farmer, T. W., Hamm, J. V., Lee, D. L., Sterrett, B. I., Rizzo, K., & Hoffman, A. S. (2018). Directed Consultation and Supported Professionalism: Promoting Adaptive Evidence-Based Practices in Rural Schools. *Rural Special Education Quarterly, 37*(3), 164-175. doi: 10.1177/1063426614521299

Farrar, D. E., & Glauber, R. R. (1967). Multicollineanty in regression analysis: the problem revisited. *The Review of Economics & Statistics, 49*, 92-107.

Fekkes, M., Pijpers, F. I., Fredriks, A., M., Vogels, T., & Verloove-Vanhorick, S. P. (2006). Do bullied children get ill, or do ill children get bullied? A prospective cohort study on the relationship between bullying and health-related symptoms. *Pediatrics, 117*(5), 1568-74. doi: 10.1542/peds.2005-0187

Friedrich, A., Flunger, B., Nagengast, B., Jonkmann, K., & Trautwein, U. (2015). Pygmalion effects in the classroom: Teacher expectancy effects on students' math achievement. *Contemporary Educational Psychology, 41*, 1-12. doi: 10.1016/j.cedpsych.2014.10.006

Fried, S., & Fried, P. (1996). *Bullies and victims: Helping your child through the schoolyard battlefield.* New York: M. Evans.

Fung, S., Lunsky, Y., & Weiss, J. A. (2015) Depression in youth with autism spectrum disorder: The role of ASD vulnerabilities and family–environmental stressors, *Journal of Mental Health Research in Intellectual Disabilities, 8*(3-4), 120-139, doi:10.1080/19315864.2015.1017892

Garandeau, C. F., Lee, I. A., & Salmivalli, C. (2014). Inequality matters: classroom status hierarchy and adolescents' bullying. *Journal of Youth and Adolescents, 43*(7), 1123-33. doi:10.1007/s10964-013-0040-4.

Gehlbach, H., Brinkworth, M. E., King, A. M., Hsu, L. M., McIntyre, J., & Rogers, T. (2016). Creating birds of similar feathers: Leveraging similarity to improve teacher–student relationships and academic competence. *Journal of Educational Psychology, 108*(3), 342-352. doi:10.1037/edu0000042

Gest, S. D., Mahoney, J. L. & Cairns, R. B. (1999). A developmental approach to prevention research: configural antecedents of early parenthood. *American Journal of Community Psychology, 27*(4), 543-65. doi:10.1023/A:1022185312277

Gest, S. D., Rulison, K.L., Davidson, A.J., Welsh, J.A. (2008). A reputation for success (or failure): The association of peer academic reputations with academic self-concept, effort, and performance across the upper elementary grades. *Developmental Psychology, 44*(3), 625-636. doi: 10.1037/0012-1649.44.3.625

Gest, S. D. (2006). Teacher reports of children's friendships and social groups: Agreement with peer reports and implications for studying peer similarity. *Social Development, 15*, 248–259. doi:10.1046/ j.1467-9507.2006.00339.x

Gest, S. D., & Rodkin, P. C. (2011). Teaching practices and elementary classroom peer ecologies. *Journal of Applied Developmental Psychology, 32*, 288–296. doi:10.1016/j.appdev.2011.02.004

Gest, S. D., Madill, R. A., Zadzora, K. M., Miller, A. M., & Rodkin, P. C. (2014). Teacher management of elementary classroom social dynamics: Associations with changes in student adjustment. *Journal of Emotional and Behavioral Disorders, 22*(2), 107-118. doi: 10.1177/1063426613512677

Glasser, W. (1986). *Control theory in the classroom*. New York: Harper & Row.

Glew, G.M., Fan, M., Katon, W., Rivara, F.P., & Kernic, M.A. (2005). Bullying, psychosocial adjustment, and academic performance in elementary school. *Archives of Pediatric Adolescent Medicine, 159*, 1026-1031. doi: 10.1016/j.jpeds.2007.05.045

Goldbaum, S., Craig, W. M., Pepler, D., & Connolly, J. (2003). Developmental trajectories of victimization: Identifying risk and protective factors. *Journal of Applied School Psychology, 19*, 139–156.

Goldweber, A., Waasdorp, T. E. & Bradshaw, C. P. (2013). Examining the link between forms of bullying behavior and perceptions of safety and belonging among secondary school students. *Journal of School Psychology, 51*(4), 469-85. doi:10.1016/j.jsp.2013.04.004

Goodenow, C. (1993). The psychological sense of school membership among adolescents. *Psychology in the Schools, 10(1)*, 79—90. doi:10.1002/1520-6807(199301)30:1<79:AIDPITS2310300113>3.0.CO;2-X

Goodenow, C., & Grady, K. E. (1993). The relationship of school belonging and friends' values to academic motivation among urban adolescent students. *Journal of Experimental Education, 62*(1), 60-71. doi:10.1080/00220973.1993.9943831

Graham, S., Bellmore, A., & Juvonen, J. (2003). Peer victimization in middle school: When self-and peer views diverge. *Journal of Applied School Psychology, 19*, 117-137. doi:10.1300/J008v19n02_08

Gronlund, N.E. (1955). Social perception and teaching effectiveness. *The School Review, 63*, 277-283.

Gronlund, N.E. (1957). The general ability to judge sociometric status: Elementary student teachers' sociometric perceptions of classmates and pupils. *The Journal of Educational Psychology, 47*, 147-157.

Guerin, S. & Hennessy, E. (2002). Pupils' definitions of bullying. *European Journal of Psychology of Education, 17*(3), 249-261. doi: 10.1007/BF03173535

Hagborg, W. J., (1998). School membership among students with learning disabilities and nondisabled students in a semirural high school. *Psychology in the Schools, 35*(2), 183-188. https://doi.org/10.1002/(SICI)1520-6807(199804)35:2

Hair, J., Anderson, R., Tatham, R. and Black, W. (1998) *Multivariate data analysis*. 5th Edition, Prentice Hall, New Jersey.

Hamm, J. V., Farmer, T. W., Lambert, K., & Gravelle, M. (2014). Enhancing peer cultures of academic effort and achievement in early adolescence: Promotive effects of the SEALS intervention. *Developmental Psychology, 50*(1), 216-228. doi:10.1037/a0032979

Hamm, J.V. & Hoffman, A.S. (2015). Teachers' management of classroom social dynamics. To appear in K. Wentzel and G. Ramani (Eds.), *Social Influences on Social-Emotional, Motivation, and Cognitive Outcomes in School Contexts*.

Hamm, J. V., Farmer, T. W., Dadisman, K., Gravelle, M., & Murray, A. R. (2011). Teachers' attunement to students' peer group affiliations as a source of improved student experiences of the school social–affective context following the middle school transition. *Journal of Applied Developmental Psychology, 32,* 267-277. doi:10.1016/j.appdev.2010.06.003

Hamm, J.V., Schmid, L, Farmer, T.W., & Locke, B. L. (2011). The influence of injunctive and descriptive peer group norms on the academic adjustment of rural early adolescents. *Journal of Early Adolescence. 31*, 41-73. doi:10.1177/0272431610384486

Hamre, B. K., & Pianta, R. C. (2005). Can Instructional and Emotional Support in the First-Grade Classroom Make a Difference for Children at Risk of School Failure? *Child Development, 76,* 949-967. doi:10.1111/j.1467-8624.2005.00889.x

Hawker, D.S.J., & Boulton, M.J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 41*, 441-455. doi:10.1111/1469-7610.00629

Hawley, P.H. (2014). Evolution, prosocial behavior, and altruism: A roadmap for understanding where the proximate meets the ultimate. *Prosocial development: A multidimensional approach* (pp. 43-69). L. Padilla-Walker & G. Carlo (Eds). Oxford University Press.

Hawley, P. H. (2003). Prosocial and coercive configurations of resource control in early adolescence: A case for the well-adapted Machiavellian. Merrill-Palmer Quarterly, 49, 279–309. doi:10.1353/ mpq.2003.0013

Hawley, P. H. (1999). The ontogenesis of social dominance: A strategy-based evolutionary perspective. *Developmental Review, 19*(1), 97-132. doi:10.1006/drev.1998.0470

Heck, R. H. & Thomas, S. L. (2009). *An introduction to multilevel modeling techniques* (2nd Edition). New York: Routledge.

Hektner, J. M., & Swenson, C. A. (2012). Links from teacher beliefs to peer victimization and bystander intervention: Tests of mediating processes. *The Journal of Early Adolescence, 4*, 516-536. doi:10.1177/0272431611402502

Herman, J., & Choi, K., (2008). *Formative Assessment and the Improvement of Middle School Science Learning: The Role of Teacher Accuracy*. Los Angeles, University of California.

Hoffman, A. S., Hamm, J. V., & Farmer, T. W. (2015). Teacher attunement: Supporting early elementary students' social integration and status. *Journal of Applied Developmental Psychology*, 3914-23. doi:10.1016/j.appdev.2015.04.007

Hoffmann, M. L., Powlishta, K. K., & White, K. J. (2004). An examination of gender differences in adolescent adjustment: The effect of competence on gender role differences in symptoms of psychopathology. *Sex Roles, 50,* 795–810. doi:10.1023/B:SERS.0000029098.38706.b1

Hox, J., & Bechger, T. (1998). An introduction to structural equation modelling. *Family Science Review, 11*, 354-373.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.

Hughes, J. N., Luo, W., Kwok, O., & Loyd L. K. (2008). Teacher–student support, effortful engagement, and achievement: A 3-year longitudinal study. *Journal of Educational Psychology, 100*(1), 1-14. doi:10.1037/0022-0663.100.1.1]

Hughes, J. N., Zhang, D., Hill, C.R. (2006). Peer assessments of normative and individual teacher-student support predict social acceptance and engagement among low-achieving children. *Journal of School Psychology, 43*, 447–463.

Hunt, D. E. (1975). Person-environment interaction: A challenge found wanting before it was tried. *Review of Educational Research, 45*, 209-230.

IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.

Jackson, A. W., & Davis, G. A. (2000). *Turning points 2000: Educating adolescents in the 21st century.* New York, NY: Teachers College Press.

Jöreskog, K.G. and Sörbom, D. (1993). *LISREL 8: User's reference guide*. Chicago: Scientific Software. Bullying among young adolescents: the strong, the weak, and the troubled. *Pediatrics, 112*(6), 1231-7.

Juvonen, J., Le, V.N., Kaganoff, T., Augustine, C. H., & Constant, L. (2004). *Focus on the wonder years: Challenges facing the American middle school* [Report prepared for the Edna McConnell Clark Foundation]. Santa Monica, CA: RAND.

Juvonen, J., Wang, Y., & Espinoza, G. (2011). Bullying experiences and compromised academic performance across middle school grades. *The Journal of Early Adolescence, 31*(1):152–173. doi:10.1177/0272431610379415

Kindermann, T.A. (2011). Commentary: The invisible hand of the teacher. *Journal of Applied Developmental Psychology, 32*(5), 304-308. doi:10.1016/j.appdev.2011.04.005

Kindermann, T. A. (2007). Effects of naturally-existing peer groups on changes in academic engagement in a cohort of sixth graders. *Child Development, 78,* 1186-1203. doi:10.1111/j.1467-8624.2007.01060.x

Kindermann, T. A. (1993). Natural peer groups as contexts for individual development: The case of children's motivation in school. *Developmental Psychology, 29*(6), 970–977. doi:10.1037/0012-1649.29.6.970.

Kline, R. B. (2005). Methodology in the social sciences. *Principles and practice of structural equation modeling (2nd ed.).* New York, NY, US: Guilford Press.

Kline, R.B. (2016). *Principles and practice of structural equation modeling, Fourth Edition*. New York: Guilford Press.

Klein, J., Cornell, D., & Konold, T. (2012). Relationships between bullying, school climate, and student risk behavior. *School Psychology Quarterly, 27*(3), 154-169. doi:10.1037/a0029350

Kolenikov, S., Bollen, K. A. (2012). Testing negative error variances: is a heywood case a symptom of misspecification? *Sociological Methods & Research, 41,* 124-167. doi:10.1177/0049124112442138

Ladd, G.W., Herald-Brown, S. L. & Reiser, M. (2008). Does chronic classroom peer rejection predict the development of children's classroom participation during the grade school years? *Child Development, 79*(4), 1001-15. doi:10.1111/j.1467-8624.2008.01172.x.

Ladd, G. W., Ettekal, I., & Kochenderfer-Ladd, B. (2017). Peer victimization trajectories from kindergarten through high school: Differential pathways for children's school engagement and achievement? *Journal of Educational Psychology, 109*(6), 826-841. http://dx.doi.org/10.1037/edu0000177

LaFontana, K. M., & Cillessen, A. H. (2010). Developmental changes in the priority of perceived status in childhood and adolescence. *Social Development, 19*, 130-147. doi:10.1111/j.1467-9507.2008.00522.x

LaFontana, K. M., & Cillessen, A. H. (2002). Children's perceptions of popular and unpopular peers: A multimethod assessment. *Developmental Psychology, 38*, 635–647. doi:10.1037/0012-1649.38.5.635

Latané, B., & Darley, J. M. (1970). *The unresponsive bystander: Why doesn't he help?* Englewood Cliffs, NJ: Prentice Hall.

Lee, C.H., & Song, J. (2012). Functions of parental involvement and effects of school climate on bullying behavior among South Korean middle school students. *Journal of Interpersonal Violence*, *27*(12), 2437-64. doi:10.1177/0886260511433508.

Leff, S. S., Kupersmidt, J. B., Patterson, C. J., & Power, T. J. (1999). Factors influencing teacher identification of peer bullies and victims. *School Psychology Review*, *28*(3), 505-517.

Leth-Steensen C., Gallitto E. (2016). Testing mediation in structural equation modeling: The effectiveness of the Test of Joint Significance. *Educational and Psychological Measurement, 76*(2), 339-351. doi: 10.1177/0013164415593777

Lewin, Kurt (1936). *Principles of Topological Psychology*. New York: McGraw-Hill.

Li, Y., Lynch, A.D., & Kalvin, C., Liu, J., Lerner, R.M. (2011). Peer relationships as a context for the development of school engagement during early adolescence. *International Journal of Behavioral Development, 35*(4), 329-342. doi:10.1177/0165025411402578

Magnusson, D., Cairns, R. B. (1996). Developmental science: Toward a unified framework. In: Cairns RB, Elder G, Costello E, editors. *Developmental science*. New York, NY: Cambridge University Press.

Martin, R. P. (1994). Child temperament and common problems in schooling: Hypotheses about causal connections. *Journal of School Psychology, 32*(2), 119-134. doi: 10.1016/0022-4405(94)90006-X

Marucci, E., Oldenburg, B., & Barrera, D. (2018). Do Teachers Know Their Students? Examining Teacher Attunement in Secondary Schools. *School Psychology International, 39*(4), 416–432. doi:10.1177/0143034318786536

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-396. doi:10.1037/h0054346

Mazzone, L., Ducci, F., Scoto, M. C., Passaniti, E., D'Arrigo, V. G., & Vitiello, B. (2007). The role of anxiety symptoms in school performance in a community sample of children and adolescents. *BMC public health, 7*, 347. doi:10.1186/1471-2458-7-347

McCutcheon, A. L. (1987). *Latent class analysis*. Quantitative Applications in the Social Sciences Series No. 64. Thousand Oaks, California: Sage Publications. ISBN 978-0-521-59451-6.

McGuire, K. D., & Weisz, J. R. (1982). Social cognition and behavior correlates of preadolescent chumship. *Child Development, 53*(6), 1478-1484. doi:10.2307/1130074

Mehta, C. M., & Strough, J. (2009). Sex segregation in friendships and normative developmental contexts across the lifespan. *Developmental Review, 29*, 201–220. doi:10.1016/j.dr.2009.06.001

Meltzer, L., Katzir-Cohen, T., Miller, L., & Roditi, B. (2001). The Impact of Effort and Strategy Use on Academic Performance: Student and Teacher Perceptions. *Learning Disability Quarterly, 24(2),* 85-98. doi:10.2307/1511065.

Midgley, C., Middleton, M. J. Gheen, M. H., & Kumar, R. (2002). Stage-environment fit revisited: A goal theory approach to examining school transitions. In C. Midgley (Ed.), *Goals, goal structures, and patterns of adaptive learning* (pp. 109–142). Mahwah, NJ: Erlbaum

Modecki, K. L., Minchin, J., Harbaugh, A. G., Guerra, N. G., & Runion, K. C. (2014). Bullying prevalence across contexts: A meta-analysis measuring cyber and traditional bullying. *Journal of Adolescent Health, 55*, 602-611. doi: 10.1016/j.jadohealth.2014.06.007

Motoca, L., Farmer, T.W., Hamm, J.V., Byun, S-Y., Lee, D., Brooks, D.S., Rucker, N., & Moohr, M. (2014). Directed consultation, the SEALS Model, and teachers'

classroom management. *Journal of Emotional of Behavioral Disorders, 22*, 119-129. doi:10.1177/1063426614521299

Murray-Harvey, R., & Slee, P. T. (2010). School and home relationships and their impact on school bullying. *School Psychology International, 31*(3), 271-295. doi:10.1177/0143034310366206

Nakamoto, J., & Schwartz, D. (2010). Is Peer Victimization Associated with Academic competence? A Meta-analytic Review. *Social Development, 19*(2), 221–242. doi:10.1111/j.1467-9507.2009.00539.x

National Center for Educational Statistics, (2016). *Student reports of bullying: Results from the 2015 school crime supplement to the national crime victimization survey.* Retrieved from https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2017015

National School Climate Council (2012). *The School Climate Improvement Process: Essential Elements*. School Climate Brief, No. 4. Available online at: http://www.schoolclimate.org/climate/schoolclimatebriefs.php

Neal, D. W., Cappella, E., Wagner, C., & Atkins, M. S. (2011). Seeing eye to eye: Predicting teacher-student agreement on classroom social networks. *Social Development, 20*, 376–393. doi: 10.1111/j.1467-9507.2010.00582.x

Newman, B.M., Lohman, B.J., & Newman, P.R. (2007). Peer group membership and a sense of belonging: their relationship to adolescent behavior problems. *Adolescence, 42*(166), 241-63.

Nishina, A., & Juvonen, J. (2005). Daily reports of witnessing and experiencing peer harassment in middle school. *Child Development, 76*(2), 435-50. doi:10.1111/j.1467-8624.2005.00855.x

Norwalk, K. E., Hamm, J. V., Farmer, T. W., & Barnes, K. L. (2016). Improving the school context of early adolescence through teacher attunement to victimization: effects on school belonging. *The Journal of Early Adolescence, 36*(7), 989-1009. doi:10.1177/0272431615590230

Orpinas, P., & Horne, A.M. (2006). *Bullying prevention: Creating a positive school climate and developing social competence*. Washington, D.C.: American Psychological Association. doi:10.1037/11330-000

Parkhurst, J. T., & Hopmeyer, A. (1998). Sociometric popularity and peer-perceived popularity: Two distinct dimensions of peer status. *The Journal of Early Adolescence, 18*(2), 125-144. doi:10.1177/0272431698018002001

Pearl, R., Leung, M-C., Van Acker, R., Farmer, T.W., & Rodkin, P.C. (2007). Teachers' awareness of their classroom's social network. *Elementary School Journal, 108*, 25-39. doi:10.1086/522384

Pellegrini, A. D., & Long, J. D. (2002). A longitudinal study of bullying, dominance, and victimization during the transition from primary school through secondary school. British *Journal of Developmental Psychology, 20*(2), 259–280. doi:10.1348/026151002166442

Peskin, M. F., Tortolero, S. R., & Markham, C. M. (2006). Bullying and victimization among Black and Hispanic adolescents. *Adolescence, 41*(163), 467-484.

Phillips, M. (1997). What makes schools effective? A comparison of the relationships of communitarian climate and academic climate to mathematics achievement and attendance during middle school. *American Educational Research Journal, 34 (4)*, 633-662. doi:10.2307/1163352

Piaget, J. (1936). *Origins of intelligence in the child*. London: Routledge & Kegan Paul.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40,* 879-891. doi:10.3758/BRM.40.3.879

Preacher, K. J., Zhang, Z., & Zyphur, M. J. (2011). Alternative methods for assessing mediation in multilevel data: The advantages of SEM. *Structural Equation Modeling, 18,* 161-182. doi:10.1080/10705511.2011.557329

Quiroga, C., Janosz, M., Lyons, J., Morin, A. (2012). Grade retention and seventh-grade depression symptoms in the course of school dropout among high-risk adolescents. *Psychology, 3,* 749–755. doi:10.4236/psych.2012.329113

R Core Team (2013). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org/.

Raudenbush, S.W., & Bryk, A.S. (2002). *Hierarchical Linear Models: Applications and data analysis methods (2nd ed.).* Thousand Oaks, CA: Sage Publications, Inc.

Rigby, K. (2003). Consequences of bullying in schools. *Canadian Journal of Psychiatry, 48*(9), 583-590. doi:10.1177/070674370304800904

Rigby, K. (2000). Effects of peer victimization in schools and perceived social support on adolescent well-being. *Journal of Adolescence, 23*(1), 57-68. doi:10.1006/jado.1999.0289

Rigby, K., & Bauman, S. (2010). How school personnel tackle cases of bullying: A critical examination. In S. R. Jimerson, S. M. Swearer, & D. L. Espelage (Eds.),

Handbook of bullying in schools: An international perspective (pp. 455-469). New York: Routledge.

Rimm-Kauffman, S., & Sandilos, L., (2017). *Improving students' relationships with teachers to provide essential supports for learning*. American Psychological Association. Education and Psychology. http://www.apa.org/education/k12/relationships.aspx

Rodkin, P. C., & Gest, S. D. (2011). Teaching practices, classroom peer ecologies, and bullying behavior among schoolchildren. In D. L. Espelage & S. Swearer (Eds.), *Bullying in North American schools* (2nd ed., pp. 75-90). New York, NY: Routledge.

Rodkin, P. C., & Berger, C. (2008). Who bullies whom? Social status asymmetries by victim gender. *International Journal of Behavioral Development, 32,* 473–485. doi:10.1177/0165025408093667

Rodkin, P. C., Farmer, T. W., Pearl, R., & Van Acker, R. (2000). Heterogeneity of popular boys: Antisocial and prosocial configurations. *Developmental Psychology, 36*, 14 –24. doi:10.1037/00121649. 36.1.14

Rodkin, P. C., & Ryan, A. M. (2012). Child and adolescent peer relations in educational context. In K. R. Harris, S. Graham, T. Urdan, S. Graham, J. M. Royer, & M. Zeidner (Eds.), APA handbooks in psychology. *APA educational psychology handbook, Vol. 2. Individual differences and cultural and contextual factors* (pp. 363-389). Washington, DC, US: American Psychological Association. doi:10.1037/13274-015

Rose, A. J., Swenson, L. P., & Waller, E. M. (2004). Overt and relational aggression and perceived popularity: Developmental differences in concurrent and prospective relations. *Developmental Psychology, 40,* 378–387. doi:10.1037/0012-1649.40.3.378

Rosenthal, R., &. Jacobson, L. (1963). Teachers' expectancies: Determinants of pupils' IQ gains. *Psychological Reports, 19,* 115-118.

Roseth, C. J., Pellegrini, A. D., Dupuis, D. N., Bohn, C. M., Hickey, M.C., Hilk, C. L., & Peshkam, A. (2011). Preschoolers' bistrategic resource control, reconciliation, and peer regard. *Social Development, 20*(1), 185–211. doi:10.1111/j.1467-9507.2010.00579.x

Rubin. K. H., Bukowski, W., & Parker, J. G. (1998). Peer Interactions, Relationships and Groups. In W. Damon, & N. Eisenberg (Eds.), *Handbook of Child Psychology* (pp. 619-700). New York: Wiley.

Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In N. Eisenberg, W. Damon & R.M. Lerner (Eds.), *Handbook of child psychology: Vol. 3, Social, emotional, and personality development* (6th ed., pp. 571–645). Hoboken, NJ: John Wiley & Sons Inc.

Ryan, A. M., Kuusinen, C. M., & Bedoya-Skoog, A. (2015). Managing peer relations: A dimension of teacher self-efficacy that varies between elementary and middle school teachers and is associated with observed classroom quality. *Contemporary Educational Psychology, 41,* 147-156. doi:10.1016/j.cedpsych.2015.01.002

Ryan, A. M. (2001). The peer group as a context for the development of young adolescent motivation and achievement. *Child Development, 72*(4), 1135–1150. doi:10.1111/1467-8624.00338.

Salmivalli, C., Voeten, M., & Poskiparta, E. (2011). Bystanders matter: Associations between reinforcing, defending, and the frequency of bullying behavior in classrooms. *Journal of Clinical Child and Adolescent Psychology, 40*(5), 668-676. doi:10.1080/15374416.2011.597090

Sandstrom, M.J., & Cillessen, A. N. (2006). Likeable versus popular: Distinct implications for adolescent adjustment. *International Journal of Behavioral Development, 30*, 305–314. doi:10.1177/0165025406072789

Schoen, S., & Schoen, A. (2010). *Bullying and harassment in the United States*. Clearing House, 83(2), 68-72.

Scholte, R. H., Burk, W. J., & Overbeek, G. (2013). Divergence in self-and peer-reported victimization and its association to concurrent and prospective adjustment. *Journal of Youth and Adolescence, 42*, 1789-1800. doi:10.1007/s10964-012-9896-y

Scholte, R. H. J., Overbeek, G., ten Brink, G., Rommes, E., de Kemp, R. A. T., Goossens, L., & Engels, R. C. M. E. (2009). The significance of reciprocal and unilateral friendships for peer victimization in adolescence. *Journal of Youth and Adolescence, 38*(1), 89–100. doi:10.1007/s10964-008-9287-6

Sideridis, G. D. (2006). Understanding low achievement and depression in children with learning disabilities: A goal orientation approach. *International Review of*

Research in Mental Retardation, 31, 163-203. doi:10.1016/S0074-7750(05)31005-6

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*, 571-581. doi:10.1037//0022-0663.85.4.571

Smetana, J.G. (2000). Middle class African-American adolescents' and parents' conceptions of parental authority and parenting practices: A longitudinal investigation. *Child Development, 71*, 1672–1686. doi:10.1111/1467-8624.00257

Song, S. Y. (2005). *Protective Peer Ecology Scale—Middle school* (Unpublished measure). New Haven, CT: Yale Child Study Center.

Sourander, A., Helstelä, L., Helenius, H., & Piha, J. (2000). Persistence of bullying from childhood to adolescence—a longitudinal 8-year follow-up study. *Child Abuse & Neglect, 24*(7), 873-881. doi:10.1016/S0145-2134(00)00146-0

Spielman, A. J., Caruso, L. S., & Glovinsky, P. B. (1987). A behavioral perspective on insomnia treatment. *Psychiatric Clinics of North America, 10*(4), 541-553.

Südkamp, A., Kaiser, J., & Möller, J. (2012). Accuracy of teachers' judgments of students' academic achievement: A meta-analysis. *Journal of Educational Psychology, 104*(3), 743-762. doi:10.1037/a0027627

Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. NewYork: Norton.

Swearer, S., Espelage, D.L., Vaillancourt, T., & Hymel, S. (2010). What can be done about school bullying? Linking research to educational practice. *Educational Researcher, 39*, 38-47. doi:10.3102/0013189X09357622

Townsend, L., Flisher, A. J., Chikobvu, P., Lombard, C., & King, G. (2008). The relationship between bullying behavior and high school dropout in Cape Town, South Africa. *South African Journal of Psychology, 38*(1), 21-32. doi:10.1177/008124630803800102

Troop-Gordon, W. (2015). The role of the classroom teacher in the lives of children victimized by peers. *Child Development Perspectives, 9*(1), 55–60. doi:10.1111/cdep.12106.

Ttofi, M. M., Farrington, D. P., & Losel, F. (2012). School bullying as a predictor of violence later in life: A systematic review and meta-analysis of prospective longitudinal studies. *Aggression and Violent Behavior, 17*, 405-418. doi:10.1016/j.avb.2012.05.002

U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "*Public School Data File*," 2007-08.

van der Ploeg, R., Steglich, C., Salmivalli, C., & Veenstra, R. (2015). The intensity of victimization: Associations with children's psychosocial well-being and social standing in the classroom. *PLoS ONE, 10*(10). Article ID e0141490.

van den Berg, Y. H. M., Segers, E., & Cillessen, A. H. N. (2012). Changing peer perceptions and victimization through classroom arrangements: A field experiment. *Journal of Abnormal Child Psychology, 40*(3), 403-412. doi:10.1007/s10802-011-9567-6

Wentzel, K. R., Muenks, K., McNeish, D., & Russell, S. (2018). Emotional support, social goals, and classroom behavior: A multilevel, multisite study. *Journal of Educational Psychology, 110*(5), 611-627. doi:10.1037/edu0000239

Wentzel, K. R. (2005). Peer Relationships, Motivation, and Academic Performance at School. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 279-296). New York, NY, US: Guilford Publications.

Wentzel, K. R., Barry, C. M., & Caldwell, K. A. (2004). Friendships in Middle School: Influences on Motivation and School Adjustment. *Journal of Educational Psychology, 96*(2), 195-203. doi:10.1037/0022-0663.96.2.195

Wentzel, K. R., & Asher, S. R. (1995). The academic lives of neglected, rejected, popular, and controversial children. *Child Development, 66,* 754–763. doi:10.2307/1131948

Weston, R., & Gore, P.A., Jr. (2006). A brief guide to structural equation modeling. *The Counselling Psychologist, 34*, 719–751. doi:10.1177/0011000006286345

Wigfield, A., Eccles, J. S., Yoon, K. S., Harold, R. D., Arbreton, A. J. A., Freedman-Doan, C., & Blumenfeld, P. C. (1997). Change in children's competence beliefs and subjective task values across the elementary school years: A 3-year study. *Journal of Educational Psychology, 89*(3), 451-469. doi:10.1037/0022-0663.89.3.451

Wigfield, A. L., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology*, *25*, 68-81. doi:10.1006/ceps.1999.1015

Wigfield, A., & Eccles, J. S. (2002). Students' motivation during the middle school years. In J. Aronson (Ed.), *Improving academic competence; Impact of psychological factors on education.* (pp. 159–184). San Diego, CA: Academic Press. doi:10.1016/B978-012064455-1/50011-7

Wolke, D., Copeland, W. E., Angold, A., & Costello, E. J. (2013). Impact of bullying in childhood on adult health, wealth, crime, and social outcomes. *Psychological Science, 24*(10), 1958-70. doi:10.1177/0956797613481608

Xie, H., Li, Y., Boucher, S. M., Hutchins, B. C., & Cairns, B. D. (2006). What makes a girl (or a boy) popular (or unpopular)? African American children's perceptions and developmental differences. *Developmental Psychology, 42*(4), 599-612. doi:10.1037/0012-1649.42.4.599

Yoon, J. (2004). Predicting Teacher Interventions in Bullying Situations. *Education and Treatment of Children, 27*(1), 37-45.

Zins, J.E., Weissberg, R.P., Wang, M.C., & Walberg, H.J. (Eds.). (2004). *Building academic success on social and emotional learning: What does the research say*? New York: Teachers College Press.