

ABSTRACT

Title of dissertation: INDIVIDUAL- AND CLASSROOM- LEVEL
SOCIAL SUPPORT AND CLASSROOM
BEHAVIOR IN MIDDLE SCHOOL

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This study investigated relations between middle school students' perceptions of social support from their teachers and peers, the social climate of the classroom, and students' social goal pursuit and prosocial and socially responsible behavior. A multilevel framework was utilized in order to examine a) how perceptions of social support in the forms of emotional support and expectations for social behavior are related to outcomes, b) how characteristics of the classroom climate in terms of cohesion and structure are related to outcomes, c) how classroom climate might moderate the relations between perceptions of social support and student outcomes and d) whether or not contextual effects due to classroom climate exist.

Existing survey data collected from 6th-8th grade students and their respective classroom teachers from multiple classrooms was used. Psychometric properties of the data were investigated through confirmatory factor analysis, examination of scale properties, and by gathering evidence regarding the nested nature of the data; intraclass correlation coefficients and design effects supported the use of multilevel modeling. In

addition, qualities of the classroom climate were measured through the coefficient of variation (CV) which was derived from student reports of perceived social support.

Individual-level models confirmed the well-established positive relations between perceived social support and social pursuit and classroom behavior and highlighted the differential roles peer and teacher effects have on these outcomes. Classroom-level models indicated classroom characteristics in the forms of cohesion and structure from teachers and peers were directly related to social goal pursuit and classroom behaviors. Results suggested that structure from peers was positively related to classroom behavior while structure from teachers worked in the opposite direction. Also, peer structure and peer cohesion were significant predictors of socially responsibility goal pursuit, but only when considered independently. Classroom characteristics were also found to moderate the relations (i.e., slopes) between perceptions of emotional support from teachers or peers and student outcomes, working in both additive and compensatory fashions. Finally, some contextual effects were found, most often in terms of peer social support as compared to teacher social support. Implications and directions for future research are discussed.

INDIVIDUAL- AND CLASSROOM- LEVEL SOCIAL SUPPORT AND
CLASSROOM BEHAVIOR IN MIDDLE SCHOOL

By

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2012

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Dedication

To my family, for all of your loving support.

Acknowledgements

This dissertation could never have come together without the support and guidance of many exceptional and dedicated people. First and foremost I would like to thank Dr. Kathryn Wentzel for her belief in me and the foresight to see where I would go before I ever could. Little did I know what I would be able to accomplish under her tutelage, when I first reached out to her while sitting in the deserts of southern Africa, utilizing the one public computer with internet access (thank you for responding!). It is her continuous responsiveness as a dedicated mentor that afforded me the opportunity to accomplish all that I have. She truly practices what she preaches, offering social support in multiple forms. Due to her dedicated mentorship and never-ending encouragement to keep pushing me forward, I have made great progress in my scholarly thinking, writing, and general approach to research.

I also want to thank members of my dissertation committee who have helped me throughout my graduate school career and have played key roles in molding me into a scholar. From my very first days on campus, Dr. Patricia Alexander has been there to push me to think critically, constantly question ideas, and at the same time embrace me like family. Through the years she also showed me how to bring out these qualities in undergraduate students as well. Dr. Judith Torney-Purta has always been quick to generously share her resources and offer opportunities for scholarly activities, exposing me to experiences I would otherwise never have had. She also has played a pivotal role in shaping my approach to reading research and instilled a desire to constantly question conclusions and think of the broader contexts and forces that might be at play. I owe much of my ability to think deeply about the details underlying quantitative research to

the many hours spent with Dr. Jeffrey Haring. Thank you for your never-ending patience, working with me from my first experiences with analysis of variance to the more complex tasks that were undertaken for this study. I am forever grateful for your time and guidance through the many questions I have had over the years. Dr. Linda Valli first made time for me as I undertook my first qualitative research project and offered me much needed direction as I wandered through this new field of inquiry. I thank you for the conversations over the years about the experiences of teachers and for helping to keep research tied to the lives of teachers and students.

The community of scholars in the department of Human Development has also played a large role in supporting me throughout my years of training. The Rhoda Warriors have been a huge help in assisting me through *the process*. I will forever be indebted to Sandra Baker, Alexis Williams, Alice Donlan, Danette Morrison, and Shannon Michael. Dr. Ann Battle has challenged me to look at teaching in new ways and from a variety of perspectives that led to many aha moments over the years, while simultaneously making me feel like I could accomplish anything. Nicole Denmark and Ting Zhang have also been there to offer support and assistance on many occasions.

Finally, thank you to my family and friends who have been by my side throughout the years and never gave up on me. I am ever grateful to my husband, Yonatan Ben-Shalom for his never-ending love and support, as well as dedicating many hours to scholarly banter and reading through manuscript drafts. Although not physically near, my parents Cindy and Bernie Russell, and family Chad Russell, Tracy Olsen, Kristin Russell, and Brian Olsen provided me with continual loving support and necessary respite throughout this journey.

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Chapter 1: Individual- and Classroom-Level Social Support and Classroom Behavior in Middle School

Individual perceptions of social support from both teachers and peers have been related positively to students' classroom behavior and emotional engagement (Furrer & Skinner, 2003; Wentzel, 1998; Wentzel et al., 2010). These student-teacher and student-peer interactions are embedded within unique classroom and school contexts which can also serve as levels of influence in their own right. For example, a school climate that fosters high academic expectations was found to have an effect on the relation between individual-level social support and learning (Lee & Smith, 1999). However, less is known about how characteristics of the classroom social environment can also contribute to positive student behaviors. Therefore, identifying specific classroom-level social supports that can serve as direct and indirect pathways to student outcomes could provide a rich resource for promoting positive school behaviors. Indeed, researchers are now beginning to investigate the classroom climate teachers create in terms of emotional support and organization and links to positive student outcomes (Pianta, LaParo, & Hamre, 2008).

The body of work on positive interpersonal relationships and perceptions of emotional support often draws upon attachment theory. When others provide warmth and felt security, the individual's sense of self and desire to interact with the environment is enhanced (Bretherton, 1985). In the educational context, these emotionally supportive interactions evoke a student's sense of relatedness and are believed to initiate academic and social engagement with the teacher and peers (Connell & Wellborn, 1991). Indeed, positive teacher-student relationships have been related to students' emotional wellbeing

(Wentzel 1997, 1998), beliefs about efficacy and autonomy (Murdock & Miller, 2003; Ryan & Patrick, 2001; Ryan, Stiller & Lynch, 1994), and academic engagement (Furrer & Skinner, 2003; Marchant, Paulson, & Rothlisberg, 2001; Murdock & Miller, 2003; Murray, 2009; Wentzel, 1997, 1998; Wentzel et al., 2010). Social support from peers has also been associated with desirable classroom behavior (Gutman, Sameroff, & Eccles, 2002; Wentzel, 1998, Wentzel et al., 2010; You & Sharkey, 2009).

The literature on individual-level social support reflects the unique contributions teachers and peers have on student behavior and shows that support can vary as a function of classroom (Wentzel et al., 2010). Further, according to Wentzel (2004), social support can be delineated into at least four forms: providing emotional support, communication of expectations and values, providing instrumental help, and creating a safe environment. While Wentzel's empirical work provides evidence for this multi-dimensional approach at the individual-level (i.e., level of dyadic, interpersonal supports), it is unclear if classroom-level social support also aligns with this multi-faceted conceptualization.

In general, characteristics of the classroom context have not been taken into consideration as frequently as school dimensions (Koth, Bradshaw, & Leaf, 2008), although differences in classroom social climates within one school may exist. For example, Wentzel (2002) found significant differences in students' reports of teacher practices related to high expectations and rule setting across teachers but not schools. Similarly, Barth et al. (2004) identified significant variance across classrooms in outcomes related to poor peer relations. Therefore, research on the social environment of schools could benefit from looking at the classroom as a more proximal context (in

addition to school characteristics) and as another source of influence beyond the individual.

Indeed, perceived characteristics of the classroom or school social climate (e.g., pedagogical care) can also influence the student and her actions. For example, Danielsen, Wiium, Wilhelmsen, and Wold (2010) found Norwegian classrooms perceived by the group as pedagogically caring and autonomy supportive had higher levels of academic initiative, while You and Sharkey (2009) found school-level teacher support had a positive effect on adolescents' participation in school over and above individual-level factors. Therefore, studying aspects of the classroom in terms of group cohesion, which is the feeling of support group members provide to one another (Olson, 2000; 2011), could provide insight regarding differences in student behavior across classrooms.

In addition, how classroom climate in terms of positive peer group characteristics directly impacts student's classroom behavior has not been forthcoming. For example, relations between perceived wellbeing, emotional support, and classroom behavior are well-documented (Chu, Saucier, & Hafner, 2010), but how the combined wellbeing of the group affects prosocial and socially responsible behaviors, is not clear. In contrast, much more is known about the negative effects of the peer group on student behavior (Brown, Bakken, Ameringer, Mahon, Prinstein, & Dodge, 2008). For example, peer rejection and peer exclusion have been negatively related to student's classroom participation (Buhs & Ladd, 2001, 2006). Given that the peer group can be such a powerful influence on behavior and the classroom social climate, research could gain from the incorporation of positive characteristics of the peer group which might be linked to student behavior in that particular classroom. In addition, the ways in which teachers might mitigate peer

influence have only recently begun to be teased apart (see Farmer, Lines, & Hamm, 2011).

The literature on social support reflects the unique contributions teachers and peers have on student behavior and indicates that perceptions of support can vary as a function of classroom (Wentzel et al., 2010). However, it is unclear which characteristics of the classroom directly impact the adolescent student's positive behavior in class. Therefore, research on classroom social climates might benefit from the incorporation of the multiple contributors (i.e., student-teacher-peer) to the classroom climate and a wider range of the classroom conditions in which these behaviors are embedded.

Multilevel Approaches to Understanding the Social Climate of Educational Contexts

A common perspective incorporated into educational climate research is ecological systems theory (Bronfenbrenner, 1989), in which the person and context are considered together as a functioning unit. Current models of social support often assume that the strength of the relations between student perceptions and student outcomes function similarly across contexts. Recent empirical work (Wentzel et al., 2010) found that average perceptions of emotional support from peers varied across classrooms, even in cases where both classrooms shared the same teacher, while perceived teacher emotional support varied by teacher. These findings suggest that perceptions of support are related to the membership of the group and have implications for classroom functioning.

In order to capture more accurately the interdependent factors that constitute the classroom system, both qualities of the individuals and the climate within the classroom could be incorporated into studies of the classroom social environment. For example,

student demographics such as the representation of gender or ethnicity in the group as a whole are related to differences in students' sense of belonging (Kirkpatrick Johnson, Crosnoe, & Elder, 2001), perceptions of social support (Wentzel et al., 2010) and relationships with teachers (Crosnoe, Johnson, & Elder, 2004) as well as the relation between peer support and academic achievement (Gutman, et al., 2002). However, insight regarding the role of teacher characteristics on classroom functioning and student behavior has often been overlooked. The little empirical research that exists highlights the negative effects of a mismatch between teacher and student sex and ethnicity (for example, White teacher and Hispanic student) on relationship quality (Wentzel, 2009). More commonly, researchers have looked at the ethnicity of the teachers as a group or the percent of minority teachers in a particular school and relations to teacher-student relationship quality or student academic achievement (e.g., Crosnoe et al., 2004). Therefore, it could be beneficial in future empirical work to include teacher characteristics along with student characteristics.

In summary, much is known about the relation between individual-level social support from teachers and to some extent peers, and positive academic and behavioral outcomes in educational settings. In addition, research supports the existence of relations between multiple types of social support from multiple sources to social and academic behaviors at the individual-level. However, it is not clear how classroom-level social support is related to students' classroom behavior.

Further, the broader school social environment has been found to provide an additional level of support. Indeed, perceived belongingness (i.e., a general sense of being a part of the school community) has been related to students' academic engagement

(Goodenow & Grady, 1993; Kirkpatrick Johnson, Crosnoe, & Elder, 2001; Sánchez, Colon, & Esparza, 2005; Voelkl, 1995), self-efficacy (McMahon, Wernsman, & Rose, 2009) and positive affect towards school (Roeser, Midgley, & Urdan, 1996). Therefore, this same supportive emotional climate at the classroom-level might also be related to similar student outcomes and warrants further examination.

What remains to be clarified are the direct and indirect relations between classroom-level characteristics and classroom behavior. Therefore, I now propose a multilevel investigation of social support and classroom behavior. First, I present the overarching conceptual model for the multilevel investigation. This section includes relevant theory and empirical work underlying the individual- and classroom-level model components and linking pathways. Next, I describe the current study, guiding research questions, and predictions.

Conceptual Model

An overarching premise of the study is the framing of the classroom as a system consisting of individuals, dyads, and groups that are interconnected. Within this complex system, the outcomes of interest are related to student engagement as defined by prosocial and social responsibility goal pursuit and the corresponding classroom behaviors. Students' classroom behaviors are often studied in relation to how specific forms contribute to or are related to meeting the demands of the classroom (Fredericks, Blumenfeld, & Paris, 2004) as well as how behaviors can function as a manifestations of adolescent motivation (Skinner, Kindermann, Connell, & Wellborn, 2009). These behaviors can be more academically focused, such as participation in, or commitment to classroom activities or tasks, or socially-focused, behaviors that reflect positive conduct

and prosocial behavior or the pursuit of adaptive social goals that promote classroom functioning. In either case, positive classroom behaviors reflect students who are actively engaged in the classroom and in turn promote academic achievement (see Connell & Wellborn, 1991; Fredericks et al., 2004; Wentzel, 1991b). Moreover, classroom behavior is dependent upon characteristics of the student and features of the context (Connell & Wellborn, 1991). In order for a student to participate in the classroom, she must be motivated to act; this motivation can be initiated by her own characteristics and through contextual supports provided by others (Wentzel, 2004).

In the next section, I first discuss the overarching model of classrooms as systems of interrelated dyadic and individual-to-group relationships. Next, I present a multilevel model of social support and student social goal pursuit and classroom behavior that includes particular individual and classroom factors related to social behaviors.

Classrooms as Systems

In order to better understand the social context of the classroom, it is useful to acknowledge the interrelatedness of student behavior and classroom functioning. From a systems perspective, the classroom is viewed as complex, consisting of a multitude of interrelated social interactions between teachers, students, and peers (see Fig. 1). These different parts of the system are assumed to be hierarchically arranged but have mechanisms in place to allow for reciprocity between parts. Additionally, the overall climate of the classroom system is understood to be the “shared perceptions of persons in the environment” (Trickett & Moos, 1973, p.94).

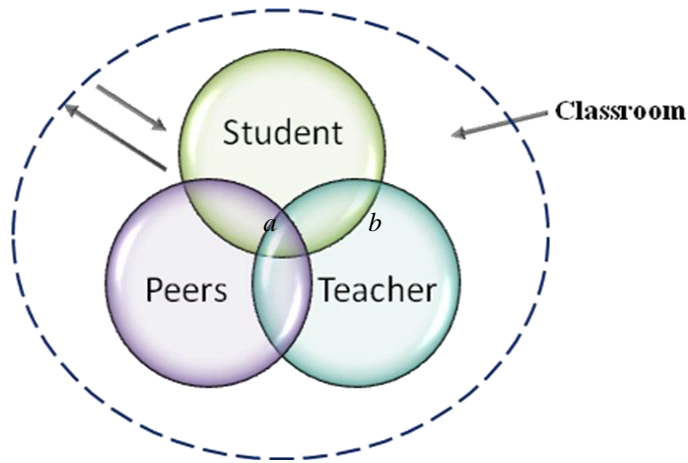


Figure 1. Conceptual model of classroom social climate depicting overarching systems model of the classroom. *a* refers to the student-peer subsystem. *b* refers to the student-teacher subsystem.

A systems approach is widely used in the context of families, yet is also applicable to classrooms. Indeed principles of family dynamics (e.g., relationships as reciprocal and hierarchically arranged) have been previously used to better understand teacher-student relationships (see Pianta, 1999; Walker, 2008; Wentzel, 1997). Moreover, from a family systems approach, there are multiple subsystems within the group that work symbiotically to regulate overall system functioning, providing feedback to each person within the system (Maccoby, 2007). This view of the broader group as a unique system of dyadic and subgroup relationships can also be applied to the functioning of classroom contexts. Specifically, in the classroom, a student's responses are shaped by the teacher-student, student-peer, teacher-peer, and student-student subsystems. These subsystems are depicted in Figure 1 as the overlapping spheres. Of particular interest for this study are the first two subsystems, labeled *a* and *b*.

Additionally, the overall functioning of a family system is commonly described through three dimensions: cohesion, structure, and communication (e.g., Olson, 1986,

2000, 2011) which also provide a useful framework for better understanding the climate of a classroom system (Moos & Moos, 1978). These three dimensions are used to characterize the family or classroom system to better understand how system functioning shapes behavior. Two of these aspects are of primary interest for this study, cohesion and structure, and serve as the foundation for investigating classroom-level social support as depicted in Figure 3. Cohesion represents the affective environment and the emotional support that members of a group provide for one another (Olson, 2000, 2011). Structure refers to the quality and clarity of expectations for and consequences of behavior (Connell & Wellborn, 1991) and relationships (Olson, 2011). Each of these aspects of the classroom climate are related to overall system functioning which in turn can shift student behavior.

A Multilevel Model of Social Support and Classroom Behavior

The conceptual model guiding this investigation consists of four core components: individual characteristics, perceptions of contextual supports, classroom characteristics, and social goal pursuit and behavioral outcomes. In this section I summarize the extant literature which provides the foundation for the conceptual model in terms of key constructs and pathways of interest.

Social goal pursuit and classroom behavior. As shown in Figures 2 and 3, social goal pursuit and classroom behavior are the focal outcomes of this study. An extensive review of work on student engagement by Fredericks, Blumenfeld, and Paris (2004), describes behaviors related to engagement as participation in, or commitment to, classroom activities or tasks and that can include academic related actions such as effort, task persistence, and participation as well as behaviors that are more socially focused

(e.g., cooperating). According to Skinner, Kindermann, and Furrer (2009), behavioral engagement is best represented as a multi-faceted phenomenon with both engaged and disaffected dimensions. More often research on classroom behaviors from a social perspective incorporates the latter component, disaffection and alienation rather than more positive behaviors. In light of this, the current study will focus on positive (i.e., engaged) classroom behaviors operationalized as prosocial and socially responsible behaviors as well as the pursuit of prosocial and social responsibility goals.

Student characteristics included as control variables. This model is ultimately aimed at better understanding the mechanisms that influence student behavior in academic settings. Therefore, a necessary first component to include contains the characteristics the student brings with him to the classroom and that serve as the lens through which he will view all social interactions. These characteristics include gender, age or the grade they are in, and general sense of self. Namely, the child has a history of previous interactions with others that impact their current general affect, and trust in others (Bretherton, 1985). The individual's sense of self and their general emotional wellbeing, is of particular interest in this study when examining perceived emotional support, as positive affect is consistently related to perceptions of social support (Chu, Saucier, & Hafner, 2010). More specifically, wellbeing is depicted in Figure 2 as an individual-level control variable.

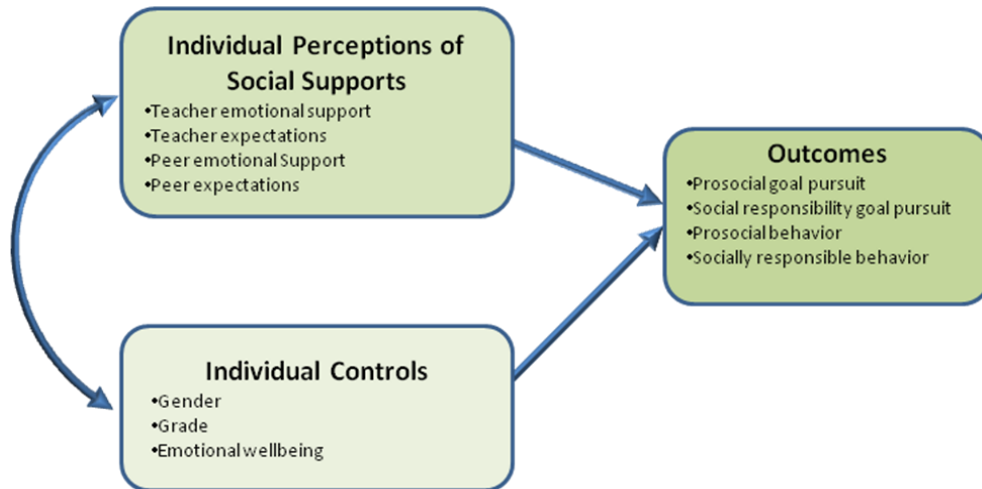


Figure 2. The conceptual model guiding the study at the individual-level adapted from Wentzel’s (2004) Model of Classroom Competence.

According to attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978), a mechanism underlying all social interactions is the individual's internal working model that guides understandings of self and others as worthy of love. However, these characteristics of self are not easily accessible since they are intangible and lie within the mind of the individual. Therefore, in this conceptual model wellbeing serves as a means for tapping into this factor. Moreover from this theoretical framework, a student’s general positive feelings about self, or wellbeing, might be related to perceptions of provisions of social support, as depicted as a direct pathway in Figure 2. In addition, this path is supported by empirical work across multiple studies (Chu, Saucier, & Haftner, 2010) and in relation to teacher and peer support in particular (Ahmed, Minnaert, van der Werf, & Kuyper, 2010; Natvig, Albrektsen, & Qvarnstrøm, 2003; Wentzel, 1998).

I now turn my focus to the second component of the model, perceptions of contextual supports.

Perceptions of social support. This aspect of the model focuses on students' perceptions of the classroom as socially supportive based on two sources of social support, teachers and peers, and in multiple forms of support (Wentzel, 2004). In particular, there are at least four types of social support pertinent to the classroom context: emotional support, expectations and values, instrumental help, and safety (Ford, 1992). Members of the classroom community may provide social support through any combination of these forms. Few investigations have included multiple types of social support simultaneously although differences have been found in the relative contribution of each type (Malecki & Demaray, 2006; Wentzel et al., 2010). Therefore, to better understand the particular mechanisms through which social support is linked to positive adolescent outcomes, considering multiple sources and types of support could be advantageous. In this study, I focus on provisions of emotional support and expectations from both teachers and peers as direct predictors of student social behavior.

Emotional support from teachers and peers. Often researchers conceptualize the emotional support that teachers or peers extend to students as providing care (Wentzel, 2009). This support is perceived by the student as their teacher or peers genuinely caring about her as a person and her feelings. In turn, this emotional support evokes the student's sense of belongingness, and motivates the student to participate in the classroom (Connell & Wellborn, 1991). Perceptions of teacher emotional support have been positively related to desirable classroom behaviors (Furrer & Skinner, 2003; Marchant, Paulson, & Rothlisberg, 2001; Murdock & Miller, 2003; Wang & Holcombe, 2010) and positive emotions towards school (Ahmed, Minnaert, van der Werf & Kuyper, 2010; Furrer & Skinner, 2003; Wentzel, 1997; Wentzel et al., 2010), as well as negatively

to disruptive behavior (Ryan & Patrick, 2001). Similarly, perceiving classroom peers as emotionally supportive has been positively correlated to classroom behavior (Gutman, Sameroff, & Eccles, 2002; Wentzel, 1998; Wentzel et al., 2010; You & Sharkey, 2009).

Expectations and values of teachers and peers. According to Wentzel (2004), another form of contextual social support reflects the expectations and values that teachers and peers hold for the student in terms of classroom behaviors and academic performance. Indeed, perceived expectations from the teacher and peers for social behavior have been positively related to student's positive feelings towards schooling (Ahmed et al., 2010; Wentzel, 2002; Wentzel et al., 2010) while perceived peer (Wentzel, Filisetti, & Looney, 2007) and teacher (Wentzel, 2002), expectations predicted social behaviors. Expectations from teachers in the form of students' perceived classroom structure (e.g., clarity of expectations, consistency) have also been linked to student reports of both behavioral and emotional engagement (Skinner & Belmont, 1993). In addition, perceived values of peers' for academics have been related to positive growth in participation in school (You & Sharkey, 2009). In contrast, perceived low expectations from teachers can negatively impact student behavior. For instance, if expectations for academic achievement are set too low by teachers, students might act in ways that align with these messages (i.e., self-fulfilling prophecy) and disengage from the classroom (Weinstein, Gregory, & Strambler, 2004).

Classroom characteristics. Although less prevalent in the literature, a second potential source of social support is the collective classroom environment. Classrooms are unique environments that can reflect group expectations and norms (Moos & Moos, 1978), which can account for significant variance in classroom behavior (Trickett &

Moos, 1973). Therefore, it is important to consider characteristics of the classroom system that might impact student behavior and goal pursuit within that context. Characteristics of the classroom are represented in the model as direct predictors of student outcomes and as influencing the relation between perceived social support and outcomes (see Figure 3). In particular, three classroom characteristics are of primary interest, two aspects of system functioning, classroom cohesion (i.e., classroom-level emotional support) and classroom structure (i.e., classroom-level expectations), and average wellbeing of the peer group.

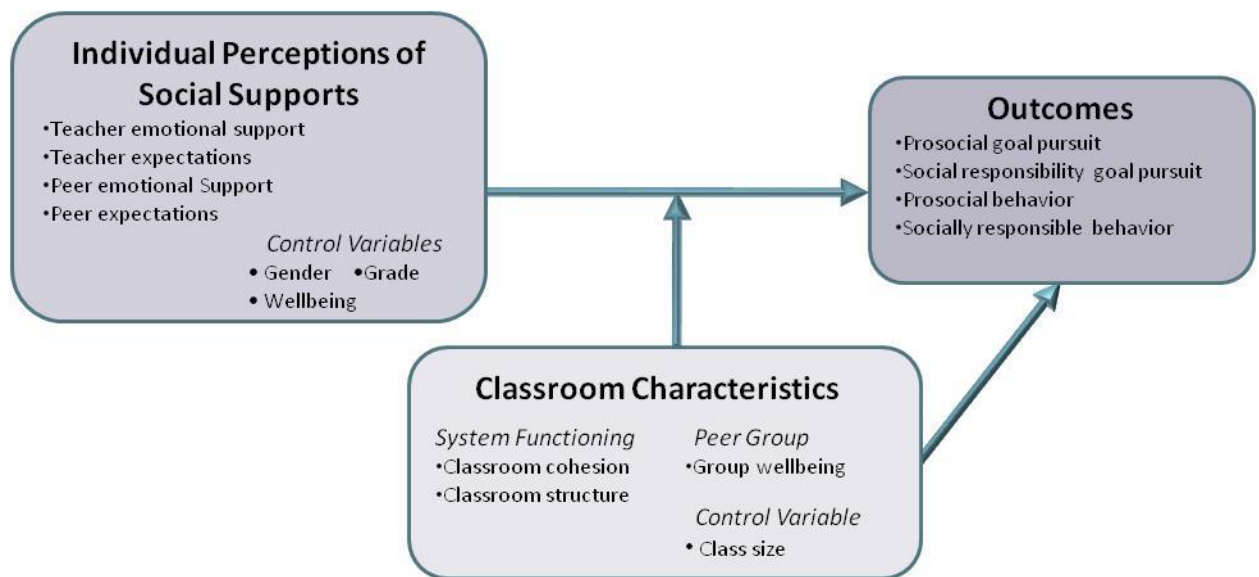


Figure 3. The conceptual model representing individual- and classroom-level influences on student outcomes as well as the classroom characteristics as moderating the relation between perceived social support and student outcomes.

System functioning. One aspect of healthy system functioning, cohesion, is of primary interest in this study. Cohesion refers to the degree to which the group as a whole provides emotional support for one another (Olsen, 2000). The term cohesion has been primarily reserved for describing the family context, and from that perspective family

cohesion has indeed been correlated with a student's interest in class (Wentzel, 1998). However, cohesion has also been adapted to capture classroom cohesion. For example, Moos and colleagues (1974) measured classroom cohesion through students' perceptions of classroom relationships in terms of involvement, affiliation, and teacher support. Similarly, other researchers have conceived of classroom cohesion in terms of belongingness, emotional support from both teachers and peers, which at the individual-level has been positively related to desirable outcomes (Goodnow, 1993). A second quality of the classroom environment drawn from family systems theory, structure, is also relevant for understanding student behavior. Indeed, perceptions of clear, balanced authority structure within the peer group has been related to student effort (Wilson, Karimpour, & Rodkin, 2011), while clear expectations of school-level structure have been positively related to academic and behavioral outcomes (Brand, Felner, Shim, Seitsinger, & Dumas, 2003). In contrast, chaotic or over-restrictive environments can negatively impact group functioning (Olsen, 2000), adult-adolescent relationships (Garbarino, Sebes, & Schellenbach, 1984), and adolescent behavior (Sameroff, Peck, & Eccles, 2004).

Qualities of the classroom climate might also interact with the relation between perceptions of social support and student outcomes, depicted in Figure 3 as the pathway between classroom characteristics and the link between individual perceptions of contextual supports and student outcomes. For instance, the relation between social support and student achievement varied between schools at different levels of academic expectations such that for those students with high levels of social support, high expectations at the school-level further increased gains in math and reading achievement

(Lee & Smith, 1999). In addition, variations in the relations between social support at both the individual- and school- level and academic engagement have been linked to students' access to resources outside of school (Gutman, Sameroff, & Eccles, 2002; Shouse, 1996).

Peer group characteristics. Another group of classroom characteristics that might be related to social goal pursuit and classroom behavior are attributes of the peer group. Specific characteristics of the peer group can influence the behavior of students through the process of socialization and specifically in terms of promoting academic competence (Wentzel, 2009). In the present study, the average wellbeing of the peer group is conceived as having a direct and a moderating effect on student outcomes in class (see Figure 3). The peer group can function as both a positive and negative socialization entity on the student and through multiple mechanisms (e.g., peer pressure, modeling; Brown et al., 2008). As depicted in Figure 3, only positive attributes of the peer group are considered in relation to social goal pursuit and classroom behavior.

Investigations of the interaction between student characteristics and characteristics of the peer group have shed some light on the joint contributions of these two sources of influence on positive academic behaviors. For example, being in a peer group with high levels of achievement does not have equivalent effects on students of varying academic abilities. Rather, students with the lowest levels of achievement who surround themselves with high achieving (vs. low achieving) friends have been shown to have greater changes in academic performance (Altermatt & Pomerantz, 2005). Therefore, characteristics of the peer group might moderate the relation between those

resources the student perceives are available to them in the classroom (i.e., emotional support) and their positive classroom behaviors.

Assumptions of the Model

Given the prominent role systems theory takes in shaping the conceptual model, for this study, classrooms are considered to be unique from one another and to show systematic differences as a function of group membership. In particular, each classroom group is viewed as being qualitatively different from another even if the same teacher leads the two classes. In addition, both dyadic and group interactions are the core mechanism for conveying information regarding contextual support (i.e., emotional support and expectations) and can be either explicit or implicit (Wentzel, 1997). These contextual supports are understood to exist at both the individual-level and as a quality of the classroom environment created by the group as a whole. Indeed, each classroom has a unique climate that can be described in terms of group perceptions and group characteristics or through external observations. Further, these classrooms are also embedded in additional layers of influence (e.g. school, neighborhood, school district) that although not depicted in the conceptual model are understood to exist.

The classroom climate is understood to drive student perceptions of social support available in this context. In other words, students are reporting on their unique perception of the same phenomenon (e.g., classroom cohesion and structure). Within each group more similarity in perceptions is expected than between groups, yet individual characteristics (e.g., age, sex, wellbeing) will still introduce some variability within each group. In this study, these perceptions of social support are conceived to be reflective (the shared environment drives each group members' reflection of the shared environment) of

the classroom climate rather than understood to be formative (each group member contributes a piece which aggregates to form the environment). Edwards and Bagozzi (2000) outline this conceptual distinction between reflective and formative approaches in conceiving of the direct relation between constructs (intangible phenomenon) and measures (an observed score). Further, the reflective approach (that the construct or environment drives the perception) follows from classical test theory in that measures are capturing the underlying construct with some additional measurement error. The reflective approach to capturing constructs based on contextual characteristics is common in multilevel frameworks (Lüdtke, Trautwein, Kunter, & Baumert, 2006) and is recommended over formative measurement approaches, when appropriate, from a statistical modeling standpoint (Howell, Breivik, & Wilcox, 2007).

In turn, classroom characteristics (e.g., cohesion or structure) can interact with student characteristics (e.g., perceived expectations for behavior) to alter behavioral trajectories. The range of student characteristics is not limited; there might be those adolescents who have rich bonds to the classroom group (i.e., perceived emotional support) while others have no bond they are aware of. This variability could exist on all characteristics, even those that represent deeper underlying beliefs about self.

The Current Study

In this study, I focus on how characteristics of the classroom climate are related to social goal pursuit and classroom behavior in conjunction with individual characteristics and perceptions of social support. In particular I am interested in the direct relations between multiple types of perceived social support (emotional support and expectations) from two sources, teachers and peers, and the pursuit of social goals and

their corresponding behaviors (e.g., prosocial and social responsibility). In addition, classroom characteristics in terms of cohesion (i.e., emotional support of the group) and structure (i.e., expectations of the group) from teachers and peers, are conceptualized as both directly and indirectly related to student outcomes. Also at the classroom-level, peer group emotional wellbeing is viewed as being both directly and indirectly linked to goal pursuit and classroom behavior. Finally, three variables with well-documented relations to social support and behavior (wellbeing, sex, and grade) will be included as control variables.

This study utilizes an existing data set which consists of 2788 student cases (49% female), from 125 fifth- through eighth-grade classrooms across 15 schools. Information was gathered from both students and their subject-matter teachers in the form of surveys. Students provided self-report data in terms of perceptions of support from teachers and peers in the form of emotional care and expectations as well as their beliefs about their wellbeing.

In addition, classroom behavior in the form of student's prosocial and socially responsible classroom behaviors as well as the student's pursuit of these two types of social goals was assessed. Moreover, social goals were captured through the student's perspective while prosocial and socially responsible behaviors were measured through the use of both teacher ratings and peer nominations. The subject-matter teacher and classmates from each classroom (e.g., a single math class) or team (e.g., core group of students who share common teachers) provided information regarding students' prosocial (e.g., cooperates and shares) and socially responsible (e.g., follows rules) behaviors. This latter approach relies upon external ratings that therefore are closer approximations to

actual behaviors in comparison to the student's perceptions of their own behavior. In essence, this multi-method, multi-informant measurement approach creates a richer picture of classroom behavior by incorporating three points-of-view using different types of assessment.

These data have been previously used in published studies of perceptions of social support and student outcomes at the individual-level (Wentzel, 1991a, 1993, 1994, 1997, 1998, 2002, Wentzel et al., 1995, 1997, 1999, 2004, 2007, 2010, 2012). Indeed this group of studies provides the empirical support for the Wentzel (2004) Model of Classroom Competence that is the foundation of the individual-level model presented in Figure 2. Therefore, the current study proposes a new way to utilize these data to extend the literature on social support to include classroom-level characteristics. More specifically, these data have not been used in a multilevel framework or to investigate: a) classroom-level effects, b) the relations between perceptions of social support and behavior when classroom characteristics are considered simultaneously, and c) a multi-dimensional notion of social support at the group-level (see Figure 3). Also, the relative contributions of peer and teacher support are not always consistent across samples, therefore investigating classroom-level characteristics that might help explain these variants could be useful. For example, I investigate the ways in which classroom climate might moderate the relations between perceptions of social support and classroom behavior. Therefore to examine Wentzel's (2004) framework of social support at the classroom-level, it was necessary to draw upon data that has been collected in a manner conceptually consistent with her Model of Classroom Competence across a broad sample of classrooms.

The following four research questions guide this investigation.

- 1) How do individual perceptions of social support from teacher and peers relate to individual social goal pursuit and behavior in class, when controlling for gender and grade?

Teacher and peer emotional support will be positively related to prosocial behavior, socially responsible behavior and the pursuit of each of these types of goals. Second, teacher and peer expectations for social behavior will be positively related to prosocial behavior, socially responsible behavior and the pursuit of each of these types of goals.

- 2) How do characteristics of the classroom climate in terms of cohesion and structure, and emotional wellbeing of the peer group relate to average social goal pursuit and classroom behavior?

Group cohesion and classroom structure will each positively predict average prosocial behavior, socially responsible behavior and the pursuit of each of these types of goals. Emotional wellbeing of the peer group will also be positively related to average prosocial behavior, socially responsible behavior and the pursuit of each of these types of goals.

- 3) To what extent does the relation between perceptions of social support from teacher and peers and social goal pursuit and classroom behaviors vary as a function of level of classroom cohesion or structure, and level of peer group wellbeing?

Levels of group cohesion will influence the relation between perceived social support and goal pursuit and classroom behavior such that for higher levels of cohesion the relation between perceived social support and student outcomes will be stronger in

comparison to classrooms with lower levels of cohesion. Similarly, levels of classroom structure will influence the relation between perceived social support and student outcomes such that for higher levels of structure the relation will be stronger in comparison to the classrooms with lower levels of structure.

In terms of peer group characteristics, the average wellbeing of the peer group will alter the relation between perceived emotional support and social goal pursuit and classroom behavior. In particular, the relation between perceived emotional support and student outcomes will be stronger in classrooms with higher levels of group wellbeing in comparison to classrooms with lower levels of group wellbeing.

- 4) Are there classroom contextual effects for social support, such that classroom cohesion and structure have additional effects on average social goal pursuit and classroom behavior over and above the effect of individual perceptions of emotional support and expectations for social behavior? Also, are there contextual effects for group wellbeing, such that group wellbeing has an additional effect on average behavior over and above the effect of individual wellbeing?

Average classroom social support (i.e., cohesion) will explain variance in social goal pursuit and classroom behaviors in addition to individual perceptions of teacher and peer emotional support. Similarly, average classroom expectations (i.e., structure) will also explain variance in student outcomes in addition to individual perceptions of teacher and peer expectations. Finally, peer group wellbeing will have an effect over and above individual characteristics in terms of wellbeing on average classroom behavior.

Definition of Terms

1. Classroom cohesion: the emotional support that members of a group provide for one another (Olson, 2000; 2011).
2. Classroom structure: similarity in group members' perceptions of order and clarity of the classroom (Trickett & Moos, 1973).
3. Emotional support: feelings that the teacher and peers care about one as a person (Wentzel, 2004).
4. Emotional wellbeing: positive feelings about one's self.
5. Expectations for social behavior: perceptions of the standards and values the teacher and peers hold for classroom behavior (Wentzel, 2004).
6. Group wellbeing: general positive feelings of a group
7. Prosocial behavior: actions intended to promote positive social relationships such as sharing, cooperating, and helping.
8. Social goal pursuit: the intention to act in ways that are cooperative and compliant in nature.
10. Socially responsible behavior: actions which promote or maintain classroom functioning.

Chapter 2: Literature Review

The purpose of this study is to better understand the complex, multi-layered social environment of middle school classrooms. Previous research has highlighted the important role perceived social support, in multiple forms and from multiple sources, plays in promoting positive student classroom behaviors (see House, 1981; Malecki & Demaray, 2002; Tardy, 1985; Wentzel, 2004). What is less known, however, are the ways in which classroom-level supports and general climate might also relate to student actions. In addition, characteristics of the classroom climate might also modify the relation between students' perceptions of support and social goal pursuit and classroom behavior (see Figure 3). In this study, the outcomes of interest are actions or intentions viewed as contributing to meeting the demands of the classroom which can be manifested as behaviors (e.g., cooperating) or the pursuit of relevant goals (Wentzel, 2004). Because the current study focuses on the social climate of the secondary classroom, student social behaviors and goal pursuit are the primary outcomes of interest. More specifically, social behavior is defined as those actions students display that encourage cooperation, help, and social responsibility. In general, these behaviors or the pursuit of related social goals, are seen as positive outcomes that demonstrate student skills and competence in the classroom setting.

I begin this chapter by reviewing the literature on the outcomes of interest, that is, classroom social behavior and related goal pursuit. Next, I provide evidence for the pathway between social support and the outcomes represented in Figures 2 and 3. Then, theories that function as guiding frameworks for research on social support are discussed. Next, building upon systems theory, classroom- and school-level characteristics are

discussed in light of student outcomes. Finally, I present overarching methodological issues pertinent to the current study design.

Classroom Behavior and Social Goal Pursuit

Classroom behaviors and social goal pursuit are the outcomes of interest for the current study, as depicted in Figures 2 and 3. Outcomes highlight social behaviors that are related to the student's participation in classroom activities and which also serve as manifestations of adolescent motivation (Skinner, Kindermann, Connell, & Wellborn, 2009). These classroom behaviors and intentions are often conceptualized as forms of engagement which can be further differentiated in terms of whether the actions are social or academic and are self-motivated or more cooperative in nature (Fredericks, Blumenfeld, & Paris, 2004). The outcomes included here focus on social actions that reflect positive conduct in general and that are geared towards promoting or maintaining classroom functioning. More specifically, two types of positive social behavior and goal pursuit are of interest: a) prosocial actions intended to promote positive social relationships, such as sharing, cooperating, and helping, and b) demonstrating social responsibility or compliance. These types of behaviors, intentions, or social competencies have in turn been related to academic outcomes in the classroom (Malecki & Elliot, 2002; Wentzel, 1991b, 1993, 1998, 2004; Wentzel & Caldwell, 1997).

Further, the conceptualization of student behavior adopted here recognizes that action is dependent upon characteristics of the student and features of the context (Bronfenbrenner, 1989). In order for a student to take part in classroom tasks or be an active participant, she must be motivated to act; this motivation can be initiated by her own personal attributes and through contextual supports provided by others

(Bronfenbrenner, 1989; Connell & Wellborn, 1991; Wentzel, 2004). Indeed, Wentzel (2004) presents a model of classroom competence that outlines both socio-motivational processes and self-processes that predict specific outcomes defined by the demands of the classroom context. Four forms of social support (emotional care, expectations, help, and safety) interact with the individual's self-processes, such as affect, self-efficacy, control beliefs, and reasons for behavior, to motivate the student to act in ways that reflect classroom competence. Moreover, these behaviors and intentions reflect both social and academic skills that are related to academic achievement in educational settings.

Prosocial and socially responsible behavior. As previously indicated, social behaviors and social goal pursuit are of primary interest in the current study. Classroom social behavior as related to interpersonal relationships has been the focus of research on teacher-student relationships (Pianta, 1999), peer relations and friendships (McNamara Barry & Wentzel, 2006; Nelson & DeBacker, 2008; Wentzel 1991a; Wentzel & Asher, 1995, Wentzel & Caldwell, 1997; Wentzel, Caldwell, & McNamara Barry, 2004), or both teacher and peer relationships simultaneously (Chang, 2003; Wentzel, 1994, 1997, 1998, Wentzel et al, 2007, 2010).

In the current study, both prosocial behavior and social responsibility will be considered. Prosocial behavior encompasses student actions to cooperate, help, and share and has been acknowledged as an important indicator of social competence (e.g., Ladd, 1996; Wentzel, Filisetti, & Looney, 2007). Furthermore, prosocial behaviors have been related to the quality of relationships with peers and adults, positive beliefs about self, and perceived norms for behavior from the teacher and peers (Wentzel et al., 2007). The second category, social responsibility, focuses on student behaviors that aim to uphold

the norms of the classroom, including following rules intended to create and maintain a conducive learning environment and which are interrelated with positive academic outcomes (Wentzel, 1991b).

Multiple studies by Wentzel and colleagues over the last twenty years have demonstrated significant relations between social support from teachers and peers and prosocial behavior, social responsibility, and social goal pursuit (see Wentzel, 2004; Wentzel, Russell, Garza, & Merchant, 2011). Indeed, this body of work is the foundation of the individual-level model depicted in Figure 2 and provides the data that will be used in the current study.

Across this body of work, the relative contributions of peers and teachers to prosocial and socially responsible behavior have varied at times. For example, perceived expectations for behavior from peers predicted adolescent prosocial behavior over and above teacher expectations, which did not have a unique effect on prosocial behavior (Wentzel, Filisetti, & Looney, 2007). Indeed, during adolescence researchers often look at prosocial behaviors in reference to influences from peers and friends while less emphasis has been placed on teacher relationships.

In contrast, behavior that demonstrates social responsibility or compliance (e.g., following rules) might be more influenced by those in positions of authority such as teachers. In addition, teachers spend time directly communicating to students the norms of the classroom as well as indirectly communicating these norms through differential treatment of students (i.e., preference); teacher preference has been related to students' demonstrations of socially responsible behavior (Wentzel, 1991b). Although, perceived support from teachers, but not from peers, has been found to uniquely predict the pursuit

of social responsibility goals (Wentzel, 1994, 1998), this distinction might not be as clear in terms of behavior as compared to goal pursuit, especially across different populations. For example, in a sample of behaviorally at-risk students, peer emotional support and teacher academic expectations predicted socially responsible behavior (Wentzel et al., 2010), and in a sample of primarily Hispanic fifth and sixth graders peers rather than teachers uniquely predicted socially responsible behavior (Wentzel et al., 2011).

The multiple sources of data that support these relations were used in the current study by combining them and examining an additional level of influence (see Figure 3). The current study aims to further examine the relative contributions of each source of social support and classroom-level factors to these two types of classroom behavior, prosocial and socially responsible behavior.

Social goal pursuit. Another aspect of social behavior incorporated into the current study is the student's pursuit of social goals; that is, the intent to act in socially responsible and prosocial ways. Antecedents of social goals include contextual social supports from both teachers and peers. Indeed, perceived teacher caring (Wentzel, 1994, 1997, 1998; Wentzel et al., 2010), peer emotional support (Nelson & DeBacker, 2008; Wentzel, 1998) and peer expectations (Wentzel et al., 2007, 2010) have predicted social goal pursuit. Also, students who perceive teachers as holding high expectations are more likely to pursue social goals (Wentzel, 2002), and teacher's who create a more authoritative climate (one that is emotionally supportive with appropriate expectations) might have students who act in more socially responsible ways in comparison to teachers who are more authoritarian or permissive (Walker, 2008).

Alternative conceptualizations of social characteristics and goals. Although not adopted in the current study, other approaches to capturing social behavior and social goal pursuit exist in the literature and have provided important insight into the social climate of classrooms. For example, in peer nomination procedures, prosocial leadership is often included in studies of peer relationships and treated as a character trait rather than as behavior (e.g., Pursell, Laursen, Rubin, Booth-LaForce & Rose-Krasnor, 2008). More recently, Ryan and Shim (2006) have presented social achievement goal orientations that align with two dimensions of social development: social demonstration-avoid and social demonstration-approach. Although these are interesting perspectives for further exploring the domain of motivation and social behaviors, none of these approaches to capturing prosocial characteristics or social goals is appropriate for the current study given the focus on behavior rather than traits or goal orientations. Instead, social behaviors as judged by others and the student's perceived intent to pursue prosocial and social responsibility goals will be examined.

Classroom behavior, social goal pursuit, and academic achievement.

Although academic achievement is not the focus of this study, it is pertinent to acknowledge the conceptual and empirically documented links between social (i.e., prosocial and socially responsible) behavior and academic achievement (see Juvonen & Wentzel, 1996; Wentzel, 1991b). More specifically, prosocial behavior has been acknowledged as an important indicator of social competence (e.g., Ladd, 1996; Wentzel, Filisetti, & Looney, 2007) which in turn has been linked to academic achievement (see Wentzel, 1991a; Wentzel & Caldwell, 1997; Ladd & Dinella, 2009). Further, the link between social and academic competence has also been explored as a reciprocal process

over time (Welsh, Parke, Widaman, & O'Neil, 2001) and many school interventions (see Durlak et al, 2011) and classroom instructional reforms (e.g., Responsive Classroom Approach; Rimm-Kaufman & Chiu, 2007) have integrated the two domains into their approaches.

Further the pursuit of socially responsible goals has been linked both directly and indirectly to academic achievement (see Wentzel, 1991b for a review; Wentzel, 1998). From the mechanisms identified in Wentzel's (1991b) review of links between social goal pursuit and academic outcomes, more recent empirical work has investigated this relation in conjunction with perceived self-efficacy (Patrick, Hicks, & Ryan, 1997) academic task orientation (Anderman & Anderman, 1999), peer relationships (Nelson & DeBacker, 2008) and general school characteristics (Dowson, McInerney, & Nelson, 2006). Although further exploring the link between social behavior and social goal pursuit would be advantageous, it is beyond the scope of the current study.

Social Support

The foundation of this study is built upon the literature on social support in educational settings, which has been related to positive behaviors from first-grade (Hamre & Pianta, 2005) through the first-year of college (Freeman, Anderman, & Jensen, 2007). In addition, social support has been conceptualized both as one general entity and as multi-dimensional, and studied from either a single source or a combination of sources (e.g., teachers and peers) simultaneously. In this section, I discuss these key conceptual distinctions and then summarize the correlates of social support. Given the large body of work that exists on social support, the focus is on typically developing adolescents in educational contexts founded on North American and Western European ideals. Although

some work has been done on students in Asian countries, this literature will not be included, given the vast cultural differences in approaches to schooling (Hawkins & Zhixin, 2003), teacher-student relationships (e.g., Takemura, & Shimizu, 1993, in Japanese classrooms), and peer group interactions (e.g., Nishioka, 2006, in Japan).

In addition, the theory or principles underlying the conceptualizations of social support are not clear across the literature. While some researchers have a well-documented rationale behind the form(s) of social support they have incorporated, others use the construct without providing much background. For example, Wentzel (2004) draws upon decades of previous work founded on socialization and motivational processes and Malecki and Demaray (2002) pull from established models of social support. In contrast, some researchers provide little background beyond citing that teacher support is related to positive student outcomes and thus an important contextual support to include (e.g., Alfaro, Umaña-Taylor, & Bámaca, 2006). In light of this, much confusion exists for interpreting the results of this body of work.

Multiple forms of social support. Most often, social support in the context of educational settings has been studied as a form of general emotional support or as a general sense of belongingness to school (see Malecki & Demaray, 2006; Wentzel et al., 2010). However, social support in the classroom context can be delineated into at least four dimensions: providing emotional support, communication of expectations and values, providing instrumental help, and creating a safe environment (Ford, 1992; Wentzel, 2004). Wentzel has found that each dimension is related to positive student outcomes in the form of interest and the pursuit of goals to be prosocial and socially responsible (Wentzel et al., 2010). From this framing, members of the classroom create a

supportive context which provides a rich network of resources that afford the student the opportunity to demonstrate competence and engage in classroom activities. In essence,

These dimensions reflect essential components of social support in that if present (1) information is provided concerning what is expected and valued in the classroom; (2) attempts to achieve these valued outcomes are met with help and instruction; (3) attempts to achieve outcomes can be made in a safe, non-threatening environment; and (4) individuals are made to feel like a valued member of the group. (Wentzel et al., 2010, p. 2)

In addition, broad models of social support, not constrained to the classroom context, have also included multiple dimensions of social support. For example, House's (1981) four factor conceptualization of social support includes emotional, informational, instrumental, and appraisal support, and overlaps with Wentzel's (2004) model. Indeed, this broad body of work on social support emerged from the mental health literature (House, Landis, & Umberson, 1988) and has been widely used with adults. Moreover, House recognized social support as "the emotionally or instrumentally sustaining quality of social relationships" (House, Umberson, & Landis, 1988, p. 293). In line with these observations, the current study focuses on two vital components of this multi-dimensional conceptualization found in both frameworks: social support in terms of emotional care and expectations. Evidence points to the importance of these two aspects of social support at the classroom-level as well (see Connell & Wellborn, 1991; Moos & Moos, 1978). Given the multilevel conceptual model guiding this study, these two dimensions of social support have been included because there is empirical support for their inclusion at both the individual- and classroom-level.

In the social support literature, the multi-dimensional framework has been further fleshed out by Tardy (1985), who identified other conceptual differences in research on social support. Specifically, he brought to light variants of social support in terms of: a) direction of the support, received or given; b) disposition, qualities of available support, or actual utilization of support; c) goals of the research to describe vs. evaluate support; d) content of support (i.e., four types); and e) source of support from one's social network (e.g., family, friends, co-workers). Application of this particular model allows one to distinguish between different aspects of social support and refine one's own conceptualization of social support in a particular study. For example, in the current study of social support the focus is on a) provisions of support by individuals and groups and as a function of the classroom, b) quantities of available support, c) describing classroom social support, d) two dimensions of support content, and e) support as derived from the student's classroom network via the teacher and peers.

In regards to content, two aspects of social support, emotional support and expectations, are the focus of the current study. Social support in the form of emotional support is more commonly found in the literature and is often conceptualized as provisions of care and recognition of the student as a person (Wentzel, 2009). The work on care in educational settings can also trace roots to Noddings' (1992) notion of care as a vehicle to student engagement, as well as Goodenow's (1993) and Connell and Wellborn's (1991) focus on student's perceptions of relatedness or belongingness to classrooms or schools. Indeed, Osterman (2000) summarizes the literature on belongingness, making connections between belongingness and social outcomes through 1) the development of school competencies, 2) prosocial attitudes, and 3) behavioral

engagement. Also, of interest for this study are expectations, a second form of social support. Expectations have been associated with creating a structured environment in which students understand how they should act and what consequences are associated with their actions (Connell & Wellborn, 1991; Olson, 2000, 2011; Wentzel, 2004). Moreover, these expectations can come from teachers as well as peers.

In examining multiple types of social support across both teachers and peers, the relative contributions of each dimension of social support might vary as a function of the outcome of interest. For example, Malecki and Demaray (2006) utilized a multi-dimensional framework of social support (i.e., emotional, informational, instrumental, and appraisal) and found that only emotional support from teachers positively predicted student academic competence, while the other three forms of social support did not have a unique contribution. In contrast, Wentzel et al. (2010) found all four forms of teacher social support (i.e., emotional care, expectations, instrumental help, and safety) positively predicted interest in class. However, only peer expectations and peer help were related to interest in class. Therefore, the incorporation of multiple forms of social support could be advantageous in trying to understand the antecedents of prosocial and socially responsible behavior as well as students' pursuit of these two types of social goals.

Multiple sources of social support. Social support can be drawn from one or many individuals or groups from one's social network (Tardy, 1985) or members of the classroom (Wentzel, 2004). In the educational context, a student's social network includes those directly within the school (peers, teachers, school administration and staff) as well as some connections with individuals and groups outside of the actual school

(parents, and members of the neighborhood community). In the context of the classroom, the most proximal sources of support are peers and the teacher.

The literature on classroom social climate has a rich history which considers either peers or teacher as sources of support. However, less work considers the two sources simultaneously (Wentzel, 2009). Indeed, teacher support and peer support in some classrooms make distinctly different contributions to student behavior, while in other classrooms both sources of support predict similar behavior. For example, in some cases teacher support has been related to academic behaviors (Malecki & Demaray, 2003), while in other cases peer support and not teacher support has been a unique predictor of prosocial behavior (Wentzel, Filisetti, & Looney, 2007). In contrast, emotional support from both sources has been related to general behavioral engagement (Furrer & Skinner, 2003; Ma, Phelps, Lerner & Lerner, 2009), cooperative participation (Ladd & Burgess, 2001), and task-related interactions (Patrick, Ryan, & Kaplan, 2007). Also, social support from peers and teachers was found to predict academic engagement (Bouchey & Harter, 2005), intrinsic valuing of school, and academic efficacy (Murdock & Miller, 2003). In light of this evidence, social support from both teachers and peers, or even only from peers, appears to have positive benefits in comparison to little or no support from either source, especially during the transition to middle school (Davidson, Gest, & Welsh, 2010). Moreover, levels of perceived peer support tend to be significantly higher than teacher support (Furman & Buhrmester, 1985; Lempers & Clark- Lempers, 1992) and specifically from age 13-18 in comparison to ages 9-12 (Bokhorst, Sumter, & Westenberg, 2009), while perceptions of teacher support decline over the transition from elementary school to middle school (Simmons & Blyth, 1987). Given the variation in the

contributions of both teachers and peers across classrooms, as proposed in the current study, it seems beneficial to include both sources in order to obtain a richer picture of the role social support plays in secondary classrooms.

Correlates of social support. In this section, I continue to focus on the literature that includes provisions of social support from teachers and peers simultaneously. Although some researchers have considered the joint contribution of support from parents and teachers, or parents and peers, only teachers and peers will be considered in the current study given the focus on the classroom context. Studies that looked at global support from school or family (e.g., Gutman, Sameroff, & Eccles, 2002) were not reviewed. However, studies that viewed teacher support at the school-level will be discussed later when focusing on the broader levels of the educational context. Also, in refining the body of empirical literature to include here, other distinguishing characteristics arose. For example, studies of social support spans grades 1 through 12, but the emphasis here is on work utilizing secondary school samples. Also, given the guiding multi-dimensional framework of social support, studies that combined emotional support and expectations into a single construct (e.g., Katz, Kaplan, & Gueta, 2010) were not reviewed in this section. Other studies emphasizing negative behavioral outcomes (i.e., aggression or bullying) were also not appropriate for the perspective adopted here. Now, I summarize correlates of social support in terms of the two dimensions, emotional support and expectations, as they apply to goal pursuit and classroom behavior.

Emotional support from teachers and peers. In general, models of social support often conceptualize emotional support in terms of care or relatedness, from either teachers or peers. Perceptions of teacher emotional support have positively predicted

behavioral engagement (Furrer & Skinner, 2003), social behaviors and social goal pursuit (Wentzel, 1994, 1997, 1998, 2004; Wentzel et al., 2010), perceived academic competence and academic motivation (Marchant, Paulson, & Rothlisberg, 2001), teacher-rated effort (Murdock & Miller, 2003), general emotional engagement (Furrer & Skinner, 2003), and interest (Wentzel, 1997; Wentzel et al., 2010); perceptions of emotional support have also negatively predicted disruptive behavior (Ryan & Patrick, 2001) and distraction in school (Wang & Holcombe, 2010). Similarly, perceiving classroom peers as emotionally supportive is positively correlated to prosocial behavior and prosocial goal pursuit (Wentzel, 1998; Wentzel, Filisetti, & Looney, 2007; Wentzel & McNamara, 1999), academic achievement (Gutman, Sameroff, & Eccles, 2002), and coming prepared to class (You & Sharkey, 2009). In addition, drawing upon a multi-dimensional framework of social support, Malecki and Demaray (2003) found only emotional support from teachers uniquely predicted student academic competence. Therefore, in the current study perceived emotional support from both teacher and peers will be considered in relation to both prosocial and socially responsible behavior and goal pursuit.

Expectations and values of teachers and peers. A second form of social support is the expectations and values that teachers and peers hold for the student in terms of classroom behaviors and academic performance. Indeed, perceived expectations for appropriate classroom behavior from the teacher and peers were positively related to interest in class (Wentzel, 2002; Wentzel et al., 2010), while perceived peer (Wentzel, Filisetti, & Looney, 2007) and teacher expectations have been found to predict social goal pursuit (Wentzel, 2002) and academic engagement (Tucker et al., 2002). Expectations from teachers in the form of perceived classroom structure has also been

associated with student reports of both behavioral and emotional engagement (Skinner & Belmont, 1993). In addition, peers' values for academics have been related to average engagement (i.e., coming prepared to class) across grades 6 to 8 and to positive growth in engagement (You & Sharkey, 2009). As proposed in Figure 2, perceived expectations for behavior from two sources, teacher and peers, will be considered as predictors of social behaviors.

In contrast, Weinstein and colleagues (2004) have investigated the relations between teacher expectations for academic performance at the beginning of the year and actual student performance at a later time using teacher reported beliefs and student end-of-year academic achievement. A guiding perspective is that perceived low academic expectations from teachers can negatively impact student behavior and subsequent academic achievement. For example, if expectations are set too low by teachers, students might act in ways that align with these messages (i.e., self-fulfilling prophecy) and disengage from the classroom (Weinstein, Gregory, & Strambler, 2004). In addition, inequities in teacher academic expectations can also impact a student's academic performance (McKown & Weinstein, 2008) and have been related to children's perceptions of their own school-related competencies (Rubie-Davies, 2006). For example, McKown & Weinstein found that in classrooms where students perceived that teachers had varying levels of expectations for different students, there were differences in expectations between groups of students (defined by ethnicity), and teacher differential treatment accounted for actual differences in academic achievement at the end of the school year.

Student characteristics. The literature on social support includes an array of child demographics that have been included as substantive controls when looking at correlates of social support. In the current study, these characteristics are found in Figure 2, as related to social support and classroom behavior. In particular, gender has been included because girls tend to perceive more social support from teachers than boys (Bokhorst, Furrer & Skinner, 2003; Rueger, Malecki, & Demaray, 2010; Wentzel et al., 2010). In addition, recent work by Rueger, Malecki, & Demaray (2010) found relative contributions of multiple sources of support to psychological and academic adjustment also vary across gender. When considering multiple sources of support, classmate support is more salient for girls than boys.

Age or grade-level also appears to be an important factor to consider. For instance, a well-documented trend is that the quality of teacher-adolescent relationships decreases beginning with the middle school grades (Midgley, Feldlaufer, & Eccles, 1988; Murdock & Miller, 2003; Wentzel, 1997). Moreover, in cross-sectional studies, a sharp decline in perceptions of social support from teachers was found between ages 12 and 13 (Bokhorst, Sumter, & Westenberg, 2009) and teacher emotional support was found to be significantly higher in 6th graders as compared to 7th graders (Wentzel et al., 2010). Additionally, students' understandings or accurate comprehension of the expectations their teachers hold for them improve from first grade to fifth grade (Weinstein, Marshall, Sharp, & Botkin, 1987). In light of this, the current study focuses on early adolescence when perceptions of social support seem to shift and students' understandings of their role in the classroom become clearer. Therefore, the child's grade level or age should be

accounted for when studying social support and potential sources of influence and is included as a control variable in this study.

The child's access to internal resources associated with social competence is also included in the model. Specifically, the way children feel about themselves in terms of psychological wellbeing, has been positively related to social support consistently across multiple studies based on a meta-analysis of 246 studies (Chu, Saucier, & Hafner, 2010). In addition, social support from both teachers and peers has been related to negative emotions such as distress (Ahmed, Minnaert, van der Werf & Kuyper, 2010; Wentzel, 1998) depression, and low self-esteem (Malecki & Demary, 2006; Rueger, et al., 2010). Further, Wentzel and McNamara (1999) found negative affect (i.e., distress) was related negatively to prosocial behavior. However, depressive affect was not related to social support in the form of expectations from teachers and peers (Wentzel, Filisetti, & Looney, 2007). Therefore, while investigating perceptions of social support, especially in the form of emotional support, it might be beneficial to consider the student's positive views of self (see Figure 2).

Summary of social support. Overall, strong evidence exists in the literature to support the pathway between students' perceived prosocial and social responsibility goal pursuit and corresponding behaviors and social support from teachers and peers. However, among this body of work less emphasis has been placed on the multi-dimensional nature of social support, although there is empirical evidence to support this conceptualization. In addition, both teachers and peers function as important contributors to perceptions of social support, which is in turn, related to socially responsible and prosocial behaviors and the pursuit of these types of goals. I now turn my focus to

theories that provide a foundation for research on interpersonal relationships and group functioning in secondary schools.

Theories Guiding Research on Social Support

In general, the work on social support has been informed from multiple fields that are interested in examining processes of social relationships. A recent review by Martin and Dowson (2009) identified key motivational theories pertinent to research on interpersonal relationships in educational settings. In addition, Martin and Dawson offered a tri-level model for examining relationships, motivation, and engagement. However, they took a fairly cognitive focus and did not highlight enough the social context of the classroom, nor did they integrate principles of systems theory as vital to a multilevel framework. In this section, I highlight three related areas of theory applicable to the study of classroom social support that were not explicitly addressed in the Martin and Dowson review. First, attachment theory addresses the relationship history the child brings with them that serves as the foundation for future close relationships, namely with teachers and peers. Second, Connell and Wellborn (1991) formulated an important theoretical model of self-system processes adapted specifically for educational settings. Finally, principles of systems theory are discussed as useful for understanding group functioning in terms of families and extended to classrooms.

Theory relevant for individual-level model components.

Attachment theory. Often, work on positive, caring teacher-student relationships draws upon principles of attachment theory. According to attachment theory (Bowlby, 1969), the way in which the individual interacts with teachers or non-familial adults reflects an internal working model which guides social interactions. In the first years of

life, an attachment is created between child and caregiver that is primarily based on the responsiveness of the caregiver (i.e., accepting, available, comforting) to the child's needs (Cassidy, 2001). Specific parental characteristics most powerfully associated with a healthy, or secure, attachment include: parental sensitivity; engaging in reciprocal and rewarding interactions; and shared, mutual attention to positive, engaging situations (de Wolff & van IJzendoorn, 1997). The attachment that comes of these interactions establishes the propensity for the child to trust the caregiver. In turn, the child develops an internal working model which guides views of self as valuable, and one's capabilities to engage in social interactions (Bergin & Bergin, 2009).

In the context of the teacher-student relationship, both the teacher and the student bring preconceived notions about others and the self (i.e., wellbeing) with them to the relationship (see Figure 2 path between individual characteristics and contextual supports). These internalized systems in turn influence perceptions of the relationship, guiding all interactions and reactions (Bretherton, 1985). Therefore, students as well as teachers have their own expectations for the relationship, which can determine the degree to which each party is actively involved and whether positive or negative qualities are perceived in the dyad.

Further, in the context of schools, each child brings with them an attachment to primary caregivers which can influence potential attachments to the teacher. Indeed, principles of attachment have been discussed explicitly in the context of school via relationships with teachers (see Davis, 2003; Wentzel, 2010) as well as via indirect effects of attachment to parents on academic achievement (Bergin & Bergin, 2009). According to a recent review by Bergin and Bergin (2009) regarding attachment in the

classroom, the child's attachment history influences school achievement through the following child characteristics: a) acceptance of challenges and independence, b) ADHD symptoms, c) social competence, and d) propensity toward delinquency. Each of these factors in turn has a direct influence on children's academic success. Given the focus of the current study, it is the relation between perceptions of emotional support (i.e., a quality of the teacher-student relationship) and social competence in the form of positive schooling behavior and pursuit of social goals that is integrated into the conceptual model (see Figure 2). In addition, socially competent children have higher quality relationships with both teachers and peers (Bergin & Bergin, 2009) and caring relationships with teachers are in turn related to prosocial and socially responsible behaviors (Wentzel, 1994, 1997, 1998).

Self-System Model of Motivational Development. One of the key theoretical models underlying the current study is Connell and Wellborn's (1991) model of self-system processes. This seminal piece draws upon the rich history of work done on the self, that is, how the individual develops into their own person, integrating cognitive, social and motivational perspectives. In particular, Connell and Wellborn developed a theoretical model that focuses on the interaction of context and sense of self as predecessors of action (i.e., engagement). Further, it is these actions that serve as pathways to acquiring actual skills. In addition, this process model has been explicitly developed for understanding educational contexts. The model outlines three psychological needs that all individuals have - relatedness, competence, and autonomy - which interact with features of the educational context, defined in terms of involvement,

structure, and autonomy support that lead to different courses of action (i.e., engagement or disengagement) that can occur for students.

Of the three fundamental needs referenced in the Connell and Wellborn model, it is the needs for relatedness and competence that are of interest for the current study (see Figure 2). Relatedness is defined as “the need to feel securely connected to the social surround and the need to experience oneself as worthy and capable of love and respect” (Connell & Wellborn, 1991, p. 51-2). In essence, one’s own perspective or self-evaluation of whether or not this need is being met in the current context motivates action. For example, if a student feels the classroom is supporting her need for relatedness, then she will most likely engage in classroom activities, through one or many forms (i.e., behaviorally, emotionally, or cognitively). On the other hand, if the classroom does not support her need for relatedness, she most likely will disengage or withdraw (Skinner, Kindermann, Connell, & Wellborn, 2009). The contextual characteristic of the classroom that aligns with the need for belongingness is involvement. That is, members of the classroom provide emotional support for the student so that she feels welcomed into and cared for by the classroom community. In the current study, this perspective provides theoretical support for the pathway between emotional support from both teachers and peers and student outcomes.

A second core need for individuals is competence, that is, “to experience oneself as capable of producing desired outcomes and avoiding negative outcomes” (Connell & Wellborn, 1991, p. 51). Each student will perceive whether this need is being met or not through classroom provisions of support in the form of structure. That is, whether expectations for and consequences of classroom behavior are clear. Accordingly, the

need for competence is supported by a structured classroom environment which is created through expectations from teachers and peers. These expectations will support students' actions through the feelings that he is capable and knows how to meet the demands of the classroom (i.e., self perceptions of competence). It is this link between contextual supports in the form of expectations from teacher and peers that give rise to feelings of competence leading to student behavior that offers support for the pathway in Figure 2.

Connell and Wellborn's model of self-system processes has been widely applied to studies of student motivation and engagement. For the current study, this model provides the rationale underlying perceptions of contextual support and the pathway to individual outcomes (i.e., the individual-level model). In addition, it highlights the importance of considering student needs or characteristics and their fit with the features of the classroom context. This same principle is reflected in theories of systems and system functioning to which I now turn my attention.

Theory relevant for classroom-level model components.

Systems theories. To better understand the multiple layers of influence in the classroom, it is useful to acknowledge explicitly the interrelatedness of dyadic interactions, group relationships, and overall classroom functioning. From a systems perspective, the classroom is viewed as complex, consisting of a multitude of overlapping social interactions between teachers, students, and peers (see Figure 1). Additionally, the overall classroom climate is understood to be the "shared perceptions of persons in the environment" (Trickett & Moos, 1973, p.94). Utilizing a systemic view of classrooms allows for a better representation of relationships within the classroom as interconnected, influencing each other within the context beyond the dyad alone. In other words, whether

a teacher gets along with one student not only impacts that particular dyadic relationship but concomitantly impacts the quality of the relationship between the teacher and students as a whole. Therefore, the overall functioning of the classroom is responsive to the emotional connectedness between all parties involved, while acknowledging the unequal power dynamics of teacher, student and peer hierarchies. From this perspective, all processes and relationships of interest are to be interpreted contextually.

A systems approach and principles of family dynamics have been previously used in the literature to better understand teacher-student relationships (see Pianta, 1999; Walker, 2008; Wentzel, 1997). Moreover, family systems theory takes into account the interconnected family unit in terms of the child, the parent-child dyad, the parental dyad, and the role of siblings (Maccoby, 2007). An important notion inherent in this approach is that interactions and responses within the family shape the child's behavior and are responsible for child outcomes. Indeed, there are various layers and subsystems encompassed within the larger family that work symbiotically to regulate overall functioning of the family, thus providing feedback to each aspect (or person) within the family system (Maccoby, 2007). Similarly, in the classroom, a student's responses are shaped by the teacher-student subsystem, peer subsystem, and teacher-peer subsystem. These subsystems are depicted in Figure 1 as overlapping spheres. Of particular interest for this study are the first two subsystems, labeled *a* and *b*. Whether or not the student engages in the classroom is therefore influenced by the behaviors they demonstrate and observe within the multitude of social interactions in the classroom.

Circumplex Model of Marital and Family Systems. One model of family functioning especially useful for understanding the classroom context is the Circumplex

Model of Marital and Family Systems (Olson, 1986, 2000, 2011). The model was developed as a means to integrate multiple family dimensions repeatedly found to be influential on family functioning into a single model (Olson, 1986; 2000; 2011). More specifically, these aspects of family functioning were extracted after a review of the literatures in family therapy, family sociology and small-group interactions (Gondoli & Jacob, 1993). There are three dimensions that frame the model: cohesion, flexibility (i.e., structure), and communication, which are assumed to have varying levels of expression within each family system. Ideally, a family that is balanced along these dimensions will function smoothly (Olson, 1986; 2011), although in times of duress the system might need to accommodate for additional stressors by shifting levels within each dimension. The model can assist researchers in identifying where strengths as well as weaknesses in group functioning might lie, and to record how the system adjusts over time (Olson, 2000). In particular, the first two dimensions, cohesion and structure, are of primary importance for this study. They are depicted in Figure 3 under classroom characteristics.

The circumplex model of marital and family systems allows researchers to capture and measure multiple dimensions of a relationship system as well as account for individual influences within the system, making this a potentially powerful framework for understanding the complexity of classrooms. Each classroom is a unique combination of teacher and students, housed in a particular space and time, which might function differently across the dimensions of cohesion, structure, and communication, where different combinations can potentially lead to positive outcomes. For instance, one particular classroom might require higher levels of cohesion than another for students to engage, while another might need more structure to maintain adequate student

participation in classroom activities. Indeed, the model allows researchers to identify differences across classrooms as each system can vary from another given the unique membership held within each context.

Ecological systems theory. A second systems theory that has implications for guiding research on classroom social support is Bronfenbrenner's ecological systems theory (1989). From this systemic perspective, all interactions between the individual and the classroom context are understood in terms of the fit of the individual's characteristics and the environments they occupy at a given point in time. The goodness-of-fit between these two dimensions leads to possibilities for growth (Bronfenbrenner, 1989). Moreover, differences in individual developmental trajectories can be understood in terms of variations in developmental processes that rise out of the interaction between the person and the environment. Due to personal characteristics, individuals will vary in their interactions with their surroundings, and the degree to which the environment affords individual growth changes case-by-case. For example, a student who requires high levels of emotional support from the teacher and peers, but is in a classroom with little support, is less likely to engage than if he were in a class that offers these supports. This same principle can be applied to classroom-level supports as depicted in Figure 3; if that same child were in a classroom with high cohesion he might be more likely to engage than in a classroom with low cohesion.

Further, in looking at classrooms as systems, it is advantageous to account for both student and contextual influences as related to overall classroom functioning. Classrooms consist of reciprocal social exchanges in which both parties are exerting influence on each other (for instance: teachers on students and students on teachers). In

turn, these interactions and the context itself can provide affordances for the student. In particular, supportive interactions with peers and teachers in these social contexts have been particularly influential (see Wentzel, 2004). Therefore the interaction of person and contextual variables are pertinent when attempting to account for differences in student behaviors (Pianta, 2006; Trickett & Moos, 1973; Wentzel, 2004). In light of the current study, both individual and classroom characteristics will be considered simultaneously as direct effects, and classroom characteristics as potential moderators of relations between individual perceptions of support and social behaviors.

An additional feature of systems models is the influence of time, what Bronfenbrenner (1989) referred to as the chronosystem. The culmination of all experiences influences how the individual interacts with the present contexts, yet behavior is not predetermined. The influence of time also implies that the system is not static but ever changing. Studying a child at the beginning and end of the school year should therefore account for variations in the child's ecosystem, given the growth that might have occurred over time. In addition, one should not assume that the changes that occur over the school year are consistent across all children. For example, teachers have described variations in changes in a specific quality of their relationship with students, trust. As described by Russell, Wentzel, and Donlan (2011), teachers report that students either gain or lose the teacher's trust throughout the school year or show no change in trust.

In addition, according to Bronfenbrenner (1989), changes might occur either within the individual or external to the individual (i.e., in the environment), yet either change will prompt a shift in the way the two aspects interact. For instance, a student

might feel better about herself, (i.e., increased wellbeing) over the school year, influencing perceptions of social support (internal shift). On the other hand, the classroom might provide higher levels of cohesion (i.e., a shift in the environment), with potential repercussions for the fit of the young person in the classroom environment (external shift). Previous investigations of social support incorporate the chronosystem into research methodology through documentation of change, examining how support develops or diminishes over school years (e.g., Wentzel, 1997) and transitions (e.g., Bokhorst, Sumter, & Westenberg, 2009; Midgley, Feldlaufer, & Eccles, 1988).

Summary of guiding theories. In examining social support in educational settings, three theories have been especially important in shaping the current study on the classroom social environment. First, attachment theory has been used to better understand the relationship between teachers and students and how each member of the dyad brings certain expectations with them based on their unique relationship history. Therefore, as depicted in Figure 1, wellbeing has been incorporated as an individual characteristic related to perceptions of social support and student outcomes. Second, Connell and Wellborn (1991) provide a theoretical model to frame the roles context (i.e., perceived social support) and self play in promoting action in educational settings. Finally, principles of systems theories that have been used to study overall classroom functioning (cohesion and structure) have been drawn upon to characterize the classroom context and how the fit between the individual and the classroom environment motivates behavior (see Figure 3).

In the next section, I build upon the discussion of systems theory, by further examining classroom- and school-level characteristics related to student intentions and

behavior and individual-level components of the classroom. More specifically, I draw upon Olson's dimensions of system functioning, cohesion and structure, as ways to understand classroom and school climate.

Classroom- and School-Level Characteristics

According to the National Research Council's Committee on Increasing High School Students' Engagement and Motivation to Learn (National Research Council and the Institute of Medicine [NCRIM], 2004), one means for increasing engagement is through personalizing the high school experience. This can be done either via structural changes (e.g., reductions in class size) or by addressing interpersonal relationships between teachers, students, family and community above and beyond structural changes to the school (NCRIM, 2004, p. 173). Indeed, school-wide social emotional learning (SEL) interventions have been associated with changes in positive social behavior (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). In light of the positive relation between emotionally supportive classroom climates and desirable student outcomes, many researchers have focused on assessing the social emotional context of the classroom and the broader school environment.

In this section, I review the work that has been done on the social environment of schools and classrooms. Moreover, I draw attention to research examining differences across these educational contexts to identify classroom- and school-level characteristics associated with positive student outcomes. This section provides the foundation for the direct and indirect pathways between classroom characteristics and social goal pursuit and classroom behavior shown in Figure 3. First, I summarize the scope of characteristics that have been studied at the school-level. Next, I examine particular aspects of the social

climates of systems, cohesion and structure. Finally, contributions of the peer group to classroom climate are addressed.

School social climate, a sense of belongingness. The literature on school-level influences on student outcomes includes a broad range of factors including structural and organizational factors of the school (e.g., school size, curriculum options; Lee & Smith, 1999), general school climate (e.g., teacher support, consistency and clarity of rules, positive peer interactions; Brand, Felner, Shim, Seitsinger, & Dumas 2003), and schools as caring communities (see Schaps, 2005 for a review). One construct of particular interest in the school climate literature is the student's sense of belongingness, capturing the affective climate of schools and classrooms. Most often, school belongingness is conceptualized as the student's feeling that they are a part of the school, fit in, and are wanted there (Goodnow, 1993). In addition, some researchers argue that school belongingness has an affective component, through attachment, as well as an academic component shown through valuing of education (i.e., expectations or structure) and engagement (i.e., coming to school and prepared; Kirkpatrick Johnson et al., 2001). Therefore, school belongingness is conceptually related to both dimensions of system functioning, cohesion and structure through the affective and academic components, respectively.

Schools offer a unique social environment in which students spend a large portion of their time and which exposes them to a variety of socialization partners. Schools that function as communities of care can provide students with a sense of belongingness through a variety of mechanisms such as meaningful influences on the group (Murdock & Bolch, 2005), interactive relationships with others (Goodnow & Grady), and

emotional connections (Battistich, Solomon, Kim, Watson, & Schaps, 1995). Moreover, identification with school (i.e., school belongingness) has been found to not only have a positive effect on motivational outcomes, but also to work as a protective factor against negative behaviors such as school drop-out (Goodenow & Grady, 1993; Nichols, 2006). In addition, perceived belongingness has been related to students' academic achievement or engagement (Goodenow & Grady, 1993; Kirkpatrick Johnson, Crosnoe, & Elder, 2001; Sánchez, Colon, & Esparza, 2005; Voelkl, 1995), self-efficacy (McMahon, Wernsman, & Rose, 2009), and positive affect towards school (Roeser, Midgley, & Urdan, 1996).

School belongingness has also been correlated with classroom and school-level social expectations through the pursuit of social responsibility goals (i.e., following teachers rules), goals to build positive relationships with peers (Anderman & Anderman, 1999), and student's abilities to get along with peers (Nichols, 2006). However, in order for this structure to be created and maintained, the expectations that students should adhere to must be communicated. This can occur via school faculty who are primarily responsible for defining and communicating expectations for school behavior (Roeser et al., 1996) as well as through social expectations of the peer group (Anderman & Anderman).

Less is known about classroom-level social support and classroom social behaviors and goal pursuit of interest in this study. However, Griffith (2002) found perceived classroom emotional support to account for significant variance in academic achievement and variance in achievement between schools. In addition, a recent meta-analysis of school interventions that focus on the social emotional environment of schools

concluded these programs were successful, as compared to control schools (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). In addition, when teachers administered these social emotional learning programs (i.e., they were classroom based) rather than programs implemented by non-school personnel or that incorporated multiple components (classroom- and school-level pieces), student outcomes were significantly better than those in comparison schools (Durlak et al.). Therefore, these findings lend support to additional research focused on classroom-level influences. To better understand the ways in which classroom social climate has been related to student outcomes, I now draw upon dimensions of system functioning.

Classroom system functioning. For over 40 years, researchers have created means to capture the role of interpersonal relationships in classroom management. The perspectives on classroom techniques for behavior management range in focus from general philosophical approaches (i.e. Beliefs in Discipline, Glickman & Tamashiro, 1980; Pupil Control Ideology, Willower, Eidell, & Hoy, 1967; Problems in Schools, Deci, Schwartz, Sheinman, & Ryan, 1981; Teacher Belief Q-Sort, Rimm-Kaufman, Storm, Sawyer, Pianta, & LaParo, 2006) to beliefs about specific qualities of classroom relationships (Midgley et al., 1988). These perspectives also draw attention to the importance of two dimensions of classroom systems, cohesion and structure (see Figure 3). For example, investigations of classroom management practices have defined cohesion as a caring, warm rapport between teacher and student (Weinstein, 1998), positive student-teacher relations (Solomon, Battistich, & Hom, 1996), or as a classroom that encourages emotionally positive environments (Martin, Yin, & Baldwin, 1998). The second systemic dimension, structure, is often discussed in terms of values and

expectations: a reciprocal relationship in which both parties help determine the expectations of the classroom (Glickman & Tamashiro, 1980), or in which all members are expected to participate in the general social experience (i.e., “Doing an activity to create a sense of community”; Rimm-Kaufman et al., 2006). Therefore, the guiding philosophies teachers hold, and their approaches used for classroom management, have implications for the climate that is fostered in their classrooms in terms of cohesion and structure. I now further describe and define these two dimensions of the classroom context.

Cohesion. In this study, classroom cohesion has been chosen as a primary characteristic to describe the classroom emotional climate. This construct has been deemed more appropriate than alternative notions such as school belongingness. While there is a growing body of literature on belongingness, it is not the most appropriate construct for the current framework for three reasons. First, the focus herein is on student perceptions and classroom-level influences, while the more global school context is not of concern. Second, belongingness is often conceived of and subsequently measured as a single factor that might encompass both emotional and academic components, as described earlier. This does not allow for a multi-dimensional approach to social support. Third, cohesion is a characteristic of systems or groups, thus distinguishing it from individual perceptions of support. In the classroom setting cohesion might be described as the community of the classroom or a shared reliance on one another to maintain class functioning.

Research on group or social cohesion dates back to the late 1930’s (Dion, 2000; Friedkin, 2004) and continues to appear in the literature, from research on group

counseling to group sports (Friedkin, 2004). Much of the work that stems from these roots conceptualizes cohesion in terms of groupness or properties that help maintain group unity. The application of this body of work has often been to self-selected peer groups (e.g., cliques or crowds) and not necessarily to assigned formal peer groups one is placed into via classroom rosters (e.g., all classmates). For instance, in the peer group literature, cohesion is conceptualized as a sense of groupness or that the members of a selected peer group (e.g., clique) feel like a similar entity (Campbell, 1958; Kwon & Lease, 2009). However, cohesion is also often operationalized as the density of the group or the total number of existing ties to the network rather than as perceptions of the emotional connectedness of the group.

In addition, cohesion in self-selected peer groups has also been conceptualized as magnifying or enhancing student characteristics over time. That is, an interaction exists between student behavior and properties of the group such that cohesion is related to changes in the frequency of individual group member's behaviors. Indeed, group cohesion determined through social network analysis has been associated with increases in self-reported delinquency across group members as well as with minimizing behaviors (Haynie, 2001).

Another distinction made in the current study is to view cohesion as stemming from the affective domain, in comparison to instrumental or task cohesion. Clearly delineating the two types of cohesion has been endorsed by multiple researchers (see Dion, 2002). Although further distinctions in cohesion can be made, such as a focus on group integration vs. attraction to the group (see Carron et al., 1988 for an application to

sports teams), for the purposes of this study and its application of cohesion to classroom settings, and not teams or self-selected peer groups, this distinction is not made.

More recent work on cohesion includes arguments for articulating the specific mechanisms that lead to cohesion or the outcomes of cohesion (see Friedkin, 2004). Indeed, a challenge in studying cohesion is capturing the interrelatedness of member behaviors and group characteristics, as one influences the other (Friedkin, 2004). Therefore, a systems approach in which both individual- (e.g., perceived emotional support) and group-level (e.g., cohesion) characteristics are jointly considered is warranted. The current study incorporates classroom cohesion as well as perceived social supports as linked to goal pursuit and classroom behavior into the conceptual model.

Structure. In comparison to cohesion, less work has been done on the second quality of the classroom environment, structure. However, this characteristic has been related to positive student behaviors and has been given an equally prominent position in theoretical models of classroom engagement previously discussed (see Connell & Wellborn, 1991). The current study defines classroom structure in terms of the group's perception that there are clear expectations for behavior from the teacher and peers within the system. This notion of structure is drawn from Connell and Wellborn's (1991) and Moos' (1979) description of the classroom context. Moreover, this extends Olson's (2011) conceptualization of family flexibility (i.e., structure) "as the quality and expression of leadership and organization, role relationship, and relationship rules and negotiations" (p. 65). In the context of classrooms, these expectations can be in terms of social behavior or academics. Much literature exists on teacher expectations for academic abilities (see Jussim & Harber, 2005), and to some extent as expectations at the school-

level via academic press (i.e., a push by members of the school to aim for academic excellence; see Lee & Smith, 1999). However, less work has focused on structure of the classroom in terms of expectations for social behavior.

Clear expectations (i.e., structure) at the level of the school have been positively related to student academic and behavioral outcomes (Brand, Felner, Shim, Seitsinger, & Dumas, 2003), while perceptions of a clear, balanced authority hierarchy (i.e., structure) within the peer group have been related to student effort (Wilson, Karimpour, & Rodkin, 2011). The current study draws upon the conceptualization of structure in terms of clear expectations, rather than structure as shared authority. In contrast to balanced levels of structure, chaotic or over- restrictive environments can negatively impact group functioning (Olsen, 2000), adult-adolescent relationships (Garbarino, Sebes, & Schellenbach, 1984), and adolescent behavior (Sameroff, Peck, & Eccles, 2004). Therefore, classrooms that provide appropriate structure can promote positive student behaviors (Olson, 2000, 2011) and a sense of competence (Connell & Wellborn, 1991).

Teachers are the initial architects of the classroom environment. From a systems perspective, however, the climate changes as other members join the group (see Figure 1). Recent work by Rubies-Davis (2006, 2010) has provided evidence that teachers focus on expectations for the entire class rather than for individual students or groups of students based on ability levels. This work provides a further rationale for examining classroom-level or group perceptions of structure rather than only individual-level perceptions.

In addition, students interpret the degree to which the teacher holds dissimilar expectations for all students as differential treatment. In turn, perceived classroom

differential treatment moderates the relation between teacher expectations and student outcomes, producing more negative effects for students in certain groups (McKown & Weinstein, 2008). In contrast, classrooms with low perceived differential effects may function as a protective factor against the potential negative effects of teacher expectations (Kuklinski & Weinstein, 2001), at least for older elementary school children; classrooms with low perceived differential treatment reduced the effect of teacher expectations on achievement.

Studies of cohesion and structure simultaneously. These two aspects of classroom system functioning, cohesion and structure, have been correlated with positive outcomes for adolescent students as discussed above. Throughout the literature on classroom climate, these dimensions have been investigated primarily in isolation from one another and less frequently simultaneously. For example, some research on school climate has incorporated multiple dimensions of system functioning in terms of quality of interpersonal relationships (i.e., cohesion), personal growth, and system management (i.e., structure), to better understand student behavior (Brand, Felner, Shim, Seitsinger, & Dumas, 2003; Neilson & Moos, 1978). More specifically, Brand et al. (2003) measured school climate along three dimensions relevant for the current study: teacher support, consistency and clarity of rules, and positive peer interactions; each of these aspects of school climate were related to positive academic and behavioral outcomes for middle school students.

Additionally, schools have been studied in terms of the degree to which they create a caring and supportive community founded on positive relationships both in the classroom and the broader school (see Durlak, Weissberg, Dymnicki, Taylor, &

Schellinger, 2011). This body of work draws upon specific school interventions focused on adjusting the social-emotional climate of schools. Moreover, these cohesive, well-structured school environments have been associated with students' perceptions that students have a voice in decision making, enjoyment of helping others learn, and prosocial behaviors and intents (see Schaps, 2005 for a review).

I now turn my focus to research on group processes and peer influences, to better understand the mechanisms through which peers contribute to classroom climate. Peers become increasingly more important as children go to school and begin to spend a large portion of their time with fellow students (Hymel, Comfort, Schonert-Reichel, & McDougall, 1996), and relationships with peers play a pivotal role in shaping school-related behaviors and attitudes (Ladd, Herald-Brown, & Kochel, 2009). For adolescents in particular, peer influence becomes even more important in their lives and is often a strong predictor of behaviors (Brown et al., 2008). Indeed, peer social support has predicted student's positive social behaviors above and beyond provisions from family (McNamara & Wentzel, 1999) or teachers (Wentzel, Filisetti, & Looney, 2007; Wentzel, Russell, Garza, & Merchant, 2011).

Peer group contributions to positive classroom behavior. Although a vast body of research exists on peer group characteristics and influences on the individual (see Brown et al., 2008), this literature often focuses on friends, cliques and self-selected groups in contrast to the formal classroom peer group. In addition, this body of work on self-selected peer groups brings with it a rich history of studying the structure of the peer group in terms of density (i.e., cohesion), centrality, and popularity (i.e., Haynie, 2001) and, more recently, structure in terms of power hierarchy (see Wilson, Karimpour, &

Rodkin, 2011). However, given the focus placed on the formal classroom peer group (see Figures 1 & 3) in which the student does not choose the group and all classmates are considered, these conceptualizations of cohesion and structure - and more specifically the way they are measured - must be adapted. For instance, density (i.e., cohesion) in self-selected peer groups often focuses on the number of emotional ties the student has to the group, whereas when considering all peers in a given classroom, cohesion might be better represented by the quality of the emotional bond to the group as a whole. In the current study, cohesion and structure of the classroom peer group are depicted as direct predictors of classroom behavior (see Figure 3).

Although most work done on peer group influence has focused on negative behaviors, peers can also promote healthy behaviors (Brown et al., 2008). For example, Veronneau and Dishion (2011) found, when considering both positive (e.g., prosocial) and negative (e.g., aggression) friend characteristics, that only negative friend characteristics predicted academic achievement. However, when friends' school engagement (i.e., coming to school prepared and participating in school activities) was considered in isolation, there was a significant positive effect on student achievement. Indeed, encouraging statements by the peer group have been found to predict positive changes in competence in young children (Altermatt et al., 2002). Further, a peer group's average academic effort has been found to predict increases in student effort from 6th to 7th grade (Molloy, Gest, & Rulison, 2011), and characteristics of the peer group at the beginning of the school year predicted behavioral engagement or involvement (Kindermann, 1993) and liking or interest in school (Ryan, 2001) at the end of the school

year. Therefore, positive peer group characteristics might also have an important role in shaping adolescent classroom behavior, as depicted in Figure 3.

In addition, peer group characteristics and student outcomes of interest should be similar in nature. For example, when looking at negative qualities, it would make sense to also look at non-desirable student behaviors. In the same vein, a study of positive student classroom behaviors would call for investigations centered on positive peer group traits, as is the case for the current study. For example, recent work utilizing a multilevel framework by Chung-Hall and Chen (2010) found that prosocial tendencies of the peer group (at the group level) help to explain differences in perceptions of social and behavioral competence as well as teacher ratings of school competence. Also, prosocial group orientation predicted peer nominations of “who is most liked” while aggression of the group was related to peer nominations of “who is least liked” (the two types of nominations represented different constructs). In the current study, an emphasis is placed on positive peer group characteristics group (e.g., wellbeing of the group) as predictors of positive social behaviors and goal pursuit, as well as potential moderators of the relations between perceived social support and prosocial and socially responsible behaviors and goal pursuit (see Figure 3).

Classroom characteristics as moderators of social support and student outcomes. Only recently have researchers started to look at multilevel interactions between individual- and classroom-level characteristics (e.g., Cappella, 2011) or between student and peer group characteristics (Chung-Hall & Chen, 2010) and student outcomes. Some research on the moderation of individual-level relations by second-level characteristics exists in the literature on school-level effects, however. Yet, the focal

outcomes in this body of work are student achievement or academic behaviors. For example, the relation between social support and student achievement was found to vary between schools at different levels of academic expectations (i.e., structure) (Lee & Smith, 1999). For those students with high levels of social support, expectations further increased gains in math and reading achievement while for those students with low social support, a school climate with low expectations only exacerbated poor achievement. In other words, school climate moderated the relation between social support and achievement. In addition, perceptions of the school climate as a community, with a shared belief system and that was viewed as caring, was found to moderate the relation between school-level academic expectations and achievement across three different socioeconomic status groups (Shouse, 1996). The current study incorporates interactions between individual characteristics and classroom climate by investigating classroom characteristics as moderators of the relation between social support and student outcomes (see Figure 3).

When trying to understand the combined effects of classroom climate, it is vital to include perceptions of all group members of a given classroom. For instance, Marsh, Martin, & Cheng (2008) found contributions to classroom climate were more dependent on characteristics of the group than specific characteristics of the teacher. However, the relative contributions of individual- vs. class-level predictors will also vary in accordance with the nature of the outcome, and whether it is an individual attribute or a classroom characteristic (i.e., classroom climate) (Marsh, Martin, & Cheng, 2008). Therefore, a more integrated systemic approach to studying classroom climate as proposed here, incorporating both individual- and classroom-level characteristics, is warranted.

In addition, most research on individual-level peer relations ignores features of the classroom context and how classroom structure might dictate interactions. For example, the teacher can play a powerful role in shaping and managing the classroom environment (Woolfolk Hoy & Weinstein, 2006). Therefore, it might be too straightforward to conceptualize peers as completely independent of teachers' influence. Indeed, recent work on elementary school students has begun to look at classroom climate in terms of emotional support and classroom organization, as contributing to peer group characteristics (Cappella, 2011). In the current study, therefore, classroom-level characteristics in terms of cohesion and structure are conceptualized as moderating the pathway between individual-level social supports and social goal pursuit and classroom behavior (see Figure 3).

Class-size as a control variable at level-2. At the classroom-level, class size is incorporated as a control variable. This was done in order to account for the possible effect of group size on cohesion or structure. Finn, Pannozzo, and Achilles (2003) make the claim that class size is a key factor leading to changes in classroom dynamics and student and teacher behaviors in particular. The underlying notion is that size could affect the quantity and quality of interactions between the student and the teacher as well as with the peer group. In essence, this could affect the composition of total daily interactions in terms of the relative contribution of the teacher vs. peers. For example, if it is a smaller group perhaps fewer peer interactions occur since there would be more opportunities for teacher-student interaction. However, small class size can also be due to working with more challenging populations in terms of behavior or abilities, on either end of the spectrum. In addition, group size has been found to affect the relation between

cohesion and group performance (see Mullen & Cooper, 1994 for a review). Therefore the addition of class size as a control variable at the level of the classroom is warranted, especially since we do not know the reasons behind the variation in class size.

Summary of classroom- and school-level characteristics. In sum, the social-emotional environment of classrooms and schools has been described as contributing to social goal pursuit and classroom behaviors. Often, provisions of social support have been discussed in terms of belongingness. However, two other means for describing qualities of the classroom context, cohesion and structure, have also been used independently and simultaneously as predictors of positive student outcomes. Cohesion has long been used to study groups in general, and peer groups in particular. In addition, peer groups have been identified as an important influence on both positive and negative behavior during adolescence. Finally, group qualities of cohesion and structure might also moderate the relations between perceptions of social support and student outcomes.

In the next section I look more closely at how researchers define and measure the primary constructs that are examined in the current study.

Methodological Issues

In this section I address methodological issues common to the integrated body of work discussed above. More specifically, I summarize definitional and measurement issues relevant to each of the three core components of the model, social support, classroom climate (i.e., cohesion and structure), and student outcomes. Then, I focus on measuring beliefs vs. behaviors and address the use of multiple informants. Finally, the application of multilevel conceptual frameworks for classroom climate research is discussed.

Defining and measuring social support. Great variety exists in the ways in which social support has been conceptualized and subsequently measured using survey methodologies. Some researchers parse apart multiple forms of social support, such as Wentzel's (2004) four forms, while others collapse the dimensions into one general measure. For instance, some conceptualizations of teacher support have combined emotional support and instrumental help (Ahmed, Minnaert, van der Werf & Kuyper, 2010), notions of care with expectations (i.e., discipline; Ma, Phelps, Lerner, & Lerner, 2009), and autonomy, competence, and belongingness (Katz, Kaplan, & Gueta, 2010) into a single measure of social support. Therefore, it becomes challenging to make sense of the true meaning of relations between social support and student outcomes. In trying to better understand classroom social support it could be beneficial to tease apart the various aspects of social support in order to more accurately identify predictors of student behavior. For example, Ahmed et al. (2010) found relations between peer support and academic interest and enjoyment while Wentzel et al. (2010) found peer expectations and instrumental help predicted interest while peer emotional support did not. Therefore, based on these two studies, it appears that instrumental help from peers might be the more powerful predictor and not emotional support, a point lost in the results of the Ahmed et al. study due to the measurement of social support.

In the case of peer support, an additional challenge lies in how to operationally define the peer group for the classroom context. For instance, do peers refer to support from members of the classroom, students in the same grade-level, all students in the school, or even friends? Measures of social support include the use of "my classmates" (e.g., Johnson, Johnson, Buckman, & Richards, 1985), "my friends" (e.g., Ahmed et al.,

2010), or combine data that refers to both classmates and friends (e.g., Furrer & Skinner, 2003). However, adolescent boys and girls do differentiate between the social support they perceive from classmates versus close friends (Rueger, Malecki, & Demaray, 2010). Given the focus on the classroom environment specifically, priority should be placed on all classmates rather than select friends or peers. This is not to dismiss the influence of friends and peers outside of the classroom, rather those factors are beyond the scope of this study.

Looking in particular at measures of social support, there are a few widely used scales for perceived emotional support, the Psychological Sense of School Membership (PSSM, Goodenow, 1993), the Classroom Life Measure (Johnson, Johnson, Buckman, & Richards, 1985), and subscales of the Classroom Environment Scales (CES; Moos 1979). However the measurement of teacher and peer expectations as a form of social support is less uniform. Some researchers have developed their own multi-dimensional scale of social support (e.g., Child and Adolescent Social Support Scale; Malecki & Demaray, 2002) or have drawn upon well-established scales for each of the different forms of social support (e.g., Wentzel, 2004, Wentzel et al., 2010) identified by students as important components of pedagogical care (Wentzel, 1997). In addition, Skinner and Belmont (1993), used reports from both teachers and students (grade 3, 4, and 5) in regards to teacher emotional support (i.e., involvement), and expectations (i.e., structure); however, provisions of support from peers were not included.

Further, a growing body of work focuses on the emotional quality of the relationship between the teacher and student from the teacher's perspective. Relationship quality is often measured in terms of closeness and conflict (e.g., Student Teacher

Relationship Scale [STRS]; Pianta, 1999; Pianta & Nimetz, 1991; Teacher Student Relationship Inventory [TSRI] Hughes, Cavell, & Wilson, 2001). More specifically, these researchers utilize teacher ratings of relationship quality and do not include the student's perspective on whether or not they feel supported in the classroom. Given that the conceptual framing herein relies upon the student's perception of support from teachers and peers and of the overall classroom climate, these measures would not be appropriate for the current study.

Capturing system functioning. One of the largest challenges for measuring cohesion or structure is clearly defining the constructs. In this section, I review some of the ways each of these characteristics of classrooms or groups have been discussed in the extant literature.

Measurement of cohesion. The way in which cohesion has been captured varies according to the definition adopted by researchers. For example, emotional cohesion definitions that closely align with belongingness often measure student perceptions about feeling connected to the group, class, or school through the Psychological Sense of School Membership (PSSM, Goodenow, 1993). Indeed, a student's sense of cohesion or belongingness has been examined through measures focused on classroom climate or in relation to teachers and students as groups within the school environment (Neilson & Moos, 1978; Roeser et al, 1996; Voelkl, 1995). In turn these perceptions of emotional cohesion are then analyzed in relation to individual-level, classroom-level or school-level influences. However, some studies have included emotional cohesion at the classroom-level (e.g., Danielsen, Wiium, Wilhelmsen, & Wold, 2010), combined feelings of bonding with teacher and peer nominations to create a belongingness factor (Faircloth &

Hamm, 2005), or asked students about the cohesion of the group as a whole (see Marsh, Martin, & Cheng, 2008).

In addition, researchers who study cohesion based on social network analysis, typically measure cohesion as the density of a self-selected peer group. More specifically, the work of Cairns and colleagues (e.g., Cairns & Cairns, 1994) looks at the average number of interpersonal connections between group members. This is carried out by having each child identify people who they “like to hang around with.” In turn, responses to this question are used to a) identify groups and then b) describe properties of the groups. A group that is more cohesive will have more ties to the group (i.e., on average more members claim they are part of the group) in comparison to a less cohesive group in which fewer shared connections between members exist. In other words, cohesion can be represented as the similarity between group member’s nomination profiles (i.e., they nominated the same people as who they hang out with often; Wilson, Karimpour, & Rodkin, 2011). Since there are different numbers of connections across the different groups, cohesion (i.e., density) scores provide a means for comparing the variation in the number of connections across groups.

In contrast, others use an average cohesion score based on all group members’ perceptions of emotional connectedness of the group, but this strategy does not take into account variance information. When describing properties of a group that take into account shared perceptions it is important to also consider whether or not these views are similar or different across all members. Therefore, the standard deviation of members’ ratings of cohesion across the group has been used as an indicator rather than the mean level of cohesion (Friedkin, 2004); however, this technique does not account for mean

differences. In light of these challenges, the current study will take into account both average perceptions as well as differences in members' perceptions of classroom cohesion by using the coefficient of the variation ($CV=SD/M$). This allows for comparing dispersion across groups, taking into account variance, and accounting for the average level of cohesion through a score that is unitless (Bedeian & Mossholder, 2000).

Measurement of structure. Structure also poses some challenges, as researchers have operationalized structure to mean discipline or control (e.g., “A good educator is firm but fair in taking disciplinary action on violators of school rules”, Wolfgang & Glickman, 1980), hierarchies in peer groups (e.g., Wilson, Karimpour, & Rodkin, 2011), or as adopted for this study, clear and consistent expectations (Connell & Wellborn, 1991; Olson, 2011). In reference to the last definition, common measurement tactics include: student perceptions of classroom structure (e.g., rules are clear and consistent), or classroom norms (e.g., my classmates or teacher expect me to try hard). The current study incorporates items similar to this latter approach to measurement, however student perceptions of structure were combined to represent group perceptions as the classroom-level. More specifically, the coefficient of the variation was used as previously described in reference to classroom cohesion.

Indeed the focus here is on the students' perceptions of classroom structure, and not teachers' expectations for academic abilities. For instance, Hinnant, O'Brien, Marion, & Ghazarian (2009) found that teachers' academic expectations for young children have an impact on mathematics achievement especially for those children identified as at-risk. However, expectations were measured as the discrepancy between teacher-rated academic capabilities and the child's actual performance on standardized tests. Instead,

measures that focus on the adolescent's perception of clear expectations for classroom behavior and whether or not there are definitive rules are better equipped to capture the conceptualization of structure adopted here.

In addition, the structure of peer groups can be studied from a social network analysis framework. This operationalization of structure or group hierarchy examines the relative status or centrality each member has within a broader group (e.g., whole classroom). This measurement strategy relies on the same peer nomination procedure described earlier in which students identify who they hang around with. A student with high status or centrality is one that is identified by many classmates as meeting this description. In contrast a student with few nominations would have low centrality. Structures of smaller peer groups (e.g., cliques) are then described in terms of whether group members have similar or different statuses on average (Wilson, Karimpour, & Rodkin, 2011). Given the focus on power hierarchies rather than clarity of expectations or the communication of norms, this measurement technique is not appropriate for capturing classroom-level structure as a property of the system.

Social engagement as an outcome. The outcomes of interest in this study refer to aspects of classroom engagement and are measured in regards to three components: a) prosocial behaviors including actions focused on helping, sharing, and cooperating, b) behaviors demonstrating social responsibility and c) pursuit of prosocial and social responsibility goals. Indeed, one's ability to adapt to the rules and responsibilities of the classroom is a vital component of classroom success (Wentzel, 1991b, 2004). Since the focus is on behaviors as well as the student's intent to act in prosocially and socially responsible ways both behavioral ratings and self-perception data are of interest. More

specifically, two well-established methods, teacher ratings and peer nomination procedures, were used to measure student behaviors while self-report data provide a mechanism to capture goal pursuit in the proposed study. Therefore, I now discuss the use of self-perceptions and behavioral ratings or nominations as strategies for obtaining information.

Measuring beliefs vs. behaviors. A key distinction across studies of the classroom social environment is whether researchers are interested in capturing student's perceptions of the self, classroom climate, perceptions of behavior or actual behaviors. For example, in studying student engagement, one can either look at the adolescent's intent to engage in the classroom (e.g., goal pursuit), perception that she is engaging (e.g., trying), or an outsider's judgment about a student's behavior. Each method for quantifying these outcomes brings with it certain assumptions that limit the claims that can be drawn, since the data are different in regards to internal perceptions vs. external judgments. For instance, if actual behaviors are of interest, a teacher's or peer's rating of a student's socially responsible actions might be a more appropriate indicator of the student's classroom behavior than the student's own perspective.

Utilizing teacher and peer reports in addition to self-reports can enhance the quality of a study. A key strength of this measurement strategy is the ability to capture other's perceptions of actual behaviors, in addition to students' perceptions of their own behavior. Indeed, this technique allows researchers to then look at variations in the reports from multiple perspectives (teacher, peers, self) on a specific outcome, as well as the contributions each of these points-of-view make to the assessment of classroom social environments. In this scenario, researchers can investigate if differences exist as a

function of who provides the rating, the student vs. teacher vs. peer, and the content of the behavior.

For example, peer and teacher ratings regarding prosocial behavior are not always highly correlated (Wentzel, 2010), and differences in reports of both behavioral and emotional engagement from students and teachers have been found (Skinner et al., 2008, 2009). Similarly, individual family members' reports of cohesion within family dyads (mother-son; father-son; mother-father) were not significantly related to each other in a sample of 6th grade boys and their parents (Feldman, Wentzel, & Gehring, 1989); the prevalence of bullying was found to be significantly higher through the use of peer nominations in comparison to self-report data (Branson & Cornell, 2009). In addition, having multiple reporters has shed light on the relations between subjective and objective measures of the same phenomenon. For instance, Feldman, Wentzel, and Gehring (1989) found that sons and fathers were more accurate reporters of family cohesion than mothers in comparison to researchers' observations, and Pellegrini and Bartini (2000) found that self-perceptions of bullying or victimization do not always align with group members' or researchers' observations.

Also, the specific conceptual relations being examined might direct the appropriateness of each measurement method. For example, if interested in the influence of peers, the relation between a student's perception of peer support and peer-ratings of the same student's prosocial behavior might be more interesting than the relation between peer support and teacher ratings. Therefore, teacher and peer reports of adolescent behavior as used in the current study provide an additional and necessary approach to studying the social environment of classrooms.

A small group of studies utilize teacher and peer report data in a slightly different manner; students have reported on the relationship quality between the teacher and other students (e.g., Davis & Lease, 2007; White & Jones, 2000). For instance, each student responds in regard to how much they think the teacher likes another student. This approach to classroom systems focuses on external reports of others' dyadic relationship (i.e., reputation). In essence, it captures how other's perceptions of a subsystem within the classroom (see Figure 1) are also related to an individual's behaviors. Indeed, a student's reputation of being liked by the teacher has been related to the teacher's perception of the dyadic relationship quality and the student's actual academic performance (Davis & Lease, 2007).

Group perceptions and multilevel analyses. In this section, I describe how student perceptions and aggregated student perceptions have been used to study group or classroom characteristics. First, social support as an aspect of classroom climate has often been measured as either student's perceptions of the group or characteristics of the classroom. This approach to climate research is evident in Moos' (1979) Classroom Environment Scales from the late 70's and continues today in the realm of social support and belongingness. Indeed there is a well-established body of literature that draws upon Goodenow's (1993) notion and measure of psychological sense of school membership. However, more recent empirical work utilizing aggregate perceptions of social support has demonstrated that group-level social support can also explain additional variance in student outcomes (Danielsen et al., 2010; Russell, Michael, & Wentzel, 2011). Inherent in both of these strategies utilizing individual perceptions, is that classroom climate conceptually is a class-level characteristic (Marsh, Martin & Cheng, 2008).

Individual perceptions of the group vs. average perception of the group. Some measures of social support are geared towards capturing social support in relation to groups (e.g. teachers or peers), with the intention that the respondent is generalizing across a group and not keeping one target in mind. For instance, students might respond to an item that asks whether or not the teacher in this class vs. the teachers in this school care about me or students. The latter case requires the student to make two generalizations, one about teachers as a group as well as students as a whole. An issue that then arises is, how do we know what person or group is brought to mind when the participant is making this subjective judgment? This issue has been raised by Karabenick et al. (2007) when using self-reports that rely on internal cognitive processing. Therefore, researchers cannot be sure of what representation is held in mind as the respondent completes the scale. The current study focuses on the classroom and a specific teacher rather than teachers as a group.

A second approach to capturing the group perception is to use the average individual perception of the group as a score for a particular construct. For example, the peer rating techniques mentioned previously utilize this approach; most often a peer nomination score represents the average of all peer ratings for a specific student on a single trait. Similarly, classroom climate work has also incorporated the average rating of the group on qualities of the classroom as a measurement technique (e.g., Marsh, Martin, & Cheng, 2008). This approach to analyzing characteristics of classrooms and schools has been previously used to study classrooms' pedagogical care and autonomy support (Danielsen, Wiium, Wilhelmsen, & Wold, 2010), teacher goals (Anderman et al., 2001),

and school-level teacher support (You & Sharkey, 2009) and expectations (Lee & Smith, 1999).

Utilizing a multilevel framework. Given the focus on outcomes of students who are embedded in specific classrooms within schools, analytic techniques that can account for the nested nature of the data are warranted (Raudenbush, Rowan, & Kang, 1991). In essence, student responses are not isolated from one another; they share common variance since they are part of the same classroom and school. Therefore, models that take into account these overlapping influences and shared environments should more accurately depict the nature of the classroom environment.

Multilevel modeling is becoming more widely used in educational research in general and in studying social support in particular. More specifically, it is appropriate for researchers who want to simultaneously investigate individual- and group-level aspects of the social environment, to compare outcomes across contexts, and to look at cross-level interactions (i.e., classroom effects on individual-level relations; Raudenbush & Bryk, 2002). Multilevel modeling offers an advantage for comparing classroom- or school-level differences over some traditional regression analytic techniques when substantial between-classroom variance exists. In addition, this design allows a researcher to study perceptions of social support within and between contexts. This method could also allow one to identify and compare the potential influences of social support at the individual-, classroom-, and even school-level on outcomes of interest. For instance, Koth, Bradshaw, and Leaf (2008) used multilevel modeling to analyze the unique contribution individual and classroom-level characteristics make to school climate, taking into account student gender and ethnicity. Therefore, multilevel modeling offers a means

for empirically testing these separate contributions to, and components of, the classroom system.

In addition, researchers can test models that include how two levels of the school context might interact, that is whether a second-level (e.g., classroom) factor might moderate a relation between variables at the individual-level (level-1) (i.e., influence the slope). For example, Lee and Smith (1999) found cross-level interactions such that the relation between social support and academic achievement varied across different levels of school expectations as indicated by academic press.

Summary of methodological issues. A variety of methodological issues have been raised in terms of construct definitions, the measurement of beliefs vs. behaviors, and the use of multilevel conceptual frameworks and analyses. In the current study, a multi-dimensional definition of social support was utilized that also includes contributions from two sources in the classroom, teachers and peers. In addition, student behavior was measured through the use of multiple ratings of prosocial and socially responsible behaviors by both teachers and peers. Student's self-reported pursuit of prosocial and social responsibility goals were also integrated, providing multiple methods of data collection. Finally, the study incorporated two levels of social support, individual and classroom, as predictors of social goal pursuit and classroom behavior.

The Current Study

As shown in Figures 1-3, a multilevel approach to studying social support in the classroom environment is the focus of this study. More specifically, the classroom is conceptualized as a unique system made up of multiple dyadic and group relationships that overlap and influence one another (see Figure 1). In addition, each student brings

with them their own positive feelings of self, wellbeing, which is related to perceptions of the contextual social supports made available in the classroom from both the teacher and peers in the form of emotional care and expectations for behaviors (see Figure 2). In turn these perceptions are related to the student's engagement in the classroom. In addition, classroom characteristics also can directly influence social goal pursuit and classroom behavior as well as moderate the relation between perceptions of social support and these outcomes (see Figure 3).

Multiple well-established theories guide the current conceptual model at both the individual- and classroom-level. First, attachment theory (Bowlby, 1969) substantiates the path between individual characteristics and social support. In addition, multiple models that incorporate self and contextual characteristics as motivators of action provide the foundations for the paths to student outcomes (Bronfenbrenner, 1989; Connell & Wellborn, 1991; Wentzel, 2004). Indeed each of these models incorporates general principles of systems theories. Another systems model by Olson (2011) draws attention to two specific dimensions useful for analyzing system functioning, cohesion and structure. These particular system characteristics have been described frequently in the literature on social relationships, group functioning, classroom climate, and classroom management.

Based on the established literature on social support, classroom climate, and student social goal pursuit and classroom behavior, the current study adopted a multi-dimensional and multilevel framework. More specifically, perceived social support was incorporated in two forms, emotional care and expectations, and as coming from two sources, teacher and peers. Second, classroom characteristics in the form of cohesion and

structure were viewed as derivatives of the perceptions of all students in the classroom. Finally, student outcomes were examined through prosocial and socially responsible behaviors and the student's pursuit of social goals.

Chapter 3: Method

Participants

This study utilizes existing data collected across multiple classrooms and schools from the mid-Atlantic, Midwest, and Southwest regions of the US. Participants include 2615 students from 116 classrooms across 15 schools. In addition, subject-matter classroom teachers (e.g., mathematics teacher) provided behavioral ratings of the students in participating classrooms. All students were in early adolescence, and were in grades 5-8 at the time of data collection. More specifically, 16.3% were fifth graders, 56.3% sixth graders, 14.9% seventh graders, and 12.5% were eighth graders. Gender distribution was nearly equal; 49% of the participating students were female. Class sizes ranged from 10-35 and the mean class size was 21.7 (SD=5.88) students. Fifty-nine percent of the students were attending schools located in the mid-Atlantic, 23% were in the southwest, and 18% of students were in schools in the Midwest region of the US.

Participant information regarding ethnicity and socioeconomic status (SES) was not available at the individual-level across all data collections and therefore was not included in the analyses. For descriptive purposes, cohort one came from a school district that was primarily Hispanic (75%) and low SES (88%), whereas cohort two was primarily European American (68%) and working class students. Two cohorts (three and five) were almost evenly split between African American and European American students (49% v. 48%; 44% v. 49 %) and were from middle class households. The remaining cohorts (four and six) consisted of students from primarily middle class families and that were European American (92% and 75%, respectively).

In choosing participants, entire classes were selected rather than individuals within the school. Data were collected over multiple years (between 1989 and 2007) from different classrooms either from within a single school or across multiple schools within a single school district. In the latter case, schools were located in the mid-Atlantic and Southwest regions of the US and data were collected either in 1992, 1994 or 2007. The process for selecting classrooms varied by cohort and often depended on arrangements made with the principal or other school officials. For some cohorts the entire 6th grade was included whereas in other cases the principal selected a diverse sample of classrooms from grades 6, 7, and 8.

Procedures

In order to identify and recruit classrooms for participation in the study, the principal investigator of each of the studies, Dr. Kathryn Wentzel, contacted school principals or school districts. Once schools and classrooms were selected, students were then recruited for participation in the study. Information describing the study and parental consent forms were sent home to parents in either English or Spanish. In most cases, classroom teachers assisted in collecting the consent forms. For those students that chose to participate and had been given parental consent, paper and pencil surveys were administered during regular school hours in the selected classrooms by a trained data collector. In addition, teachers remained in the classrooms for the duration of data collection.

The study was presented as a survey of students' opinions about their classroom experiences. Students were told that all of their answers would be confidential and that they did not have to answer any of the questions if they did not want to. Each survey

included a unique identification code in order to ensure confidentiality. In addition, all participating students and teachers signed consent forms that described the study and ensured confidentiality. Students who did not obtain parental permission, or chose not to participate in the study, either sat in a discreet area of the room, or were taken out of the classroom as necessary, to minimize distraction. The average participation rate was approximately 87% across the 6 cohorts (see Table 1).

Measures

In this section the measures that were used to obtain information from both students and subject matter teachers are described (see Appendix A for a list of items). All measures had been used in previous research and are well-established in the literature. The methods for calculating classroom characteristic scores will also be explained. The same measures were used to assess students' perceptions of: social support from teachers and peers in the forms of emotional care and expectations, wellbeing, and social goal pursuit across each data collection. However, the range of variables included in the student surveys across classrooms varied to some extent (see Table 1). For instance, some students reported on both forms of social support while others only provided data on perceived emotional support from either teachers or peers. More specifically, the subset (cohort 1 data collected in the Southwest region) provided data on all predictor variables across all 27 classrooms but only students in 8 classrooms reported on social goals and students in 19 classrooms provided peer ratings. Students in cohorts two through four all reported on emotional support, but not expectations for behavior. On the other hand, cohort four had students with data on all variables except peer emotional support while

Table 1. List of cohorts by region and variables included in study.

Region Cohort	Total	Southwest	Midwest	Mid-Atlantic			
		1	2	3	4	5	6
Teachers	84	27	11	20	17	4	5
Classrooms	125	27	20	20	17	18	23
<i>n</i>	2788	595	476	452	431	339	495
% female	49	47	50	50	48	53	50
% participation	87	79	99	88	94	67	91
Variables							
Emotional support –T	2257	✓	✓	✓	✓	✓	✓
Emotional support –P	1908	✓	✓	✓	✓	-	✓
Expectations –T	458/824	✓	-	-	-	✓	✓
Expectations –P	950/822	✓	-	-	-	✓	✓
Prosocial goal pursuit	1759	✓ ^a	✓	✓	✓	✓	✓
Soc.resp. goal pursuit	1719	✓ ^a	✓	✓	✓	✓	✓
Prosocial behavior –TR	2034	✓	✓	✓	✓	✓	-
Prosocial behavior – PR	1592	✓ ^b	✓ ^c	✓	✓ ^c	✓	-
Soc.resp. –TR	2181	✓	✓	✓ ^d	✓	✓	-
Soc.resp. – PR	1285	✓ ^b	✓ ^d	-	✓ ^d	✓	-
Gender	2788	✓	✓	✓	✓	✓	✓
Grade	2788	✓	✓	✓	✓	✓	✓
Emotional wellbeing	1126	✓	-	-	✓	✓	-
Class size	2788	✓	✓	✓	✓	✓	✓

Note. T=teacher; P = peer; Soc.resp. = social responsibility TR = teacher rated; PR= peer rated.

^a these variables were collected in 7 classrooms

^b peer ratings were done in 20 classrooms

^c nominations were done within teams

^d ratings were reversed (in reference to who does not follow/breaks the rules)

students in cohort five had no behavioral data. Finally, only cohorts one, four, and five had students who self-reported on emotional wellbeing.

For all survey items, students were instructed to answer in reference to their experiences in the class they were in at the time of data collection. In order to measure students' social behavior, teachers provided ratings for each student with regard to socially responsible and prosocial behaviors. Classmates also provided information on socially responsible and prosocial behaviors of individual students through a peer nomination procedure. This measurement tactic is widely used in the peer literature (e.g., Cillessen, 2009) and a large body of work exists regarding this technique, with roots tracing back to the 1950s and the "guess who procedures" of Havighurst et al. (1952). These measurement strategies will now be explained in more detail.

Individual perceptions of social support.

Emotional support. In order to measure emotional support from teachers and peers two subscales were used from the Johnson, Johnson, Buckman, and Richards (1985) Classroom Life Measure. There were four and five items on the teacher and peer emotional support subscales, respectively. Response options were on a 5-point Likert scale and ranged from *never* (1) to *always* (5). Sample items include "My teacher really cares about me," "My classmates like me as much as they like others." The average response for the four teacher items was entered as the teacher emotional support score. Similarly, the average rating across the five peer items constitutes the peer emotional support score. In previous studies, Cronbach's alpha values ranged from .72 to .91 for teacher and from .82 to .88 for peer emotional support.

Expectations for social behavior. Two measures were used to capture students' views of the expectations for social behavior that their teacher and classmates hold for them. In the first measure, three items were used to assess perceptions of peers' expectations to behave positively in class (e.g., "My classmates expect me to follow the rules in this class"), and three items focused on perceptions of teacher expectations for social behavior (e.g., "My teachers think that helping others is very important.;" Wentzel et al., 2010). Response options were: 1 = *always*, 2 = *often*, 3 = *sometimes*, and 4 = *never*. The scale scores were reversed such that higher scores reflect higher levels of expectations. The teacher and peer expectations for social behavior scores were the average response for the three teacher items and the three peer items, respectively.

The second measure consists of six items with three items devoted to teachers and three to classmates. All items are from the Classroom Life Measure (Johnson et al., 1985) and focus on students' perceptions of whether their teacher or classmates want them to share ideas and materials, help others, and work cooperatively in class. Response options were on a Likert scale from 1 = *never* to 5 = *always*. Similar to above, each scale score of expectations for behavior from teacher and peer represents the student's average response across the 3-items. Alpha values for expectations for social behavior from either measure ranged from .67-.75 and .75-.80 for teacher and peers, respectively in previous work.

Individual characteristics.

Wellbeing. An individual's positive feelings about the self were measured through three self-report items on a 5-point Likert scale (Weinberger, Feldman, Ford, & Chastain, 1987). A sample item includes "I'm the kind of person who has a lot of fun" for which the student chooses from *false* (1) to *true* (5). The wellbeing score is the mean

response across three such items. Reliability for wellbeing items ranged from .77 to .87 in previous work.

Grade level. Students reported their current grade-level.

Gender. For most cases, students self-reported whether they are female or male. Female was coded 1 and male was coded 0.

Classroom characteristics.

Cohesion. Student reports on perceptions of emotional support from teachers and peers were utilized to create a classroom-level indicator of cohesion. Two indicators were used for classroom cohesion, one based on emotional support from the teacher and one based on peer emotional support (peer cohesion). Individual perceptions of emotional support from peers within each classroom were used to calculate the mean and standard deviation for peer cohesion for that particular classroom. Next, these values were used to calculate the coefficient of variation ($CV = SD/M$). This coefficient was then entered as the peer cohesion score for that classroom. The same procedure was also used to calculate cohesion by using individual perceptions of teacher emotional support. For the analyses, the coefficient of variation for classroom cohesion and peer cohesion for each classroom were used as indicators of classroom-level cohesion.

The coefficient of variation (CV) is often used to compare dispersion or diversity of some characteristic across groups (Bedeian & Mossholder, 2000). This indicator takes into account the average level of the characteristic as well as variance within the group. The coefficient of variation is commonly used to describe the workforce in the Organizational literature; especially in terms of demographic differences. More recently, in the peer literature, the coefficient of variation was used to compare equity of

classrooms in terms of peer relationships (Cappella & Neal, 2011). Interestingly, social network analysis techniques were used to identify numbers of connections between peers, and the coefficient of variation captured dispersion of number of peer relationships across classrooms. Therefore, the coefficient of variation represented the degree to which students had equal access to a network of peer support.

Structure. Classroom-level structure was measured using the same procedure as described above for cohesion. Student reports of their perceptions of teacher and peer expectations for social behavior were used to create CV scores for classroom-level structure. Individual perceptions of peer expectations for social behavior were pooled by classroom and used to calculate the coefficient of variation for peer structure for each classroom. The same calculations were carried out using perceived expectations for social behavior from the teacher to create a classroom-level teacher structure score. For the analyses, the coefficient of variation was used as an indicator for each of the two structure scores (classroom structure and peer structure) for each classroom.

Peer group wellbeing. Individual student reports on wellbeing were averaged across each classroom to represent the general wellbeing of the classroom or peer group. Therefore, this group wellbeing score was based on the individual-level measure, three items on a 5-point Likert scale, as described above.

Classroom size. At the classroom-level, class size was added as a control variable. Class size was calculated based on the total number of students enrolled in the class which might differ from the number of students who participated in the survey in each class. However, rosters were not available for cohort two; therefore class size was entered as the number of students that participated in the study that were in that particular class.

For example, classroom 1 had 20 participants so class size was entered as 20. The other algorithm considered for computing class size, for this cohort, was based on the average participation rate across all other classes. More specifically, across the other five cohorts, participation was about 87% of the total number of students listed on the roster. However, this estimation method was not utilized given that this cohort had an extremely high consent rate, only three students did not return consent forms, and this second algorithm might lead to underestimating the true class size. Further, Wentzel (1991a) reports all students that received consent participated in the study supporting the decision to use the number of participants per class as the measure of class size.

Student outcomes.

Social goal pursuit. Social goal pursuit was measured using a 14-item scale that included both prosocial and social responsibility goal pursuit (Wentzel, 1994). Prosocial goal pursuit was assessed with six items that asked about efforts to share and help peers with academic and personal problems. A sample item is: "How often do you try to share what you've learned with your classmates?" The average rating across the six items comprises the prosocial goal pursuit score. Responsibility goal pursuit was assessed with eight items that focus on how often students try to follow classroom rules and keep personal commitments. A sample item is: "How often do you try to do what your teacher asks you to do?" Response options were: *never* (1), *rarely* (2), *sometimes* (3), *often* (4), and *always* (5) for five of the six cohorts. One cohort responded on a six-point rather than five-point Likert scale, therefore violating assumptions about identical distributions. Therefore, these scores were recoded to fit to a five-point scale according to the following schema: 1=1; 2=1.8; 3=2.6; 4=3.4; 5=4.2; 6=5. This was done in order to

retain as much variability as possible in responses. A second option would have been to combine responses of 3 and 4 (the middle of the six-point scale), using that as the middle point on the new five-point scale. An item analysis was done to examine the shift in mean response and the standard deviation under each coding scheme (see Table 2). Tests for significant differences between the means under each of the three possible schemes were significant as well as all post-hoc pairwise analyses. Given this significant shift based on the coding scheme adopted, the decision was made to keep the coding scheme that would be most comparable to the rest of the data while retaining as much variability as possible. Thus, the first scheme was chosen since the second, which would collapse responses of 3 and 4, would sacrifice information concerning students who differentiated between these two options. Responses were therefore rescaled as explained previously under option one. In previous work by Wentzel alpha coefficients ranged from .74 to .86 and .74 to .87 for prosocial and social responsibility goal pursuit, respectively.

Table 2. Three possible solutions for rescaling specific social goal items from a 5-point to a 4-point scale.

Variable	No adjustment		Collapse 3 & 4		Redistribute	
	M	SD	M	SD	M	SD
g1	3.42	1.51	2.96	1.12	2.94	1.21
g2	4.22	1.53	3.53	1.16	3.58	1.23
g3	4.52	1.61	3.77	1.24	3.81	1.28
g4	4.11	1.71	3.46	1.31	3.49	1.37
g5	3.95	1.58	3.36	1.18	3.36	1.26
g6	3.54	1.58	3.02	1.17	3.03	1.26
g7						
g8						
g9						
g10						
g11						
g12						
g13						
g14	3.45	1.51	3.00	1.11	2.96	1.21

Note. F-tests show significant difference between all means. Follow up post hoc analyses found all pairwise comparisons to be significantly different.

Social behavior. Teacher and peer ratings were used to assess prosocial and socially responsible behavior. Teachers assessed prosocial behavior, based on the frequency of students' cooperative behavior (e.g., "In this class, how often does this student cooperate and share with other students in this class?") while socially responsible behavior was assessed by asking teachers about the frequency of complaint behavior (e.g., "How often does this student follow the rules in this class?"; "How often does this student break the rules in this class?"). All ratings were made on 5-point scales, 1 = *never*, 5 = *always*; scores were reverse coded for the one cohort that responded to breaking rules rather than following rules. Each teacher's response was entered as an indicator of the adolescent's prosocial or socially responsible behavior.

A peer nomination procedure was used to obtain peer perspectives of student behavior. Each student survey included pages designed to elicit responses that evaluate classmate behavior. More specifically, a roster of the students in a particular class, or team, was presented beneath a prompt regarding the prosocial and responsible behaviors of these students. For example, for prosocial behavior, the descriptor read "Who cooperates and shares in class?", and the socially responsible prompt was "Who follows the rules in class?" or "Who breaks the rules in class?". The participant was instructed to circle the names of students who fit the provided criterion. Students were allowed to nominate as many or as few classmates as they desired.

Scores for each student were calculated by counting the total number of nominations for each student and dividing that by the total possible number of nominations, the most common method for scoring nominations (Cillessen, 2009). For instance, a student that received five nominations out of a possible 20 would have a score

of .25. In the case that students were asked who breaks the rules, scores were subtracted from 1 to be consistent with all other data. The data generated from this measurement technique, peer nominations, provides responses from multiple informants, thus generating useful evidence for reliability as “the desired consistency or reproducibility of test scores” (Crocker & Algina, 1986, p. 105). For example, if everyone in a classroom of 25 students responds to the item, “How often does John help, share, and cooperate?”, there are now 24 reports on this behavior, rather than one.

Properties of the Data

In this section information about properties of the data in light of the analytic approach adopted in this correlational study is provided. First, the decision to treat the data as observed rather than latent is described. Next, the psychometric properties of the data, investigating both the validity and reliability of the data are examined. Third, missing data in general and then missingness for this particular study are discussed. Finally, the research questions guiding this study are summarized.

Observed vs. latent data. Prior to conducting any analysis the decision to approach this study from an observed rather than a latent approach was made. This was necessary to determine which analyses should be undertaken in order to accurately describe the data under one framework or the other. The choice to work in an observed framework was based on the following considerations. First, these particular data are assumed to represent observable phenomenon rather than conceived as indicators of a latent construct. This is most evident in the case of behavioral ratings which are viewed as external reports of another individual’s actions. In addition, given the complex nature of the data, and issues of missing data (discussed in the next section), an observed

framework seemed more appropriate for estimating standard errors. However, in adopting this approach there are some limitations worth mentioning. The most evident drawback is the inability to parse out measurement error which can lead to attenuating coefficients. A latent variable approach uses statistical models that are able to separate out measurement error, potentially providing more accurate estimations of coefficients. Nevertheless, previous work that utilized these data at the individual-level was conducted using a measured framework after determining that a latent framework would not change or enhance the results. In other words, a latent approach was not deemed necessary.

Psychometric properties. In this section evidence with regard to validity and reliability pertaining to the core variables in this study is provided. First, information based on confirmatory factor analyses carried out in the software Mplus version 6.0 (Muthén & Muthén, 2010) is described, followed by reliability information on the subscales that were established after validity analyses were conducted.

Validity. In order to draw valid, meaningful, conclusions regarding these data, multiple pieces of evidence are necessary to build the case for validity. Messick's (1995) framing of validity as a unitary concept was adopted as the most useful framework and states that, "construct validity is based on an integration of any evidence that bears on the interpretation or meaning of the test scores" (p. 742). Although evidence to support validity can come in a variety of complementary forms, here empirical and conceptual evidence is provided a) via confirmatory factor analysis for those variables with multiple items and b) based on conceptual fit.

First, a confirmatory factor analysis was conducted using Mplus 6.0 and maximum likelihood estimation on the following variables: emotional support from

teachers, emotional support from peers, expectations from teacher, expectations from peers, wellbeing, and the outcome social goal pursuit to provide empirical evidence for validity. Since there was a theoretical model underlying the factors being investigated in the current analysis, a confirmatory rather than an exploratory framework was appropriate (Brown, 2006). The goal of this step was to examine whether the sample data fit the proposed theoretical model underlying the variables well, and to provide evidence that trustworthy conclusions can be drawn based upon these data or scores.

A series of models were run for each of the variables of interest, and the fit statistics for each model are shown in Table 3. Goodness-of-fit was based on multiple fit indices that examine model fit from at least two different perspectives: absolute model fit (e.g., SRMR), incremental fit (CFI), or parsimony fit (e.g., RMSEA). The advantage of using multiple indices is that, taken together, they can provide a richer picture to base decisions regarding model fit upon (see Hooper, Coughlan, & Mullen, 2008) as long as the information garnered is not redundant (Fan & Sivo, 2005). To follow is a description of the advantages and limitations of each fit statistic.

Absolute model fit indices examine the fit of the sample data to the theoretical model in comparison to no model at all, whereas incremental fit indices focus on differences between theoretical and baseline (i.e., null model, that all variables are unrelated) models (Hooper, Coughlan, & Mullen, 2008). There are multiple indices within each category, and each having strengths and weaknesses. For example, the Standardized Root Mean Squared Residual (SRMR) is often utilized in comparison to the Chi Square statistic due to the latter index's sensitivity to sample size. Similarly, for incremental fit indices, the Comparative Fit Index (CFI) is preferred to some other

Table 3. Results from confirmatory factor analysis models for core variables.

Variable	Model	CFI	SRMR	RMSEA
Emotional Support	4 Factors: Emotional and academic support from teachers and peers	.965	.037	.046
	2 Factors: Support from teachers and peers	.912	.067	.071
	2 Factors: Emotional and academic support	.632	.020	.146
	2 Factors: Emotional support from teachers and peers	.982	.030	.050
	2 Factors: ^a Emotional support from teachers and peers (3 items each)	.994	.018	.041
	1 Factor: Support	.619	.200	.148
Expectations for behavior	2 Factors: Expectations meas. A and B	.837	.090	.096
	2 Factors: Expectations from teachers and peers	.832	.181	.097
	2 Factors: Expectations from peers meas. A and B	.977	.053	.056
	1 Factor: Expectations	.814	.109	.148
	2 Factors: ^a Expectations from teachers and peers meas. A	1.000	.014	.000
	2 Factors: ^a Expectations from teachers and peers meas. B	.951 .985	.035 .023	.100 .071
Wellbeing	1 factor ^a	1.000	.000	.000

^aModel chosen for analyses.

Table 3 continued. Results from confirmatory factor analysis models for core variables.

Variable	Model	CFI	SRMR	RMSEA
Social goal pursuit	4 Factors: Prosocial and soc.resp. peers and academic	.920	.052	.066
	4 Factors: ^a Prosocial and soc.resp. peers and academic	.936	.043	.059
	2 Factors: Prosocial (6 items) and soc.resp. (8 items)	.846	.064	.089
	2 Factors: Prosocial (7 items) and soc.resp. (7 items)	.839	.066	.091
	1 Factor	.767	.074	.109

Note. Meas. = measure; Soc.resp. = social responsibility.

^aModel chosen for analyses.

indices (e.g., Non-Normed Fit Index (NNFI)) due to that fact that it is not as sensitive to sample size. Finally, the third category, parsimony fit indices, take into consideration the number of parameters in the model, rewarding parsimony unlike indices in the others categories (e.g., SRMR). For instance, the Root Mean Squared Error of Approximation (RMSEA) takes into account whether or not parameters are providing additional information and enhancing the model or are more parameters simply using up additional degrees-of-freedom. These indices can be useful when trying to compare two models based on the same data with varying degrees-of-freedom, such that models utilizing more parameters are penalized and simplicity is rewarded (e.g., AIC). This latter example, the AIC, does not have clear cut-off criteria; instead lower values indicate a more parsimonious model and are preferred (Hooper, Coughlan, & Mullen, 2008).

Given the many fit indices available, it is up to the researcher to discern which are most appropriate and meaningful for their study. Although Hu and Bentler (1999) in their seminal work on fit statistics proposed specific joint criterion and cut-off values to be

used to judge model fit, the generalizability of some of their conclusions have been questioned. For instance, Fan and Sivo (2005) found the SRMR index is not as sensitive to structural misspecifications as previously proposed by Hu and Bentler as one argument for the use of multiple fit indices. However, using multiple indices can still be a useful strategy when determining model fit, as long as the indices can provide additional and not replicate information (Fan & Sivo, 2005; Hu & Bentler, 1999). Based on the evaluation of the aforementioned findings, multiple indices were utilized to assess which models best fit the data. Specifically, the following criteria were set based on those suggested by Hooper, Coughlan, and Mullen (2008) which mirror, to some extent, Hu and Bentler's (1999) suggestions: $CFI \geq .95$; $SRMR \leq .05$ (.08 according to Hu & Bentler, 1999); $RMSEA \leq .06$. The first index is an incremental fit index whereas the latter two indices are absolute fit indices, however, only the RMSEA incorporates parsimony of the model.

After concluding that these criteria would be used to judge model fit, confirmatory factor analysis was used to examine each variable with multiple items. For each variable of interest multiple models were tested to establish item configurations that would provide evidence for validity. More specifically, models were examined for perceived emotional support, expectations for social behavior, wellbeing, and social goal pursuit. First, the emotional support items were part of a larger scale on social support from the teacher and peers in two forms, emotional and academic. The following models were run under a confirmatory factor analysis framework: a) a 4 factor model, teacher emotional support, peer emotional support, teacher academic support, and peer academic support, b) a 2 factor model, teacher support and peer support, c) a second 2 factor model, emotional support and academic support, and d) a 1 factor model. The four

factor model demonstrated the best fit (CFI = .97; SRMR =.04; RMSEA = .05). As such, a model was run which only included the two emotional support components, one from the teacher (4 items) and one from peers (5 items). This model also fit the data well (CFI =.98; SRMR =.03; RMSEA = .05).

However, an issue arose when examining the emotional support data, the cohort 5 emotional support data did not include all nine items in the original scale (only six were used). Therefore, a two factor model using only six indicators was also fit to all available data. This alternate model also fit the data well (CFI = .99; SRMR = .02; RMSEA = .04). Further work was done to help define which solution would best fit the data. After examining reliability information (see Table 4) and bivariate correlations for core study variables under each of the two possible emotional support scale schemes (see Table 5), few discrepancies arose. There were no differences in the direction of relations, but some small changes in the magnitude of the bivariate correlations did emerge.

Another defining distinction between the two plausible schemes is the number of students that can be included in the analyses under each; a considerable number of cases would have been lost if all 9-items were used. Considering all of this information together, the six-item scheme was incorporated in order to make use of as much data as possible.

Next, the expectations for social behavior items were investigated. A close examination of the data and the cohort structure lead to an identification of a problem. Specifically, two different measures were used to capture expectations from teachers and peers. Cohort one (i.e., the subset) used a six-item expectations measure (e.g., measure A)

Table 4. Reliabilities (Cronbach's Alpha) by variable across cohorts.

Variables	Cohort						
	All	1	2	3	4	5	6
Emosupp –T2	.88	.73	.82	.80	.85	.82	.86
Emosupp – P2	.78	.76	.74	.78	.75	-	.82
ExpA–T	.75	.75	-	-	-	-	-
ExpB–T	.74	-	-	-	-	.66	.67
ExpA – P	.67	.80	-	-	-	-	.65
ExpB–P	.74	-	-	-	-	.74	.75
Wellbeing	.78	.77	-	-	.80	.76	
Prosoc gp peer	.79	.73	-	.79	.75	.82	.81
Prosoc gp academic	.75	.84	.78	.75	.71	.66	.76
Socresp gp peer	.63	.70	-	.63	.66	.60	.60
Socresp gp academic	.78	.81	-	.80	.78	.76	.74

Note. T =teacher; P= peer; Emosupp= emotional support; ExpA= Expectations measure A; ExpB = Expectations measure B Prosoc = Prosocial; gp= goal pursuit; Socresp = Social responsibility; TR =teacher rated; PR =peer rated.

Table 5. Comparison of bivariate correlations between two possible schemes for the perceived emotional support from teacher and peers variables.

Variables	Emosupp-T (4-items)	Emosupp-T (3-items)	Emosupp-P (5-items)	Emosupp-P (3-items)
1.Emosupp –T	-	-		
2.Emosupp – P	.39***	.38***	-	-
3.ExpA–T	.49***	.47***	.30***	.31***
4.ExpB–T	.48***	.50***	-	.43***
5.ExpA – P	.32***	.24***	.31***	.26***
6.ExpB–P	.38***	.39***	-	.60***
7.Prosoc gp peer	.32***	.32***	.38***	.43***
8.Prosoc gp academic	.32***	.33***	.39***	.42***
9.Socresp gp peer	.27***	.22***	.33***	.33***
10.Socresp gp academic	.39***	.40***	.26***	.25***
11.Prosoc beh –TR	.22***	.21***	.11**	.11**
12.Prosoc beh– PR	.06*	.06*	.15***	.14***
13.Socresp beh –TR	.26***	.25***	.11***	.12***
14.Socresp beh – PR	.11***	.10***	.02	.05

Note. n's ranged from 329-1856. T =teacher; P= peer; Emosupp = emotional support; ExpA= Expectations measure A; ExpB = Expectations measure B; Prosoc = Prosocial; gp= goal pursuit; Socresp = Social responsibility; TR = teacher rated; PR = peer rated. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

that was different than the six-item expectations scale used by cohorts five and six (e.g., measure B). In addition, data from cohort five was collected using both measures of the peer expectations measure, but not teacher expectations. This is important to note since it allows for testing factor models that include indicator items from both measures for peer expectations, but not for teacher expectations. Although, each of these measures is theoretically related, the structure of the data constrained the confirmatory models that could be tested (e.g., a four factor model).

To examine the data captured using these two different measures the following models were run: a) two factors each defined by the measure it came from irrespective of source of expectations b) two factors with indicator items coming from either peers or teachers regardless of measure, c) two peer expectations factors with indicators from each respective measure, d) one peer expectations factor with indicators from both measures, e) two factors, peer and teacher expectations but only from measure A, and f) two factors, peer and teacher expectations but only from measure B. The goodness-of-fit statistics are reported in Table 3 and based on the fit criteria described above, the strongest model configurations were those with two factors within each measure examined separately.

In particular, these two models had excellent ($CFI = 1.0$; $SRMR = .01$; $RMSEA < .001$) or satisfactory ($CFI = .95$; $SRMR = .04$; $RMSEA = .10$) fit for measures A and B, respectively. The RMSEA index for measure B was higher than expected which was indicative that the model might be over-parameterized. However, given that the other two indices indicate good fit and that this measure has been used previously in the literature, fit was deemed to be adequate. In addition, when the peer expectations data from both measures was examined simultaneously, a two factor structure fit the data best ($CFI =$

.98; SRMR=.05; RMSEA =.06). Based on this information, it does not seem appropriate to use the two measures of expectations from peers and teachers interchangeably. Therefore, analyses were run separately for each measure of the expectations from teacher and peers data. For example, models were run that incorporated a) measure A and b) measure B.

A confirmatory factor analysis for wellbeing was straight forward since only one model could be run. There were only three indicator items, which is the minimum number for a single factor model to be just- or over-identified. As expected for a just-identified model, the data fit the model well (CFI = 1.00; SRMR & RMSEA =.00).

The outcome social goal pursuit was captured through a 14-item measure used previously in the literature under different configurations with the most common arrangement being two subscales, prosocial and social responsibility goal pursuit. However, it also possible to theoretically deconstruct these two subscales further, as either peer or academic focused. In order to test these different possible configurations to see which best fit the data in the current study, the following models were examined: a) a four factor structure as described above, b) a two factor model, prosocial (6-items) and social responsibility (8-items) goal pursuit, c) a two factor model, prosocial (7-items) and social responsibility (7-items) goal pursuit, and d) a one factor model.

As shown in the Table 3, the one factor model did not fit the data well, nor did either version of the two factor model. Based on the examination of suggested modification indices for these two factor models, those adjustments that were theoretically sound were incorporated into subsequent CFA models and tested. In the end, none of these models fit the data as well as a four factor model. The final four factor

model that best fit the data required moving one indicator (“How often do you try to think about how your behavior will affect other kids?”) from the originally proposed four factor configuration to a different factor. This move was supported by previous research which has used this item on different subscales based on the particular sample being studied.

The final four factor model (which included peer and academic prosocial goal pursuit and peer and academic social responsibility goal pursuit) fit the data adequately (CFI = .94; SRMR = .04; RMSEA = .06). The CFI was lower than desired, however, this information, when taken alongside that offered by the other two indices, suggested there was a relatively small chance a misspecified model was being accepted. The CFI value (.94) was close to the cut-off value .95, providing some confidence that the theoretical model is stronger than the null model (i.e., that none of the components are correlated). Further the RMSEA met the criterion and supports the use of the theoretical model with this data.

Overall, the results of the confirmatory factor analyses provide evidence that trustworthy conclusions can be drawn from the data associated with the best fit models for each of the variables examined.

Next, another aspect of validity, content validity was explored further to build the case for validity. Content validity focuses on taking stock of the data, at the item-level in this scenario, to see if they adequately capture the variables of interest (Messick, 1995). The wording of the emotional support variables clearly indicate whether the source is the teacher or peers, supporting the model identified in the confirmatory factor analysis. Additionally, the items refer to provisions of emotional support rather than alternate

forms of available support such as physical or instructional. For the four expectations subscales, the items were reviewed for conceptual strength. Similar to the emotional support subscales, the source of expectations for social behavior was identified within each item, further corroborating factor analysis findings. Lastly, the content of items in relation to expectations clearly reflected social behavior in the context of the classroom.

Reliability. Cronbach's alpha was used to investigate the integrity of the variables derived from subscales with multiple items. Coefficient alpha provides an indication of how well the items on the scale are interrelated or measuring the same thing (Cronbach, 1951). More specifically, reliability as captured through coefficient alpha compares multiple split-half versions of a single test rather than two parallel tests. Therefore, it provides a glimpse of the average interrelatedness of items or, said another way, takes into account the unique contributions to variance each item makes (Cortina, 1993). In contrast, other common interpretations of reliability are based on multiple administrations of a test, or administrations of parallel test forms to the same individual. Therefore, the interpretation of alpha as a measure of reliability when only one administration of a measure has occurred is not as straightforward.

Further, an alpha value is a lower bound, and represents a value that is lower than the true score reliability due to the presence of measurement error (Sijtsma, 2009a). Therefore, in reporting reliability using Cronbach's alpha value, it is recognized that the estimate is actually lower than the true reliability. Other estimates for reliability which lie closer to the true reliability value do exist, such as the greatest lower bound (glb), as well as additional analytical approaches such as SEM (see Green & Yang, 2009), but these were not used here. The choice to use alpha was therefore three-fold. First, utilizing alpha

allows the current estimates to be compared to the existing literature in which the same measures have been used. Second, in using alpha, one is erring on the side of the lower reliability estimate without the sampling biases found with the glb (Ten Berge & Socan, 2004). Finally, using structural equation modeling requires data acquired through parallel forms (Green & Yang, 2009) and a necessary part of the process, to decompose variance into multiple parts, has been questioned (Sijtsma, 2009b). However, the use of Cronbach's alpha as an estimate of reliability is done so understanding its limitations.

Overall, alpha values ranged from .63 to .88 (see Table 4) with most falling in the acceptable or good range for social science research (e.g., Pedhauzer & Schmelkin, 1991). This conclusion is drawn in light of the number of items on the scales and the previous results from the factor analyses (see Cortina, 1993; Streiner, 2003). Further examination of the reliability of the data by cohort found similar results across the following scales: emotional support from teachers (α 's=.73-86), emotional support from peers (α 's= .74-82), expectations from teachers (two measures; α 's=.75 and .66,.67), expectations from peers (two measures; α 's=.65,80 and .74, .75), four aspects of social goal pursuit (α 's= .73-.82; .66-.84; .60-70; .74-81), and wellbeing (α 's= .76-.80).

Item-level analysis utilizing the full dataset suggested that reliability would not increase by dropping any items from the proposed scales, with the exception of small gains for expectations from peers (measure B; α 's= .74 to .77) and peer social responsibility goal pursuit (α 's= .63 to .66) measures. Based on this information, the theoretical underpinnings of each scale, and evidence for validity through confirmatory factor analyses described in the previous section, all items were retained on these two subscales.

An issue that arose when examining the emotional support data as described in the previous section, was that data collected from cohort 5 did not include all nine scale items, instead only six items were used. More specifically, the following items were not included: “My teacher thinks it’s important to be my friend.”; “My classmates like me the way I am.”; and “My classmates really care about me.” Therefore, it was necessary to examine the reliability of the two three-item subscales. When assessed, they were found to be satisfactory at $\alpha = .88$ and $.78$, as compared to the four and five item subscales, $\alpha = .84$ and $.86$, for teacher and peer support, respectively. There was not a substantial change in reliability of the scales under the two different compositions, yet the changes reflect a one item loss on the teacher subscale and two item loss for peer emotional support. This further validates the decision described in the previous section to use only six items to create the emotional support scales.

Based on the psychometric properties described above the subscales were used in the analyses in the final forms outlined in Table 6. That is, a four-item teacher emotional support, five-item peer emotional support, two measures of a three-item expectations for behavior from the teacher, two measures of a three-item expectations for behavior from classmates, a three-item wellbeing scale, and four subscales for social goal pursuit.

Missing data analysis. The current study has unique challenges in terms of missing data given the cohort structure of the data. However, missing data in general are quite common in social science research and often create an additional challenge for researchers (Peugh & Enders, 2004). Here three general mechanisms underlying missingness are reviewed and then the known problem of missingness in this particular data set is described. To begin with, incomplete data sets or missing data generally fall

Table 6. Final subscales psychometric properties and descriptives.

Variable	<i>n</i>	Model	No. of items	CFI	SRMR	RMSEA	α	M (SD)
Emotional Support	2257	2 factors	3	.994	.018	.041	T: .88 P: .78	3.93 (1.08) 3.31 (1.06)
Expectations	962	2 factors measure	3	1.000	.014	.000	T: .75 P: .74	3.50 (.63) 3.08 (.84)
		A						
	833	2 factors measure	3	.951	.035	.100	T: .67	3.79 (.82)
		B						
Wellbeing	1145	1 factor	3	1.000	.000	.000	.78	4.01 (.97)
Social goal pursuit	2197	4 factors	3	.936	.043	.059	ProsP: .79 ProsA: .75 SocresP: .63 SocresA: .78	4.03 (.85) 3.37 (.91) 4.11 (.73) 3.91 (.76)

Note. T = teacher; P = peer; ProsP = Peer prosocial goal pursuit; ProsA = Academic prosocial goal pursuit; SocresP = Peer social responsibility; SocresA = Academic social responsibility goal pursuit.

into one of three categories, a) missing completely at random (MCAR), b) missing at random (MAR) or c) missing not at random (MNAR) and any combination of types of missingness might exist within a single data set (Peugh & Enders, 2004). Determining, if possible, the underlying mechanism of missingness is of vital importance in order to make informed decisions about how to most accurately correct for the issue in subsequent analysis. Missingness can have implications for the accuracy of the estimations of coefficients and standard errors (see Enders, 2010).

MCAR. Missing completely at random (MCAR) involves data that is missing in a random manner such that it is not related to any other variable or the value on that particular variable (Peugh & Enders, 2004). For example, whether or not a student does not respond to an item regarding social goal pursuit is not related to that student's perceived wellbeing or to the region of the country that she came from. In addition, missing data on the outcome might be due to something unexpected such as absence from school due to illness. Some tests exist for empirically assessing whether or not data are

MCAR. For example, one can either dummy code each outcome variable as missing or not and then compare group means on other measured variables to see if differences exist (Osbourne, 2008). In addition, one can identify this type of missingness using Little's test for MCAR (Little, 1988) or similar tests built into software such as the Missing Values Analysis module in SPSS.

MAR. The second mechanism possibly underlying missingness is MAR. In this situation, missingness on an outcome variable is related to another variable. For example, whether or not a student has peer ratings for prosocial behavior could be related to class size. However, the value of the outcome of interest must randomly vary within the groups defined by the other variable, that is, a control variable can explain the relation (McCartney, Bub & Burchinal, 2006). In other words, a grouping variable, which is included in the data set, is related to whether or not students are missing data on the outcome (Peugh & Enders, 2004). Using the previous example, suppose that within each class size there was no significant relation between missing data and the quality of peer ratings. Unfortunately, no empirical statistical tests exist to investigate whether or not missingness is at random (Peugh & Enders), however, one might be able to identify which variables are related to the propensity for missing data (McCartney, Bub, & Burchinal).

MNAR. The third mechanism, missing not at random or nonignorable missingness (MNAR) describes the case in which missingness on a particular variable is related to values on that outcome. For example, if students missing data are those who have poor prosocial behaviors and do not come to school in order to be rated by their peers, then the level of the outcome (i.e., prosocial behavior) is related to whether or not

the data are missing. If there were other variables in the data set that could account for this problem, then the missingness could potentially be controlled. However, if no auxiliary variables exist, that is variables available in the data set but not being used in the core analyses that can serve as proxy variables, nothing can be done. MNAR is a common problem in secondary data analyses in which core variables are not included (McCartney, Bub, & Burchinal, 2006). As with the case of MAR, no empirical test can be undertaken to confirm a case of MNAR.

How to handle missing data. When missing data is of concern and is determined to be MAR, one of two general courses of action are often taken, either multiple imputation (MI) can be used to create complete cases of data, or an appropriate estimation procedure such as full information maximum likelihood (FIML) can be adopted. These approaches might be more appropriate than traditional means for handling missing data such as listwise deletion or mean imputation, due to the biases inherent in the parameter estimates produced under each of these traditional frameworks (e.g., Ender, 2010; Little 1992, Schafer, 1997). For example, FIML has produced much more accurate estimates of the mean and standard error than either of the other two older methods in empirical tests (Peugh & Enders, 2004). In addition, MI improves upon traditional methods of regression imputation in that multiple filled-in data sets are created rather than only one data set. This allows the researcher to incorporate more plausible variations in data that can arise in samples drawn from the same population. Further Peugh and Ender point out that, MI can be an appropriate choice in some cases given the degree of missingness is not excessive, the data are multivariate normal, and data are MAR. In

addition, MI is more flexible in its use with many types of analyses as the imputation phase is separate from model analyses.

Another technique for handling MAR data is full information maximum likelihood (FIML). This estimation procedure has an advantage over other estimation techniques in that all available raw data are incorporated into each estimation, rather than exclusively using complete cases. This approach to missing data occurs within model analysis, in the estimation step, and is therefore incorporated into all analyses, as opposed to a separate procedure as in MI. However, utilizing this maximum likelihood based estimation procedure requires data be multivariate normal or issues might arise in properly estimating standard errors (Enders, 2001). One modification for curtailing this problem is to estimate SE's using only observed data (Enders, 2006). The appropriate course of action to take in the MAR situation is determined based on properties of the data, whether necessary assumptions are met (e.g., multivariate normality), and the type of analyses that will be undertaken. Each of these procedures can be useful when data are MAR, however, if data are MNAR, neither is very useful (Peugh & Enders).

If the missingness is in fact considered to be MNAR, the case becomes more complex. Although there are some approaches available to the researcher, less is known about how to best handle these type of data given the lack of information regarding the source of missingness. Common approaches to MNAR include specific estimation techniques such as selection models or pattern-mixture models as well as conducting a sensitivity analysis to examine fluctuations in the estimates of coefficients and standard errors. Selection models utilize regression equations to predict response probabilities, while pattern mixture modeling parses the cases into different groups based on patterns of

missingness and then estimates the model for each group. Given the level of uncertainty about the data since there are many unknowns, often the best course of action is not clear. Further, both of these options require that the researcher make assumptions about distributions or values of certain parameters which cannot be estimated (Enders, 2010).

The current study presented a challenge in terms of missing data on two levels: overarching study design, and in terms of data within individual cases. First, as previously mentioned, some classrooms do not have data on particular variables of interest and therefore the analytic sample varies for each component of the overall conceptual model. For instance, students in all classrooms provided data on perceived emotional support and social goal pursuit, however less student data are available to test the pathway between perceived expectations and social goal pursuit (see Table 1). More specifically, the cohort from the Southwest region has complete data while the cohort from the Midwest has no expectations data. This missingness in the data is planned, that is by design, since only specific variables were collected from various samples.

Therefore, means to further investigate this issue becomes complex since some variables were simply not collected. Additionally, there is no reason to believe that whether a group completed (i.e., was given) a measure or not should be related to the value on that variable (i.e., MNAR). As previously summarized, two means for examining missingness through sensitivity analyses are with selection models or pattern mixture modeling. However, since there are no appropriate indicator variables to build a meaningful selection model, and proper conditions to carry out pattern mixture modeling that would lead to a useful interpretation are also lacking; neither of these techniques was

incorporated. If inappropriate variables (i.e., choosing poor indicator variables) are added to the analyses, the problem can become more convoluted rather than clear.

Given the complex nature of this aspect of missingness and lack of justification to use the available modeling techniques described above, comparison analyses were carried out. For each of the models run to test the four research questions guiding the study, two scenarios were investigated; first with the full data set and second with a subset of data. In the first scenario, all available data were included whereas in the second condition approximately 595 cases from 27 classrooms that had data on all variables were included. The rationale for running the analysis with all available data was a) utilizing listwise deletion would lower the sample size and potentially introduce further biases into parameter estimates (Peugh & Enders, 2004) and b) the percentage of missing data was relatively high. All results are reported for both conditions in a side-by-side comparison.

Second, within the cohorts some data from individual cases was missing under a MAR mechanism. Therefore, FIML estimation techniques were used for all analyses to accommodate MAR data within each of the cohorts. Although MI would have also been a statistically sound option, it was judged a less appropriate technique given the extent of missingness and since the researcher ultimately has a hand in structuring the imputations (i.e., selecting how imputed values are created). Finally, given the overarching planned missingness, as well as case-level missingness, all interpretations of parameters and analyses will be made in light of these issues.

Multilevel Modeling

This investigation involves students nested within classrooms and therefore adopts a multilevel modeling framework. Doing this allows the researcher to not only

look at relations between variables at the individual-level (i.e., personal characteristics) but also to examine relations between class-level variables and outcomes. In addition, when working with data that occurs within a naturally occurring hierarchical structure (i.e., students within classrooms) multilevel modeling is an appropriate technique to handle non-independence and is often recommended for research in educational settings (Raudenbush & Bryk, 2002). Further, in multilevel models researchers can include both individual (i.e., level 1) and classroom (i.e., level 2) effects and if desired interactions between the two levels.

The general two-level model guiding these analyses comes from Raudenbush and Bryk (2002) and outlines two-levels of predictors, the possibility for a cross-level effect, and partitions the variance into individual and group effects. It can be written in simple form as:

$$\text{Level 1: } Y_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + r_{ij}$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01}W_j + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}W_j + u_{1j}$$

In which

β_{0j} is the average outcome across all students in classroom j

β_{1j} is the average relation between an individual characteristic (e.g., peer emotional support) and the outcome or the average difference between categories of students (e.g., males v. females) on the outcome

X_{ij} is an individual-level predictor (e.g., teacher expectations)

r_{ij} is the unique effect of student i in classroom j

γ_{00} is the average outcome across all classrooms

γ_{10} is the mean difference on outcome between classrooms of different levels of associated characteristic (e.g., teacher cohesion)

W_j is a classroom-level predictor (e.g., peer structure)

u_{0j} is the unique effect of classroom j

γ_{10} is the average β_{1j} slopes across all classrooms

γ_{11} is the mean difference in β_{1j} slopes between classrooms of different levels of associated characteristic (e.g., peer cohesion)

u_{1j} is the unique effect of classroom j on the slope β_{1j} (e.g., relation between peer emotional support and prosocial behavior).

This is the basic form underlying all subsequent analyses although multiple level 1 and 2 predictors will be included. However, not all parts on the model will be utilized to answer each research question.

Multilevel Characteristics of the Data and Ancillary Multilevel Issues

Conceptually, the data are part of a nested structure, so part of the process was to investigate whether or not a multilevel framework was appropriate for analyzing these data based on empirical information. Preliminary analyses were conducted to examine where the variance in each variable resided in terms of within the individual and between classrooms. This is a necessary step when working with nested data to determine if multilevel modeling is warranted. First the fully unconditional model for each of the eight outcomes ($Y_{ij} = \beta_{0j} + r_{ij}$) was run and the intraclass correlation (ICC) was examined to see what percentage of the variation in student outcomes existed at the individual- and classroom-levels. This model only included the outcome of interest (e.g., teacher-rated

prosocial behavior) so that the variance associated with the outcome could be partitioned into individual- and between-levels.

As shown in Table 7, variance (i.e., ICC) in each outcome across classes ranged from 1% to 67% in the full data set and from .01% to 43% in the subset. There was some variation in between-group variability across the two data sets on various variables. For example, the between group variance in teacher ratings of socially responsible behavior was 24% in the full data set and 15% in the subset. In addition, the intraclass correlations of the four social support variables were examined, to verify that variance existed across classrooms. Indeed, some variance did exist between classrooms; ICC's ranged from 5% to 11%.

Next, the design effects ($DEFF = V_C / V_{SRS} = 1 + (s - 1) \rho$) (Raudenbush & Bryk, 2002) were calculated. DEFF is an indicator of the effect that the nested structure of the data might have on analyses if this aspect of the design is not accounted for; that is if a multilevel model is not incorporated. For example, a large design effect (i.e., greater than 2) can lead to inaccurate estimates of variance and thus misinterpretation of results (Croninger, 2010; Muthén & Satorra, 1995). The DEFF's ranged from 1.12 to 14.64 and therefore indicated the need for multilevel modeling.

Since variance existed at the classroom-level, and design effects were found, the data were analyzed using multilevel modeling via Mplus 6.0 (Muthén & Muthén, 2010) which accounts for the nested nature of the data. In these analyses, clustering was accounted for by incorporating classroom as the clustering variable. The clusters vs. stratification command was used since this data set does not represent a larger representative population (e.g., superpopulations; Graubard & Korn, 2002), hence no

Table 7. Interclass correlations, average class size, and design effects by variable.

Variables	n/ # of classes	ICC	ICC SS	Avg Class Size	Avg Class Size SS	DEFF	DEFF SS	ICC2	ICC2 SS
Emosupp –T2	2073/120	.11	.17	17.28	16.04	2.76	3.51	.68	.76
Emosupp – P2	1890/102	.06	.06	18.53	16.30	2.03	1.92	.54	.51
ExpA–T	458 / 27	.05	.05	16.96	16.96	1.83	1.83	.48	.48
ExpB–T	824 / 41	.05	-	20.10	-	2.01	-	.53	-
ExpA–P	950 / 50	.10	.03	19.00	17.11	2.76	1.52	.67	.36
ExpB–P	822 / 41	.06	-	20.05	-	2.14	-	.56	-
Wellbeing	1126/62	.01	.00	18.16	16.96	1.12	1.02	.11	.02
Prosoc gp peer	1759 / 86	.06	.13	20.45	20.38	2.13	3.54	.56	.75
Prosoc gp academic	2174 / 106	.07	.06	20.51	20.25	2.37	2.17	.61	.59
Socresp gp peer	1719 / 86	.07	.04	19.99	19.63	2.25	1.69	.59	.43
Socresp gp academic	1740 / 86	.07	.02	20.23	16.50	2.39	1.37	.61	.29
Prosoc beh –TR	1285 / 62	.27	.25	20.73	21.78	6.23	6.24	.88	.88
Prosoc beh– PR	2022 / 94	.50	.43	21.50	20.90	11.31	9.63	.96	.94
Socresp beh –TR	2137 / 102	.24	.15	20.95	21.78	5.76	4.18	.87	.80
Socresp beh – PR	1580 / 74	.67	.35	21.35	20.90	14.64	7.92	.98	.92

Note. ICC = intraclass correlation coefficient; SS= subset of data; DEFF = design effect; ICC2 = intraclass correlation coefficient 2; T =teacher; P= peer; Emosupp= emotional support; ExpA= Expectations measure A; ExpB = Expectations measure B; Prosoc = Prosocial; gp= goal pursuit; Socresp = Social responsibility; TR =teacher rated; PR =peer rated.

claims can be made regarding a larger population, nor were the data collected in a manner conceptually consistent with stratification rather than clustering (Zanutto & Gelman, 2000). All analyses used multiple regression within a multilevel framework to examine the theoretical pathways of interest.

Model building. Multilevel models were built first by examining the proposed control variables. Models were run to examine if controls were related to the outcomes and worth including in the analyses. More specifically, level-1 models included grade-level, sex, and wellbeing (for the emotional support models) while the level-2 models incorporated class size for each of the eight outcomes. These models functioned as a baseline to compare the change in variance accounted for in subsequent models.

As seen in Tables 8 and 9, at the individual-level, sex and wellbeing predicted all outcomes except peer ratings of socially responsible behavior, while grade-level predicted all four behavioral ratings and academic prosocial goal pursuit. Further, for all eight outcomes shown across the two tables, the control variables taken together significantly explained some variance. More specifically, R^2 values ranged from .05 (peer socially responsible goal pursuit) to .14 (peer prosocial goal pursuit). Finally, significant residual variance existed across all eight outcomes, that is, there was still variance to be explained in each of the outcomes after accounting for the control variables.

In comparison, in analyses using the subset, sex predicted all eight outcomes, and wellbeing predicted all forms of goal pursuit and teacher-rated socially responsible behavior; grade-level was not a significant predictor of any outcome (see Tables 8 & 9). In addition, each model predicted significant amounts of variance in all four types of

Table 8. Individual-level regression of control variables on four types of social goal pursuit in the full data set and the subset.

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	817		161		822		160		806		155		810		154	
#classrooms	43		8		43		8		43		8		43		8	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Sex	.28***	.03	.23***	.07	.17***	.03	.22**	.07	.16***	.03	.21**	.08	.16***	.03	.18**	.07
Grade	-.001	.03	.10	.12	-.08*	.03	.11	.08	-.04	.03	.11	.08	-.05	.03	.14	.08
Wellbeing	.22***	.03	.28***	.07	.24***	.03	.35***	.07	.14***	.03	.18*	.08	.20***	.03	.44***	.06
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.58***	.03	.57***	.07	.62***	.03	.73***	.08	.48***		.50***	.06	.54***	.03	.39***	.05

Note. Sex coded 0=male; 1= female. All control variables were grand-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 9. Individual-level regression of control variables on teacher- and peer-rated prosocial and socially responsible behavior in the full data set and the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	954		295		1099		456		954		295		1097		455	
#classrooms	54		19		62		27		54		19		62		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Sex	.27***	.03	.17**	.06	.22***	.03	.20***	.05	.15***	.03	.33***	.05	.25***	.03	.30***	.04
Grade	.22	.19	-.11	.06	-	.03	-.09	.13	.04	.03	-.06	.17	-	.03	.14	.09
Wellbeing	.07*	.03	-.03	.06	.07*	.03	.01	.05	.04	.03	.05	.06	.08**	.03	.10*	.05
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.04***	.00	.03***	.00	.86***	.08	.33**	.10	.07***	.00	.03***	.00	.78***	.03	.58***	.04

Note. Sex coded 0=male; 1= female. All control variables were grand-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

social goal pursuit and both ratings of socially responsible behavior (R^2 , ranged from .07 to .27) and significant residual variance remained in all eight outcomes.

Tables 10 and 11 present the classroom-level control models. At the classroom-level, in the full data set, class size significantly positively predicted academic socially responsible goal pursuit but no other outcomes. In addition, considered alone, class size did not account for a significant amount of variance in any outcome (all R^2 were *ns*). However, significant residual variance existed in all eight outcomes (see Tables 10 & 11). These same models when examined using the subset, found no significant effects for the behavioral outcomes. Finally, significant residual variance remained in the four behavioral outcomes in the subset (see Table 11).

Given that significant relations existed between each of the control variables and at least one of the outcomes, all four control variables were retained for analyses.

Power in multilevel models. Statistical power is often a concern in all types of inferential statistical research and involves the ability of the researcher to detect an effect, or be able to reject the null hypothesis of interest. This requires having an adequate sample size given the magnitude of the effect one is trying to detect (i.e., effect size) and the type I error level that has been set (e.g., $\alpha = .05$), so that the power is sufficient to be able to detect whether a difference exists between groups. Often, social science researchers aim for statistical power of .80 and make adjustments to sample size accordingly. In multilevel models there are additional factors that should be considered, including the number of clusters (i.e., classrooms), the number of members within clusters (i.e., students), and the magnitude of the intraclass correlation (Spybrook, 2008).

Table 10. Classroom-level regression of control variable, class size, on four types of social goal pursuit in the full data set

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	1759				2174				1719				1740			
#classrooms	86				106				86				86			
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Class Size	-.03	.16			-.02	.13			.16	.15			-.27*	.14		
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.69***	.02			.77***	.02			.50***	.02			.54***	.02		
Class mean, u_{0j}	.04***	.01			.06***	.01			.04***	.01			.04***	.01		

Note. Sex coded 0=male; 1= female. All control variables were grand-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 11. Classroom-level regression of control variable, class size, on teacher and peer-rated prosocial and socially responsible behavior in the full data set and the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	2022		397		1285		588		1580		397		2181		588	
#classrooms	94		19		62		27		74		19		102		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Class Size	.06	.11	-.29	.21	-.03	.14	.28	.19	.14	.12	-.09	.24	-.14	.11	.07	.22
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.02***	.00	.02***	.00	.74***	.03	.86***	.05	.03***	.00	.04***	.00	.73***	.02	.72***	.04
Class mean, u_{0j}	.02***	.00	.01***	.00	.27***	.06	.27***	.08	.05***	.01	.02**	.01	.23***	.04	.13***	.05

Note. Sex coded 0=male; 1= female. All control variables were grand-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

In these models, there are two sample sizes to consider, one each at the individual and group levels. More specifically, when examining group differences (level-2 effects) an increase in the number of clusters (i.e., classrooms) has a larger impact on power than an increase in the number of members within clusters. At some point, increasing the number of group members no longer has an impact on power whereas increasing the number of clusters continues to increase statistical power (Spybrook, 2008). The number of clusters becomes important when determining power to detect cross-level interactions. Ultimately, these additional factors, number of clusters, members, and the intraclass correlation have implications for the accuracy of the standard error associated with the parameter one is attempting to estimate, which in turn effects the statistical power (see Spybrook, 2008).

Since this study involved secondary data analysis, the sample size could not be changed. However, decisions made during analyses and in interpreting results were made in light of potential power issues. Indeed, some social science researchers make the case for setting the alpha level to .10 when they are concerned about power given the number of clusters they are able to sample. For instance, the PISA 2006 report compared country-level differences at an alpha level of .10 where power was low as compared to an alpha level of .005 at the student-level. This was due to differences in the sample size at the two levels, 55 vs. 14 000 at the country and student levels, respectively (OECD, 2006). In the current study, the numbers of classrooms were rather small for some analyses and therefore it would be hard to detect a significant effect even if one were present. For example, in the subset analyses only eight classrooms had data on social goal pursuit thus making it hard to draw conclusions regarding outcomes at the classroom level. In

addition, the inclusion or exclusion of particular variables such as wellbeing had major implications for the number of classrooms included in analyses and therefore, had implications for statistical power. These issues will be discussed further within the results section as they arise.

Analytical Approach to Answering Core Research Questions

The core research questions were examined drawing upon the multiple regression statistical technique within a multilevel framework. All analyses were carried out using the Mplus 6.0 software and parameters were estimated using maximum likelihood (Muthén & Muthén, 2010). For this study, four sets of models were run that aimed to address each of the four research questions. The first set focused on the individual-level, that is, models that examined perceptions of social support as predictors of student outcomes. The next set of models addressed research question 2, looking at classroom-level characteristics (level-2) as predictors of social goal pursuit and classroom behavior. In this set of models (i.e., means-as-outcomes), intercepts (i.e., average outcome by class) became the dependent variable and classroom characteristics were used to predict these outcomes while taking into account class size (i.e., level-2 control variable) and perceptions of social support and control variables at level-1 (Raudenbush & Bryk, 2002). The third set of models looked at cross-level interactions and therefore incorporated both individual- and classroom-level controls and predictor variables. The final question addressed contextual effects on each of the eight outcomes; coefficients on paired variables across the two levels, individual and class, were compared. Before modeling the data in a multilevel framework, decisions were made regarding centering, which I now turn my attention to.

Centering. An important decision to be made in constructing multilevel models is which centering method (e.g., natural metric, group-mean or grand-mean) will be used. In essence, centering determines where the zero point or mean will lie along the metric for each variable. Centering has implications for the interpretation of results, especially in terms of the intercept. For example, does a value of zero on a predictor accurately represent the mean? If not, the natural metric should not be utilized and instead group- or grand-mean centering should be incorporated. Therefore a centering approach based on ease of interpretation given the focus of the particular model being run (e.g., individual-level or classroom-level focused) was adopted. In other words, the centering of predictors was done in a way that results had meaning given the nature of the relations being investigated (Raudenbush & Bryk, 2002).

In this study two centering options exist for level-1 variables: a) group-mean ($x_{ij} - \bar{x}_{.j}$) and b) grand-mean ($x_{ij} - \bar{x}_{..}$). Group-mean centering is useful when the researcher wants to maintain variability in the relations between variables (i.e., the slope) of interest across groups. In interpreting results that have incorporated group-mean centering, coefficients represent a student in a specific group. Further, the variance that exists at level-1 and level-2 remains orthogonal, that is they do not overlap (Ender & Tofghi, 2007). In contrast, grand-mean centering represents the average relation between two variables across all groups; group variation is controlled for (i.e., the mean has been adjusted for group differences). Therefore when using grand-mean centering some variance from level-2 can be incorporated into level-1, and the variance components are no longer orthogonal (Ender & Tofghi, 2007; Raudenbush & Bryk, 2002). Therefore, when running tests for contextual effects (i.e., research question 4) it is important to note

which centering approach is adopted as the coefficients take on different meanings based on centering (Raudenbush & Bryk, 2002).

In general, group-mean centering was adopted when individual-level predictor variables were of key interest and no random effects associated with the level-1 covariate were modeled (i.e., research question 1), whereas when estimating classroom-level effects, grand-mean centering was incorporated (i.e., research question 2). However, if there were significant mean differences across groups and that variation was modeled, then that variable was group-mean centered in order to increase precision (Raudenbush & Bryk).

In contrast, all control variables were grand-mean centered since there was no interest in modeling variation across groups, nor would it make conceptual sense to group-mean center the variable sex or grade-level in this manner. Although less of a concern, classroom-level predictors were grand-mean centered rather than left uncentered to aid in interpretability (Raudenbush & Bryk, 2002).

Centering decisions related to building models to answer research question 3 on moderating effects (i.e., cross-level interactions) involved multiple steps. Cross-level interactions require group-mean centering; that is the researcher must retain between-group variance in order to model level-2 variables (e.g., classroom cohesion) that might account for these differences. More specifically, while building these models significant slopes were noted, that is, any instances in which the relation (i.e., slope) between a specific aspect of social support (individual-level) and the outcome variable varied across classrooms. For example, each individual-level model was built by entering one form of social support from two sources (e.g., teacher and peers) to test for significant slope

variance. The predictors were first entered as group-mean centered with a random effect, that is, the slope was free to vary across groups. This source of variation was free rather than fixed so that the variation in the slope across groups using classroom-level characteristics could be modeled or potentially explained. However, if there was no significant variance in the slope, the predictor was re-entered as grand-mean centered and fixed; no variation in the relation across groups was allowed. Therefore the decision to group- or grand-mean center level-1 variables while answering research question 3 was in part determined by whether or not variance in the slope existed across groups. In the case that variance in the slope did indeed exist, the variable was group-mean centered. However, if no slope variance was present the variable was grand-mean centered. Model building then continued with entering classroom characteristics that might explain some of the variation across classrooms in the significant slope.

In summary, the following centering decisions were made:

- a) Research question 1, control variables were grand-mean centered and individual-level predictors were group-mean centered.
- b) Research question 2, control variables and individual-level predictors were grand-mean centered and classroom-level predictors were centered.
- c) Research question 3, control variables were grand-mean centered, individual-level predictors were group-mean centered if the associated slope was allowed to vary, if not, the individual-level predictor was grand-mean centered. All classroom-level variables were centered.
- d) Research question 4, control variables and individual-level predictors were grand-mean centered and classroom-level variables were centered.

Framework for interpreting results. Based on the research questions, the focus in the current study was on the strength of the pathways (or coefficients) connecting the variables of interest as presented in Figure 3. Therefore, in the results section estimates for the pathway coefficients are organized, first by the full sample and then for the subset. Results are organized by research question and interpretation is dependent upon the centering of each of the variables as discussed above. For instance, if all level-1 variables are grand-mean centered then results are in terms of a student at average levels of all variables in that particular analysis. Suppose the beta for the regression of teacher emotional support on social responsibility goal pursuit is .32 and significant, and all individual-level variables were grand-mean centered. This would be interpreted as a .32 unit increase in social responsibility goal pursuit for each unit increase in teacher social support for a male in grade 5, with average levels of wellbeing and peer social support. In contrast if peer emotional support was group-mean centered, then the coefficient would be interpreted as a .32 unit increase in social responsibility goal pursuit for each unit increase in teacher social support for a male in grade 5, with average levels of wellbeing and average peer social support for a student in group j , which is determined by classroom.

For classroom level results (i.e., research question 2) a similar interpretation can be made. That is if a significant relation exists between peer cohesion and prosocial behavior and the coefficient is .56 this can be interpreted that for each unit increase in peer cohesion there is a .56 unit increase in prosocial behavior for a student in group j , with an average level of teacher cohesion and classroom size.

Research question 3 combines both sets of predictors from questions 1 and 2 and adds an effect for cross-level interactions. For those slopes that are examined, level-2 predictors found to be significantly related to the slope can be interpreted as accounting for a change in the variance explained in the slope (e.g., relation between peer emotional support and prosocial behavior) and the coefficient represents a significant change in the slope given a one unit increase in the average classroom climate variable in group j .

The final research question compares the coefficients of level-1 predictors with their aggregate at level-2 to see if there is a contextual effect. Based on this information a conclusion can be drawn about whether or not classroom variables have an effect on social goal pursuit or classroom behavior above and beyond individual perceptions of social support and whether this effect is stronger at level 1 or 2.

Research Questions

Each research question along with the equations underlying each multilevel analysis using typical multilevel modeling notation are now presented. Multiple relations were tested given there were eight outcomes of interest. In addition, control variables were included as covariates of individual-level social support as proposed in Figure 2 and at the classroom-level as shown in Figure 3. More specifically, gender and grade-level were included in all individual-level analyses and wellbeing was included in models that incorporate perceived emotional care while class size was added at level two. Each of the control variables were entered into the equations as grand-mean centered. Also, each of the models depicted below assume errors are homogenous as is common in many multilevel studies (Raudenbush & Bryk, 2002). Finally, all of these models were run first utilizing all available data and then rerun using the subset.

Research question 1: Social support predicting individual social goal pursuit and classroom behavior. The first research question addresses the level-1 (i.e., individual) relation between a) perceived emotional care, from teachers and peers and each of the outcomes and b) perceived expectations from teachers and peers and each of the outcomes. In addition, control variables are included. The following model guides this analysis:

$$\text{Level 1: } Y_{ij} = \beta_{0j} + \sum_{q=1}^Q \beta_{qj} X_{qij} + r_{ij}$$

Where X_{qij} can take on the values for: sex, grade-level, wellbeing, emotional support from teachers, emotional support from peers, expectations for social behavior from teachers, and expectations for social behavior from peers.

Research question 2: Classroom climate predicting average social goal pursuit and classroom behavior. This question focuses on level-2 or between classroom effects on outcomes (i.e., means-as-outcomes model). More specifically, what are the relations between a) classroom cohesion in terms of teacher and peers, b) classroom structure in terms of teacher and peer, and c) group wellbeing, and each of the outcomes? The following equations underlie these level-2 analyses:

Level 1:

$$Y_{ij} = \beta_{0j} + \sum_{q=1}^Q \beta_{qj} X_{qij} + r_{ij}$$

Level 2:

$$\beta_{0j} = \gamma_{00} + \sum_{s=1}^S \gamma_{0s} W_{sj} + u_{0j}$$

Where X_{qij} can take on the values for: sex, grade-level, wellbeing, emotional support from teachers, emotional support from peers, expectations for social behavior from

teachers, and expectations for social behavior from peers and W_{sj} can take on the values for: class size, teacher cohesion, peer cohesion, structure from teacher, structure from peers, and group wellbeing.

Research question 3: Classroom characteristics as moderators of the relation between perceived social support and social goal pursuit and classroom behavior.

Here the focus is on cross-level interactions or moderating effects of a) classroom cohesion, b) classroom structure, and c) group wellbeing on level-1 relations. More specifically, the goal is help explain the variation in any relations between individual-level social support and one of the outcomes that are found to significantly vary across classrooms (i.e., intercepts- and slopes-as-outcomes models).

The following equation underlies these level 2 analyses:

$$Y_{ij} = \gamma_{00} + \sum_{q=1}^Q \gamma_{q0} X_{qij} + \sum_{s=1}^S \gamma_{0s} W_{sj} + \sum_{s=1}^S \gamma_{qs} X_{qij} W_{sj} + u_{0j} + \sum_{q=1}^Q u_{qj} X_{qij} + r_{ij}$$

Where X_{qij} can take on the values for: sex, grade, wellbeing, emotional support from teachers, emotional support from peers, expectations for social behavior from teachers, and expectations for social behavior from peers and W_{sj} can take on the values for: class size, teacher cohesion, peer cohesion, structure from teacher, structure from peers, and group wellbeing.

Research question 4: Classroom climate as a contextual effect. In order to compare individual- and classroom-level effects of a) emotional support or cohesion and b) expectations or structure on goal pursuit or behavior, classical contextual effects models were run. Each of these contextual effects was examined separately for each form

of support (i.e., emotional support or expectations for behavior). This test was guided by the models below.

Level 1:

$$Y_{ij} = \beta_{0j} + \sum_{q=1}^q \beta_{qj} X_{qij} + r_{ij}$$

Level 2:

$$\beta_{0j} = \gamma_{00} + \sum_{s=1}^s \gamma_{0s} W_{sj} + u_{0j}$$

Where X_{qij} can take on the values for: emotional support from teachers, emotional support from peers, expectations for social behavior from teachers, and expectations for social behavior from peers and W_{sj} can take on the values for: average emotional support from teachers, average emotional support from peers, average expectations for social behavior from teachers, and average expectations for social behavior from peers average.

Summary

This study utilized existing data to learn about student's perceptions of the social environment of their middle school classrooms. These data were collected with measures previously used in the literature on classroom context. Measures of classroom characteristics were calculated utilizing the available perspectives of all individuals within each classroom. In turn, individual and classroom characteristics were used to predict social goal pursuit and classroom behavior. One research question focuses solely on individual-level predictors of student outcomes based on a multi-dimensional conceptualization of social support from two sources: the teacher and peers. A second question examines the relations between classroom characteristics and behavior, while a

third aims to examine cross-level interactions. Finally, a test for contextual effects was run.

Chapter 4: Results

In this chapter I describe the data and present results for the core analyses pertaining to the four research questions. First, descriptive results in terms of measures of central tendency, normality of the data, and bivariate correlations are presented. Next, the core analyses, which include using a multiple regression statistical approach in a multilevel framework to examine each of the four research questions, are described. These models were tested using the full data set followed by analyses utilizing a subset of the data. The full data set draws upon all available cases from 125 classrooms, while the subset examines cases taken from 27 classrooms in a single school district. Running the analyses under these two conditions allowed me to draw conclusions about the robustness of the findings, given the complexity of the data due to their missing at random nature.

Descriptive Analyses

First, descriptive statistics were examined and close attention was paid to measures of central tendency and bivariate correlations between all variable pairs. Information was gathered from both single value indicators (e.g., mean) and visual plots (e.g., histograms). Based on the knowledge gleaned from these analyses, any outliers were further investigated. In addition, residuals from regressions in the core analyses were examined to assess any issues regarding model fit. Finally, the strength of the relations between pairs of variables was checked, so that further analyses founded on the strength of these correlations could be conducted.

Table 12 provides descriptive statistics (e.g., M, SD) for all level 1 (individual), level 2 (classroom), and outcome variables. For individual-level predictors, variable means (*SD*'s) ranged from 3.08 (.84) to 4.01(.97) and no predictors posed issues

Table 12. Descriptive statistics for core variables.

Variable	N	Mean	SD	Skewness		Kurtosis	
				Statistic	SE	Statistic	SE
<i>Level One</i>							
Emosupp –T2	2257	3.93	1.08	-1.04	.05	.31	.10
Emosupp – P2	1908	3.31	1.06	-.41	.06	-.55	.11
ExpA–T	458	3.50	.63	-1.38	.11	1.37	.23
ExpB–T	824	3.79	.82	-.58	.09	.12	.17
ExpA–P	950	3.08	.84	-.84	.08	-.10	.16
ExpB–P	822	3.43	.91	-.49	.09	.03	.17
Wellbeing	1126	4.01	.97	-1.10	.07	.72	.15
<i>Level Two</i>							
Cohesion-T	119	.26	.09	.32	.05	-.05	.10
Cohesion-P	101	.31	.08	-.56	.05	3.19	.10
Structure 1-T	27	.18	.06	1.14	.10	2.56	.20
Structure2-T	41	.21	.05	.63	.09	-.04	.17
Structure 1-P	50	.27	.07	-.24	.07	-.26	.15
Structure 2-P	41	.26	.07	.85	.09	.47	.17
Group wellbeing	62	4.01	.23	-.42	.07	-.37	.13
Mean Emosupp-T	120	3.94	.43	-.25	.05	-.15	.10
Mean Emosupp-P	102	3.34	.39	.49	.05	2.95	.10
Mean ExpA- T	27	3.50	.21	-.63	.10	.42	.20
Mean ExpB- T	41	3.79	.26	-.12	.09	-.46	.17
Mean ExpA- P	50	3.06	.32	-.25	.07	-.95	.15
Mean ExpB- P	41	3.43	.30	-1.50	.09	3.12	.17
<i>Outcomes</i>							
Prosoc gp peer	1759	4.03	.85	-.98	.06	.74	.12
Prosoc gp academic	2174	3.37	.91	-.37	.05	-.20	.11
Socresp gp peer	1719	4.11	.73	-1.24	.06	1.98	.12
Socresp gp academic	1740	3.91	.76	-.82	.06	.50	.12

Note. T=teacher; P=peer; Emosupp= emotional support; ExpA= Expectations measure A; ExpB = Expectations measure B Prosoc = Prosocial; gp= goal pursuit; Socresp = Social responsibility; TR =teacher rated; PR =peer rated.

Table 12 continued. Descriptive statistics for core variables.

Variable	N	Mean	SD	Skewness		Kurtosis	
				Statistic	SE	Statistic	SE
Prosoc beh –PR	2034	.36	.20	.35	.05	-.62	.11
Prosoc beh – TR	1285	3.73	1.00	-.47	.07	-.46	.14
Socresp beh – PR	1592	.67	.28	-.58	.06	-.83	.12
Socresp beh –TR	2181	3.94	.97	-.69	.05	-.16	.11

Note. T=teacher; P=peer; Emosupp= emotional support; ExpA= Expectations measure A; ExpB = Expectations measure B Prosoc = Prosocial; gp= goal pursuit; Socresp = Social responsibility; TR =teacher rated; PR =peer rated.

concerning skewness; absolute values were all less than 1.5. In terms of kurtosis, two level-2 variables were just above the 3.0 threshold (Finney & Distefano, 2006): cohesion from peers (kurtosis = 3.19) and mean expectations from peers (measure B) (kurtosis =3.12). Closer examination of these level-2 scores did not identify any salient outliers. Also, when all key variables were examined by cohort, no variables had skewness or kurtosis statistic values that fell outside the normal range. Therefore, no adjustments were made to these variables.

For variables captured at the classroom-level using the coefficient of variation, in which means closer to zero represent higher levels of cohesion or structure, means (*SD*'s) ranged from .18 (.06) to .31 (.08). In addition, the mean and standard deviation of average wellbeing was 4.01 (.23) (see Table 12).

Next, model fit was examined to determine whether it was appropriate to use multiple regression with these data. Model fit was assessed by reviewing the residuals associated with each model. If any values were not close to zero they were examined further. In the individual-level models for the full cohort, no residual values were far from zero (between +.001 and -.002) and therefore no further investigation was required. The residuals in the individual-level models utilizing the subset did have a few larger

deviations from zero. These deviations occurred in the cases where the goal pursuit outcome means were constrained to a specific value, therefore leading to larger residuals in the models. However, this issue only arose in models that incorporated all four aspects of social support. There were also some subtle deviations in classroom-level emotional support models in the between-groups covariances between class size and prosocial goal pursuit. The residual values were not that large in comparison to the size of the covariances (-.01 v. -.16 and .09 v. -.33 for peers and classmates, respectively) and therefore determined to not be of concern. Therefore, the data were assumed to fit the model well.

As shown in Table 13, bivariate correlations of all individual-level variables that were significantly correlated had a positive relation (r 's ranged from .06 to .60). All forms of perceived social support across all sources were positively, significantly related to one another. Some of these correlations were rather high and could potentially raise concerns regarding multicollinearity. Multicollinearity occurs when there is a high correlation between predictor variables and indicates a dependent relationship between the variables. However, the few relatively high correlations (e.g., perceived emotional support from teachers and expectations from teachers) in this data set are not conceived as being due to issues of multicollinearity. Rather these correlations reflect the expected similarity in constructs as well as shared variance; each of these variables comes from a single source, the student. Also, in the core multilevel analyses, all variables were centered which protects against multicollinearity (Raudenbush & Bryk, 2002).

Ratings of socially responsible behavior were not significantly correlated with measure A of teacher expectations and were inconsistently related to peer expectations

Table. 13. Correlations between individual-level perceived social support and outcome variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Emosupp –T	-												
2.Emosupp – P	.38***	-											
3.ExpA–T	.47***	.31***	-										
4.ExpB–T	.50***	.43***		-									
5.ExpA – P	.24***	.26***	.28***	.29***	-								
6.ExpB–P	.39***	.60***	-	.60***	.39***	-							
7.Prosoc gp peer	.32***	.43***	.42***	.39***	.27***	.45***	-						
8.Prosoc gp acd	.33***	.42***	.46***	.43***	.31***	.51***	.57***	-					
9.Socresp gp peer	.22***	.33***	.27**	.25***	.22***	.33***	.46***	.37***	-				
10.Socresp gp acd	.40***	.25***	.41***	.37***	.32***	.32***	.44***	.48***	.37***	-			
11.Prosoc beh –TR	.21***	.11**	.15***	.26***	.08	.22***	.25***	.27***	.16***	.26***	-		
12.Prosoc beh– PR	.06*	.14***	.00	.22***	.02	.29***	.15***	.13***	.09**	.21***	.18***	-	
13.Socresp beh –TR	.25***	.12***	.09	.15**	.18***	.08	.16***	.15***	.16***	.29***	.52***	.26***	-
14.Socresp beh – PR	.10***	.05	.05	.21**	.09	.20***	.14***	.19***	.19***	.15***	.33***	-.05	.42***

Note. *n*'s ranged from 154-2181. T =teacher; P= peer; Emosupp = emotional support; Expect1= Expectations measure A; Expect2 = Expectations measure B; Prosoc = Prosocial; gp= goal pursuit; acd= academic; Socresp = Social responsibility; TR =teacher rated; PR =peer rated.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

across measures and sources. Prosocial behavioral ratings were significantly, positively correlated with all variables except expectations from teacher and peers as assessed with measure A. All four forms of perceived goal pursuit were positively related to all other variables. Finally, all forms of social support were positively correlated.

Core Research Question Analyses

Each of the four research questions were examined independently using multiple regression within a multilevel framework. All analyses were carried out using the Mplus 6.0 software and parameters were estimated using maximum likelihood. As described previously, centering approaches (grand-mean v. group-mean) varied based on the specific question being investigated and the level of focus, individual vs. class; the specific centering approach is described within each section. Results from the regression analyses are presented in Tables 14 to 33 and are divided into fixed and random effects. The fixed effects represent the regression coefficients whereas the random effects indicate variation associated with either individuals (r_{ij}), the class-level mean of the outcome (i.e., intercept) (u_{0j}), or the slope (u_{1j}). Although the focus of this study is on the fixed effects, the random effects provide information regarding how much unaccounted for variation exists. In addition, results are presented by outcome in the Appendix.

Research question 1: Social support predicting social goal pursuit and classroom behavior. Linear multiple regression analysis within a multilevel framework was used to examine perceptions of emotional support from the teacher and peers as predictors of classroom behavior, while simultaneously accounting for students' sex, grade-level, and perceived wellbeing. Control variables were grand-mean centered and all

predictor variables were group-mean centered. Statistical tests were used to determine whether estimates were significantly different than zero.

There were eight different outcomes examined individually, four related to social goal pursuit and four regarding student behavior. The four perceived social goal pursuit outcomes were characterized by type of goal, prosocial or social responsibility, and context, academic or peer. For example, academic prosocial goal pursuit reflected the student's intent to be helpful and nice to their classmates whereas peer social responsibility goal pursuit indicates the student's intent to act in ways expected by their peers in terms of keeping promises, secrets or doing things they said they would do. The four behavioral outcomes differed by type, prosocial or socially responsible behavior, and the source of the rating, teacher or peers.

When running the level-1 models, a complication arose in estimating the goal pursuit models with the subset of data. Due to the small number of classrooms ($n=8$) that had data on goal pursuit, the intercept of the outcome could not be reliably modeled. Although the focus here was on individual-level predictors and outcomes, the model was run in a multilevel setting and therefore also estimated the class-level intercept. Because there were so few classrooms in the subset on these outcomes, there was not sufficient information available to estimate an average at the class-level for social goal pursuit outcomes. Therefore, I fixed the value of the outcome intercept (i.e., class average) so that the software program no longer tried to estimate this value. These fixed intercept values were based on initial start values produced by Mplus. Once this was done, the program could reliably estimate the coefficients of the level-1 predictors, which were the focus of research question 1.

Perceived emotional support.

Full data set analyses. As shown in Table 14, analyses of the full data set found that perceived emotional support from teachers and emotional support from peers were both significant predictors of various forms of perceived social goal pursuit after accounting for sex, grade-level, and perceived wellbeing. More specifically, emotional support from both sources positively predicted academic prosocial and socially responsible goal pursuit ($p < .05$) and peer prosocial goal pursuit, while peer emotional support positively predicted peer social responsibility goal pursuit ($p < .001$). In addition, as seen in Table 15, perceived teacher emotional support positively predicted teacher-rated socially responsible behavior ($p < .01$), and perceived emotional support from peers positively predicted peer-rated prosocial behavior ($p < .001$). Further, significant variance was explained across the four perceived social goal pursuit outcomes ($R^2 = .23, .20, .15$ and $.25$ for peer and academic prosocial and social responsibility goal pursuit (all p 's $< .001$), respectively) and the four behavioral outcomes ($R^2 = .56, .07, .51, .12$ (all p 's $< .05$) prosocial and socially responsible behavior from peer and teacher ratings, respectively). R-square values represent the amount of variation the individual-level regression model, as a whole, explained in the outcome. For example, 23 % of the variance in peer prosocial goal pursuit was explained by the variables, sex, grade-level, wellbeing, perceived emotional support from teachers, and emotional support from peers. R-square values are also included for each of individual-level models as an indicator of effect size.

Table 14. Individual-level regression of perceived emotional support from the teacher and peers on four types of social goal pursuit in the full data set and the subset.

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	317		154		316		154		311		148		309		148	
#classrooms	20		8		20		8		20		8		20		8	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Sex	.24***	.05	.21***	.07	.18**	.05	.20**	.07	.18***	.05	.18*	.07	.15**	.05	.21***	.06
Grade	.08	.07	.14	.12	-.09	.07	.13	.09	.01	.07	.14	.10	-.15*	.06	.15*	.07
Wellbeing	.05	.06	.05	.08	.06	.06	.13	.08	.07	.06	.001	.08	.14*	.06	.18**	.07
Emosupp-T	.11*	.05	.20**	.07	.13**	.05	.19*	.07	.06	.06	.19*	.08	.30***	.05	.43***	.06
Emosupp-P	.31***	.05	.31***	.08	.29***	.06	.29***	.08	.27***	.06	.33***	.08	.14*	.06	.22**	.07
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.47***	.04	.46***	.05	.57***	.05	.63***	.07	.40***	.03	.39***	.05	.40***	.03	.26***	.03
Class mean, u_{0j}	.03	.02	.07	.04	.03	.02	.03	.03	.02	.01	.02	.02	.02	.01	.01	.01

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support. All control variables were grand-mean centered and emotional support variables were group-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 15. Individual-level regression of perceived emotional support from the teacher and peers on teacher and peer-rated prosocial and socially responsible behavior in the full data set and the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	430		267		569		420		430		267		566		419	
#classrooms	30		19		38		27		30		19		38		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Sex	.17***	.04	.22**	.06	.24***	.04	.19***	.05	.20***	.05	.33***	.06	.31***	.04	.29***	.05
Grade	-.20**	.07	-.25	.19	-.08	.12	-.08	.14	.68**	.11	-.08	.18	.04	.08	.13	.09
Wellbeing	.02	.04	-.07	.07	.01	.05	-.02	.06	.07	.04	.11	.07	.07	.04	.09	.05
Emosupp-T	.02	.04	-.05	.07	.05	.04	.03	.05	.04	.04	.11	.07	.12**	.04	.09	.05
Emosupp-P	.15**	.04	.13	.07	.02	.05	.06	.06	-.07	.04	-.15*	.07	-.01	.05	.02	.06
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.01***	.00	.01***	.00	.67***	.04	.70***	.05	.02***	.00	.03***	.00	.57***	.04	.58***	.04
Class mean, u_{0j}	.03*	.01	.01**	.00	.34***	.09	.35**	.11	.05***	.01	.02***	.01	.12***	.04	.13**	.05

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support. All control variables were grand-mean centered and emotional support variables were group-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Subset analyses. Analyses of the subset at the individual-level revealed similar results in terms of the relations between perceived emotional support from both sources (i.e., teacher and peers) and social goal pursuit. As seen in Table 14, both sources of support positively predicted all four outcomes: peer prosocial goal pursuit, academic prosocial goal pursuit, peer social responsibility goal pursuit, and academic social responsibility goal pursuit. However, as demonstrated in Table 15, perceived teacher emotional support was not a significant predictor of any of the four behavioral ratings (peer-rated prosocial behavior, teacher-rated prosocial behavior, peer-rated socially responsible behavior, and teacher-rated socially responsible behavior), whereas perceived emotional support from peers negatively predicted socially responsible behavior as perceived by peers ($p < .05$). All models accounted for significant amounts of variance in classroom outcomes with the exception of prosocial behavior ($R^2 = .28, .20, .25$ and $.51$ for peer and academic prosocial and social responsibility goal pursuit, respectively (all p 's $< .001$); $R^2 = ns, ns, .13$, and $.13$ for prosocial and socially responsible behavior from peer and teacher ratings, respectively). Thus, relations between prosocial behavior and perceived emotional support were similar across the two groups of analyses, but relations between emotional support from peers and socially responsible behavior varied.

Perceived expectations for social behavior. Individual-level models examined the pathways between perceived expectations for social behavior from the teacher and peers and the eight outcomes (four social goal pursuit and four behavioral), while controlling for sex and grade-level.

Full data set analyses. Among these analyses, those run on the full data set incorporated measure B of expectations for behavior whereas measure A was used in

analyses with the subset. In the full data set, as shown in Table 16, perceived expectations from the teacher and peers (measure B) positively predicted peer prosocial goal pursuit ($p < .01$) and academic socially responsible goal pursuit ($p < .001$). As seen in Tables 16 and 17, perceived expectations from peers (measure B) also positively and significantly predicted academic prosocial goal pursuit, peer social responsibility goal pursuit, and peer-rated prosocial behavior. Perceived expectations from the teacher positively predicted teacher-rated prosocial behavior ($p < .05$). Further, significant variance was explained across seven outcomes (peer-rated socially responsible behavior was *ns*) ($R^2 = .25, .27, .10$ and $.14$ for peer and academic prosocial and social responsibility goal pursuit, respectively (all p 's $< .001$); $R^2 = .21, .10, ns, .09$ (all p 's $< .05$) for prosocial and socially responsible behavior from peer and teacher ratings, respectively).

Subset analyses. Analyses utilizing the subset, as seen in Table 16, were analogous to the relations found in the full data set between perceived expectations for social behavior (measure A) and the four types of social goal pursuits, with the exception of academic prosocial goal pursuit. As demonstrated in Table 17, results for teacher-rated prosocial behavior were similar to the full data set analysis; perceived expectations of the teacher was the unique positive predictor ($p < .05$). Perceived peer expectations for social behavior positively predicted socially responsible behavior as rated by the teacher ($p < .05$). Further, significant variance was explained across seven outcomes ($R^2 = .29, .35, .17$ and $.39$ for peer and academic prosocial and social responsibility goal pursuit, respectively (all p 's $< .001$); $R^2 = ns, .06, .13, .13$, all p 's $< .05$) for prosocial and socially responsible behavior from peer and teacher ratings, respectively).

Table 16. Individual-level regression of perceived expectations for behavior from the teacher and peers on four types of social goal pursuit in the full data set and the subset.

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	811		161		790		160		790		157		806		154	
#classrooms	41		8		41		8		41		8		41		8	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Sex	.23***	.03	.20***	.07	.09**	.03	.17**	.07	.09**	.03	.18*	.07	.09**	.03	.13*	.06
Grade	.02	.04	.12	.13	.02	.05	.14	.09	.02	.05	.12	.09	-.11*	.05	.17*	.07
Exp-T	.18***	.04	.25***	.07	.08	.04	.27***	.07	.08	.04	.14	.08	.25***	.04	.26***	.07
Exp-P	.28***	.04	.31***	.07	.23***	.04	.37***	.06	.23***	.04	.24***	.08	.12**	.04	.43***	.06
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.51***	.03	.48***	.06	.43***	.02	.58***	.07	.43***	.02	.45***	.05	.38***	.02	.33***	.04
Class mean, u_{0j}	.02	.10	.08	.05	.02*	.01	.04	.03	.02*	.01	.01	.02	.04**	.01	.00	.01

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Exp = expectations. All control variables were grand-mean centered and expectation variables were group-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 17. Individual-level regression of perceived emotional support from the teacher and peers on teacher and peer-rated prosocial and socially responsible behavior in the full data set and the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	333		289		331		450		333		289		333		449	
#classrooms	18		19		18		27		18		19		18		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Sex	.19***	.05	.24***	.06	.21***	.05	.20***	.05	.21***	.06	.34***	.05	.24***	.05	.30***	.04
Grade	.35	.20	-.25	.17	.07	.14	-.07	.13	.28	.25	-.06	.17	.15	.13	.15	.09
Exp-T	.09	.06	.04	.06	.12*	.06	.11*	.05	.09	.06	.06	.06	.09	.06	.03	.05
Exp-P	.16**	.06	.00	.06	.07	.06	.03	.05	.03	.06	.08	.06	-.10	.06	.15***	.05
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.01***	.00	.02***	.00	.41***	.03	.70***	.05	.02***	.00	.03***	.00	.48***	.04	.57***	.04
Class mean, u_{0j}	.01***	.00	.01**	.00	.13*	.05	.32***	.10	.03**	.01	.02**	.01	.14*	.06	.12**	.04

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Exp = expectations. All control variables were grand-mean centered and expectations variables were group-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Key across this set of analyses were the similarities in the models predicting all four forms of goal pursuit: perceived expectations for social behavior from both peers and the teacher mattered in both data sets, while teacher expectations positively predicted teacher-rated prosocial behavior. However, the role of peer and teacher expectations on the other forms of social behavior were not as clear across the two data sets, as there were no consistent predictors across the parallel models. For example, perceived peer expectations for behavior predicted peer-rated prosocial behavior in the full data set and teacher-rated socially responsible behavior in the subset.

Two forms of social support from two sources. A final set of analyses incorporated all four components of classroom social support to test the full multidimensional model of social support. However, to run this model some adjustments were necessary given the nature of the data. First, it was necessary to drop the control variable wellbeing since only the subset had all the variables required for the full model. If wellbeing was dropped from the analyses, other cohorts could also be incorporated. In addition, given the limited amount of information (8 classrooms) for the subset analyses on the goal pursuit outcomes, adding the additional variable was overbearing on the analyses. It was too difficult for the software to estimate all requested parameters given that few classrooms were available to provide information in terms of goal pursuit. However, if wellbeing was dropped, the software was able to estimate the model. Moreover, analyses utilizing the subset on the behavioral outcomes were run with and without the inclusion of wellbeing and few changes to the results were found.

Finally, when all four aspects of perceived social support were considered jointly as predictors of classroom behavior, only the subset had any cases with all the necessary

information. Therefore, results are only available for the subset for prosocial and socially responsible behavior.

Full data set analyses. When all four components of perceived social support were jointly considered (see Table 18), peer and academic prosocial goal pursuit were positively predicted by both perceived emotional support from teacher and peers and expectations from peers, while expectations from teachers also positively contributed to academic prosocial goal pursuit (p 's $<.01$). For the pursuit of peer socially responsible goals, both forms of perceived social support from peers were positive contributors, while the two forms of teacher social support positively predicted academic socially responsible goal pursuit (p 's $<.05$). All four models accounted for significant amounts of variance ($R^2 = .35, .35, .15$ and $.23$ for peer and academic prosocial and social responsibility goal pursuit, respectively, all p 's $<.001$).

Subset analyses. In looking at the subset specifically, parallel models had similar significant predictors as those found in the full data set (see Table 18); however both forms of perceived peer social support more consistently predicted social goal pursuit than teacher social support. For instance, both forms of social support from peers were significant, positive predictors of three of the four forms of social goal pursuit, whereas teacher emotional support and expectations contributed solely to academic social responsibility goal pursuit and prosocial goal pursuit, respectively.

The subset was utilized in order to test the joint contribution of the four aspects of social support on classroom behavior. As shown in Table 19, in each of the models for socially responsible behavior, one type of perceived social support was the sole predictor; peer

Table 18. Individual-level regression of perceived emotional support and expectations for behavior from the teacher and peers on four types of social goal pursuit in the full data set and the subset.

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	460		154		460		154		447		149		457		148	
#classrooms	23		8		23		8		23		8		23		8	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Sex	.26***	.04	.19***	.07	.00	.04	.16*	.06	.00	.05	.16***	.07	.07	.04	.17**	.06
Grade	-.01	.05	.15	.13	-.11	.06	.14	.10	.02	.07	.15	.11	-.16**	.06	.17*	.09
Wellbeing																
Emosupp-T	.18***	.05	.12	.08	.19***	.05	.07	.08	-.03	.05	.14	.08	.31***	.05	.36***	.06
Emosupp-P	.24***	.05	.25***	.07	.16**	.05	.25***	.07	.25***	.06	.29***	.08	-.02	.05	.22***	.06
Exp-T	.05	.05	.11	.07	.11*	.05	.18*	.07	.08	.06	.06	.08	.13*	.06	.07	.06
Exp-P	.15**	.05	.24***	.07	.28***	.05	.29***	.07	.13*	.06	.14	.08	.09	.06	.30***	.06
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.42***	.03	.42***	.05	.48***	.03	.54***	.06	.38***	.03	.37***	.04	.32***	.02	.23***	.03
Class mean, u_{0j}	.01	.01	.08	.05	.03	.02	.05	.04	.02	.01	.04	.03	.02	.01	.03	.02

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support variables were group-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 19. Individual-level regression of perceived emotional support and expectations for behavior from the teacher and peers on teacher and peer-rated prosocial and socially responsible behavior in the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>					263				416							
#classrooms					19				27							
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Sex			.23***	.06			.20***	.05			.34***	.06			.29***	.05
Grade			-.24	.19			-.06	.13			-.08	.18			.14	.09
Wellbeing																
Emosupp-T			-.06	.07			.01	.06			.09	.07			.08	.05
Emosupp-P			.10	.07			.01	.06			-.13*	.07			.03	.05
Exp-T			.01	.07			.09	.05			.03	.07			-.01	.05
Exp-P			-.02	.06			-.01	.05			.07	.06			.10*	.05
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}			.01***	.00			.70***	.05			.03***	.00			.57***	.04
Class mean, u_{0j}			.01**	.00			.34***	.11			.02**	.01			.13**	.04

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and expectations variables were group-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

emotional support negatively predicted peer-rated socially responsible behavior and expectations from peers positively predicted teacher-rated socially responsible behavior. Overall, in the subset (see Tables 18 & 19), perceived support from peers was more often a predictor of social outcomes in comparison to teacher supports. Peer support predicted all four social goal pursuit outcomes and two of the behavioral outcomes, while teacher support predicted only academic prosocial goal pursuit.

Summary. In this set of individual-level models, patterns emerged in terms of a) similarities between analyses in the full data set and subset, b) contributions of teacher vs. peer supports, and c) differences in predictors given the context of the outcomes. First, the models which focused on students' social goal pursuit demonstrated similar results across analyses using both the full data set and the subset. For example, both perceived emotional support and expectations for social behavior from peers were consistent predictors of the four forms of social goal pursuit when considered alongside teacher contributions. In addition, teacher emotional support predicted three of the four forms of goal pursuit. However, discrepancies arose in the links between perceived expectations from teachers and social goal pursuit; in the full data set it predicted only academic social responsibility goal pursuit whereas in the subset teacher expectations predicted three forms of social goal pursuit. In terms of behavioral outcomes, only perceived expectations for social behavior from teachers was related to teacher-rated prosocial behaviors across both data sets.

A second theme in the data surrounded the relative contributions of teacher vs. peer supports. In general, perceived peer emotional support and peer expectations were more consistent predictors of social goal pursuit. That is, perceived peer supports (in the

form of emotional caring or expectations) were significant predictors of all four forms of social goal pursuit. However, teacher supports did not follow this same pattern and were less often predictors of social goal pursuit. In addition, in those models that investigated a single form of support from both teacher and peers, when both sources made significant contributions to social goal pursuit, the strength of the coefficients on the peer supports were stronger than teacher support with the exception of academic social responsibility goal pursuit for which teacher support was a stronger predictor. This trend was also demonstrated in the full models that incorporated all forms of perceived support: emotional support from teacher and peers, and expectations for social behavior from teacher and peers. Across three of the four forms of goal pursuit the relative strength of peer support as a predictor was higher than teacher support, the exception being academic social responsibility goal pursuit.

Finally, congruence was found between the source of support and the context of the goal pursuit, peers vs. academic. Across the social goal pursuit models that incorporated the four social supports, both forms of perceived peer support significantly predicted each of the social goals within the peer context, whereas teacher supports predicted academic social responsibility goal pursuit. Therefore, there was a congruence between peer support and the peer context of social goal pursuit and between perceived support, both emotionally and in terms of expectations from teachers and social responsibility goal pursuit. In addition, all four types of perceived social support in the full data set and three of the four types of support in the subset predicted academic prosocial goal pursuit. Therefore, the similarity between provision of support and context

of prosocial goal pursuit was relatively not as consistent in the case of academic prosocial goal pursuit.

Research question 2: Classroom climate predicting social goal pursuit and classroom behavior. In order to answer research question 2, analyses focused on classroom characteristics as predictors of the eight outcomes (four social goal pursuit and four behavioral ratings), while taking into account individual-level predictors. All level-1 variables were grand-mean centered and level-2 variables were centered. Specific control variables included sex, grade-level, and wellbeing at level-1 and class size at level-2. Other predictor variables were individual-level social supports in the form of perceived emotional support or expectations for social behavior, which were simultaneously considered with the parallel classroom characteristics. For instance, perceived emotional support from teacher and peers were entered along with teacher cohesion and peer cohesion. In these level-2, means-as-outcomes models, classroom characteristics were predicting the average outcome by classroom. That is, the outcome was no longer individual goal pursuit or behavior as it was in the individual-level models. Instead, the outcome was the average individual behavior for each particular class. Ultimately, these models were configured to compare differences in the outcomes across classes.

In order to reliably estimate model parameters, sufficient variance must exist. More specifically, the amount of information provided by the groups or classrooms must be large enough to produce model parameters. In the subset, only eight classrooms provided information regarding social goal pursuit. As a result, not enough information was available to model social goal pursuit given the number of classrooms and the complexity of the analytical model; there were more parameters to estimate than number

of classrooms. For this reason, the two-level models associated with these four outcomes were only carried out in the full dataset.

Classroom cohesion. Classroom-level models examined the relations between classroom cohesion from the teacher and peer and each of the eight outcomes, while simultaneously considering sex, grade-level, wellbeing, and the size of the classroom, as well as individual-level perceptions of social support.

Full data set analyses. As seen in Table 20, classroom cohesion from the teacher did not significantly predict peer or academic prosocial and socially responsible goal pursuit. In contrast, classroom cohesion from peers was negatively related to peer and academic socially responsible goal pursuit ($p < .05$). That is, students in classrooms with lower levels of cohesion from peers had higher average levels of socially responsible goal pursuit as compared to students in classrooms with higher levels of peer cohesion. While not much random variation existed around the intercept in these models (range .02-.03), these models explained 95-97 % of that variation.

In terms of classroom behavior, there were no significant predictors (see Table 21). However, classroom cohesion from the teacher was a marginally significant, positive predictor of average teacher-rated prosocial behavior ($p = .07$) in the full data set. That is, as teacher cohesion increased, average prosocial behavior increased. In these models, random variation about the intercept was .03, .34, .05, and .12 for prosocial behavior and socially responsible behavior as rated by peers and teachers, respectively. Further, these models accounted for 33%, 21%, 0%, and 17% of that variation across the respective outcomes.

Table 20. Two-level regression of perceived emotional support and classroom cohesion from the teacher and peers on four types of social goal pursuit in the full data set.

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	320				319				314				312			
#classrooms	19				19				19				19			
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.21***	.05			.16**	.05			.16**	.05			.13**	.05		
Grade	.10	.06			-.09	.06			.06	.06			-.09	.06		
Wellbeing	.03	.06			.03	.06			.03	.06			.12*	.06		
Emosupp-T	.10*	.05			.14**	.06			.07	.06			.33***	.05		
Emosupp-P	.36***	.06			.33***	.06			.33***	.06			.16**	.06		
Level Two																
Intercept	4.13***	.04			3.64***	.04			4.21***	.04			3.97***	.04		
Class size	-.56	1.15			-.75	.66			-.66†	.35			-.68*	.27		
Cohesion-T	.55	1.16			.00	.54			.31	.29			-.22	.29		
Cohesion-P	.54	1.78			.59	.99			-.57*	.26			-.63*	.27		
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.47***	.04			.56***	.05			.39***	.03			.40***	.03		
Class mean, u_{0j}	.00	.01			.00	.01			.00	.01			.00	.01		

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support. All variables were grand-mean centered.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 21. Two-level regression of perceived emotional support and classroom cohesion from the teacher and peers on teacher and peer-rated prosocial and socially responsible behavior in the full data set and the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	429		267		568		420		429		267		565		419	
#classrooms	29		19		37		27		29		19		37		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.18***	.04	.21***	.06	.24***	.04	.19***	.05	.22***	.05	.33***	.06	.30***	.04	.29***	.05
Grade	-	.10	-.25	.19	-.14	.11	-.12	.12	.62***	.15	-.09	.19	.02	.08	.11	.09
Wellbeing	-.02	.04	-.07	.07	.00	.05	-.03	.06	.08	.04	.11	.06	.06	.04	.08	.05
Emosupp-T	-.02	.04	-.06	.08	.05	.05	.03	.06	.05	.05	.13	.08	.13**	.05	.11	.06
Emosupp-P	.11*	.04	.14	.07	.03	.05	.06	.06	-.07	.05	-.15*	.07	.02	.05	.04	.06
Level Two																
Intercept	.32***	.03	.42***	.03	3.94**	.10	3.96**	.11	.64***	.04	.45***	.03	4.21**	.06	4.25**	.08
Class size	-.26	.18	-.33	.20	.23	.16	.19	.19	.16	.18	-.13	.24	-.12	.20	.05	.22
Cohesion-T	.17	.18	.15	.13	.29†	.16	.22	.20	-.08	.19	-.003	.26	.02	.20	-.05	.25
Cohesion-P	-.05	.19	.12	.24	.24	.17	.28	.19	.16	.19	.17	.25	.25	.20	.29	.22
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.01***	.00	.01***	.00	.67***	.04	.70***	.05	.02***	.00	.03***	.00	.58***	.04	.58***	.04
Class mean, u_{0j}	.02***	.01	.01**	.00	.27***	.08	.27**	.09	.05***	.01	.02***	.00	.10**	.03	.11**	.04

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support. All variables were grand-mean centered.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Subset analyses. As shown in Table 21, in the subset, classroom cohesion was not a significant predictor of teacher- or peer-rated behaviors; only perceptions of emotional support (individual-level) were significant predictors of behavior. Random variation about the intercept was .01, .35, .02, and .13 for prosocial behavior and socially responsible behavior as rated by peers and teachers, respectively. Further, these models accounted for 0%, 23%, 0%, and 15% of that variation across the respective outcomes.

Classroom structure. In order to test whether classroom structure was related to classroom outcomes, two-level models were run that also took into account the child's sex and grade-level, along with classroom size and perceptions of social support.

Full data set analyses. As shown in Table 22, after accounting for perceptions of expectations from teacher and peers (measure B), classroom structure from peers was found to significantly, positively predict peer socially responsible goal pursuit ($p < .05$). That is, as structure from peers increased, average goal pursuit also increased. In contrast, classroom structure from the teacher was associated with a decline in average academic prosocial goal pursuit ($p < .05$, see Table 22). That is, students in classrooms with less structure from the teacher had higher levels of prosocial goal pursuit as compared to students in classrooms with more structure from the teacher. In general, not much random variation existed around the intercept in these models (range .02-.04), and the models explained 75% or 95 % of that variation in social goal pursuit in the academic and peer contexts, respectively.

Two-level models predicting classroom behavior in the full data set produced one significant effect (see Table 23). Classroom structure from peers was positively related to teacher-rated socially responsible behavior ($p < .05$); as classroom structure from peers

Table 22. Two-level regression of perceived expectations and classroom structure from the teacher and peers on four types of social goal pursuit in the full data set.

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	811				814				791				807			
#classrooms	41				41				41				41			
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.22***	.03			.01	.03			.09*	.03			.09*	.03		
Grade	.04	.03			.05	.04			.03	.04			-.05	.04		
Exp-T	.18***	.04			.21***	.04			.09*	.04			.26***	.04		
Exp-P	.31***	.04			.39***	.04			.25***	.04			.13**	.04		
Level Two																
Intercept	4.06**	.03			3.35**	.03			4.12**	.03			3.98**	.03		
Class size	.65	.57			-.23	.24			.62*	.29			-.27	.21		
Structure-T	-.52	.58			-.55*	.28			-.10	.34			.29	.26		
Structure-P	.71	.63			.52†	.28			.65*	.31			.23	.27		
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.50***	.03			.49***	.03			.43***	.02			.38***	.02		
Class mean, u_{0j}	.00	.01			.01	.01			.00	.01			.01*	.01		

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Exp = expectations. All variables were grand-mean centered.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 23. Two-level regression of perceived expectations and classroom structure from the teacher and peers on teacher and peer-rated prosocial and socially responsible behavior in the full data set and the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	333		289		331		450		333		289		333		449	
#classrooms	18		19		18		27		18		19		18		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.18***	.05	.24***	.06	.20***	.05	.20***	.05	.20**	.05	.33***	.05	.23***	.05	.29***	.04
Grade	.41**	.16	-.21	.17	.14	.12	-.03	.12	.41*	.20	-.01	.16	.17	.12	.17**	.08
Exp-T	.09	.06	.04	.06	.14*	.06	.12*	.05	.09	.06	.07	.06	.10	.07	.03	.05
Exp-P	.16**	.06	.00	.06	.07	.06	.03	.05	.03	.06	.08	.06	-.10	.06	.15***	.05
Level Two																
Intercept	.46***	.02	.42***	.02	3.37***	.08	3.95***	.11	.53***	.03	.45***	.03	3.39***	.08	4.25***	.07
Class size	.08	.20	-.33	.23	.26	.22	.21	.20	.12	.20	-.19	.25	.15	.20	.02	.20
Structure-T	.37†	.23	-.27	.22	.31	.26	.04	.21	.43†	.22	-.23	.23	.22	.25	-.21	.21
Structure-P	.35	.23	.13	.25	.28	.26	.19	.21	.24	.24	.36	.24	.56**	.21	.53**	.18
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.01***	.00	.02***	.00	.41***	.03	.70***	.05	.02***	.00	.03***	.00	.48***	.04	.57***	.04
Class mean, u_{0j}	.01**	.00	.01**	.00	.07*	.03	.28***	.09	.02**	.01	.02**	.01	.07*	.03	.09**	.03

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Exp = expectations. All variables are grand-mean centered.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

increased, average classroom socially responsible behavior also increased. Random effects about the intercept were .01, .13, .03, and .14 for prosocial behavior and socially responsible behavior as rated by peers and teachers, respectively, and these models accounted for 0%, 46%, 33%, and 50% of that variance in the respective outcomes.

Subset analyses. As shown in Table 23, classroom structure from peers (based on measure A of expectations for social behavior) had the same effect on socially responsible behavior as found in the full data set. When the subset was analyzed alone, as classroom structure from peers became more salient, average socially responsible behavior (as rated by both peers and the teacher) increased ($p < .05$). In other words, those classrooms with more structure from peers had students who acted in more socially responsible ways in comparison to students in classrooms with less structure from peers. The amount of random variation about the intercepts was similar to that found in the cohesion models: .01, .32, .02, and .12 for prosocial behavior and socially responsible behavior as rated by peers and teachers, respectively. These models explained 0%, 13%, 0%, and 25% of that variation in the respective outcomes.

Group wellbeing. Two-level models that included group wellbeing of the class were investigated under two conditions: 1) as the sole classroom characteristic, and 2) in conjunction with classroom cohesion from teacher and peers. After entering the four control variables (sex, grade-level, wellbeing, and class size), group wellbeing was conceived as a director predictor of average class outcomes. Although not tabled, group wellbeing was a significant predictor of only one outcome, teacher-rated prosocial behavior ($\beta = .39, p = .01$). However, when classroom cohesion from both teacher and peers was entered along with group wellbeing, group wellbeing was no longer significant.

Rather, cohesion from the teacher became the unique predictor of prosocial behavior ($\beta = .24, p < .01$).

Two forms of social support from two sources. A final set of analyses incorporated all four aspects of individual- and classroom-level social support. Each model incorporated child's sex, grade-level, and class size as control variables, as well as individual-level perceived social supports from both the teacher and peers. Classroom-level characteristics were added in the forms of cohesion from teacher and peers, and structure from teacher and peers. Similar to previous analyses, due to restrictions based on the nature of the dataset, social goal pursuit was investigated in the full data set while analyses concerning behavioral outcomes drew upon the subset only. In addition, individual-level wellbeing was dropped from the model in order to have a large enough analytical sample in the full data set.

Full data set analyses. As seen in Table 24, results indicated that when all forms and sources of social support were jointly considered at both levels, only individual-level social supports uniquely predicted social goal pursuit, and no classroom characteristics predicted average-levels of social goal pursuit. However, these models did explain 90%, 67%, 95%, and 50% of the little variation (range .01-.03) about the intercepts associated with prosocial and social responsibility goal pursuit in the peer and academic contexts.

Subset analyses. As shown in Table 25, the models of classroom behavior in the subset produced significant results. Peer-rated prosocial behavior was positively predicted by teacher cohesion. However, structure from the teacher was negatively related to peer-rated prosocial behavior; as cohesion from the teacher increased, prosocial behavior as reported by peers also increased. In other words, students in classrooms with

Table 24. Two-level regression of perceived emotional support and expectations, and classroom cohesion and structure from the teacher and peers on four types of social goal pursuit in the full data set.

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	460				460				447				457			
#classrooms	23				23				23				23			
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.25***	.06			-.01	.04			.01	.05			.07	.04		
Grade	-.01	.13			-.07	.04			-.02	.05			-.11*	.05		
Emosupp-T	.19***	.06			.20***	.05			-.01	.06			.32***	.05		
Emosupp-P	.25***	.06			.17***	.05			.25***	.06			.01	.06		
Exp-T	.04	.05			.09	.05			.07	.06			.12*	.06		
Exp-P	.17***	.04			.31****	.05			.15*	.06			.10	.06		
Level Two																
Intercept	4.07***	.06			3.39***	.04			4.17***	.03			4.06***	.03		
Class size	.62	.74			-.09	.45			.94**	.35			.23	.43		
Cohesion-T	-.70	.93			-.09	.57			-.34	.42			.13	.52		
Cohesion-P	.18	2.51			.25	.86			.03	.54			.70	.81		
Structure-T	-.19	1.42			-.46	.63			.29	.45			.67	.56		
Structure-P	.19	2.51			-.34	.87			.14	.55			-.89	.79		
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.41***	.03			.48***	.03			.38***	.03			.32***	.02		
Class mean, u_{0j}	.00	.01			.01	.01			.00	.01			.00	.01		

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All variables are grand-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 25. Two-level regression of perceived emotional support and expectations, and classroom cohesion and structure from the teacher and peers on teacher and peer-rated prosocial and socially responsible behavior in the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>			263				416				263				415	
#classrooms			19				27				19				27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex			.22***	.06			.20***	.04			.33***	.06			.28***	.05
Grade			-.36*	.14			-.14	.12			-.14	.16			.09	.08
Emosupp-T			-.07	.08			.00	.06			.11	.08			.09	.06
Emosupp-P			.10	.07			.02	.06			-.13	.07			.06	.06
Exp-T			.01	.07			.10	.06			.04	.07			-.01	.06
Exp-P			-.02	.06			-.01	.05			.07	.06			.10*	.05
Level Two																
Intercept			.43***	.02			3.97***	.10			.46***	.03			4.26***	.06
Class size			-.41*	.19			.14	.18			-.31	.22			-.05	.19
Cohesion-T			.72***	.23			.39†	.22			.46	.28			.31	.24
Cohesion-P			.28	.20			.33†	.19			.34	.21			.29	.20
Structure-T			-	.23			-.35	.24			-.71**	.27			-.56*	.23
Structure-P			.86***	.21			.27	.19			.58**	.21			.60***	.16
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}			.01***	.00			.70***	.05			.03***	.00			.57***	.04
Class mean, u_{0j}			.01**	.00			.23**	.08			.01**	.00			.06*	.03

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All variables are grand-mean centered.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

higher levels of teacher cohesion but lower levels of teacher structure had more prosocial behavior as compared to students in classes with opposing levels of each of these qualities. Results for socially responsible behavior were parallel across reports from both the teacher and peers. More specifically, structure from teachers and peers uniquely predicted socially responsible behavior as rated by the teacher and peers, although in opposite directions. Students in classrooms with higher levels of peer structure and lower levels of teacher structure had, on average, more socially responsible behavior than students in classrooms with the opposite characteristics. Associated with these findings is a range of random variation about the intercepts: .01, .34, .02, and .13 for prosocial behavior and socially responsible behavior as rated by peers and teachers, respectively. These models accounted for 0%, 33%, 50%, and 53 % of that variation in the respective outcomes.

A final set of models including group wellbeing as an additional classroom characteristic were attempted. However, this set of models could not be run because 1) no cases in the full data set had information on all necessary variables and 2) the model was too complex for the subset alone, given the number of parameters relative to number of classrooms.

Summary. In this set of analyses, the focus was on level-2 predictors of social goal pursuit and classroom behavior while taking into account perceptions of social support and control variables. In the full data set, peer cohesion was a significant, negative predictor of social responsibility goal pursuit in both contexts, peer and academic. In addition, structure from peers was significantly, positively related to peer social responsibility goal pursuit, while teacher classroom structure significantly predicted

academic prosocial goal pursuit in the negative direction. However, when all four classroom characteristics (cohesion from teacher and peers, and structure from teacher and peers) were considered simultaneously, peer cohesion and structure from teacher or peer no longer had a significant effect. No classroom characteristics were related to any form of social goal pursuit.

In terms of behavioral outcomes, structure from peers significantly, positively predicted teacher-rated socially responsible behavior in both the full dataset and the subset when considered alongside teacher structure. This effect also held in the subset when all four classroom characteristics were taken into consideration. In addition, structure from peers emerged as a positive predictor of peer-rated socially responsible behavior and teacher cohesion as a positive predictor of peer-rated prosocial behavior. Peer cohesion was not directly related to any behavioral outcome.

When all four classroom characteristics were considered jointly as predictors of the four behavioral outcomes (prosocial and socially responsible behavior as rated by teacher and peers), structure from the teacher was found to negatively predict three of the behavioral outcomes. That is, in the subset when the full model was examined, classrooms with higher levels of teacher structure had students with lower levels of prosocial behavior as rated by their peers and socially responsible behavior as rated by their teacher and peers.

Research question 3: Classroom characteristics as moderators of the relation between social support and social goal pursuit and classroom behavior. The next set of models incorporated a cross-level interaction, which included modeling the relation between perceived social support and classroom behavior, the slope, as random. In

essence, the slope (a level-1 relation) was allowed to vary across classrooms. In these models, the slope is treated as a dependent variable predicted by classroom characteristics (level-2), in addition to examining direct effects of perceptions of social support (level-1) and classroom characteristics (level-2) on classroom outcomes. In this set of models, each individual-level predictor was first modeled with the slope free to vary across classrooms. The outcome of this model was then assessed for significant variance in the slope, and if variance existed, the slope was modeled in subsequent analyses. However, if no significant variance was found in the relation across groups, the slope was treated as fixed. Therefore, the first step in investigating cross-level interactions was to identify significant slopes (i.e., relations between individual-level predictors and each outcome).

In this section, cross-level interactions are described, first between perceived emotional support and classroom cohesion. Next, cross-level interactions of perceived expectations for social behavior and classroom structure are explored. Finally, any significant slopes when both forms of support are considered are described.

Group wellbeing was not included as a classroom characteristic in these analyses due to the loss in number of cases when it is included. Specifically, the significant decline in the number of classrooms if group wellbeing is included had negative implications for the reliability of the parameter estimates. Adding this additional variable increased the complexity of the model but decreased the amount of information available to estimate the model, thus leading to errors in the estimation process. In addition, group wellbeing was not found to be a unique predictor of any outcome in the classroom-level analyses, as reported in the previous section.

Emotional support and cohesion. When testing for significant slopes, two individual-level controls, child's sex and grade-level, as well as a classroom-level control, class size, were included. Level-1 control variables and predictor variables were grand-mean centered unless the predictor variable was the slope and was allowed to vary; in this case group-mean centering was used. All classroom-level variables were centered.

Full data set analyses. As shown in Table 26, the slopes between perceived emotional support from teachers and peer prosocial goal pursuit as well as between teacher emotional support and peer-rated prosocial behavior significantly varied across classrooms. The goal pursuit slope was significantly related to classroom cohesion from teachers ($\beta = .69$) and from peers ($\beta = -.89$). As teacher cohesion increased, the random slope increased, meaning the effect of perceived emotional support from teachers on goal pursuit increased. In contrast, as peer cohesion increased, the random slope decreased and the slope between perceived emotional support from teachers and prosocial goal pursuit weakened. These results indicate that the interaction between individual- and classroom-levels has a unique impact on social goal pursuit and classroom behavior. In contrast, the slope between perceived emotional support from teachers and prosocial behavior no longer significantly varied once control variables were entered into the model and therefore no further analyses were done. In these two models, initial random variation about the slope was .02 and .001 and only the model of peer prosocial goal pursuit accounted for any of this variation (19%).

Table 27 demonstrates that the relation between perceived emotional support from peers and teacher-rated socially responsible behavior varied across classrooms and could be partially explained by levels of teacher and peer cohesion. As teacher cohesion

Table 26. Cross-level interaction models of teacher emotional support slope in the full data set.

Variables	Peer Prosocial Goal Pursuit		Prosocial B'r Peer rated	
<i>n</i>	1164		1201	
#classrooms	62		69	
<i>Fixed Effects</i>	<i>Coef.</i>	<i>SE</i>	<i>Coef.</i>	<i>SE</i>
Model for Outcome				
<i>Level-1</i>				
Sex	.37***	.04	.07***	.01
Grade	.07**	.03	-.05	.03
Emosupp-T	.18***	.03	.01	.01
Emosupp-P	.25***	.02	.02***	.00
<i>Level-2</i>				
Intercept	4.02***	.03	.36***	.00
Class Size	.00	.01	.00	.00
Cohesion-T	.46	.35	-.04	.17
Cohesion-P	.84*	.42	-.23	.27
Model for Emosupp-T slope				
Class Size	.00	.01	.00	.00
Cohesion-T	.69*	.33	.04	.06
Cohesion-P	-.89*	.41	-.12	.08
<i>Random Effects</i>	<i>Var.</i>	<i>SE</i>	<i>Var.</i>	<i>SE</i>
Class Mean, u_{0j}	.02*	.01	.02***	.00
EmoSupp-T slope, u_{1j}	.02	.01	.00	.00

Note. T=teacher; P=peer; Emosupp = emotional support. All variables are grand-mean centered. Unstandardized parameter estimates.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 27. Cross-level interaction models peer emotional support slope on socially responsible behavior in the full data set and the subset.

Variables	Full Data Set		Subset			
	Socresp Br- TR		Socresp Br - PR		Socresp Br- TR	
<i>n</i>	1346		272		426	
#classrooms	77		19		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE
Model for Outcome						
<i>Level-1</i>						
Sex	.42***	.05	.12***	.02	.50***	.08
Grade	-.05	.08	-.03	.07	.21	.17
Emosupp-T	.18***	.03	.03	.02	.13*	.05
Emosupp-P	-.06*	.02	-.03*	.01	.00	.05
<i>Level-2</i>						
Intercept	4.08***	.05	.45***	.03	4.25***	.08
Class Size	.01	.01	-.01	.01	.01	.02
Cohesion-T	.00	.56	-.05	.36	-.33	.92
Cohesion-P	2.12**	.81	.36	.64	1.89	1.37
Model for Emosupp-P slope						
Class Size	-.01	.01	.00	.00	.01	.01
Cohesion-T	.65*	.30	-.06	.14	.22	.62
Cohesion-P	-.91*	.47	-.28*	.23	-2.29**	.87
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE
Class Mean, u_{0j}	.13***	.03	.02**	.01	.11**	.04
EmoSupp-P slope, u_{1j}	.01	.01	.00	.00	.02	.02

Note. T=teacher; P=peer; Emosupp = emotional support. TR =teacher rated; PR =peer rated. All variables are grand-mean centered. Unstandardized parameter estimates.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

increased, the random slope between perceived emotional support from peers and socially responsible behavior also increased ($p < .01$), whereas the opposite effect occurred in terms of peer cohesion; as peer cohesion increased, the slope decreased. At the individual-level, perceived peer emotional support negatively predicted social responsible behavior ($\beta = -.06, p < .05$), suggesting that teacher cohesion at the classroom-level worked to positively influence this relation while peer cohesion further heightened the negative relation. In this model, initial variation about the slope was very small, .001, and the model accounted for all of this variation.

Subset analyses. As seen in Table 27, the relations between perceived emotional support from peers and ratings of socially responsible behavior from both teacher and peers significantly varied across classrooms. In addition, peer cohesion was a significant predictor of these two slopes; that is, levels of peer cohesion uniquely predicted a change in the relation between perceived emotional support from peers and socially responsible behavior as rated by both peers and teachers. However, this change was in the negative direction; as peer cohesion increased, the relation between perceived peer emotional support and socially responsible behavior became more strongly related in the negative direction. Initial variation about the slope for these two models was .001 and .04 for peer- and teacher-rated socially responsible behavior. Further, the cross-level models were able to account for 99% and 43% of this variation, respectively. In addition, significant variance was found in the relation between perceived emotional support from peers and peer ratings of prosocial behavior. However, with the addition of control variables, this latter variance did not remain. Therefore, no further analyses were run.

Expectations for social behavior and structure. Tests for significant variation in the relations between perceived expectations for social behavior from the teacher and peers found three significant slopes after controlling for individual-level controls, child's sex and grade-level, as well as a classroom-level control, class size. Wellbeing was not included in these analyses.

Full data set analyses. The two significant slopes were the relation between perceived peer expectations and peer prosocial goal pursuit and the relation between peer-rated socially responsible behavior. However, as shown in Table 28, classroom-level models aimed at explaining the relation between perceived peer expectations for social behavior and prosocial goal pursuit had no unique predictors. The full model did explain significant amounts of variance in the slope (24% of the initial .02 random effect), but no single classroom characteristic had a particularly strong effect. Although not tabled, the second significant slope, between perceived peer expectations for behavior and socially responsible behavior, no longer significantly varied once control variables were entered and therefore no further work was carried out.

Subset analyses. Only one significant slope was found, the relation between perceived peer expectations for behavior and socially responsible behavior. However, the same phenomenon occurred in the subset as did in the full data set, there were no significant predictors of the slope; therefore these results were not tabled. More specifically, significant variance was found in the relation, but with the addition of control variables, the variance no longer remained.

Table 28. Cross-level interaction model peer expectations slope on peer prosocial goal pursuit in the full data set.

Variables	Peer Prosocial Goal Pursuit	
<i>n</i>	811	
#classrooms	41	
<i>Fixed Effects</i>	Coef.	<i>SE</i>
Model for Outcome		
<i>Level-1</i>		
Sex	.37***	.05
Grade	.04	.03
Exp-T	.20***	.04
Exp-P	.26***	.04
<i>Level-2</i>		
Intercept	4.06***	.03
Class Size	.01	.01
Structure-T	-.48	.69
Structure-P	1.53***	.48
Model for Exp-P slope		
Class Size	-.01	.01
Structure -T	-.27	.93
Structure -P	-.39	.66
<i>Random Effects</i>	Var.	<i>SE</i>
Class Mean, u_{0j}	.00	.00
Exp-P slope, u_{1j}	.02	.01

Note. T=teacher; P=peer; Exp = expectations. All variables are grand-mean centered. Unstandardized parameter estimates.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Two forms of social support and classroom characteristics from two sources. A final set of analyses incorporated all four aspects of individual- and classroom-level social support. Each model included child's sex, grade-level, and class size as control variables, as well as individual-level social supports from both the teacher and peers. Classroom-level characteristics were added in the forms of cohesion from teacher and peers, and structure from teacher and peers, as related to each of the eight outcomes. Similar to previous analyses, due to restrictions based on the dataset, social goal pursuit was investigated in the full data set while analyses of behavioral outcomes drew upon the subset only.

The first step of the analyses, testing for significant slopes, identified only one slope that significantly varied across classrooms when all facets of the model were considered simultaneously: the relation between perceived emotional support from teachers and peer prosocial goal pursuit. However, given the complexity of the final full model, I was unable to examine predictors of both random effects, mean-level prosocial goal pursuit (i.e., the intercept) and the slope between emotional support from teachers and prosocial goal pursuit, at the same time. Data from more classrooms would be required to estimate both of these random parameters at the same time. Therefore, I focused solely on classroom characteristics that might explain the variation in the slope (the aim of this research question) and did not model variation in mean-level prosocial goal pursuit, the intercept.

Full data set analyses. As shown in Table 29, cohesion from teachers had a significant, positive effect on the relation between perceived emotional support from teachers and peer prosocial goal pursuit. That is, as teacher cohesion increased, the

Table 29. Cross-level interaction model teacher emotional support slope on peer prosocial goal pursuit in the full data set.

Variables	Peer Prosocial Goal Pursuit	
<i>n</i>	460	
#classrooms	23	
<i>Fixed Effects</i>		
<i>Model for Outcome</i>		
<i>Level-1</i>		
Sex	.39****	.06
Grade	.00	.04
Emosupp-T	.20****	.04
Emosupp-P	.18****	.05
Exp- T	.02	.06
Exp- P	.16**	.05
<i>Model for Emosupp- T slope</i>		
Class Size	-.01	.01
Cohesion-T	1.07*	.54
Cohesion-P	.20	1.16
Structure – T	-.16	1.23
Structure -P	-1.33	1.36
<i>Random Effects</i>		
<i>Class Mean, u_{0j}</i>		
	.00	.02
<i>EmoSupp-T slope, u_{1j}</i>		
	.02	.01

Note. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All variables are grand-mean centered. Unstandardized parameter estimates.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

relation between teacher emotional support and peer prosocial goal pursuit also increased. The interaction between perceived emotional support from the teacher and classroom cohesion from teacher had a significant effect on peer prosocial goal pursuit. This model accounted for 34% of the initial variation about the slope (random effect was .04).

Subset analyses. In the subset, when all four slopes were modeled at one time, no significant variation on any slope was found across classrooms.

Summary. Across all models run in this section, seven significant slopes were found. That is, the relation between one of the individual-level (i.e., level-1) predictors and one of the outcomes significantly varied across classrooms. In five of these cases, at least one of the four classroom characteristics (teacher and peer cohesion and teacher and peer structure) could explain some of the variation in the relation across classrooms. Further, the classroom characteristics worked in one of two ways, either magnifying the average relation (i.e., became more positive) or protecting against a negative effect. For example, teacher cohesion positively enhanced the already positive relation between perceived teacher emotional support and peer prosocial goal pursuit, while peer cohesion added a negative effect to the negative relation between perceived peer emotional support and socially responsible behavior. The other way in which classroom characteristics moderated the varying slope was as a protective factor. In the full data set, teacher cohesion worked to positively affect the negative relation between perceived peer emotional support and socially responsible behavior as rated by peers. However, this effect was not significant in the subset analyses.

A more pronounced effect, found across both sets of analyses, was the negative effect peer cohesion had on the already negative relation between perceived peer

emotional support and socially responsible behavior as rated by both the teacher and peers. In addition, classroom cohesion from the teacher and peers was found to work in opposing directions when both were significant moderators. The slope between perceived teacher emotional support and peer prosocial goal pursuit as well as between peer emotional support and socially responsible behavior as rated by teachers both demonstrated this; teacher cohesion provided a positive effect while peer cohesion had a negative effect.

Finally, the five significant slopes that could be partially explained by classroom characteristics all involved relations pertaining to perceived emotional support. More specifically, the relation between perceived teacher emotional support and peer prosocial goal pursuit, and the slope linking peer emotional support and socially responsible behavior. Further, teacher emotional support varied in relation to social goal pursuit whereas peer emotional support as linked to behavior significantly varied.

Research question 4: Classroom climate as a contextual effect. In this final set of analyses, contextual effects were examined using the classic contextual effect model (Raudenbush & Bryk, 2002) that incorporates only level-1 and aggregated level-2 variables of each of the forms of support. These models estimate whether there is an effect of being in one classroom over another given differences in levels of the characteristic of interest (e.g., emotional support or expectations) even after individual-levels of these characteristics are taken into account. In these analyses, class-level variables are averages of perceived peer or teacher social support; therefore, higher amounts indicate higher average emotional support or expectations for social behavior. In each of these models, no control variables were included. Models consisted of a single

type of social support (e.g., emotional) from two sources (i.e., teacher and peers) and at two levels, entered as grand-mean centered. First, the significance of any level-2 predictors for emotional support are reported, followed by models testing for contextual effects of expectations. In these models, all predictors were grand-mean centered; thus, the contextual effect is represented by the coefficient associated with level-2 social support (γ_{01}). The contextual effect represents the difference in the outcome of interest between two students who have the same perceived social support but are in classrooms that differ by one standard deviation on the classroom quality of interest (Raudenbush & Bryk, 2002).

Emotional support and cohesion. Each of the eight outcomes were examined as related to perceived emotional support from teacher and peers and as an aggregate, as opposed to the cohesion variable, of each of these supports at the class-level.

Full data set analyses. As shown in Tables 30 and 31, for three of the four social goal pursuit and two of the four behavioral outcomes, class-level emotional support from peers had a significant, positive effect over and above individual-level perceptions of emotional support from peers. As seen on Table 30, there was no significant contextual effect from average teacher emotional support on any outcome nor was average peer emotional support significantly linked to academic socially responsible goal pursuit. Across these models, the initial random effect associated with the intercept was .02 and .03 for prosocial and social responsibility goal pursuit across both contexts. Also, 12%, 31%, 19% and 4% of the variation was accounted for by the models for peer and academic prosocial and social responsibility goal pursuit, respectively.

In terms of classroom behaviors, as shown on Table 31, average peer emotional

Table 30. Contextual effects model of perceived emotional support and classroom average emotional support from the teacher and peers on four types of social goal pursuit in the full data set.

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	1166				1554				1139				1151			
#classrooms	63				83				63				63			
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Emosupp-T	.23***	.03			.23***	.023			.14***	.03			.39***	.03		
Emosupp-P	.34***	.03			.31***	.03			.27***	.03			.12***	.03		
Level Two																
Intercept	4.02***	.03			3.37***	.02			4.09***	.03			3.93***	.03		
Mean																
Emosupp-T	-.10	.23			.27	.21			-.03	.19			.00	.20		
Mean																
Emosupp-P	.50*	.23			.50*	.21			.46*	.18			.23	.22		
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, <i>r</i> _{ij}	.54***	.02			.66***	.02			.45***	.02			.44***	.02		
Class mean, <i>u</i> _{0j}	.02	.01			.01	.01			.03**	.01			.03**	.01		

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support. All variables are grand-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Table 31. Contextual effects model of perceived emotional support and classroom average emotional support from the teacher and peers on teacher and peer-rated prosocial and socially responsible behavior in the full data set and the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	1203		272		579		427		818		272		1347		426	
#classrooms	70		19		38		27		50		19		78		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Emosupp-T	.03	.03	-.05	.08	.08	.05	.04	.06	.18***	.04	.15	.08	.25***	.03	.11	.06
Emosupp-P	.21***	.03	.15*	.07	.04	.05	.07	.06	-.03	.04	-.05	.07	-.02	.03	.10	.06
Level Two																
Intercept	.36***	.02	.43***	.03	3.90***	.10	3.94***	.11	.68***	.03	.46***	.03	4.07***	.05	4.26***	.08
Mean Emosupp-T	.06	.14	.06	.29	.30	.19	.27	.23	-.34*	.17	-.11	.29	-.17	.14	-.08	.26
Mean Emosupp-P	-.28*	.15	.12	.28	.09	.22	.20	.23	.46**	.17	.35	.27	.53***	.14	.49*	.22
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.02***	.00	.02***	.00	.71***	.04	.74***	.05	.03***	.00	.03***	.00	.70***	.03	.64***	.05
Class mean, u_{0j}	.02***	.00	.01**	.01	.29***	.08	.28**	.09	.04***	.01	.02**	.01	.14***	.03	.12**	.05

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support. All variables are grand-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

support had a significant, positive effect on peer- and teacher-rated socially responsible behavior but a negative effect on peer-rated prosocial behavior. That is, the peer emotional climate of the classroom had an effect on socially responsible and prosocial behavior above and beyond perceptions of peer emotional support. Moreover, being in a classroom that had higher average peer emotional support had a greater effect on socially responsible behavior than perceptions of peer emotional support (β 's $-.03$ v. $.46$ and $-.02$ v. $.53$), which was not a significant predictor of either rating. On the other hand, average teacher emotional support had a negative effect on peer-rated socially responsible behavior ($p < .05$) when simultaneously considering average peer emotional support. Initial random variation about the intercepts were $.02$, $.33$, $.05$, and $.16$ for prosocial and socially responsible behavior as rated by peers and teachers and 6%, 11%, 11%, and 17% of this variation was explained by the model for the respective outcomes.

Subset analyses. As shown in Table 31, when classroom behavior was examined in the subset only one significant contextual effect was found. Average emotional support from peers had a significant, positive effect on teacher-rated socially responsible behavior after accounting for individual-level perceptions of emotional support from teacher and peers. Thus, a significant difference existed in teacher-rated socially responsible behavior between two students with the same level of perceived emotional support from peers, who are in classrooms with different levels of average peer emotional support. Students in classrooms with higher average emotional support from peers were rated by teachers as having more socially responsible behavior than students in classrooms with lower levels of average peer emotional support. This effect mirrored the one found in the full sample. Further, the models accounted for random variation about the intercept for peer-

Table 32. Contextual effects model of perceived expectations and classroom average expectations from the teacher and peers on four types of social goal pursuit in the full data set.

Variables	Prosocial Goal Pursuit								Social Responsibility Goal Pursuit							
	Peer				Academic				Peer				Academic			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	811				814				791				807			
#classrooms	41				41				41				41			
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Exp-T	.21***	.04			.22***	.04			.09*	.04			.27***	.04		
Exp-P	.32***	.04			.38***	.04			.26***	.04			.13**	.04		
Level Two																
Intercept	4.06***	.03			3.36***	.03			4.12***	.03			3.99***	.03		
Mean Exp-T	-1.28	.75			-.62*	.32			-.31	.40			.44	.29		
Mean Exp-P	1.06	.66			.56	.30			.60	.36			.19	.29		
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, <i>r</i> _{ij}	.54***	.03			.49***	.03			.44***	.02			.39***	.02		
Class mean, <i>u</i> _{0j}	.00	.01			.01	.01			.01	.01			.01	.01		

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Exp = expectations. All variables are grand-mean centered.
p* < .05. ** *p* < .01. * *p* ≤ .001.

Table 33. Contextual effects model of perceived expectations and classroom average expectations from the teacher and peers on teacher and peer-rated prosocial and socially responsible behavior in the full data set and the subset.

Variables	Prosocial Behavior								Socially Responsible Behavior							
	Peer-rated				Teacher-rated				Peer-rated				Teacher-rated			
	Full set		Subset		Full set		Subset		Full set		Subset		Full set		Subset	
<i>n</i>	333		289		331		450		333		289		333		449	
#classrooms	18		19		18		27		18		19		18		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Exp-T	.14*	.06	.04	.06	.17**	.07	.12*	.05	.14*	.07	.07	.06	.14*	.07	.03	.05
Exp-P	.20**	.06	-.00	.06	.10	.07	.03	.05	.05	.07	.07	.06	-.07	.07	.16***	.05
Level Two																
Intercept	.45***	.03	.43***	.03	3.36***	.07	3.93***	.11	.53***	.03	.46***	.03	3.37***	.08	4.26***	.08
Mean Exp-T	-.18	.31	-.11	.26	.55	.31	.20	.22	.16	.30	-.09	.27	.07	.33	-.02	.24
Mean Exp-P	.69*	.27	.05	.26	.08	.33	.14	.22	.48	.28	.08	.27	.56	.30	.24	.23
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.01***	.00	.02***	.00	.42***	.03	.73***	.05	.02***	.00	.03***	.00	.52***	.04	.62***	.04
Class mean, u_{0j}	.01**	.00	.01**	.00	.07*	.03	.29**	.09	.02**	.01	.02**	.01	.10*	.04	.14**	.05

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Exp = expectations. All variables are grand-mean centered. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

rated prosocial behavior (6% of .02) and teacher-rated prosocial (16% of .33) and socially responsible behavior (21% of .15), respectively.

Expectations for social behavior and structure. Contextual effects models incorporating perceived expectations from teacher and peers along with average classroom expectations from teacher and peers produced two significant contextual effects.

Full data set analyses. As shown in Table 32, average expectations for social behavior from the teacher had an effect over and above individual-level perceptions of expectations on academic prosocial goal pursuit. Students in classes with higher average teacher expectations had lower levels of prosocial goal pursuit as compared to students in classes with lower average expectations but with the same levels of perceived expectations from teachers. In contrast, as seen in Table 33, average expectations from peers had a positive effect on peer-rated prosocial behavior. After holding individual-level expectations from teacher and peers constant, students in classes with higher average expectations from peers had higher average prosocial behavior than students in classes with lower average expectations from peers.

Across these models, the initial random effect associated with the intercept ranged from .0 to .02 for social goal pursuit across both contexts and from .02 to .15 for behavioral outcomes. Also, 22%, 20% and 33% of the variation was accounted for by the model for academic prosocial, and peer and academic social responsibility goal pursuit, respectively. In terms of behavioral outcomes, 1%, 7%, 2%, and 10% of the variation was accounted for by the models for prosocial and socially responsible behavior as rated by peers and teachers, respectively.

Subset analyses. Contextual effect models utilizing the subset found no significant effects (see Table 33).

Summary. Drawing upon the classic contextual model (Raudenbush & Bryk, 2002), individual-level social support was considered together with classroom averages of each of the types of social support. In general, average peer emotional support was more often related to outcomes than teacher emotional support. For example, classroom-level emotional support from peers had a significant effect over and above perceptions of social support on prosocial goal pursuit, peer social responsibility goal pursuit, and both peer-rated behaviors in the full data set. Further, in both the full dataset and the subset alone a contextual effect existed between classroom-level peer emotional support and teacher-rated socially responsible behavior. In contrast, classroom-level teacher emotional support had a significant, negative contextual effect on peer-rated socially responsible behavior. In terms of expectations for social behavior, there was one significant effect in the full dataset: classroom average peer expectations for social behavior on peer-rated prosocial behavior. Further, closer examination of the relative contributions of individual- and class-level effects, when there were significant class-level effects, found that for social goal pursuit individual-level effects were larger whereas class effects were greater for behavioral outcomes.

Overall, these contextual effects were not similar to the findings for research question 2 (classroom characteristics as direct predictors of outcomes). One reason this might have occurred is that in question 2 much more complex models were investigated than the classic contextual model underlying question 4 analyses. In addition, these two sets of analyses utilized different measures of classroom-level characteristics. However,

two similar effects found across the two data sets were: a) the negative effect of class-level teacher expectations (i.e., teacher structure or average teacher expectations) on peer prosocial goal pursuit and b) the significant relation between peer emotional support and peer social responsibility goal pursuit. As a follow-up, when the question 4 models were tested using the cohesion and structure measures as the contextual variables, more similarities did indeed arise. For example, parallel contextual effects were found for peer prosocial goal pursuit and teacher-rated socially responsible behavior in the emotional support models, and for academic prosocial goal pursuit and peer-rated prosocial behavior in the expectations models. Yet, more dissimilarity arose across the other outcomes, speaking to the meaningful, qualitative differences that exist between the two measurement strategies.

Chapter 5: Discussion

The present study examined the relations between perceptions of social support and classroom social climate, as related to social goal pursuit and classroom behavior, in a sample of middle school students from various regions of the US. More specifically, the study utilized a multilevel framework allowing for multiple models to be tested. First, individual-level models examined the relations between perceptions of social support from teachers and peers in the form of emotional support and expectations for social behavior, and prosocial and social responsibility goal pursuit and behavior. Next, a second layer of predictors, classroom characteristics as direct predictors of average classroom goal pursuit and behavior, was added. Third, classroom characteristics as moderators of individual-level relations between perceived social support and specific outcomes were investigated. Finally, contextual effect models were used to test whether classroom-level social support had an effect on goal pursuit and behavior when simultaneously taking into account individual-level perceptions of social support.

I begin this section with a discussion of the findings associated with each of these four areas of investigation. Next, general themes emerging from the results as a whole are summarized. Finally, future directions for work on social support and classroom climate in relation to social goal pursuit and behavior are examined.

Individual-Level Social Support and Social Goal Pursuit and Classroom Behavior

The first research question aimed to answer whether perceived social support from teachers and peers, in the forms of emotional support and expectations for social behavior, predict peer and academic prosocial and social responsibility goal pursuit, and prosocial and socially responsible behavior as rated by teachers and peers. It was

predicted that positive relations would exist between each of these perceived supports and the outcomes of interest. The goal of the individual-level model was to replicate previous findings in the literature and to create a foundational model upon which to build additional levels.

The design of this study allowed for models to be tested across two samples, the full data set (i.e., all available data) and a subset (27 classrooms) of the full data set which utilized a single cohort from one data collection. This allowed for conclusions to be drawn regarding the robustness and sensitivity of results to the specific sample of interest. Indeed, some similarities and differences were found across the two data sets. Many similarities were found in terms of perceived social support and social goal pursuit. Specifically, peer emotional support and peer expectations for behavior were positive, significant predictors of each of the four types of social goal pursuit across both data sets. This finding is well supported in the literature, as peers often influence a student's desire to pursue specific actions in the classroom (e.g., Brown et al., 2008). In addition, perceived emotional support from teachers also predicted many forms of social goal pursuit, which replicates previous research in the field (e.g., Wentzel, 1997). Teacher emotional support or care is often a consistent positive predictor of school related behaviors and motivation (see Roorda, Koomen, Split, & Oort, 2011). Multiple reviews have been dedicated to the positive influence that teacher-student relationships can have on student behavior (e.g., Bergin & Bergin, 2009; Davis, 2003; Wentzel, 2009).

The relations between teacher expectations and social goal pursuit were a bit less consistent than the relations between emotional support and goal pursuit across the two data sets. When only expectations (and not emotional support) were considered, there

were multiple positive relations between these constructs in the subset. However, when the full model was tested, and all four forms of support were included, teacher expectations only positively predicted academic prosocial goal pursuit in both data sets. This is surprising given previous work that has documented the links between perceived expectations and goal pursuit (Wentzel, 2002; Wentzel, Filisetti, & Looney, 2007). Two reasons might explain why fewer positive findings emerged in the full models (those with four social supports). First, multiple predictors were included that accounted for between 23% and 54% of the variance. Therefore, the model was doing a good job explaining the outcomes of interest when all the predictors were considered together. Second, peer social supports seemed to be the stronger predictors of social goal pursuit in general across all models. Therefore, it appears the relative contributions of peers vs. teachers are not equivalent across the different types of social goal pursuit. These findings replicate a developmental trend; adolescents often undergo shifts in their relationships with teachers (Midgley, Feldlaufer, & Eccles, 1988; Murdock & Miller, 2003; Wentzel, 1997) and peer relationships gain importance during the adolescent years (Brown, et al., 2008).

Overall, the individual-level models focused on behavioral outcomes produced few significant findings, and only one significant result was found across both of the data sets; teacher expectations for social behavior positively predicted prosocial behavior. This finding replicates the positive relation between these two constructs previously found (Wentzel, Filisetti, & Looney, 2007). In the single cohort subset, two findings held in both the simple models (only perceived expectations) and full models (both emotional support and expectations): peer expectations positively predicted socially responsible behavior, and peer emotional support negatively predicted socially responsible behavior.

The negative relation between peer emotional support and behavior seems to be a unique aspect of this specific sample of students. However, recent work has shown that this negative effect was not significant when social support from parents was simultaneously considered (Wentzel, Russell, & Baker, 2012). Clearly, further research is needed to unpack what other unique factors might be underlying this effect in this sample of primarily of Hispanic students from a single school district located in the Southwest.

Overall, more significant predictors were found for the social goal pursuit vs. behavioral ratings outcomes. This finding could be explained in two ways. First, both the predictors and social goal pursuit were all self-report measures. Therefore, shared variance which exists due to the method of data collection might be affecting the strength of the relations between these variables. Second, previous research has highlighted goal pursuit as a precursor to behavior (e.g., Covington 2000; Wentzel 1994), and therefore the links between social support and behavioral outcomes might be relatively less poignant than those between goal pursuit and behavior. Future work could test this mediational model directly rather than the individual-level model examined here.

Finally, wellbeing was included as a control variable given the consistent link found between perceived positive feelings of self and perceived social support (Chu, Suacier, & Hafner, 2010). In this study however, this particular relation was not examined. Rather, wellbeing was included in order to obtain a more accurate estimation of the link between social support and the outcomes of interest. Indeed, perceived wellbeing was related to each of the outcomes when social support was not considered. However, wellbeing was no longer related to the outcomes when social support was added to the model. This finding, therefore, informally supports a possible relation

between psychological wellbeing and students' perceptions of social support from their teachers and peers, but not between wellbeing and social goal pursuit or classroom behavior.

Limitations. A unique challenge in comparing conclusions drawn from the two datasets was the existence of two different measures to capture perceived expectations for social behavior, leading to large variability in the samples included in each set of analyses. Specifically, in emotional support only models, the full data set included the subset, whereas in models with perceived expectations constructs, the subset was excluded from the full data set. However, this also provides evidence for more robust findings when similar patterns emerged across both the full data set and subset when perceived expectations were included. A second challenge was that the sample size for each model fluctuated based on the variables included. Therefore, different students were being compared across models.

Furthermore, the peer nomination procedures had some variation across the data collections. The reference group included in the nominations was either a single class or random lists of 25 students generated from an entire team. Therefore, the reference group and the potential variation under each of these conditions were somewhat different (Bellmore, Jiang, & Juvonen, 2010). Student interpretations of what prosocial and socially responsible behavior looks like might not be consistent across classes and therefore the behavior upon which each rater was referencing when selecting who acts in prosocial or socially responsible ways might vary. However, all students in teams took multiple classes together thus having multiple opportunities to interact with one another. Therefore, variation might not be too different. In each case peer nominations were

standardized based on the number of potential nominations. Also, the ICC2 (see Table 9), a statistic that captures similarity or reliability in ratings across the groups, was highest for peer ratings in comparison to all other study variables, therefore providing evidence of validity.

Classroom Climate as a Predictor of Social Goal Pursuit and Classroom Behavior

The second aim of the study was to investigate links between classroom characteristics in terms of cohesion and structure (as provided by teachers and peers) and group wellbeing, and students' social goal pursuit and classroom behavior as rated by teachers and peers. Positive relations were predicted to exist between each of these characteristics and the outcomes of interest. The results appear to support some of these pathways but not others. Important to note is that variations in results across the two data sets (full and subset) were not necessarily attributable to differences in sample size, often similar numbers of classrooms (i.e., Level-2 units) were included in each data set.

First, several classroom characteristics predicted prosocial or social responsibility goal pursuit when either cohesion or structure were modeled alone. However, when both classroom characteristics were simultaneously modeled, neither had a unique effect on any type of social goal pursuit. When only cohesion was considered, a negative relation was found between peer cohesion and social responsibility goal pursuit in both the peer and academic contexts. While this finding seems surprising at first, when looking to the full model (in which both cohesion and structure were included) the relations between these constructs, although not significant, are in the positive direction. Therefore, the role of peer cohesion seemed to vary when simultaneously considering levels of structure present in the classroom. Indeed, the family systems model upon which these constructs

were framed argues that ideal system functioning occurs when both dimensions are taken into consideration and are at ideal levels (Olson, 2000).

In terms of classroom structure, when examined alone, teacher structure was found to negatively predict academic prosocial goal pursuit, while peer structure accounted for positive differences in peer social responsibility goal pursuit. In both cases structure reflected consistency in students' perceptions of expectations for social behavior by classroom. Therefore, conceptually higher levels of structure represented homogeneity in the group's view of the expectations teachers and peers held for them. At the individual-level, expectations from teachers and peers were direct positive predictors of social goal pursuit. Therefore, it appears that the role of perceived social support and the overall classroom climate have differential effects on goal pursuit. At the classroom-level, too much structure based on the teacher alone is associated with lower levels of academic prosocial goal pursuit, yet when structure is derived from peers' expectations for behavior, average levels of peer social responsibility goal pursuit are higher than when peer structure is at lower levels.

These findings regarding social goal pursuit were further corroborated through the examination of ratings of students' prosocial and socially responsible behavior as rated by teachers and peers. That is, peer structure was a positive predictor of socially responsible behavior, and teacher structure was negatively linked to prosocial behavior and socially responsible behavior. Therefore, classroom structure derived from teachers and peers seemed to have differential effects not only on students' intentions to act in prosocial and socially responsible ways, but also on their prosocial and socially responsible behavior.

Taken together, these findings highlight the notion that students might intend to act in ways that meet the behavioral goals of the classroom more often when structure is consistently perceived as coming from peers rather than the teacher. Indeed, in middle schools the peer group has been found to be a salient force in promoting both positive and negative behaviors (Brown et al., 2008).

In contrast, adults' provisions of structure that are found to be over-controlling or authoritarian can seem restrictive to students or reduce their sense of autonomy. While previous work on classroom management has highlighted the positive role of providing structure or order for students (e.g., Weinstein, 1998), few have acknowledged the potential harm of too much structure. Instead, the focus is often on control vs. autonomy (e.g., Reeve, 2009). Drawing upon the literature on parenting styles (Baumrind, 1971), Walker (2008) found students in authoritarian classrooms (i.e., low warmth, high control) were less socially responsible and had higher levels of self-handicapping than students in classrooms with authoritative teachers. A classroom where the structure of the room is orchestrated solely by the teacher might allow little room for student contributions. In such classrooms the students might be less likely to contribute in prosocial ways (i.e., provide help) than in classrooms where there are opportunities for student contributions.

From a family systems perspective (e.g., Olson, 2000), the conclusion that too much structure in the classroom might be detrimental to adolescent outcomes seems plausible. Indeed, this theoretical model, along with work on parenting styles, acknowledges that structure has ideal levels for group functioning. Moos (1978) found that junior high classrooms could be arranged in a typology based on various dimensions of the climate with implications for students' satisfaction with class and the teacher.

Structure or the lack of structure was a means for further delineating classrooms that were affiliation-oriented and emphasized teacher and student interaction. Positive student outcomes were higher in those classrooms with both structure and positive interactions in comparison to those that lacked structure or those that were highly controlled or task-oriented. This work was based on student reports and did not adopt a multilevel framework, as was common at the time.

However, this significant negative link between teacher structure and positive student outcomes could also work in the opposing direction. Perhaps negative student outcomes lead to a more structured classroom climate in terms of provisions from the teacher. For example, students in a classroom with lower levels of social goal pursuit and positive classroom behavior might be more likely to have similar perceptions of high expectations for social behavior from the teacher than students in classrooms with higher levels of social goal pursuit and positive classroom behavior. In essence, the difference in student behavior might motivate a shift in the teacher behavior rather than the teacher impacting the student behavior. Since this study was correlational in nature, the underlying directionality of the relation cannot be determined. Future work could incorporate a study design that would allow researchers to examine this more closely.

Limitations. Findings related to classroom-level characteristics must be interpreted in light of the characteristics of the data set. In general, there was not much variation to be explained at the classroom-level. Therefore, even though some significant effects were found, it is important to consider how meaningful these are. Less classroom-level variation existed for social goal pursuit outcomes in comparison to behavioral ratings. This might explain why there were no unique predictors in the full models

(including both cohesion and structure) for goal pursuit as compared to the models that only included either cohesion or structure, and the full models examining classroom behavior. This distinction could exist for two reasons a) goal pursuit was a self-report measure whereas behavioral ratings were external, and b) ratings were done by a teacher from a single classroom and peer ratings were standardized by classroom. Each of these latter scenarios leads to more between-group variation for the behavioral outcomes in comparison to social goal pursuit. In general, teacher-ratings yielded the most level-2 variance since only a single reporter was the source of information for each classroom, whereas goal pursuit and peer nominations incorporated all students within the group.

Group wellbeing was incorporated in the theoretical framework as a classroom characteristic that could predict outcomes both directly and indirectly. However, no empirical support was found for this proposed link. One reason this might have occurred was the formative rather than reflective nature of this construct. That is, group wellbeing was viewed as a summative effect; each member of the group contributes to forming the overall emotional climate in the classroom (Edwards & Bagozzi, 2000). In comparison, group cohesion and structure were reflective constructs, such that perceptions are driven by the classroom climate. In other words, each student rating within a group should be more similar for a reflective construct as compared to a formative construct, where students' reports of their personal wellbeing cannot be assumed to be similar. Table 9 provides empirical evidence to support this differentiation; the ICC2 (a statistic indicating interrater reliability) for wellbeing is .11 whereas the ICC2 for the four types of social support range from .48 to .67.

The derivation utilized for the other classroom characteristics, cohesion and structure, was a new approach to assessing these constructs, and support was found for using the coefficient of variation (CV) in the future. However, a vital next step is to compare the use of the CV, classroom means, and standard deviation to see if one approach to measurement is a) more meaningful and b) presents fewer weaknesses. For example, some researchers have critiqued the use of the mean as an indicator for classroom-level variables without proper preliminary psychometric work that is often overlooked beyond the individual-level of models (see Miller & Murdock, 2007). Given these classroom-level indicators were created based solely on student self-reports that were also included at level-1, it is also susceptible to some of these limitations. In the future, it would be advantageous to also collect classroom observation data to support the validity of the findings based upon cohesion and structure. For example, the Classroom Assessment Scoring System (CLASS; Pianta, LaParo & Hamre, 2008) has components that closely align with the dimensions of cohesion and structure and is becoming more widely adopted in the field.

Finally, the fluctuating sample size contributed to variations in modeling not initially intended. For example, the models examining social goal pursuit could only be run on the full data set and not on the subset. Therefore, no comparisons across the two data sets could be made to check for robust effects. A similar though less salient problem arose in terms of the behavioral outcomes; the full model with all four classroom characteristics was only run on the subset. Once again, this limited the conclusions that could be drawn regarding the robustness of effects.

Classroom Characteristics as Moderators of the Relation Between Social Support and Social Goal Pursuit and Classroom Behavior

Classroom characteristics of cohesion and structure as provided by teachers and peers were investigated as potential moderators of individual-level relations between perceived social support and each outcome. Predictions highlighted classroom characteristics as playing an additive role, such that higher levels of these characteristics would enhance the individual-level relations. Results found support for this role as well as a compensatory role. In specific models, individual-level relations were found to be negative rather than positive, and classroom characteristics then either functioned as a protective factor or enhanced that negative relation.

To begin, the relations between perceived emotional support from teachers or peers and certain outcomes were found to significantly vary across classrooms. More specifically, the varying relation between perceived emotional support from teachers and peer prosocial goal pursuit could be partially explained by differences in classroom cohesion from both teachers and peers. At the individual-level, the relation between teacher emotional support and peer prosocial goal pursuit was positive, and teacher cohesion enhanced this relation whereas peer cohesion undermined it. That is, the relation between teacher emotional support and peer prosocial goal pursuit was stronger for students in classrooms with higher levels of teacher cohesion and lower levels of peer cohesion as compared to students in classrooms with the opposite levels of cohesion. The notion that individual perceptions and group perceptions of the same quality (e.g., teacher emotional support) should work in an additive fashion makes intuitive sense when both are based on reports of the same social emotional climate (Edwards & Bagozzi, 2000)

and the indicator of teacher cohesion, the coefficient of variation, takes into account individual variation within the group (i.e., SD/M). In addition, perceived teacher care was found to be one of the most salient teacher variables to predict student outcomes (see also Cornelius-White, 2007). However, the empirical work presented here argues that emotional support from peers should also be considered; the picture becomes more complex when peer cohesion is also incorporated.

Peer cohesion had a direct positive effect on peer prosocial goal pursuit such that students in classrooms with higher levels of peer cohesion are more likely to pursue prosocial goals in comparison to students in classrooms with lower levels of peer cohesion. However, it appears that peer cohesion can also undermine the individual-level relation between teacher emotional support and peer prosocial goal pursuit. In essence, the positive relation between perceived teacher emotional support and peer prosocial goal pursuit was no longer positive in classrooms with high levels of peer cohesion. Therefore, peer cohesion can trump the relative influence of perceptions of teacher emotional support on average peer prosocial goal pursuit.

The above finding should not be interpreted necessarily as a negative implication, as under both conditions students on average in the classroom are intending to act in prosocial ways. Further, when classroom structure from both teachers and peers was also included as a moderator of the individual-level relation between teacher emotional support and peer prosocial goal pursuit, only teacher cohesion uniquely explained the variation in the slope. Once again, teacher cohesion was an additional positive effect such that the strength of the relation between perceived teacher emotional support and prosocial goal pursuit was stronger in classrooms with higher levels of teacher cohesion.

In this model, perceived peer emotional support remained a significant positive predictor of peer prosocial goal pursuit. Because previous work has focused solely on individual-level perceptions of emotional support, this additional effect of cohesion at the classroom-level on prosocial goal pursuit had not been identified. This classroom-level effect provides evidence for modeling multiple levels of emotional support even when focusing on individual-level relations.

The relation between perceived peer emotional support and socially responsible behavior significantly varied across classrooms. These variations could be partially explained by differences in peer cohesion in the subset and in the full data set by both teacher and peer cohesion. The most robust finding was that peer cohesion had an additive effect on the negative individual-level relation between perceived peer emotional support and socially responsible behavior. Thus, the negative relation based on one's perception of peer support and external reviews of socially responsible behavior was exacerbated by being in a classroom where there were higher levels of peer cohesion. This finding speaks to the notion that if one derives their emotional support from a peer group in which acting in socially responsible ways is perhaps not valued, then the student is less likely to act in those ways as compared to students in classrooms with less peer cohesion. As previously mentioned, peer influence can function in both a positive and negative manner (e.g., Brown et al, 2008).

When classroom cohesion was also derived from teachers, the negative relation between perceived emotional support and socially responsible behavior (i.e., slope) became obsolete. Therefore, higher levels of teacher cohesion can function to counterbalance perceived peer emotional support and create a classroom in which

students on average act in more socially responsible ways than students in classrooms with less teacher cohesion. This result resonates with the notion that the teacher is the architect of the classroom and can lay the initial foundation for the classroom environment. However, teachers should do this in a way that is cognizant of peer influences and accounts for ways to incorporate this into their classroom blueprint. This sentiment has recently been explored as the teacher's "invisible hand" in managing peer social dynamics (Farmer, Lines, & Hamm, 2011). Specifically, teacher attunement to peer groups was found to relate to students' sense of belongingness and perceptions of bullying at school (Hamm, Farmer, Dadisman, Gravelle, & Murray, 2011). In addition, observations of the classroom emotional climate have been found to positively predict teacher-rated prosocial behavior of 5th graders, whereas observed classroom organization predicted observed prosocial behavior with peers (Luckner & Pianta, 2011).

Limitations. Given that this set of analyses involved cross-level interactions between both individual- and classroom-level predictors, many of the limitations previously discussed also apply here. For instance, the predictor variables were all based on student reports and no classroom observations were included and limited variance existed at the classroom-level. Also, parallel models could not be run across the two data sets (full and subset) for all outcomes (e.g., social goal pursuit).

However, the situation was a bit different for the behavioral outcomes; some cross-level interactions could be run on both data sets. The first step of these analyses was to test for significant variation in the slopes and in both data sets initial tests found significant variation between perceived peer expectations for social behavior and socially responsible behavior. However, no significant variation in the slopes remained once

controls were included. In other cases, similar results were not found across the two datasets. For example, the relation between perceived teacher emotional support and teacher-rated socially responsible behavior significantly varied across both data sets, but the level-2 factors that partially explained the differences were not all parallel.

In the case that similar results did emerge across the two data sets, allowed for the identification of more robust effects. Yet, these effects could not be further investigated under more complex models across both data sets due to the limited number of classrooms available. Future models should try to incorporate all four aspects of perceived social support in order to better understand the interaction between perceived peer emotional support and socially responsible behavior.

From a conceptual view point, previous work on cohesion has used a plethora of interpretations of the construct to look across different types of groups (see Dion, 2000; Friedkin, 2004). However, less focus has been placed on the classroom peer group as contributing to cohesion as a dimension of the overall social emotional climate of the classroom and in relation to social goal pursuit and prosocial and socially responsible behavior in particular. In addition, cohesion is often framed as a direct predictor of group or group member outcomes rather than as an overarching force potentially interacting with other properties of the group. As demonstrated in the present study, classroom cohesion directly contributed to average social goal pursuit, and to prosocial or socially responsible behavior, and also interacted with individual-level relations between perceived emotional support and these outcomes. Future work should take into account ways in which these dimensions of the classroom climate, specifically cohesion, might interact with individual-level research investigations.

Classroom Climate as a Contextual Effect

The final research question examined potential contextual effects of classroom climate in terms of emotional support and expectations for social behavior. A typical contextual model was adapted in which classroom-level constructs were aggregates (i.e., means) of individual-level variables (Raudenbush & Bryk, 2002). For these analyses I proposed that classroom-level constructs would have additional positive effects on social goal pursuit and prosocial and socially responsible behavior over and above perceptions of social support. Therefore, it was expected that both individual- and classroom-level effects would exist.

Findings revealed some support for these hypotheses in terms of links between emotional support and social goal pursuit. Mean peer emotional support was a significant, positive predictor of most forms of social goal pursuit (three out of four) in addition to individual-level emotional support from both teachers and peers. However, mean teacher emotional support did not have a significant effect. These findings, in terms of peers, parallel the notion that an emotionally supportive classroom, as perceived by students, encourages students to pursue social goals desired in the classroom (see Wentzel, 2002). It also extends the literature in demonstrating that the overall group perception of the classroom peer emotional climate, but not teacher emotional climate, also has an effect after taking into account individual-level perceptions of support. This finding also lends support to continue the examination of classroom-level teacher and peer effects as separate constructs to better understand the mechanisms at play, rather than combining the two into a single broad concept. Danielsen, Wiium, Wilhelmsen, and Wold (2010) also found differential effects from each source, peers and teacher, at the classroom-level

in relation to academic initiative. However, their measure of classroom-level teacher support combined emotional support and student autonomy, making it difficult to tease apart what aspect of teacher support was responsible for the significant relation.

Average peer emotional support at the class-level also positively predicted socially responsible behavior, whereas perceived teacher emotional support (level-1) significantly, positively predicted this behavior. Thus, at the individual level, the students' perceptions that the teacher, a single person, cared about them had a unique effect on average socially responsible behavior, whereas at the group-level it was the overall classroom peer emotional climate that had a positive effect. However, all of these effects were only found in the full dataset; in the subset, only the group-level peer emotional support was a positive predictor of average socially responsible behavior. This result is interesting since both models had similar amounts of variance to work with and significant differences existed in the average outcome across classrooms even though the full dataset had twice as many classrooms as the subset. Therefore, other constructs not included in these models must be influencing these relations. It appears that perceptions of teacher emotional support did not have a unique effect on socially responsible behavior in the subset sample, which replicates findings from previous individual-level models tested in reference to research question 1.

A robust effect was found for the link between individual-level perceptions of expectations for social behavior from teachers and peers, classroom-level teacher expectations, and the pursuit of academic prosocial goals. In both the contextual model and the level-2 model incorporating structure, perceived expectations from both sources were significant, positive predictors of prosocial goal pursuit, whereas classroom-level

teacher expectations/structure was a negative predictor. This finding, that teacher expectations at the classroom-level but not the individual-level were related to decreases in desirable outcomes, extends our understanding of how expectations and structure as provided by the teacher might function in middle school classrooms. Previous work has highlighted the positive and negative effects teacher expectations can have on classroom outcomes (e.g., Kuklinski, & Weinstein, 2001; Skinner & Belmont, 1993; Wentzel, 2002; Wentzel et al., 2010; Weinstein, Gregory, & Strambler, 2004), and this effect was replicated here; in both models, all individual-level expectations for behavior from both teachers and peers were positive significant predictors of all four forms of social goal pursuit.

However, less is known about how group-level perceptions of teacher expectations or how teachers' expectations for the class rather than the individual, could affect behavior (Rubie-Davies, 2006). Recent work by McKown and Weinstein (2008) has begun to unpack the influence of differential treatment in terms of expectations, but little emphasis has been placed on the overall "group think" regarding expectations. Nonetheless, Rubie-Davies (2006) found that differences in student self-perceptions from the beginning to the end of the school year were attributable to the class perception of low teacher expectations. This effect was also found in teachers' ratings of student characteristics (Rubie-Davies, 2010), such that teachers' high or low expectations moderated the relations between student characteristics and academic achievement. Although this interpretation of class structure is a variation on the definition adopted here, it does provide promising ways to examine this construct.

Overall, the results from this set of models are not parallel to the models previously discussed, which utilized the coefficient of variation (CV) to capture classroom cohesion and structure. For example, mean peer emotional support positively predicted prosocial goal pursuit in the contextual models, but peer cohesion did not have a significant effect on prosocial goal pursuit. There are multiple reasons why this might have occurred. First, the models were not equivalent; the first set also included control variables at both the individual- and classroom-level. This changes not only what constructs are considered when interpreting the results, but unique to this study, also changes the sample size. Evidence for this effect was found in the link between perceived expectations, classroom-level teacher expectations/structure, and academic prosocial goal pursuit; in both analyses, the same sample was used and when control variables were included the effect was non-significant. Second, the indicators of classroom-level characteristics were purposefully different. The rationale for utilizing the CV was that it would account for variation across responses of students within classrooms whereas the classroom mean does not take this into account. Given that variation did exist in student reports of emotional support and expectations, the two measurement approaches are not equivalent. Future research will need to look more closely at which of these two tactics are most valid for capturing the social-emotional climate of secondary classrooms.

Limitations. This set of analyses had both similar and additional limitations in comparison to previous sets of analyses in this study. As common to other multilevel analyses, the social goal pursuit models could not be replicated in the subset, therefore the robustness of these findings could not be tested. One of the most pressing issues is the validity of results using classroom means as an indicator of classroom climate, and the

same can be said for the use of the coefficient of variation (CV) since different results were produced when each indicator was used. For instance, significant effects were found between classroom structure and socially responsible behavior when the CV was used and when more complex models (including control variables and four aspects of classroom climate) were tested, but were not seen in the more simple contextual effects model. This issue is not new, since level-2 variables in multilevel models often draw upon aggregates of level-1 data, and cohesion and structure in particular have been measured using either the mean or the standard deviation. What still needs to be teased apart is which approach to capturing level-2 variables produces more valid results given the research question of interest.

Another limitation of these analyses was that the samples in the two sets of analyses fluctuated given changes in the models and which constructs were included in each. This was true across models within this set of analyses as well as in terms of comparing contextual models to prior level-2 analyses using cohesion and structure. Therefore, follow up analyses were conducted to compare similar models: one using the mean and the other incorporating the CV to represent classroom characteristics. Results based on these analyses were still not parallel, even when control variables were entered and the same samples were being compared across the two models. These additional analyses capture the impact that the choice of level-2 indicator can have on the results produced and their interpretation.

General Themes of the Model

Drawing upon these four sets of analyses, I now discuss two overarching themes of the results. First, the roles of individual and group effects are examined. Next, the focus is placed on how teacher and peer effects can work together and against each other.

Individual and group effects. Across the analyses in this study, social support was conceptualized as complex and multi-dimensional, coming in different forms and from different sources, and related to outcomes through perceptions (level-1) and classroom climate (level-2). Evidence was found to partially support this modeling framework. Different forms and sources of support played different roles in predicting perceived social goal pursuit and classroom behavior. More specifically, at level-1, perceptions of emotional support from both teacher and peer were consistently linked to social goal pursuit. At level-2, social support also displayed a complex and multi-dimensional nature in some models. Indeed, if only one form of social support is considered at a time, results looked different than if two forms are considered together from multiple sources. For example, structure was not a unique predictor of prosocial and socially responsible behavior when considered in isolation from cohesion, but when the full model (teacher and peer cohesion and teacher and peer structure) was applied to classroom behavioral outcomes, a more complex picture emerged. Indeed, multiple types and sources of classroom-level characteristics contributed to prosocial and socially responsible behavior. In contrast, when all four classroom characteristics were considered jointly in relation to social goal pursuit, none were significant predictors. However, these two findings were in relation to different samples since neither dataset could test the full model on both types of outcomes, and therefore claims regarding robustness cannot be made.

Individual and group differences were seen in the measurement of the outcomes in the two-level models. More specifically, whether the outcome was dependent on self-reports (e.g., goal pursuit) or ratings by the group (e.g., prosocial behavior) produced different patterns of results. In the full dataset, no unique predictors of any social goal pursuit outcomes emerged. In the subset, however, multiple classroom characteristics arose as unique, significant predictors of behavioral outcomes. Therefore, the measurement approach adopted for the outcome might also play a role in these multilevel means-as-outcome models. In these models, the outcomes rated by peers and teachers rely more heavily on the classroom group as compared to the individual goal pursuit self-reports, and therefore theoretically might be more related to group averages (i.e., the outcome in these models). This phenomenon was demonstrated by Henry (2006), who found peer- and teacher-ratings of malicious behavior were more salient predictors of behavior than self-reports. Further, peer ratings were based on multiple reports and therefore potentially pose less variability (should be more similar across groups) than classroom averages of self-reported perceived social goal pursuit or individual teacher's ratings (see Table 12 SD's).

Peer vs. teacher effects. A second theme that arose are the ways in which peer and teacher provisions of emotional support, expectations for social behavior, cohesion and structure differ across the various models. At the individual-level, perceived peer emotional support and expectations were more often positive predictors of social goal pursuit than teacher support across all models included. This is not to say perceived teacher social support did not also play a significant, positive role; rather, more often peers did. Research on adolescence often highlights the increased influence peers have

during this time period, especially in terms of behavioral intentions (e.g., Brown et al., 2008). Unique to the subset sample, perceived peer emotional support was negatively related to peer-rated socially responsible behavior. Further, this relation varied across those classrooms (i.e., significant slope), and could be partially explained by peer cohesion such that the negative relation was further enhanced by greater cohesion. Future work should seek to identify protective factors against this potentially toxic classroom characteristic.

At the classroom-level, teacher and peer cohesion and structure can either work in tandem or contradict one another. The results demonstrated that direct effects of cohesion from both teachers and peers often provide positive effects for classroom behavior, whereas structure from teachers and peers might not work in the same direction. Namely, an increase in peer structure was related to more socially responsible behavior whereas the opposite was found in terms of teacher structure and prosocial and socially responsible behavior. Also, teacher and peer cohesion worked in opposing ways in explaining the variation in the relations (i.e., slopes) between perceived teacher emotional support and peer prosocial goal pursuit and between perceived peer emotional support and socially responsible behavior. However, these effects did not hold when perceived expectations and structure were simultaneously considered. These results highlight that future work should take into account the multiple groups that contribute to creating the classroom climate; only looking at one source provides an incomplete picture. This echoes the systems theories (e.g., Connell & Wellborn, 1991; Olson, 2011) upon which this study was designed.

General Strengths and Limitations

The study has multiple strengths but also contains some limitations. In this section I highlight some of the most relevant issues beginning with strengths. First, social support was conceptualized as complex, having multiple dimensions and sources. The study focused on two aspects of social support, provisions of emotional support, and expectations for social behavior and from two sources, the teacher and peers. In addition, support was considered at two levels, individual-level perceptions of support and classroom-level social supports. Conceptually, this approach captured multiple aspects of the classroom system in terms of subsystems and overall system functioning. In addition, the student's social goal pursuit and classroom behavior was motivated by individual characteristics, members within the system, and characteristics of the system itself.

Second, the multilevel framing of the data as students nested within classrooms was included in the approach to studying social goal pursuit and behavior. Utilizing multilevel modeling, individual- and classroom-level effects were investigated as well as interactions between classroom characteristics (level-2) and the relation between perceptions of social support and student outcomes (level-1). Accounting for variance across contexts can generate more accurate estimations of individual-level effects. Additionally, this approach allowed for analysis of cross-level interactions; that is modeling classroom-level characteristics as moderating relations at the individual-level (i.e., perceived social support and student outcomes). Although not a new approach to educational research, it has seldom been used to examine classroom-level influences in comparison to school-level effects.

Third, the study design incorporated multiple informants, the individual, a specific classroom teacher, and her peers. Using these three different perspectives

provided richer data as the researcher could examine the relations between perceptions of support and the student's perceptions of his social goal pursuit as well as with external reports of social behavior. In addition, having two sources for ratings of prosocial and socially responsible behavior, allowed for comparison across reporters. Information gathered through multiple informants also provided additional evidence useful for interpreting results (McCartney, Bub & Burchinal, 2006).

Finally, the population of interest in this study was adolescents. Relationships are likely to be especially important for adolescent students, who typically undergo shifts in their relationships with teachers (Midgley, Feldlaufer, & Eccles, 1988; Murdock & Miller, 2003; Wentzel, 1997). Peer relationships also gain in importance during the adolescent years (Brown, et al., 2008).

Although the study had multiple strengths, there are some limitations to be considered. First, the design of the study was correlational in nature and not a true experiment. Therefore, no causal explanations could be drawn; rather, conclusions were framed as relations between constructs of interest. In addition, the model and supporting research questions reflect a snapshot of the classroom at a single time point thus limiting the types of questions that can be answered. For example, the conceptual model guiding this study inherently assumed change was occurring throughout the school year, but questions regarding this change were not examined.

This design also brought with it some potential disadvantages in terms of internal and external validity and therefore conclusions were drawn in light of these limitations.

First, the results of this study are not generalizable beyond the sample that was included. The participants in this study were not chosen in any way to reflect a broader

population, such as all middle school students in the U.S. Therefore, results can only be applied to these particular adolescents from these schools and classrooms. Further, the sample consisted of primarily middle class, European American middle school students. However, the analysis of the subset was focused on primarily Hispanic, low ses students. Future work could examine the relations between classroom climate and adolescent social goal pursuit and classroom behavior in a larger, more nationally representative sample to see if these models are generalizable to the broader U.S. middle school population.

Next, each student was embedded within a classroom within a school. The study accounted for classroom effects but did not control for school effects. It is possible that an atypical event might have occurred in one school but not another that could have affected the students' perceptions of emotional support. For instance, if data were collected the day after the school won a big sporting event, students' perceptions of social support from peers and teachers might have shifted in comparison to a more typical day. In addition, if a tragic event occurs at the school which required the students to depend on the classroom group, cohesion might have increased. Indeed, it is expected that a healthy system would respond to external stressors including a shift in cohesion (Olson, 2000).

Similarly, potential variations in student behavior or social goal pursuit might be linked to influences outside of the school. Although a systems perspective has been adopted for this model, contexts beyond the school were not directly accounted for in the model. Therefore, other factors in the adolescents' home or community might have interacted with the social climate of the classroom to predict behavior (see Davis, 2003; Russell, Wentzel, & Donlan, 2010; Wentzel et al., 2011).

Next, each classroom was unique given that characteristics of the group were based on the individuals that comprise the system. Therefore, a potential limitation to this study was continuity of group membership across classrooms. Some classrooms might have had more student mobility, instances of incoming or outgoing students, than others. Indeed, student mobility has been found to relate to children's academic engagement and teacher support (Gruman, Harachi, Abbott, Catalano, & Fleming, 2008). Also, middle schools often make use of a team structure in which students take classes with a similar group of students throughout the year, which could also impact perceptions and characteristics of the group. Moreover, the student who has spent more time with the teacher and peers in a specific classroom might have stronger bonds with the group in comparison to a student who has just entered the class. At the same time, the classroom climate shifts with each change in membership so it would not be appropriate to simply discount those students' perspectives that have not been in the classroom for very long; they are still part of the current system. Similarly, school structures and policies that might have an influence on consistent group membership have not been taken into account.

Finally, the model was student-focused and although teacher and peer characteristics were incorporated, they were done so through the filter of the adolescents' perceptions. The current study did not include actual teacher practices, but rather focused on the perceived social environment and climate that was created within the classroom. Although, teacher practices marked by responsiveness, predictability, and democratic communication styles are viewed as essential components of good classroom management, effective teaching, and fostering a caring classroom (Woolfolk-Hoy &

Weinstein, 2006), inclusion of these aspects of classroom structure was beyond the scope of the current investigation.

Future Directions

The results of this investigation have shed light on the multiple forces directly and indirectly interacting within the classroom social climate, as well as prompted new ways to further examine the classroom context. First, alternative ways for conceptualizing the links between model components are suggested. Next, means for expanding the constructs included in the study are identified. Third, how to move forward with the potential use of the coefficient of variation are discussed. Finally, ways in which the methodological approach to this work can be improved in the future are examined.

Alternative model pathways. Based on the findings at the individual-level, it appears the conceptual model presented here could be improved by reconfiguring some model pathways. First, staying closer to Wentzel's (2004) Model of Classroom Competence upon which the current individual-level model was framed might be advantageous. Specifically, social goal pursuit could be placed as a mediator between perceived social support and behavioral outcomes. Indeed, this is the way in which these constructs were originally conceived to be related by Wentzel and within the relevant literature goals are often described as precursors to behavior (e.g., Covington 2000; Wentzel 1994).

In addition, Wentzel's model includes four forms of social support, two of which (help and safety) were not included in this investigation. Incorporating students' perceptions of instrumental help and safety from teachers and peers could provide a richer picture of the contextual resources available in the classroom. Indeed previous

work has found instrumental help from peers to predict academic interest (Ahmed, Minnaert, van der Werf, & Kuyper, 2010; Wentzel, Battle, Russell, & Looney, 2010). Further, instrumental help was found to be a more salient predictor of interest than emotional support from peers (Wentzel et al., 2010), whereas teacher emotional support, but not instrumental support uniquely predicted students' perceived academic competence (Malecki & Demaray, 2003). However, Malecki & Demaray, (2003) found no significant difference in the relative importance of these two types of support from either peers or teachers. Future models incorporating more forms of social support could be advantageous for better understanding the unique roles of social support for positive student outcomes.

Another model configuration to consider is that one form of social support might precede another. Indeed, recent work by Wentzel, Baker, and Russell (2012) found that individual-level teacher and peer emotional care function as partial mediators between perceived expectations and goal pursuit. Also, Woolley, Kol, and Bowen (2008) found that peer and parent social support precede teacher support as pathways to negative classroom behavior. Further, work by Wentzel, Russell, & Baker (2012) has demonstrated that the interactions between types of support from the same source at the individual-level might be the more appropriate intersection to investigate in relation to social behavior. However, whether these findings hold true at the classroom-level is yet to be seen.

Additional classroom characteristics to explore. Other classroom-level constructs that might better explain the variations in the intercepts and slopes should be explored. Across all multilevel models tested here, there was significant variance in the

outcome (i.e., intercept was significant). However, the factors which might explain this variation were not always present in the model. In other words, variation existed, but no unique factors that could account for the variation emerged. A similar effect was found in the cross-level models; some slopes significantly varied across classrooms, but no classroom characteristic could uniquely account for this variation. Drawing upon previous literature on school environments and group characteristics, factors to consider might be gender and ethnic composition of the students, as well as the teacher or even average academic success of the group. Although limited, some empirical work has found these factors can influence the social climate of and relationships within classrooms (e.g., Crosnoe, Johnson, & Elder, 2004, Kirkpatrick Johnson, et al., 2001).

In addition, the finding that teacher and peer structure worked in opposing ways to account for differences in socially responsible behavior should be further explored. In order to look more closely at the underlying factors that might be influencing this effect, future work should include means, to see if too much structure is indeed aligning with Baumrind's (1971) idea of an authoritarian parent or whether students' sense of autonomy is being undermined and thus reducing this type of behavior. This latter theoretical explanation incorporates the third dimension of Connell and Wellborn's (1991) model, which was not included in this study but could be added in the future to help tease apart this phenomenon.

Interaction terms should also be considered at level-2. For example, classroom size could influence classroom cohesion such that cohesion is higher in smaller classes as compared to larger classes. The link between class size and opportunities for teacher-student and peer-student social exchanges as well as changes in teacher practices have

been proposed, yet evidence for these effects have been inconsistent across the school years (Finn, Pannozzo, & Achilles, 2003). However, the interaction between group size and cohesion has been found to influence performance (Mullen & Cooper, 1994). Thus, an interaction term comprised of class size and characteristics could be added as a direct predictor of behavioral outcomes.

The use of the coefficient of variation. It appears that measuring classroom cohesion and structure through the coefficient of variation ($CV=SD/M$) indeed captures significant links between classroom characteristics and social goal pursuit and classroom behavior. However, these results differ from approaches incorporating the mean as the indicator of these characteristics. Therefore, more work is needed to better understand whether or not the use of the CV is a better means for capturing classroom climate over more traditional methods such as averages or standard deviations. One method for further investigating the validity of this approach would be to compare the use of the CV, mean, and SD, along with other measures of classroom climate such as classroom observations or interviews. The use of classroom observations or teacher and student interviews could add another layer of information that might help researchers identify which of these indicators are most accurately representing the construct of interest. In order to do this, the observational tool would have to precisely align with the initial construct under investigation (e.g., cohesion). One promising option currently available is the Classroom Assessment Scoring System (CLASS; Pianta, LaParo & Hamre, 2008). Integrating interviews with both teachers and students could provide a rich resource, yet still would rely on perceptions of members within the group. However, utilizing self-perceptions makes conceptual sense when working from the motivational perspective adopted here

that explores the interaction between contextual supports and internal processes (Connell & Wellborn, 1991; Wentzel, 2004).

Alternative methodological approaches. Key limitations in this study surrounded complications with the sample used to examine the core research questions, which provide some direction for how to adapt this line of research in the future. To begin, all analyses were run on two data sets in order to test for robust effects, however few were found. The reason for this was two-fold. One, some effects purely were not robust and rather unique to only one of the samples. Two, some of the more complex models required a larger number of classrooms than one data set could accommodate to properly estimate all model parameters. Given there were a limited number of classrooms available in each data set and the numbers of classrooms varied by model, these more complex models were only run on one of the datasets. Therefore, the models that did produce significant effects should be replicated on other samples that are large enough to handle the complexity. What would be most important is to maintain the integrity of the conceptual model and not compromise pathways or parameters due to sample constraints.

Another way to move forward with this work is to reassess the constructs included in the models. Based on level-2 model analyses, it became evident that group wellbeing was not a necessary construct to be included as a classroom characteristic for these particular outcomes. Therefore, the inclusion of wellbeing as an individual-level control variable should also be reconsidered. Although there is a well-documented link between emotional support and wellbeing, this does not necessarily hold true for perceived expectations for social behavior and calls into question the inclusion of wellbeing as a control variable.

The way in which items were worded to capture characteristics of the group could also be reconsidered. Items here relied on individual perspectives regarding a particular teacher or group of peers, yet did not ask about cohesion or structure of the entire classroom group. This latter approach requires the respondent to generalize across the group rather than keeping a particular target (e.g., one teacher) in mind. For example, a student could respond to “This class generally cares about one another.” Measuring group cohesion in this manner might be more appropriate for classroom-level variables (i.e., cohesion or structure) whereas asking about dyadic relationships (i.e., teacher care) could be best utilized at the individual-level. If this approach were adopted it would allow the researcher to account for social-emotional properties of the classroom due to both social support of the group and between two individuals that are also part of the broader group. Indeed social support between a teacher and a student, viewed from a systems perspective, necessitates this more holistic, multilevel, interdependent view. Moreover, items could more precisely capture the way in which social support within the dyadic relationship (e.g., teacher emotional support) might interact with social-emotional qualities of the classroom (e.g. peer cohesion).

In contrast, some researchers argue that if one is ultimately interested in the classroom climate, then individual perspectives on characteristics of the classroom (i.e., group) rather than dyadic relationships would be appropriate. However, what is important with this tactic is to account for the naturally occurring multilevel structure that is in place, students nested within classrooms. For example, Marsh, Martin, and Chang (2008) have highlighted the importance of capturing classroom climate at both the individual- and class-level. They support using individual students’ perspectives on characteristics of

the climate which can then be aggregated to the classroom-level. However, when utilizing this measurement technique, data should demonstrate appropriate psychometric properties at each of the levels it is intended to be used. In the current study items included both a dyadic relationship (student-teacher), and group relationship (student-peer), which ultimately intended to capture classroom climate variables.

Future work could explore the impact item wording at the individual- and classroom-level has on measuring the social-emotional climate of the classroom. For instance, this could be accomplished by comparing individual-level variables based on dyadic relationships and classroom-level variables centered on properties of the group to one set of items that capture individual perspectives on classroom climate used at both levels, as adopted in the current study.

The methodological approach adopted in this study incorporated measured variable techniques drawing upon multiple regression statistical analysis. Using this approach had some limitations in terms of accurately depicting the relations between constructs given that measurement error played a role in these estimations. In the future, latent variable modeling approaches might improve upon these analyses by removing this measurement error from the estimation of relations between constructs. This would also allow for other modeling techniques to be incorporated such as comparing the entire model across groups (e.g., boys v. girls or 6th v. 7th graders) to see if pathways function similarly across the two. Model comparisons could also be expanded to include contextual differences that might be responsible for changes in overall model functioning, such as classroom practices or specific school programs. Indeed, some policies (e.g., high stakes testing) have been found to negatively impact teacher-student relationships as

teachers roles and tasks expand under these external forces (Valli & Buese, 2007). These additional factors could be conceptualized as either class-level factors comparing teacher characteristics and curriculums or school-level variants such as policies and programs.

Finally, incorporating a longitudinal design would allow researchers to look at classroom system dynamics rather than adopting a static point-of-view. Given the systems framework underlying the conceptual model, it would be interesting to examine whether aspects of the classroom climate do indeed change over time (e.g., cohesion increasing across the school year) or if the relative influence of cohesion or structure on social goal pursuit or classroom behaviors varies across the school year. Future work could also look at how students' behavioral trajectories look similar or different across time although they are in the same classroom system. This would allow researchers to have a better understanding of how students' characteristics and qualities of the classroom system interact with one another.

Conclusion

Overall, the social-emotional environment of middle school classrooms appears to be complex and best captured when simultaneously considering multiple dimensions and sources of support at both the individual- and classroom-levels. However, it is important to carefully select outcomes that are appropriate to examine in a multilevel framework, taking into consideration not only the nature of the construct but also the measurement approach that is adopted. Each of these factors has implications for identifying and interpreting significant effects and provides the opportunity to paint a more rich picture of how the classroom social environment is related to social goal pursuit and classroom behavior.

Appendices

Appendix A. List of measure items and response options.

Variable and items	Response options
<p>Emotional support-Teacher</p> <p>My teacher thinks it's important to be my friend. My teacher really cares about me. My teacher likes me about as much as s/he likes other students. My teacher cares about my feelings.</p>	<p>1= Never 2= Seldom 3= Sometimes 4= Often 5= Always</p>
<p>Emotional support- Peers</p> <p>My classmates think it's important to be my friend. My classmates like me the way I am. My classmates care about my feelings. My classmates like me as much as they like others. My classmates really care about me.</p>	<p>1= Never 2= Seldom 3= Sometimes 4= Often 5= Always</p>
<p>Expectations for social behavior – Teacher (Measure A)</p> <p>My teachers try to get me to be kind to everyone. My teachers think that helping others is very important. My teachers think that being a good person is important.</p>	<p>1= Always 2= Often 3= Sometimes 4= Never</p>
<p>Expectations for social behavior-Peers (Measure A)</p> <p>My classmates expect me to follow the rules in this class. My classmates expect me to do what I'm supposed to do in this class. My classmates expect me to not cause trouble in this class.</p>	<p>1= Always 2= Often 3= Sometimes 4= Never</p>
<p>Expectations for social behavior – Teacher (Measure B)</p> <p>The teacher wants me to share my ideas and materials with other students. The teacher wants me to help other students learn. The teacher wants me to work together cooperatively with other students.</p>	<p>1= Never 2= Seldom 3= Sometimes 4= Often 5= Always</p>
<p>Expectations for social behavior – Peers (Measure B)</p> <p>My classmates want me to work cooperatively with them. My classmates want me to help them learn. My classmates want me to share my ideas and materials with them.</p>	<p>1= Never 2= Seldom 3= Sometimes 4= Often 5= Always</p>
<p>Wellbeing</p> <p>I usually think of myself as a happy person. I feel very happy. I'm the kind of person who has a lot of fun.</p>	<p>1= False 2= Somewhat false 3= Not sure 4= Somewhat true 5= True</p>

Appendix A continued. List of measure items and response options.

Variable and items	Response options
<p>Teacher cohesion</p> <p>Coefficient of variation = SD/M for each classroom Derived from student reports of perceived teacher emotional support</p>	N/A
<p>Peer cohesion</p> <p>Coefficient of variation = SD/M for each classroom Derived from student reports of perceived peer emotional support</p>	N/A
<p>Teacher structure</p> <p>Coefficient of variation = SD/M for each classroom Derived from student reports of perceived teacher expectations</p>	N/A
<p>Peer structure</p> <p>Coefficient of variation = SD/M for each classroom Derived from student reports of perceived peer expectations</p>	N/A
<p>Peer prosocial goal pursuit</p> <p>How often do you try to be nice to kids when something bad has happened to them? How often do you try to help other kids when they have a problem? How often do you try to cheer someone up when something has gone wrong?</p>	<p>1= Never 2= Rarely 3= Sometimes 4= Often 5= Always</p>
<p>Academic prosocial goal pursuit</p> <p>How often do you try to share what you've learned with your classmates? How often do you try to help your classmates solve a problem once you've figured it out? How often do you try to help our classmates learn new things?</p>	<p>1= Never 2= Rarely 3= Sometimes 4= Often 5= Always</p>
<p>Peer social responsibility goal pursuit</p> <p>How often do you try to keep promises that you've made to other kids? How often do you try to keep secrets that other kids have told you? How often do you try to do the things you've told other kids you would do?</p>	<p>1= Never 2= Rarely 3= Sometimes 4= Often 5= Always</p>

Appendix A continued. List of measure items and response options.

Variable and items	Response options
<p>Academic social responsibility goal pursuit</p> <p>How often do you try to do what your teacher asks you to do? How often do you try to be quiet when others are trying to study? How often do you try to keep working even when you're tired? How often do you try to keep working even when other kids are goofing off? How often do you try to think about how your behavior will affect other kids?</p>	<p>1= Never 2= Rarely 3= Sometimes 4= Often 5= Always</p>
<p>Prosocial behavior prompt</p> <p>In this class, how often does this student cooperate and share with other students in this class? (Teacher) Who shares and cooperates? (Peers)</p>	<p><i>Teacher Rating:</i> 1= Never 2= Rarely 3= Sometimes 4= Often 5= Always</p> <p><i>Peer nomination:</i> Circle = yes</p>
<p>Socially responsible behavior prompt</p> <p>How often does this student follow the rules in this class? (Teacher) Who follows the rules? (Peers)</p>	<p><i>Teacher Rating:</i> 1= Never 2= Rarely 3= Sometimes 4= Often 5= Always</p> <p><i>Peer nomination:</i> Circle = yes</p>

Appendix B. All multilevel regression models of peer prosocial goal pursuit using the full data set.

Variables	Peer Prosocial Goal Pursuit															
	817		317		811		460		1759		320		811		460	
<i>n</i>	817		317		811		460		1759		320		811		460	
#classrooms	43		20		41		23		86		19		41		23	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.28***	.03	.24***	.05	.23***	.03	.26***	.04			.21***	.05	.22***	.03	.25***	.06
Grade	-.001	.03	.08	.07	.02	.04	-.01	.05			.10	.06	.04	.03	-.01	.13
Wellbeing	.22***	.03	.05	.06							.03	.06				
Emosupp-T			.11*	.05			.18***	.05			.10*	.05			.19***	.06
Emosupp-P			.31***	.05			.24***	.05			.36***	.06			.25***	.06
Exp-T					.18***	.04	.05	.05					.18***	.04	.04	.05
Exp-P					.28***	.04	.15**	.05					.31***	.04	.17***	.04
Level Two																
Intercept											4.13***	.04	4.06***	.03	4.07***	.06
Class size									-.03	.16	-.56	1.15	.65	.57	.62	.74
Cohesion-T											.55	1.16			-.70	.93
Cohesion-P											.54	1.78			.18	2.51
Structure-T													-.52	.58	-.19	1.42
Structure-P													.71	.63	.19	2.51
Random Effects																
Level-1 effect, r_{ij}	.58***	.03	.47***	.04	.51***	.03	.42***	.03	.69***	.02	.47***	.04	.50***	.03	.41***	.03
Class mean, u_{0j}			.03	.02	.02	.10	.01	.01	.04***	.01	.00	.01	.00	.01	.00	.01

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support variables were group-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix C. All multilevel regression models of academic prosocial goal pursuit using the full data set.

Variables	Academic Prosocial Goal Pursuit															
	822		316		813		460		2174		319		814		460	
#classrooms	43		20		41		23		106		19		41		23	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.17***	.03	.18***	.05	.01	.03	.00	.04			.16**	.05	.01	.03	-.01	.04
Grade	-.08*	.03	-.09	.07	.03	.05	-.11	.06			-.09	.06	.05	.04	-.07	.04
Wellbeing	.24***	.03	.06	.06							.03	.06				
Emosupp-T			.13**	.05			.19***	.05			.14**	.06	.21***	.04	.20***	.05
Emosupp-P			.29***	.06			.16**	.05			.33***	.06	.39***	.04	.17***	.05
Exp-T					.21***	.04	.11*	.05							.09	.05
Exp-P					.37***	.04	.28***	.05							.31***	.05
Level Two																
Intercept											3.64***	.04	3.35***	.03	3.39***	.04
Class size									-.02	.13	-.75	.66	-.23	.24	-.09	.45
Cohesion-T											.00	.54			-.09	.57
Cohesion-P											.59	.99			.25	.86
Structure-T													-.55*	.28	-.46	.63
Structure-P													.52†	.28	-.34	.87
<i>Random Effects</i>																
Level-1 effect, r_{ij}	.62***	.03	.57***	.05	.49***	.03	.48***	.03	.77***	.02	.56***	.05	.49***	.03	.48***	.03
Class mean, u_{0j}			.03	.02	.04**	.02	.03	.02	.06***	.01	.00	.01	.01	.01	.01	.01

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support variables were group-mean centered.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix D. All multilevel regression models of peer social responsibility goal pursuit using the full data set.

Variables	Peer Social Responsibility Goal Pursuit															
	806		311		790		447		1719		314		791		447	
<i>n</i>	806		311		790		447		1719		314		791		447	
#classrooms	43		20		41		23		86		19		41		23	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.16***	.03	.18***	.05	.09**	.03	.00	.05			.16**	.05	.09*	.03	.01	.05
Grade	-.04	.04	.01	.07	.02	.05	.02	.07			.06	.06	.03	.04	-.02	.05
Wellbeing	.14***	.03	.07	.06							.03	.06				
Emosupp-T			.06	.06			-.03	.05			.07	.06			-.01	.06
Emosupp-P			.27***	.06			.25***	.06			.33***	.06			.25***	.06
Exp-T					.08	.04	.08	.06					.09*	.04	.07	.06
Exp-P					.23***	.04	.13*	.06					.25***	.04	.15*	.06
Level Two																
Intercept											4.21***	.04	4.12***	.03	4.17***	.03
Class size									.16	.15	-.66†	.35	.62*	.29	.94**	.35
Cohesion-T											.31	.29			-.34	.42
Cohesion-P											-.57*	.26			.03	.54
Structure-T													-.10	.34	.29	.45
Structure-P													.65*	.31	.14	.55
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.48***	.02	.40***	.03	.43***	.02	.38***	.03	.50***	.02	.39***	.03	.43***	.02	.38***	.03
Class mean, u_{0j}			.02	.01	.02*	.01	.02	.01	.04***	.01	.00	.01	.00	.01	.00	.01

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support variables were group-mean centered.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix E. All multilevel regression models of academic social responsibility goal pursuit using the full data set.

Variables	Academic Social Responsibility Goal Pursuit																
	<i>n</i>	810		309		806		457		1740		312		807		457	
#classrooms	43	20		41		23		86		19		41		23			
<i>Fixed Effects</i>	Coef.	<i>SE</i>	Coef.	<i>SE</i>	Coef.	<i>SE</i>	Coef.	<i>SE</i>	Coef.	<i>SE</i>	Coef.	<i>SE</i>	Coef.	<i>SE</i>	Coef.	<i>SE</i>	
Level One																	
Sex	.16***	.03	.15**	.05	.09**	.03	.07	.04			.13**	.05	.09*	.03	.07	.04	
Grade	-.05	.03	-.15*	.06	-.11*	.05	-.16**	.06			-.09	.06	-.05	.04	-.11*	.05	
Wellbeing	.20***	.03	.14*	.06							.12*	.06					
Emosupp-T			.30***	.05			.31***	.05			.33***	.05			.32***	.05	
Emosupp-P			.14*	.06			-.02	.05			.16**	.06			.01	.06	
Exp-T					.25***	.04	.13*	.06					.26***	.04	.12*	.06	
Exp-P					.12**	.04	.09	.06					.13**	.04	.10	.06	
Level Two																	
Intercept											3.97***	.04	3.98***	.03	4.06***	.03	
Class size									-.27*	.14	-.68*	.27	-.27	.21	.23	.43	
Cohesion-T											-.22	.29			.13	.52	
Cohesion-P											-.63*	.27			.70	.81	
Structure-T													.29	.26	.67	.56	
Structure-P													.23	.27	-.89	.79	
Random Effects																	
Level-1 effect, r_{ij}	.54***	.03	.40***	.03	.38***	.02	.32***	.02	.54***	.02	.40***	.03	.38***	.02	.32***	.02	
Class mean, u_{0j}			.02	.01	.04**	.01	.02	.01	.04***	.01	.00	.01	.01*	.01	.00	.01	

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support variables were group-mean centered.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix F. All multilevel regression models of peer-rated prosocial behavior using the full data set.

Variables	Peer-Rated Prosocial Behavior													
	954		430		333		2022		429		333			
<i>n</i>	954	430	333	2022	429	333								
#classrooms	54	30	18	94	29	18								
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One														
Sex	.27***	.03	.17***	.04	.19***	.05			.18***	.04	.18***	.05		
Grade	.22	.19	-.20**	.07	.35	.20			-.68***	.10	.41**	.16		
Wellbeing	.07*	.03	.02	.04					-.02	.04				
Emosupp-T			.02	.04					-.02	.04				
Emosupp-P			.15**	.04					.11*	.04				
Exp-T					.09	.06							.09	.06
Exp-P					.16**	.06							.16**	.06
Level Two														
Intercept									.32***	.03	.46***	.02		
Class size								.06	.11	-.26	.18	.08	.20	
Cohesion-T										.17	.18			
Cohesion-P										-.05	.19			
Structure-T													.37†	.23
Structure-P													.35	.23
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.04****	.00	.01***	.00	.01***	.00			.02***	.00	.01***	.00	.01***	.00
Class mean, u_{0j}			.03*	.01	.01***	.00			.02***	.00	.02***	.01	.01**	.00

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. All variables are grand-mean centered in level-two models.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix G. All multilevel regression models of teacher-rated prosocial behavior using the full data set.

Variables	Teacher-Rated Prosocial Behavior													
	1099		569		331				1285		568		331	
<i>n</i>	1099		569		331				1285		568		331	
#classrooms	62		38		18				62		37		18	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One														
Sex	.22***	.03	.24***	.04	.21***	.05					.24***	.04	.20***	.05
Grade	-.18***	.03	-.08	.12	.07	.14					-.14	.11	.14	.12
Wellbeing	.07*	.03	.01	.05							.00	.05		
Emosupp-T			.05	.04							.05	.05		
Emosupp-P			.02	.05							.03	.05		
Exp-T					.12*	.06							.14*	.06
Exp-P					.07	.06							.07	.06
Level Two														
Intercept											3.94***	.10	3.37***	.08
Class size									-.03	.14	.23	.16	.26	.22
Cohesion-T											.29†	.16		
Cohesion-P											.24	.17		
Structure-T													.31	.26
Structure-P													.28	.26
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.86***	.08	.67***	.04	.41***	.03			.74***	.03	.67***	.04	.41***	.03
Class mean, u_{0j}			.34***	.09	.13*	.05			.27***	.06	.27***	.08	.07*	.03

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. All variables are grand-mean centered in level-two models.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix H. All multilevel regression models of peer-rated socially responsible behavior using the full data set.

Variables	Peer-Rated Socially Responsible Behavior													
	954		430		333		1580		429		333			
<i>n</i>	954	430	333	1580	429	333								
#classrooms	54	30	18	74	29	18								
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One														
Sex	.15****	.03	.20****	.05	.21****	.06			.22****	.05	.20**	.05		
Grade	.04	.03	.68**	.11	.28	.25			.62****	.15	.41*	.20		
Wellbeing	.04	.03	.07	.04					.08	.04				
Emosupp-T			.04	.04					.05	.05				
Emosupp-P			-.07	.04					-.07	.05				
Exp-T					.09	.06							.09	.06
Exp-P					.03	.06							.03	.06
Level Two														
Intercept									.64****	.04	.53****	.03		
Class size								.14	.12	.16	.18	.12	.20	
Cohesion-T										-.08	.19			
Cohesion-P										.16	.19			
Structure-T													.43†	.22
Structure-P													.24	.24
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.07****	.00	.02****	.00	.02****	.00			.03****	.00	.02****	.00	.02****	.00
Class mean, u_{0j}			.05****	.01	.03**	.01			.05****	.01	.05****	.01	.02**	.01

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. All variables are grand-mean centered in level-two models.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix I. All multilevel regression models of teacher-rated socially responsible behavior using the full data set.

Variables	Teacher-Rated Socially Responsible Behavior													
	1097		566		333		2181		565		333			
<i>n</i>	1097	566	333	2181	565	333								
#classrooms	62	38	18	102	37	18								
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One														
Sex	.25***	.03	.31***	.04	.24***	.05			.30***	.04	.23***	.05		
Grade	-.24***	.03	.04	.08	.15	.13			.02	.08	.17	.12		
Wellbeing	.08**	.03	.07	.04					.06	.04				
Emosupp-T			.12**	.04					.13**	.05				
Emosupp-P			-.01	.05					.02	.05				
Exp-T					.09	.06							.10	.07
Exp-P					-.10	.06							-.10	.06
Level Two														
Intercept									4.21***	.06	3.39***	.08		
Class size									-.14	.11	-.12	.20	.15	.20
Cohesion-T									.02	.20				
Cohesion-P									.25	.20				
Structure-T													.22	.25
Structure-P													.56**	.21
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.78***	.03	.57***	.04	.48***	.04			.73***	.02	.58***	.04	.48***	.04
Class mean, u_{0j}			.12***	.04	.14*	.06			.23***	.04	.10**	.03	.07*	.03

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. All variables are grand-mean centered in level-two models.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix J. *Subset*. All multilevel regression models of peer prosocial goal pursuit using the subset.

Variables	Peer Prosocial Goal Pursuit							
	161		154		161		154	
<i>n</i>	161		154		161		154	
#classrooms	8		8		8		8	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One								
Sex	.23***	.07	.21**	.07	.20***	.07	.19***	.07
Grade	.10	.12	.14	.12	.12	.13	.15	.13
Wellbeing	.28***	.07	.05	.08				
Emosupp-T			.20**	.07			.12	.08
Emosupp-P			.31***	.08			.25***	.07
Exp-T					.25***	.07	.11	.07
Exp-P					.31***	.07	.24***	.07
Level Two								
Intercept								
Class size								
Cohesion-T								
Cohesion-P								
Structure-T								
Structure-P								
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.57***	.07	.46***	.05	.48***	.06	.42***	.05
Class mean, u_{0j}			.07	.04	.08	.05	.08	.05

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. Only level one models could be run due to small number of classrooms.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix K. *Subset*. All multilevel regression models of academic prosocial goal pursuit using the subset.

Variables	Academic Prosocial Goal Pursuit							
	160		154		160		154	
<i>n</i>	160		154		160		154	
#classrooms	8		8		8		8	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One								
Sex	.22**	.07	.20**	.07	.17**	.07	.16*	.06
Grade	.11	.08	.13	.09	.14	.09	.14	.10
Wellbeing	.35***	.07	.13	.08				
Emosupp-T			.19*	.07			.07	.08
Emosupp-P			.29***	.08			.25***	.07
Exp-T					.27***	.07	.18*	.07
Exp-P					.37***	.06	.29***	.07
Level Two								
Intercept								
Class size								
Cohesion-T								
Cohesion-P								
Structure-T								
Structure-P								
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.73***	.08	.63***	.07	.58***	.07	.54***	.06
Class mean, u_{0j}			.03	.03	.04	.03	.05	.04

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. Only level one models could be run due to small number of classrooms.
 * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix L. *Subset*. All multilevel regression models of peer social responsibility goal pursuit using the subset.

Variables	Peer Social Responsibility Goal Pursuit							
	155		148		157		149	
<i>n</i>	155		148		157		149	
#classrooms	8		8		8		8	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One								
Sex	.21**	.08	.18*	.07	.18*	.07	.16***	.07
Grade	.11	.08	.14	.10	.12	.09	.15	.11
Wellbeing	.18*	.08	.001	.08				
Emosupp-T			.19*	.08			.14	.08
Emosupp-P			.33***	.08			.29***	.08
Exp-T					.14	.08	.06	.08
Exp-P					.24***	.08	.14	.08
Level Two								
Intercept								
Class size								
Cohesion-T								
Cohesion-P								
Structure-T								
Structure-P								
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.50***	.06	.39***	.05	.45***	.05	.37***	.04
Class mean, u_{0j}			.02	.02	.01	.02	.04	.03

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. Only level one models could be run due to small number of classrooms.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix M. *Subset*. All multilevel regression models of academic social responsibility goal pursuit using the subset.

Variables	Academic Social Responsibility Goal Pursuit							
	154		148		154		148	
<i>n</i>	154		148		154		148	
#classrooms	8		8		8		8	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One								
Sex	.18**	.07	.21***	.06	.13*	.06	.17**	.06
Grade	.14	.08	.15*	.07	.17*	.07	.17*	.09
Wellbeing	.44***	.06	.18**	.07				
Emosupp-T			.43***	.06			.36***	.06
Emosupp-P			.22**	.07			.22***	.06
Exp-T					.26***	.07	.07	.06
Exp-P					.43***	.06	.30***	.06
Level Two								
Intercept								
Class size								
Cohesion-T								
Cohesion-P								
Structure-T								
Structure-P								
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.39***	.05	.26***	.03	.33***	.04	.23***	.03
Class mean, u_{0j}			.01	.01	.00	.01	.03	.02

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. Only level one models could be run due to small number of classrooms.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix N. *Subset*. All multilevel regression models of peer-rated prosocial behavior using the subset.

Variables	Peer-Rated Prosocial Behavior																
	295		267		289		263		397		267		289		263		
<i>n</i>	295		267		289		263		397		267		289		263		
#classrooms	19		19		19		19		19		19		19		19		
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	
Level One																	
Sex	.17**	.06	.22**	.06	.24***	.06	.23***	.06			.21***	.06	.24***	.06	.22***	.06	
Grade	-.11	.06	-.25	.19	-.25	.17	-.24	.19			-.25	.19	-.21	.17	-.36*	.14	
Wellbeing	-.03	.06	-.07	.07							-.07	.07					
Emosupp-T			-.05	.07			-.06	.07			-.06	.08			-.07	.08	
Emosupp-P			.13	.07			.10	.07			.14	.07			.10	.07	
Exp-T					.04	.06	.01	.07					.04	.06	.01	.07	
Exp-P					.00	.06	-.02	.06					.00	.06	-.02	.06	
Level Two																	
Intercept											.42***	.03	.42***	.02	.43***	.02	
Class size										-.29	.21	-.33	.20	-.33	.23	-.41*	.19
Cohesion-T											.15	.13			.72***	.23	
Cohesion-P											.12	.24			.28	.20	
Structure-T														-.27	.22	-.86***	.23
Structure-P														.13	.25	.39†	.21
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	
Level-1 effect, r_{ij}	.03***	.00	.01***	.00	.02***	.00	.01***	.00	.02***	.00	.01***	.00	.02***	.00	.01***	.00	
Class mean, u_{0j}			.01**	.00	.01**	.00	.01**	.00	.01***	.00	.01**	.00	.01**	.00	.01**	.00	

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. All variables are grand-mean centered in level-two models.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix O. *Subset*. All multilevel regression models of teacher-rated prosocial behavior using the subset.

Variables	Teacher-Rated Prosocial Behavior															
	456		420		450		416		588		420		450		416	
<i>n</i>	456		420		450		416		588		420		450		416	
#classrooms	27		27		27		27		27		27		27		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.20***	.05	.19***	.05	.20***	.05	.20***	.05			.19***	.05	.20***	.05	.20***	.04
Grade	-.09	.13	-.08	.14	-.07	.13	-.06	.13			-.12	.12	-.03	.12	-.14	.12
Wellbeing	.01	.05	-.02	.06							-.03	.06				
Emosupp-T			.03	.05			.01	.06			.03	.06			.00	.06
Emosupp-P			.06	.06			.01	.06			.06	.06			.02	.06
Exp-T					.11*	.05	.09	.05					.12*	.05	.10	.06
Exp-P					.03	.05	-.01	.05					.03	.05	-.01	.05
Level Two																
Intercept											3.96***	.11	3.95***	.11	3.97***	.10
Class size									.28	.19	.19	.19	.21	.20	.14	.18
Cohesion-T											.22	.20			.39†	.22
Cohesion-P											.28	.19			.33†	.19
Structure-T													.04	.21	-.35	.24
Structure-P													.19	.21	.27	.19
Random Effects																
Level-1 effect, r_{ij}	.33**	.10	.70***	.05	.70***	.05	.70***	.05	.86***	.05	.70***	.05	.70***	.05	.70***	.05
Class mean, u_{0j}			.35**	.11	.32***	.10	.34***	.11	.27***	.08	.27**	.09	.28***	.09	.23**	.08

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. All variables are grand-mean centered in level-two models.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix P. *Subset*. All multilevel regression models of peer-rated social responsibility behavior using the subset.

Variables	Peer-Rated Social Responsibility Behavior															
	295		267		289		263		397		267		289		263	
<i>n</i>	295		267		289		263		397		267		289		263	
#classrooms	19		19		19		19		19		19		19		19	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.33***	.05	.33***	.06	.34***	.05	.34***	.06			.33***	.06	.33***	.05	.33***	.06
Grade	-.06	.17	-.08	.18	-.06	.17	-.08	.18			-.09	.19	-.01	.16	-.14	.16
Wellbeing	.05	.06	.11	.07							.11	.06				
Emosupp-T			.11	.07			.09	.07			.13	.08			.11	.08
Emosupp-P			-.15*	.07			-.13*	.07			-.15*	.07			-.13	.07
Exp-T					.06	.06	.03	.07					.07	.06	.04	.07
Exp-P					.08	.06	.07	.06					.08	.06	.07	.06
Level Two																
Intercept											.45***	.03	.45***	.03	.46***	.03
Class size									-.09	.24	-.13	.24	-.19	.25	-.31	.22
Cohesion-T											-.003	.26			.46	.28
Cohesion-P											.17	.25			.34	.21
Structure-T													-.23	.23	-.71**	.27
Structure-P													.36	.24	.58**	.21
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.03***	.00	.03***	.00	.03***	.00	.03***	.00	.04***	.00	.03***	.00	.03***	.00	.03***	.00
Class mean, u_{0j}			.02***	.01	.02**	.01	.02**	.01	.02**	.01	.02***	.00	.02**	.01	.01**	.00

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. All variables are grand-mean centered in level-two models.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

Appendix Q. *Subset*. All multilevel regression models of teacher-rated social responsibility behavior using the subset.

Variables	Teacher-Rated Social Responsibility Behavior															
	455		419		449		415		588		419		449		415	
<i>n</i>	455		419		449		415		588		419		449		415	
#classrooms	27		27		27		27		27		27		27		27	
<i>Fixed Effects</i>	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Level One																
Sex	.30***	.04	.29***	.05	.30***	.04	.29***	.05			.29***	.05	.29***	.04	.28***	.05
Grade	.14	.09	.13	.09	.15	.09	.14	.09			.11	.09	.17**	.08	.09	.08
Wellbeing	.10*	.05	.09	.05							.08	.05				
Emosupp-T			.09	.05			.08	.05			.11	.06			.09	.06
Emosupp-P			.02	.06			.03	.05			.04	.06			.06	.06
Exp-T					.03	.05	-.01	.05					.03	.05	-.01	.06
Exp-P					.15***	.05	.10*	.05					.15***	.05	.10*	.05
Level Two																
Intercept											4.25***	.08	4.25***	.07	4.26***	.06
Class size									.07	.22	.05	.22	.02	.20	-.05	.19
Cohesion-T											-.05	.25			.31	.24
Cohesion-P											.29	.22			.29	.20
Structure-T													-.21	.21	-.56*	.23
Structure-P													.53**	.18	.60***	.16
<i>Random Effects</i>	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE	Var.	SE
Level-1 effect, r_{ij}	.58***	.04	.58***	.04	.57***	.04	.57***	.04	.72***	.04	.58***	.04	.57***	.04	.57***	.04
Class mean, u_{0j}			.13**	.05	.12**	.04	.13**	.04	.13***	.05	.11**	.04	.09**	.03	.06*	.03

Note. Sex coded 0=male; 1= female. T=teacher; P=peer; Emosupp = emotional support; Exp = expectations. All control variables were grand-mean centered and emotional support and expectation variables were group-mean centered in level-one models. All variables are grand-mean centered in level-two models.

* $p < .05$. ** $p < .01$. *** $p \leq .001$.

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