2011

Relations Among Classroom Support, Academic Self-Efficacy, and Perceived Stress During Early Adolescence

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Relations Among Classroom Support, Academic Self-Efficacy, and Perceived Stress During Early Adolescence

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
Education Specialist
Department of Psychological and Social Foundations
College of Education
University of South Florida

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Date of Approval:
July 5, 2011

Keywords: transition, external and internal resources, mental health, social cognitive theory, stage-environment Fit

Dedication

I would like to express my gratitude to all of the people who have devoted their time and wisdom, as well as inspired me during this thesis project. I would like to dedicate my thesis to my Major Professor, Dr. Sarah Kiefer, during my research at University of South Florida. Dr. Kiefer has been an unwavering source of moral support, as well as a mentor throughout the process, dedicating countless hours to provide invaluable conceptual and statistical feedback in a timely manner. I am forever grateful for Dr. Kiefer's dedication and patience to my research, as well as to her own. Thank you for helping me to improve in my writing. I would also like to thank Dr. Shannon Suldo who has inspired me with her promotion of positive psychology and her dedication to research. I appreciate the time that you spent with me to help conceptualize this project, which has been a significant learning experience for me. Moreover, I would like to thank Dr. John Ferron, who served as a valuable resource for statistical knowledge, especially in determining moderating effects. I appreciate your patience in explaining different statistical concepts in a concrete and meaningful way. Lastly, I would like to thank my family and friends, who have been remarkable sources of support throughout my life. Mom and dad, thank you for believing in me and helping me to pursue my dream to become a school psychologist. I would like to extend a special thank you to my friends, Sasha Annis and Rachel Brophy, for their revision recommendations and support. I would also like to dedicate my thesis to my husband, Ted, who went above and beyond

the call of duty, offering hugs, formatting assistance, and providing hope along the way. In closing, thank you all for your support and patience to help me in attaining this goal.

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Abstract

The purpose of this study was to gain insight into the relations between support, academic self-efficacy, and stress during the transition into middle school. Research suggests that early adolescents experience an increase in stress across the middle school transition (e.g., Chung, et al., 1998), due to a mismatch between the individuals' developmental needs and the environment (Eccles et al., 1993). Stress has been found to be a risk factor for mental health disorders among adolescents (Grant et al., 2003). The current study examined if teacher and classmate support and academic self-efficacy served as external and internal resources for buffering stress by analyzing data from 142 young adolescents from an economically and racially diverse longitudinal sample. The current study examined: (a) the relations between support from teachers and classmates, academic self-efficacy, and stress; (b) patterns of change across the middle school transition; (c) the extent to which support from teachers and classmates is associated with stress in fifth and sixth grades; (d) the extent to which academic self-efficacy moderated the relation between support and stress, and (e) whether there were group differences (i.e., gender, race, and/or gender x race). Teacher support was negatively associated with perceived stress during sixth grade, while classmate support was a not significant correlate. There was not significant change over time in any of the key variables (i.e., teacher and classmate support, academic self-efficacy, and perceived stress). Regression results indicated that teacher and classmate support served different roles as academic

self-efficacy moderated the relations between classroom support and perceived stress among fifth grade students. Teacher support was negatively related to perceived stress among sixth grade students. The only group difference found was that female sixth grade students reported higher levels of teacher support than male students did. Implications for school psychologists and future directions for research are also addressed.

Chapter I: Introduction

Statement of the Problem

An estimated one in five American youth (ages 9-17) have mental health disorders (U.S. Department of Health and Human Services, 1999). This is concerning as early adolescents' mental health concerns are negatively related to their academic performance and physical health (Torsheim & Wold, 2001). There are also long-term concerns, as about one half of adults with lifetime diagnoses develop prior to 14 years old (Kessler et al., 2005). Although there are mixed results, some research suggests that the transition into middle school can be stressful (Chung et al., 1998), which may be related to developmental and school structural changes (Eccles et al., 1993). Stress is considered to be a risk factor for mental health disorders, both internalizing and externalizing (Grant et al., 2003; Kazdin, Kraemer, Kessler, & Kupfer, 1997). Based on the prevalence rates of mental health disorders, as well as the short and long-term implications, it is crucial to determine what external and internal resources within adolescents' context may foster resiliency (Compas, Slavin, Wagner, & Vannatta, 1986; DuBois et al., 2002; Frey & Rothilberger, 1996; Grant et al., 2004; Wentzel, 1994, 1998). An external resource can be defined as an asset within an individual's environment (e.g., academic and emotional support from teachers and classmates) that buffers stress, while an internal resource (e.g., self-efficacy) serves a similar role but it is found within an individual.

Theoretical Frameworks

Stage-environment fit. The stage-environment fit theory is one of the three

theoretical frameworks that informed the current study. Based on the person-environment fit theory (Hunt, 1975), Eccles and Midgley (1989) developed the stage-environment fit theory to explain why many early adolescents experienced decreases in motivation and engagement in traditional middle school settings. Across the transition into middle school, several studies suggest that there are declines in motivation (Eccles et al., 1993) and performance (Gutman & Midgley, 2000). This decline may be due to a mismatch in the fit between early adolescents' developmental needs and the opportunities provided by the school environment (Eccles et al., 1993). There are various developmental changes in individuals' social, cognitive, and emotional needs during early adolescence (e.g., increased self-consciousness, abstract reasoning, peer comparison, and decreased academic self-efficacy). Eccles and Roeser (2009) note that these developmental changes often occur during a time of contextual changes (e.g., less personal structure and increased student-teacher ratios). Eccles and Midgley (1989) suggest that a developmentally nonresponsive environment fails to meet early adolescents' needs, resulting in negative outcomes, such as psychological and physical withdrawal from school. Hence, stage-environment fit provided a framework to explore the ecological context and to understand whether young adolescents' developmental needs are being met within the classroom context.

Social cognitive theory. Social cognitive theory is the second theoretical framework that informed the current study, particularly for academic self-efficacy (Bandura, 1986). When conceptualizing and measuring academic self-efficacy, individuals' perceptions provide an equal or better predictor of performance than ability (e.g., Pajares, 1996). Social cognitive theory has three major components: personal

factors, behavioral factors, and environmental factors. There is an ongoing interaction between these three variables, which contribute to an individual's academic self-efficacy. The interaction highlights how these variables continuously interact for an individual to appraise one's self-efficacy, an important factor in goal persistence and performance (Bandura, 1997; Pajares, 1996; Pajares & Schunk, 2001).

Transactional approach. The transactional approach is the third framework that informed the current study. The transactional approach involves the ongoing interplay between an individual and one's environment, including social support (Felner & Felner, 1989). The transactional approach is important as it demonstrates how support may increase one's self-efficacy, which in turn provides more support (e.g., positive feedback), thus maintaining or enhancing one's self-efficacy. This approach captures the need to study these relations over time due to the potential for a change in dynamics. For example, in a longitudinal study conducted by DuBois and colleagues (1992), social support and stress from Time 1 had statistically significant relations with stress levels at Time 2, highlighting the potential of carryover effects and the complex nature of these relations. The current study examined concurrent and prospective relations between classroom support, academic self-efficacy, and perceived stress across the middle school transition.

Definition of Key Terms

Classroom support. Social support is broadly defined as, "An individual's perceptions of general support or specific supportive behaviors (available or enacted upon) from people in their social network, which enhances their functioning and/or may buffer them from adverse outcomes" (Malecki & Demaray, 2002, p. 2). The current study

specifically examined social support in the form of self-reported classroom *academic and emotional support* from teachers and classmates. Academic and emotional support can be defined as perceiving others as caring about how much they learn and feeling valued (Johnson & Johnson, 1983). Research suggests perceived teacher support is the most significant contributor of the classroom context to a student's academic, personal, and interpersonal functioning across the middle school transition (Chung et al., 1998). The quality of teacher-student relationships, based on academic and emotional support, is important as it contributes to a student's sense of school belonging and success in school (Goodenow, 1993). Research suggests teacher and classmate emotional support has positive associations with various academic constructs, including motivation, engagement, and academic performance (Goodenow, 1993; Johnson & Johnson, 1983; Patrick, Ryan, & Kaplan, 2007). After the transition into middle school, students often report more anonymity in their relationships with teachers and peers compared to elementary school (Eccles et al., 1993). This reveals a potential mismatch between early adolescents' needs and the level of support they receive from teachers and peers at the middle school level.

Academic self-efficacy. *Academic self-efficacy* can be defined as a person's judgment of his or her ability to meet a certain performance level on academic tasks (Pajares & Usher, 2008). Academic self-efficacy is more domain specific compared to general self-efficacy, and focuses on school competency, which is essential for academic and overall adjustment (Bandura, 1997; Pajares & Usher, 2008). Academic self-efficacy may be particularly essential during early adolescence, as it is a time when teachers tend to emphasize performance and individuals become more abstract thinkers (Keating, 1990;

Wigfield & Karpathian, 1991). Past research has mainly focused on academic self-efficacy's positive association with achievement (Patrick et al., 2007), but recent studies suggest academic self-efficacy may serve as an important internal resource in terms of mental health and aspects of psychosocial adjustment (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999; Vieno, Santinello, Pastore, & Perkins, 2007).

Perceived stress. The current study examined *perceived stress,* which includes "Environmental circumstances or conditions that threaten, challenge, or harm the psychological or biological capacities of an individual" (Compas, 2004, p. 271). Although adolescents tend to be studied in a similar manner as adults for stress and coping, it is important to consider unique developmental and contextual differences (i.e., biological, social, and school structural changes) that occur during early adolescence (Goodyer, Park, & Herbert, 2001; Seiffge-Krenke, 2000).

Individual developmental and school structural changes occur in tandem during the transition from elementary to middle school and are associated with increased perceptions of stress (Chung et al., 1998). Through cross-cultural research, Juvonen, Le, Kaganoff, Augustine, and Louay (2004) found that American middle school students reported having significantly more mental health issues than any other middle school students in the Western countries. While other research has examined internalizing and externalizing behaviors as outcomes (Davis, 2003), the current study examined stress as an outcome, since it is an established risk factor for mental health disorders in adulthood, late childhood, and adolescence (Grant et al., 2004).

Purpose of the Current Study

The current study examined the relations among the key variables of classroom

support, academic self-efficacy, and perceived stress across the middle school transition. The study set out to examine the associations between these key variables. Another purpose of this study was to determine if there was change over time (i.e., fifth into sixth grade) in these key variables. Furthermore, the current study determined if there were differences between groups (e.g., gender and/or race, or gender x race) in the mean levels of classroom support, academic self-efficacy, and perceived stress during fifth and sixth grade. This study also aimed to extend knowledge on the role of classroom support (e.g., teacher academic and emotional support and classmate academic and emotional support), concurrently and prospectively, in relation to perceived stress among a diverse early adolescent population. Lastly, this longitudinal study determined whether academic self-efficacy serves as a moderator between classroom support and perceived stress during fifth and sixth grade, concurrently and prospectively, which may have important implications in developing early prevention mental health interventions.

Research questions. Archival data from a larger research study were analyzed at two time points across the middle school transition. The current study examined the following questions:

1. What are the associations among classroom support, academic self-efficacy, and perceived stress for early adolescents during fifth and sixth grade?
2. To what extent, if any, do students experience changes in their perceptions of their level of classroom support from teachers and classmates, academic self-efficacy, and perceived stress across the transition from elementary into middle school?

3. Are there group (i.e., gender, race, and/or gender x race) differences in the mean levels of classroom support, academic self-efficacy, and perceived stress during fifth and sixth grade?
4. To what extent, if any, does classroom support predict perceived stress during fifth and sixth grade?
5. To what extent, if any, does academic self-efficacy moderate the relationship between classroom support and perceived stress during fifth and sixth grade?

Implications of findings for school psychologists. Individuals with high levels of stress are more vulnerable to the onset of mental health issues, which in turn are related to lower academic performance, more substance use, and poorer physical health (Chassin, Ritter, Trim, & King, 2003; Torsheim & Wold, 2001). Research suggests that middle school students report more perceived stress than younger students do (Hampel, Meier, & Kummel, 2008; Seiffge-Krenke, 2000). Emotional distress is related to negative academic outcomes (Roeser, Eccles, & Stroebel, 1998). Further, most mental health symptoms emerge before the age of twenty-five (WHO, 1998), which can have negative implications during adolescence, as well as later in life, as symptoms can persist into adulthood (Knopf, Park, & Mulye, 2008). Given this, the current study may have implications in terms of what external resources (e.g., classroom support) and internal resources (e.g., academic self-efficacy) may buffer early adolescents from perceived stress, which can be detrimental to short and long-term mental and physical health (Kessler et al., 2005; Loeber & Farrington, 2000).

School psychologists should be aware of potential external and internal resources (e.g., classroom support and academic self-efficacy, respectively) to offset stress for early

adolescents while their coping strategies are still expanding, which contribute to mental health (Carbonell, Reinherz, & Beardslee, 2005; Donaldson, Prinstein, Danovsky, & Spirito, 2000). Research suggests that "…Over 20% of adolescents experience difficulties in coping" (Hayes & Morgan, 2005, p. 111). Through determining associated factors and buffers against stress, school psychologists can focus on enhancing early adolescents' learning environment by bolstering classroom support and/or promoting academic self-efficacy. It is important for school psychologists to recognize the complex, transactional nature of relations among classroom support, academic self-efficacy, and perceived stress (e.g., DuBois et al.,1992), as well as factors not accounted for in the study (e.g., parental support and genetics).

Contributions to the literature. The current study had several strengths that should be noted. One strength of the current study was its longitudinal nature, which is recommended within developmental research (Baltes & Nesselroade, 1979; Menard, 1991). The current study assessed teacher and classmate academic and emotional support, providing a multidimensional measure of social support. This study examined mean level differences in the key variables (e.g., classroom support, academic self-efficacy, and perceived stress), as well as the concurrent and prospective relations between these variables in the spring of fifth grade and the fall of sixth grade. Additionally, the current study provided insight into whether there are individual, as well as gender and race, differences. Lastly, all of the measures have well-established psychometric properties.

Limitations of the Current Study

In spite of the current study's strengths, there were several limitations. One limitation was the focus on the classroom level, which excluded the home environment (e.g., parental support), which has an important role in young adolescent's adjustment

(Demaray & Malecki, 2002b). Additionally, all of the measures were self-reported, which may result in social desirability biases. Due to the school feeder patterns across the transition into sixth grade, another issue was attrition rates. A larger sample size would have been desirable to detect relations among variables.

Significance of the Current Study

The current study examined the relations between classroom support, academic self-efficacy, and perceived stress. Previous literature focuses primarily on social support and its association with motivational constructs (e.g. engagement and achievement) and psychological outcomes (e.g., internalizing and externalizing disorders). Consequently, this study examined students' perceptions of classroom support, academic self-efficacy, and perceived stress across the middle school transition, as this is often a time when adolescents experience more stress (Chung et al., 1998). The current study utilized three interrelated frameworks, including the stage-environment fit, social cognitive theory, and transactional approach, in order to examine the relations between classroom support, academic self-efficacy, and perceived stress. It is important to understand whether academic and emotional support from teachers and classmates may be related to young adolescents' levels of perceived stress. The current study examined whether academic self-efficacy serves as an internal resource during early adolescence. Investigating these relationships may help researchers and school psychologists gain a better understanding of what is associated with lower levels of stress, which may in turn promote mental health during early adolescence.

Chapter II: Review of the Literature

This chapter reviews the developmental and school structural changes that typically occur across the middle school transition, as well as potential external and internal resources that may buffer young adolescents' experience of stress. This chapter provides an in depth discussion of social support from teachers and classmates, academic self-efficacy, and perceived stress. Additionally, there is an overview of the three major and complementary frameworks: (a) stage-environment fit, (b) social cognitive theory, and (c) the transactional approach. This chapter also features a review of literature on these three key variables and frameworks, as well as the rationale for the current study. A major goal of the current study was to examine if academic self-efficacy serves as a moderating variable between classroom support and perceived stress. Lastly, literature regarding gender and race differences for the key variables is reviewed.

Developmental and School Structural Changes during Early Adolescence

Early adolescence is a period where individuals experience many developmental and structural changes, including increasingly sophisticated cognitive skills, transformations in the nature of their social relationships, and the transition from elementary school into middle school (Donald, 2001; Eccles, 2004; Paus, 2005). Additional developmental changes include an increasing desire for autonomy, saliency of peers, and a continued need of support from teachers and adults (Brown, 2004; Deci & Ryan, 2000; Patrick et al., 2007; Ryan & Patrick, 2001; Schunk & Meece, 2006). Further, many young adolescents experience a school transition when they move from elementary into middle school.

In addition to developmental changes, young adolescents experience structural changes during the beginning of middle school (Perkins & Gelfer, 1995). Generally, social support shifts within this school context, as students reported more anonymity in both their relationships with teachers and peers (Eccles et al., 1993; Feldlaufer, Midgley, & Eccles, 1988). When adolescents transition into a middle school environment they often experience increased instability and changes in their relationships with teachers (Eccles et al., 1993; Patrick et al., 2007). Many early adolescents face disruptions in peer relationships transitioning into middle school as they navigate larger social networks (Giordano, 1995) at a time when peers are increasingly salient (Schunk & Meece, 2006). Research also suggests that peer models become more significant when transitioning into middle school (Eccles, Midgley, & Adler, 1984). Individual developmental needs and discontinuity in social relationships may elevate early adolescents' stress during this time (Chung et al., 1998). Research suggests that self-efficacy can serve as an internal resource, as an individual may feel more competent and experience less stress (Vieno et al., 2007). Consequently, academic self-efficacy may serve as an important buffer -- or protective factor for mental health -- between classroom support and perceived stress, which will be discussed in more depth in the self-efficacy as a moderator section.

Social cognitive development. One of the major developmental changes that occurs during early adolescence is cognitive development. In particular, cognition and structure of the prefrontal cortex at 10 years old begins to resemble that of older adolescents and become less similar to younger children (Paus, 2005). This has important implications as the prefrontal cortex is related to higher order processes such as "self-evaluation, long-term planning, prioritizing values, maintaining fluency, and production

of appropriate social behavior" (Donald, 2001, p. 198). During adolescence, there is an increase in deductive reasoning, which is when different possibilities are considered and then a subsequent conclusion is based on logic (Donaldson, 2001). These changes in thinking relate to how an individual perceives him/herself, and this will be further described in the academic self-efficacy section.

Social relationships. During early adolescence, peer relationships become increasingly complex and salient. Adolescents spend increasingly more time with peers, and they have a more pronounced role in their lives (Richards & Larson, 1991; Steinberg & Morris, 2001). Adolescents strive to be a part of one or more peer groups, while also developing their own identity (Brown, 1990). Early adolescents also are dealing with being within a bigger social context, as middle schools usually feature a mixture of feeder schools, which may relate to instability in friendships among this transition from elementary into middle school (Eccles, 2004). In addition, some research suggests that there is an increased expectation for intimacy in friendships during early adolescence (Bigelow & LaGaipa, 1975), during a time of potential disruption in peer networks (Hardy, Bukowski, & Sippola, 2002).

Middle school transition. The middle school transition is often referred to as a period of crossroads due to changes in structure and support. Several studies have indicated that school transitions are perceived as stressful by adolescents (Chung et al., 1998). Eccles et al. (1993) examined how the nature of this transition is associated with positive or negative adjustment and how a developmentally responsive social context may help early adolescents adapt to middle school. Eccles et al. (1993) hypothesized there is a decline in motivation during middle school due to the opportunities in the

environment not meeting the developmental needs of early adolescents (Eccles & Midgley, 1989; Eccles et al., 1993). It is important to monitor academic and psychological maladjustment, as larger declines predict academic failure and dropout (Simmons & Blyth, 1987).

Academic motivation. Early adolescents often experience negative changes in motivation when there is a mismatch between the school environment and adolescents' developmental needs. Motivation is defined as "… A process whereby goal-directed activity is instigated and sustained" (Schunk, Pintrich, & Meece, 2008, p.4). For example, research has documented declines in overall interest in school, intrinsic motivation (Harter, 1981), and academic self-efficacy (Urdan & Midgley, 2003), and these studies correspond with the middle school transition. Although research suggests that in spite of the shift towards more abstract reasoning during this age, middle schools actually place less abstract demands on students, which may explain some of this decline (Donaldson, 2000; Eccles et al., 1993).

During the transition into middle school, adolescents encounter various developmental and social changes. Overall, early adolescents may experience a decline in teacher and peer support (e.g., Eccles, 2004; Eccles et al., 1993). In terms of school structural changes, students usually have different teachers for each academic subject with various peers. This means that students spend less time with the same teacher, interact with more peers, and in turn, may perceive less academic and emotional support from teachers and peers (Eccles et al., 1993; Eccles, Lord, & Midgley, 1991). Consequently, the overall mismatch between the environment and early adolescents'

developmental needs may account for decreases in motivation and related behaviors across the middle school transition.

Teacher and Classmate Social Support

Multidimensional social support. Early adolescents have a continued need for support, especially from non-familial adult figures and students in the classroom (Midgley et al., 1989; Nicholls, 1990), despite experiencing a growing desire for autonomy (Deci & Ryan, 2000). The focus of this study was aspects of *social support* (Malecki & Demaray, 2002). A more comprehensive conceptualization of social support was included in the current study, incorporating perceptions of academic and emotional support from teachers and classmates. Research indicates social support is significant for children and adolescents' development and school adjustment (DuBois, Felner, Brand, Adan, & Evans, 1992; Eccles & Midgley, 1989; Malecki & Demaray, 2006; Rueger, Malecki, & Demaray, 2008). Students may encounter more academic and social pressure due to an increased emphasis on performance and dominance goals as they enter middle school (Cillessen & Mayeux, 2007; Eccles, 2004). Social support from teachers and classmates may become more a salient contextual factor during the transition into middle school (Brown, 2004; Eccles & Midgley, 1989). During this transition, early adolescents are typically navigating a larger social network of teachers and classmates and may perceive a less supportive environment with more anonymity with teachers and classmates (Eccles, 2004; Eccles et al., 1993; Hicks, 1997).

The current study measured early adolescents' perceptions of teacher and classmate academic and emotional support using an adaptation of The Classroom Life Instrument (Johnson & Johnson, 1983) at two time points: before and after the transition

into middle school. Academic support involves the student perceiving teachers and/or classmates as caring about how much he or she learns, as well as serving as supports to promote learning (Johnson & Johnson, 1983). Emotional support from teachers and classmates refers to the student feeling that he or she is valued and cared about (Johnson & Johnson, 1983). It is important to measure teacher and classmate support separately due to their unique contributions (e.g., Wentzel et al. 2010). Thus, the current study utilized a multidimensional approach to examine classroom social support across the transition into middle school.

Perceived versus received support. A meta-analysis found that perceived support and received support were moderately correlated, but they also vary in their conceptualization, which has implications for adolescent adjustment (Haber, Cohen, Lucas, & Baltes, 2007). Conceptually, perceived support refers to how individuals feel they are generally supported and to what extent are they satisfied with this support, whereas received support refers to individuals obtaining specific instances of support (Sarason, Sarason, & Pierce, 1990). Social cognitive theory highlights the centrality of perceptions as there is an ongoing interplay between one's interpretations of personal factors, behavioral factors, and environmental factors (e.g., teacher support), which is influential in an individual's self-efficacy (Bandura, 1997; Pajares, 1996; Pajares & Schunk, 2001). In terms of implications, there is a stronger relation between perceptions of social support with mental and physical health than with received support (Costello, Pickens, & Fenton, 2001; Haber et al., 2007). Studying adolescent mental health is essential as research suggests that the majority of long-term mental health issues arise before the age of 25 (Kessler et al., 2005; World Health Organization WHO, 1998).

Social support and implications for academic adjustment. Teacher and classmate support have a positive relation with motivation, engagement, and achievement (Davis, 2003; Goodenow, 1993; Patrick et al., 2007; Wentzel et al., 2010). Extant research suggests teacher support is consistently associated with academic success (Wentzel, 1998), while research is more ambiguous for classmate support (e.g., Wentzel et al., 2010), which will be discussed later within this subsection. It is noteworthy that few studies have simultaneously accounted for these different sources and/or types of support longitudinally across the middle school transition. For example, Ryan and Patrick (2001) conducted a longitudinal study measuring teacher support, which omitted classmate support. Contrary to past findings (Roeser, Midgley, & Urdan, 1996), teacher support did not independently predict academic self-efficacy, a significant contributor to achievement, as its relation was mediated by teachers promoting mutual respect (Ryan & Patrick, 2001). Data were collected within the middle school context rather than across the middle school transition (i.e., elementary into middle school; Ryan & Patrick, 2001). A significant relation was found between teacher support and self-regulated learning (i.e., planning and monitoring work, aspects of metacognition; Ryan & Patrick, 2001). Further, Wentzel (1998) found that teacher academic and emotional support predicted school and class-related interest. The current study measured academic and emotional teacher and classmate support across the middle school transition to determine if there were changes over time and if they related to perceived stress.

Although less common, teacher and classmate support have been simultaneously measured in a few studies (Cauce, Felner, & Primavera, 1982; Patrick et al., 2007; Wentzel, 1994; Wentzel et al., 2010). Patrick et al. (2007) examined the impact of teacher

and classmate academic and emotional support on fifth grade students' academic outcomes at one time point. However, only teacher emotional support and classmate academic support were significant predictors of engagement (i.e., self-regulation and task-related interaction) of the four types of possible classroom support. This study bolsters the rationale to consider support from multiple sources and different types of perceived support since they served as unique predictors to outcomes (Patrick et al., 2007). Notably, this study was conducted only within an elementary school context with a predominantly Caucasian population at one time point (Patrick et al, 2007). Wentzel et al. (2010) also examined teacher and classmate support, but the study only measured emotional support. This cross-sectional study of middle school students, predominantly Caucasian and African American, found that teacher emotional support uniquely predicted interest in school and social goals, while classmate support did not uniquely contribute to these variables (Wentzel et al, 2010). The current study will contribute to extant research by utilizing a longitudinal research design, incorporating teacher and classmate emotional and academic support across the transition into middle school, and including a racially diverse population.

Classmate support is important to consider due to peers' increasing influence during adolescence (Brown, 2004; Furman & Buhrmester, 1992; Levitt, Guacci-Franco, & Levitt, 1993; Weigel, Devereux, Leigh, & Ballard-Reisch, 1998). Although research is more ambiguous regarding classmate support than teacher support, positive relations have been found between classmate support and academic outcomes, as well as with behavioral outcomes (DuBois et al., 1992; Wentzel, 1994, 1997, 1998). Classmate relationships may differ from student-teacher relationships, as there is likely greater

reciprocity and equality among peers than between students and teachers (Hartup, 1989). Patrick et al. (2007) found that classmate support is positively associated with academic self-efficacy, a major variable of the current study. However, when a student fails to receive social support from another classmate, he or she may face peer rejection. Peer rejection, or being disliked by one's classmates, is associated with negative implications for academic adjustment and mental health (e.g., Dumont & Provost, 1999).

Social support and implications for mental health. Overall, studies examining perceived support from teachers and classmates have mainly focused on academic outcomes. Teacher support has been studied extensively in relation to achievement and motivation (Davis, 2003; Ryan, et al., 2007; Wentzel et al., 2010), while peer support has been studied in relation to achievement and to some extent with motivation (Fredricks, Blumenfeld, & Paris, 2004; Ryan & Patrick, 2001). Achievement and motivation are key variables to consider in a student's life to foster student success within the school context and beyond. However, mental health should also be considered since it has a positive relation with academic success (McLeod & Kaiser, 2004; Roeser & van der Wolf, 2001). In the realm of mental health, perceived stress is important because it is associated with a higher risk for the onset of internalizing and externalizing disorders (U.S. Department of Health and Services, 1999). Consequently, the current study examined mental health through measuring perceived stress, while recognizing there is a complex, transactional relation between perceived stress and mental health (Hammen & Brennan, 2001; Patton et al., 2003).

Notable exceptions of studies that measured multiple sources and types of support simultaneously through a preventative mental health framework include Wentzel (1998)

and DuBois and colleagues (1992). Wentzel (1998) conducted a one point time study during the first year of middle school. A significant finding was when early adolescents reported less emotional distress, they perceived more classmate support (i.e., an average of academic and emotional support; Wentzel, 1998). Emotional distress served as a pathway between classmate support and school interest, suggesting distress plays an important role in motivation. A strength of the study is the use of a multidimensional measurement of social support (i.e., academic and emotional support) from different sources (i.e., teachers and classmates). However, the study was conducted at one time point and the sample mainly consisted of predominantly Caucasian, middle-class students, limiting the external validity of the study. DuBois et al. (1992) conducted a longitudinal study over two years within the middle school context with a predominantly African American and Caucasian sample. DuBois et al. (1992) found that provision of school personnel support, compared to friend and parent support, was related with lower levels of stress (i.e., daily hassles and major life events) and psychological distress (i.e., an average of the anxiety, depression, and self-appraisal scores). However, this study only included the personnel support variable at Time 1 rather than at both time points. The current study expands upon this literature as it measured both teacher and classmate support longitudinally, explored academic self-efficacy as a potential moderator between perceived support and stress, and included a diverse sample that was primarily Latino and Caucasian.

It is crucial to examine perceived support from teachers, as teacher support may prevent the onset of maladaptive thought patterns during adolescence (McNeeley & Falci, 2004; Reddy, Rhodes, & Mulhall, 2003; Roeser & Eccles, 1998; Sarason, Sarason, &

Pierce, 1990; Yang & Clum, 1994). Although the direction of the relation has not been clearly established, perceived support may help buffer against negative events in one's life (Yang & Clum, 1994), and other forms of stress and anxiety (Cohen & Wills, 1985; Sarason et al., 1990). In longitudinal studies within middle school, a negative relation has been found between depressive symptoms and teacher support (Reddy et al., 2003; Roeser & Eccles, 1998). Past research has shown an association between suicidal ideation and perceived teacher support across adolescence (McNeeley & Falci, 2004; Reddy et al., 2003). McNeeley and Falci (2004) examined a nationally representative sample of seventh through twelve graders in 1995 for two data points within a year, using data from the National Study of Adolescent Health. One of the health-risk behaviors measured was suicidal attempts, a critical aspect of mental health (McNeeley & Falci, 2004). Perceived teacher support was found to be a protective factor for attempted suicides among students who did not report suicidal thoughts at Time 1. McNeely and Falci's study (2004) found perceived teacher support was only a protective factor before the onset of health-risk behaviors. The researchers noted early adolescents usually began to perceive a reduced amount of support from teachers during the middle school transition. This aligns well with the stage-environment fit theory, one of major theoretical frameworks of the current study (Eccles & Midgley, 1989; Eccles et al., 1993). McNeely and Falci (2004) suggested prevention through focusing on enhancing perceptions of teacher support among middle school students.

Classmate support should also be considered in terms of early adolescents' mental health. As previously indicated, early adolescents generally experience more anonymity with classmates in middle school at a time when peers are increasingly salient (Brown,

2004), suggesting a need to examine these relations. While much of the extant research focuses on the negative mental health implications of bullying (Rigby, 2000), the current study examined early adolescents' perceptions of classmate support and its relation to perceived stress.

Previous research suggests that there are mixed findings in terms of perceived peer support and mental health. DuBois et al. (1992) measured perceived support from friends among early adolescents within the middle school context. However, perceived friend support was not a significant, unique predictor of psychological distress (i.e., an average of anxiety, depression, and self-appraisal) after Time 1 adjustment variables were considered (DuBois, Felner, Brand, Adan, & Evans, 1992). A strength of this study is that parents, school personnel, and friends were included as sources of support. However, DuBois and colleagues' (1992) study only measured school personnel support during Time 1. Furthermore, a broader conceptualization of support was not met due to the omission of classmate support. Research suggests classmate support may supersede the importance of social support from a close friend for emotional adjustment (Demaray & Malecki, 2002a; 2002b). The study also was within the middle school context rather than across the transition into middle school, a period of increased stress for youth (Chung et al., 1998). Consequently, the current study included a more comprehensive model of sources and types of social support during both time points in the spring of elementary school and the fall of middle school.

Research suggests classmate support plays a significant role in adolescents' mental health (Rueger, Malecki, & Demaray, 2008). Lower levels of classmate social support have been shown to be significantly related to emotional problems (e.g.,

depressive symptoms feelings of worthlessness, suicidal ideation) among high school students (Garnfeski & Diekstra, 1996). Additionally, eighth and eleventh grade students who reported higher levels of classmate support had lower levels of perceived everyday stress and depressive symptoms in comparison to students who reported lower levels of classmate social support (Dumont & Provost, 1999).

The role of social support seems particularly important during the middle school transition due to the structural changes and perceived anonymity with classmates. Research suggests a decrease in classmate support can be detrimental, with higher reports of depressive symptoms and externalizing behaviors (Way, Reddy, & Rhodes, 2007). Few longitudinal studies examining social support from multiple sources in relation to mental health exist. A notable exception is DuBois et al. (2002) who measured a sample of 350 students from fifth through eighth grade at four time points. Dubois and colleagues (2002) found a significant, positive, prospective relation between classmate support and emotional adjustment a year later among a predominantly African American and Caucasian sample. However, this study was unable to detect a significant concurrent relation between social support and adjustment (DuBois et al, 2002). A longitudinal study conducted by Malecki et al. (2005) suggests classmate support serves as a positive predictor of emotional adjustment within the middle school context. Past research suggests social support remains relatively stable within the same school context (Malecki & Demaray, 2003). The current study contributes to this literature by utilizing a longitudinal research design, examining classroom support, academic self-efficacy, and perceived stress across the transition from elementary school into middle school.

More research is warranted regarding the concurrent and prospective relations among teacher and classmate support and mental health. The current study examined perceived support and stress, as well as academic self-efficacy, at both time points. Research suggests teacher support is a major predictor of academic adjustment, while classmate support is more ambiguous (Wentzel et al., 1998; 2010). Less is known about classroom support, an external resource, in association with mental health. Rueger et al. (2008) hypothesized there is variability in peer social support and adjustment outcomes due to different conceptualizations and measurements of the construct (e.g., close friend, classmate, or a combination of these supports, see DuBois et al., 1992). However, research suggests a positive role of classmate support for emotional adjustment among adolescents (e.g., DuBois et al., 2002), with the exception of clinical populations (e.g., hospitalized suicidal adolescents, see Kerr, Preuss, & King, 2006). Additionally, past research suggests that self-efficacy, an internal resource, may serve as a mediator between perceived support and stress, suggested in a one-time point study (Vieno et al., 2007). It does not appear that self-efficacy's potential role as a moderator was tested within this study. It is noteworthy that self-efficacy was measured in general in this study (Vieno et al., 2007). The current study used a more specific domain, academic self-efficacy, which is recommended over the general measurement of self-efficacy (Bandura, 1997). The current study also explored the relations between classroom support (i.e., academic and emotional support from teachers and classmates) and perceived stress during early adolescence, and the extent to which academic self-efficacy moderates the relation between classroom support and perceived stress across the middle school transition.

Classroom support and group differences. The current study examined whether classroom support varies by gender and race. No significant differences for gender or race were found for perceptions of teacher support among a sample of predominantly African American and Caucasian adolescent sample in the Midwest (Patrick & Ryan, 2001). Regarding gender differences, females may perceive higher levels of teacher support than males do (den Brok, Fisher, Rickards, & Bull, 2006; Goodenow, 1993; Rigby, 2000; Rueger et al., 2008; Way et. al., 2007; Wentzel et al., 1994, 2010). However, the longitudinal results of Way et al. (2007) found males had a small but significantly higher rating of social support than females did in the last year of middle school. Perceived support may be important for females, as research suggests adolescent females who perceived higher classmate support were associated with having less mental health concerns (i.e., somatic symptoms, anxiety, social dysfunction, and depression; Rigby, 2000; Rueger et al., 2008; Slavin & Rainer, 1990; Windle, 1992). Teacher support has been found to significantly predict academic achievement among Latino youth (Garcia-Reid, Reid, & Peterson, 2005; Plunkett, Henry, Houtlberg, Sands, & Abarca-Mortensen, 2009). However, there is some indication that Latino adolescents may perceive less social support from teachers than Caucasian students (Demaray & Malecki, 2002a). Consequently, the current study examined whether there were group differences in students' perceptions of classroom support, as well whether group differences influenced relations between classroom support and other key variables, including academic self-efficacy and perceived stress.

Summary of perceived support. The current study contributes to the field in several ways. Firstly, it conceptualizes and measures different types of support (i.e.,

academic and emotional support) from different sources (i.e., teachers and classmates), as past research has generally studied support from one type or source of support (e.g., Patrick et al., 2007). Next, the current study examines the relation between support and stress, which is less commonly found in the literature compared to support and academic outcomes. Thirdly, the current study determines whether academic self-efficacy moderated the relation between social support and stress. Recent literature suggests that self-efficacy may have a role between support and stress (Vieno et al., 2007). Lastly, by utilizing an economically and racially diverse sample population, the current study explores how gender and race may vary in their relation with teacher and classmate support, academic self-efficacy, and perceived stress at both time points (refer to group differences section).

Self-Efficacy during Early Adolescence

Motivation, in particular self-efficacy, is important to examine, as it relates to aspects of adjustment. The following section will provide an overview of self-efficacy, as well as describe positive and negative school identities. Then self-efficacy will be described within the context of social cognitive theory. Next, a specific type of self-efficacy, academic self-efficacy will be described as a concept. There will also be a discussion of factors influencing academic self-efficacy and patterns of academic self-efficacy. Lastly, early adolescents' academic self-efficacy perceptions may have implications for their academic (Multon et al., 1991) and mental health adjustment (Bandura, 1991) during the transition from elementary into middle school (i.e., fifth into sixth grade. Academic self-efficacy may help educators better understand the extent to which students lack confidence in their abilities rather than skills. Academic self-efficacy

seems to have important implications for mental health. When individuals have low self-efficacy in terms of the demands they encounter, they tend to focus on their personal deficiencies and experience more stress (e.g., Bandura, 1997), while self-efficacy may be effective in preventing the development of internalizing disorders (Bandura, 1991; Bandura et al., 1999; Muris, 2002) among adolescents. This will be further discussed in the academic self-efficacy and mental health section. The current model examines the relation between academic self-efficacy and perceived stress and to what extent, if any, academic self-efficacy serves as a moderator between classroom support and perceived stress.

Negative and positive school identities. Specific characteristics are associated with students who report high and low levels of self-efficacy. Students with low self-efficacy are often identified as having negative school identities based on poor academic records and peer relations, and lowered expectations regarding future school success (Roeser & Lau, 2002). Research has found that students who report low levels of self-efficacy are often less likely to work harder, be able to recover from failures, and reach a greater level of success compared to students who report high levels of self-efficacy (Bandura, 1997; Pintrich & Schunk, 1996). In contrast, students with high self-efficacy are often characterized as having positive school identities due to past experience of positive school performance and peer relationships, positive conceptions as students, and dedication to learning (Roeser & Lau, 2002). Research has shown that self-efficacy is a significant predictor of success even when it is partially independent from cognitive skills (Collins, 1982), and is an important aspect in terms of whether an individual approaches academic tasks.

Self-efficacy and social cognitive theory. Social cognitive theory is an overarching framework that is used to determine how self-efficacy develops and may change over time. Perceived self-efficacy -- an individual's judgment of his or her capabilities -- is a central motivational concept within social cognitive theory (Bandura, 1986). Self-efficacy is tied to an individual's cognition, which relates to beliefs about him/herself in terms of intelligence, confidence, anxiety, goals, and values (Pajares, 2003). Social cognitive theory consists of three components: personal factors (i.e., cognition, affect, and biological events), behavioral factors (i.e., persistence, engagement, and passive goals), and environmental factors (i.e., task difficulty, models, and rewards); (Pajares, 1996). Bandura (1986) deemed self-efficacy as being the most influential cognition of the personal factors because it helps people judge whether they can be successful in pursuing their goals. For example, if a task is perceived as difficult and one lacks self-efficacy, then one may experience more stress and anxiety (e.g., Bandura et al., 1999; Muris, 2002). Further, academic self-efficacy, a specific form of self-efficacy, has a direct, significant association with early adolescent's academic achievement (Multon et al., 1991; Pajares, 2006).

An important consideration is the interaction among the components in the social cognitive theory. Within this framework, Bandura (1989) described a *reciprocal interaction*, meaning that two of the components influence each other. Perceived self-efficacy can be minimized or maximized in one's environment, which is reflected in one's behaviors. When all three components interact and influence each other, this is referred to as *triadic reciprocity*. These ongoing relations between the individual and one's environment portray the transactional nature of the model (Felner & Felner, 1989;

refer to Figure 1, page 39 for a simplified visual representation of the social cognitive model).

Conceptualization of academic self-efficacy. Academic self-efficacy is a central and a unique aspect of Bandura's social cognitive theory (1987), as self-evaluation is highly influential in interpreting one's thoughts, behavior, and environment (Bandura, Adams, Hardy, & Howells, 1980). Academic self-efficacy can be defined as a person's judgment of his or her ability to meet a certain performance level on academic tasks (Pajares & Usher, 2008). Academic self-efficacy is distinct from the construct of academic competency. While academic competency is a more global measure and compares performance to others, academic self-efficacy is more specific and does not compare performance to others (Bandura, 1997; Pajares, 1996). Academic self-efficacy relates to choosing a task, persisting on it, and exerting effort (Bandura, 1997; Multon, Brown, & Lent, 1991).

Factors influencing academic self-efficacy. There are four major sources that help to inform one's academic self-efficacy, including actual experience, vicarious experience, verbal and social persuasion, and physiological arousal (Bandura, 1986). There is objective, tangible data, such as actual performance on tests, quizzes, class work, past performances to inform self-efficacy. There is also more subjective information, such as task difficulty, effort, amount of help received, credibility of those providing feedback, content of performance feedback, vicarious or observational experience, and physiological response (Schunk & Miller, 2002). Feedback, a source of verbal and social persuasion, is provided by both teachers and students, and early adolescents filter this

information to form impressions of academic and emotional support, which is an environmental factor.

Social cognitive theory (Bandura, 1986) highlights the importance of environmental factors as they relate to an individual's assessment of self-efficacy. Bandura (1997) indicates the importance of being situated within a responsive environment, because academic self-efficacy's influence can be enhanced when an individual's effort can earn a potential reward. The transactional nature of the social cognitive model indicates this ongoing relation between environmental influence (e.g., classmate and teacher academic and emotional support) and self-efficacy. For example, a student who has more opportunities in his or her environment to achieve mastery, in turn developing their self-efficacy, is more likely to attempt and persist in challenging tasks and experience positive teacher and peer feedback (Schunk & Miller, 2002).

Generally, there seems to be a positive relation between teacher and classmate support and self-efficacy. Support from teachers is related to positive academic adjustment and motivation, including self-efficacy (Anderman & Maeher, 1994; Eccles et al. 1993; Patrick et al., 2007; Roeser, Eccles, Sameroff, 2000; Rosenfeld, Richman, & Bowen, 2000; Wentzel, 1998). Positive teacher relationships are associated with positive classmate relations, which are also related to adolescent adjustment (Wentzel, 1998). Perceived peer support may be a positive predictor of self-efficacy (Rosenfeld et al., 2000; Vieno et al., 2007). However, various studies have failed to consider the unique contribution of adults (i.e., teachers) and peers to an early adolescent's development, which limits comprehensiveness (Wentzel et al., 2010), while the current study incorporated these sources of support into the same model.

Patterns in academic self-efficacy among students. Extant theory and research are mixed in terms of academic self-efficacy's patterns. While Weiner's (1985) attribution theory, as well as Covington's (1992) theory, conceptualized self-efficacy as a fairly stable characteristic, past developmental studies suggest that perceptions of self ability changes over time (Nicholls, 1990). Research indicates there is a decline in self-efficacy (Pajares & Valiante, 1999; Pajares & Valiante, 2002; Urdan & Midgley, 2003). Other studies support an increase in self-efficacy within the subjects of mathematics and language (Shell, Colvin, & Bruning, 1995; Zimmerman & Martinez-Pons, 1990). Schunk and Meece (2006) hypothesized that the differences in self-efficacy patterns arises due to differences in measurement (e.g., general versus specific self-efficacy; self-efficacy versus competency). The current study focuses on general academic self-efficacy, rather than a specific academic domain (e.g., writing or math). Given that the current study investigated general academic self-efficacy, it is hypothesized that self-efficacy will decline across the transition into middle school.

Changes during early adolescence. Early adolescents often experience an array of internal developmental changes (i.e., cognitive functioning) and structural changes (i.e., school transitions), which may relate to a decline in self-efficacy. There are several individual, internal developmental changes associated with adolescence that may impact students' self-efficacy. Early adolescents are experiencing advancements in their cognitive development, which may shape the perceptions that they hold of themselves. A major change in cognitive development is the ability to evaluate self-beliefs, as they become increasingly specific and accurate (Eccles, 1999). In elementary school, students are generally not aware of their abilities and deficiencies in different areas (Eccles, 1999).

However, as students develop cognitively while acquiring more experience, they become more able to realistically appraise their abilities (Keating, 1990). During early adolescence, there is also an increasing reliance on making social comparisons, based on abstract concepts (e.g., skills and abilities) rather than on superficial similarities and differences (e.g., gender and race; Eccles, 1999). These comparisons may make students more vulnerable to stress and depression when evaluating their self-efficacy (Bandura, 1997; Eccles, 1999; Wigfield & Karpathian, 1991).

In addition to internal developmental changes, structural changes (i.e., school transitions) may shape students' academic self-efficacy. An early adolescent typically encounters new teachers and expectations, an increase in the number of teachers, public evaluation, norm-referenced grading and new peers within the middle school context (Eccles & Midgley, 1989; Juvonen et al., 2004; Schunk, Pintrich, & Meece, 2008). There is often more of a focus on performance goals than mastery goals during middle school compared to elementary school (Eccles et al., 1993; Urdan & Midgley, 2003). For the current study, it was expected that early adolescents would report lower levels of academic self-efficacy following the transition into middle school.

A**cademic self-efficacy and academic adjustment.** Research suggests positive implications for individuals with high levels of academic self-efficacy. Academic self-efficacy is associated with effort, persistence, and goal setting, which are academic predictors, as well as its direct relation with academic performance (Bandura, 1997; Pajares, 1996; Pajares & Schunk, 2001). Research suggests that academic self-efficacy predicts actual performance to the same extent or better compared to academic competence or mental ability (Pajares, 1996; Pajares & Kranzler, 1995; Pajares & Miller,

1994). Middle school students who reported high self-efficacy used an assortment of cognitive and self-regulatory strategies (Pintrich & De Groot, 1990). Students reporting higher self-efficacy have indicated higher levels of academic performance compared to students with lower levels of self-efficacy (e.g., Bandura, 1997; Britner & Pajares, 2001; Pajares, Britner, Valiante, 2000; Schunk, 1996).

As indicated in a previous section, early adolescents face multiple internal developmental and structural school changes as they transition into middle school. Studies suggest that early adolescents experience changes that may impact their self-efficacy across this transition. For example, students may experience stricter grading practices with an emphasis on social comparison, which is associated with lower grades for many adolescents (Alspaugh,1998; Eccles & Midgley, 1989; Eccles & Roeser, 2009; Simmons & Blyth, 1987). Generally, students who experience a decline in grades will also have low self-efficacy, which is associated with anxiety and depression (Bandura, Barbanelli, Caprara, & Pastorelli, 1996; Meece, Wigfield, & Eccles, 1990; Pintrich, Roeser, & De Groot, 1994). Inversely, early adolescents with high self-efficacy are less vulnerable to depression (Bandura, 1991; Bandura et al., 1999; Muris, 2002). Across the middle school transition there is often an overall decline in motivation in terms of interest in school and an increase in test anxiety (Wigfield, Byrnes, & Eccles, 2006), which both predict failure in school and dropouts (Finn, 2006; Roeser & Eccles, 1998; Roeser, Eccles, & Strobel, 1998). Therefore, there needs to be a focus on building upon internal resources, such as academic self-efficacy. Academic self-efficacy may moderate the relation between stress and depression. However, less is known about academic self-efficacy's role between classroom support and perceived stress.

Academic self-efficacy may serve as a protective factor during early adolescence, a time when many individuals experience multiple developmental and structural changes (Eccles et al., 1993; Schunk & Miller, 2002). Research indicates self-efficacy generally declines from the elementary into the middle school years for many adolescents (e.g., Pajares & Valiante, 2002; Urdan & Midgley, 2003). Despite the potential mismatches that may occur during middle school between the student's needs and the opportunities provided within the school context, a decline in motivation is not inevitable, as self-efficacy may serve as an internal support during this transitory period (Eccles et al., 1993). Research supports the relation between academic self-efficacy and achievement during late childhood and mid-adolescence. Research suggests there is a positive, significant association between academic self-efficacy and aspiration, as well as with achievement and planning for young adolescents (Bandura et al., 2001; Locke & Latham, 1990; Wood & Locke, 1987; Zimmerman, Bandura, & Martinez-Pons, 1992). If a student feels less capable about his or her performance and this aligns with reality, it may have serious implications in decision-making for education, career, and other life choices. Given that self-efficacy plays a role in shaping students' decision-making in both personal and academic domains and that self-efficacy can be a protective factor, early interventions are critical in order to support positive trajectories.

Research suggests there is a positive relation between self-efficacy and academic adjustment (Pajares, 2006). As indicated, self-efficacy is directly associated with task persistence and achievement, but it also has been associated with behavioral and academic outcomes after accounting for instructional practices (Pajares & Schunk, 2001). In a meta-analysis of studies between 1977 and 1988, Multon et al. (1991) found a

moderate, positive relation between general academic self-efficacy and academic performance. Other studies have found a similar positive relation, in which an increase in performance was positively related to self-efficacy (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996, 2001; Stajkovic & Luthans, 1998). Pajares (2006) found a direct, moderate to large effect size for self-efficacy with academic adjustment. Thus, research indicates self-efficacy has important implications for young adolescents' performance in school.

Academic self-efficacy and mental health. The relation between academic self-efficacy and academic achievement has been examined extensively; however, an understudied relation exists between self-efficacy and mental health. Extant research supports a positive correlation between mental health and engagement (Roeser, Strobel, & Quihuisas, 2002), as well between mental health and achievement during adolescence (McLeod & Kaiser, 2004; Roeser, Eccles, & Sameroff, 1998; Roeser & van der Wolf, 2001).Theorists, such as Bandura (1997), predict that higher self-efficacy can help a student be more adaptive when facing stressors. Specifically, Bandura (1997) states, "Individuals play a proactive role in their adaptation rather than simply undergoing happenings in (the environment)...The success with which the risks of challenges of adolescence are managed depends, in no small measure, on the strength of personal efficacy" (p. 178). An empirical study found that adolescents' perceptions of academic self-efficacy had greater predictive validity of depressive symptoms than actual achievement, suggesting the powerful nature of self-perceptions over objective motivation (Bandura et al., 1999). Research indicates academic self-efficacy is negatively associated with externalizing and internalizing problems (McKnight, Huebner, & Suldo,

2002) and positively associated with adolescents' life satisfaction (Vecchio et al., 2007). Life satisfaction has a negative association with internalizing disorders, such as depression and anxiety (Gullone & Cummins, 1999). Self-efficacy's role in mental health may warrant more exploration, as an individual actively approaches various tasks and/or situations based on these self-appraisals.

The current study aimed to expand the literature through examining early adolescents' academic self-efficacy from an early mental health prevention framework across the transition into middle school. Rather on focusing on self-efficacy, most existing research on mental health focuses on coping strategies among early adolescents (e.g., Compas et al., 2001; Frydenberg, 1997; Seiffge-Krenke, 1995). The current study utilized a longitudinal design rather than the common one time point (Seiffge-Krenke, Aunola, & Nurmi, 2009). Stress may be a precursor, due to the importance between both mental health and emotional adjustment, as well as between mental health and academic adjustment. Perceptions of stress are informative within an early mental health prevention model since perceived stress has been found to be a risk factor for pathology (Grant et al., 2006; Hammen, Shih, & Brennan, 2004; U.S. Department of Health and Services, 1999).

Several studies support the relation between perceived academic self-efficacy and mental health. Stress's complex relation with other variables, including an individual's adaptation, may account for different responses to stress. Stress can actually be adaptive; however, there are differences among individuals' external and internal resources, and if and when they are exceeded, an individual may experience emotional distress and mental health issues may arise (Grant et al., 2006). Some of this variability between stress and outcomes (i.e., internalizing and externalizing disorders) maybe accounted for by internal

resources, such as self-efficacy (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; 1999; Ehrenberg et al., 1991; Muris, 2002; Vecchio, Gerbino, Pastorelli, Del Bove, & Caprara, 2007). When adolescents encounter academic tasks and have low academic self-efficacy, they are likely to report more difficulty (Schunk & Pajares, 2005), stress, depression, and anxiety (Pajares & Urdan, 2006). Much of the research on stress and self-efficacy among adolescents has been conducted in Western Europe; consequently, it is unknown how well some of the findings generalize to the United States. One time point and longitudinal studies of academic self-efficacy's relation with stress among early adolescents will be outlined. Thus, stress has been found to be a risk factor for negative psychological adjustment, such as depression; this topic will be further discussed in an upcoming section.

Findings from studies utilizing one time point designs suggest a relation between academic self-efficacy and stress. However, these studies are not longitudinal and causality cannot be determined. Also, none of the studies reviewed stress, a risk factor that may precede mental health concerns. One study found that Italian middle school students with higher academic self-efficacy had less vulnerability to depression, which in turn was associated with higher academic achievement (Bandura et al., 1996). Thus, academic self-efficacy may serve as a protective factor (Bandura et al., 1996). Muris (2002) also highlighted relations between self-efficacy and mental health among a Belgium adolescent population from economically diverse backgrounds. Muris (2001) found self-efficacy predicted depression after accounting for neuroticism and anxiety. Moreover, the study found a significant, moderate negative association between academic self-efficacy and school phobia, which suggests that students with lower academic self-

efficacy may be uncomfortable attending school. Positive features of the study include a large sample and high internal validity for academic self-efficacy. A shortcoming was that teacher support was not examined. The current study expands this literature by examining both aspects of academic and emotional support from teachers and classmates among an economically and racially diverse population in the United States.

A notable one time point study investigated the relation between academic self-efficacy and mental health among adolescents within the United States (Roeser, van der Wolf, & Strobel, 2001). Roeser and colleagues found a moderate, negative significant correlation between early adolescents who reported low academic self-efficacy and internalizing disorders. A similar pattern was also found between those who reported low academic self-efficacy and externalizing disorders. Limitations of this study include a relatively homogenous sample from a mostly mid to upper class, Caucasian background, and a one-time point research design. Due to the relation between academic self-efficacy with both achievement and mental health among early adolescents, it is important to examine this variable to further examine its relation to stress, which is a well known risk factor for mental health.

Longitudinal research also suggests a relation between different forms of efficacy and depression. Bandura et al. (1999) conducted a longitudinal study with another sample of Italian middle school students. Results indicated academic self-efficacy had a negative, moderate correlation with depression. Of interest, the study found a stronger relation between perceived academic self-efficacy and depression in concurrent and prospective analyses than between academic self-efficacy and actual academic performance. Other research has found that social self-efficacy serves as protective factor for depression

among early adolescents (Vanlede, Little, & Card, 2006). Some positive features of this study were its comprehensive data analysis, including both individual and group differences (i.e., gender, race, and/or gender x race); however, a limitation was that it omitted academic self-efficacy as a construct. In particular, the current study examined a racially diverse population by including a substantial Latino sample.

The current study examined the relation between academic self-efficacy and perceived stress among early adolescents experiencing a major school transition. During this transition into middle school, early adolescents typically face an influx of stressors including disruptions in social networks, navigating a larger school context, increases in the number of teachers, and increases in dominance goals (Cillessen & Mayeux, 2007; Eccles et al., 1993, Giordano, 1995). Research suggests self-efficacy may serve an important mediating role in terms of mental health and aspects of psychosocial adjustment (Vieno et al., 2007). This buffering role aligns with previous research on mental health, such as coping skills (Compas et al., 2001; Matheny et al., 1993). While the mediating role of self-efficacy has been explored, the moderating role was also important to examine as it aligns with the preventative approach, specifically a mental health framework within the current study (Fairchild & MacKinnon, 2009).The current study explored the extent to which academic self-efficacy serves as a moderator between perceived support and stress across the transition into middle school.

Academic self-efficacy as a moderator between classroom support and perceived stress. The current study utilized the social cognitive theory framework in order to examine the following model (see Figure 1). Existing research has established a positive relation between support (an environmental factor) and achievement (behavioral

factor; Rosenfeld et al., 2000). There is a positive relation between academic self-efficacy (a personal factor) and achievement (a behavioral factor); (Bandura, Adams, Hardy, & Howells, 1980; Britner & Pajares, 2001; Multon et al., 1991, Pajares, Britner, & Valiante, 2000). The current study included two of the three components: personal factors (i.e., academic self-efficacy and stress) and environmental factors (i.e., perceived academic and emotional support from teachers and classmates).

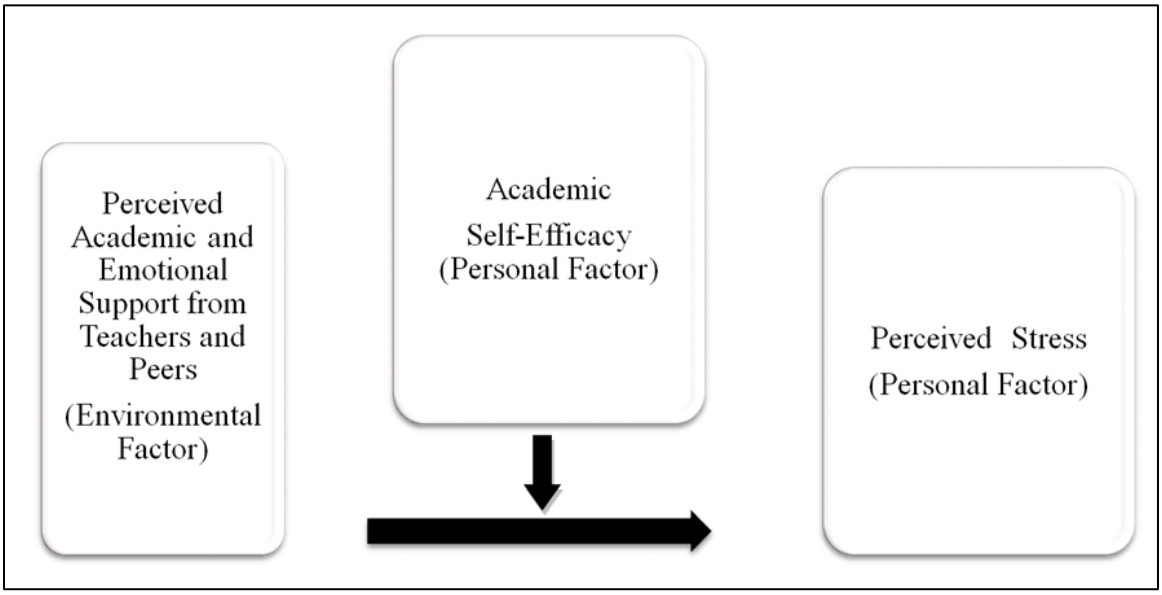

Figure 1. Current Model for Study of Classroom Support, Academic Self-Efficacy, and Perceived Stress.

Academic self-efficacy's role as a moderator between classroom support and perceived stress should be explored based on general recommendations for developmental and preventative approaches and findings from recent research. Dearing and Hamilton (2006) recommend that developmental research explore the role of moderators, as they often are found to change relations between the original two variables in terms of the size or magnitude. A moderating relation is also recommended when

using a preventative approach (Fairchild & MacKinnon, 2009), which suits the current study with perceived stress as an outcome rather than a disorder. As other studies have focused more broadly on contextual support (Vieno et al., 2007), it is important to recognize the unique influences that different sources of support may play in moderating adolescents' self-efficacy and stress.

Jex and Bliese (1999) examined young adults in the U.S. Army and found that individuals' self-efficacy regarding work moderated the relation between stress and strain. Reports of higher self-efficacy were related to less psychological strain, while lower self-efficacy was associated with more psychological strain. This study suggests that self-efficacy may play an important role as a buffer for stress. The current study extended the research by assessing academic self-efficacy and whether it played a moderating role between support and perceived stress in an educational setting. Furthermore, a direct relation between self-efficacy and stress at school has been established among different populations, including young adolescents (Compas, Slavin, Wagner, & Vannatta, 1986; Dumont & Provost, 1999; Frey & Rothlisberger, 1996; Windle, 1992), indicating a need for further study into this population's efficacy at everyday tasks, such as academic work. Moreover, the current study examined different dimensions of support (e.g., academic and emotional) and multiple sources (e.g., teachers and classmates) in relation to perceived stress, in hopes of thoroughly assessing which support variables best correlate with academic self-efficacy and perceived stress.

Academic self-efficacy and group differences. There is limited research on group differences (i.e., gender, race, and/or gender x race) for academic self-efficacy. While research suggests there are gender differences in academic self-efficacy, many of

these studies examined specific academic domains (e.g., writing, math, and science), which tend to be associated with gender stereotypes (Pajares & Usher, 2008). Female early adolescents reported less academic self-efficacy on tasks they interpreted as masculine (Meece, 1991), such as mathematics (Midgley et al., 1989; Pajares, 2005). There are also mixed results in terms of patterns of academic self-efficacy between males and females. Some research suggests that females tend to rate themselves as lower in academic self-efficacy, although objectively they can accomplish the task (Pajares & Johnson, 1996; Pajares & Miller, 1994, 1995). Bandura et al. (2001) found no gender differences in mean levels of academic self-efficacy among early adolescents in a longitudinal study.

There is limited research regarding the strength of relations between academic self-efficacy, mental health, gender, and race. One cross-sectional study found that academic self-efficacy was the most important predictor of depression for early adolescent males within a Canadian sample compared to females and different cohorts of males (Ehrenberg, Cox, & Coopman, 1991). The current study expands the research through a longitudinal study investigating perceived stress, which can precede internalizing disorders, as well as examining if there are group differences (i.e., gender, race, and/or gender x race) in perceptions of classroom support, academic self-efficacy, and perceived stress. Schunk et al. (2008) found that Caucasian students had higher self-efficacy than minority students. Research has also noted that socioeconomic status is another confounding variable (Pajares & Usher, 2008). Graham (1994) found that African American students reported higher general self-efficacy, regardless of academic performance, compared to Caucasian students. These results were similar for Latino

students compared to Caucasian classmates (Lay & Wakstein, 1985; Stevenson, Hanson, & Uttal, 1990). Based on the lack of current data regarding these group differences, the analyses that examined gender and race were exploratory.

Perceived Stress

Stress has been conceptualized in a variety of ways. There are two major conceptualizations of stress: the environmental perspective, considered to be more objective, and the transactional approach, which is regarded as more subjective (Compas, 2004). The environmental perspective focuses on an actual number of stressful events rather than cognitive appraisals, while considering extraneous variables' unique contributions (Cohen, Kessler, & Gordan, 1995). The transactional approach examines primary appraisal, meaning an individual's cognitive perceptions of whether the individual perceives an internal or external demand as difficult or detrimental (Lazarus & Folkman, 1984). Within this approach, the individual next uses secondary appraisal to determine if there are any options to address this demand (Lazarus & Folkman, 1984). Following these two forms of appraisals, an individual uses coping, "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person," in spite of how effective these attempts are (Lazarus & Folkman, 1984, p. 141). Thus, the transactional approach highlights the individual as an active agent rather than as passive receptor of stress. Based on the widespread use and acceptance of the transactional approach in extant research (Grant et al., 2003; Hess & Copeland, 2006), the current study utilizes the transactional approach to measure perceived stress among early adolescents across the middle school transition.

Adult and youth's experiences and responses to stress. While stress has been studied extensively among adults, less is known regarding stress among children and adolescents (Compas, 2004; Matheny, Aycock, & McCarthy, 1993). From an evolutionary perspective, most individuals may benefit from a small to moderate amount of stress, due to the body's physiological components response (e.g., increased heart rate) to prepare for fight-or-flight (Selye, 1993). However, exposure to stress over time that exceeds one's external and internal resources may make an individual more vulnerable to physical (Stein & Miller, 1993) and mental health concerns (Jaser et al., 2005; Thoits, 1995). When adults report high levels of stress, they also are more likely to report negative outcomes, such as depression and anxiety (Harris et al., 2000; Jaser et al., 2005). These findings also appear to generalize to youth, as higher rates of stress are related to more depressive and anxious symptoms (Goodyer et al., 2000; Grant et al., 2004; Jaser et al., 2005). Compas (2004) reports a variety of definitions and measurements of stress, as well as the lack of prospective studies, has prevented the anticipated progress of this construct among school aged children. In spite of this sentiment, research suggests the need for further study of stress among early adolescents (e.g., Grant et al., 2004), due to developmental and structural considerations for this age group.

Stress as a risk factor for youth. Extant research highlights stress playing an important role among youth, especially within the context of the United States. A meta-analysis of 60 prospective studies confirmed stress as a risk factor among children and adolescents, supporting the need to study stress prior to the onset of pathology (Grant et al., 2004). For this study a risk factor was considered perceiving high levels of stress, which extant research suggests makes individuals more vulnerable to mental health issues

compared to others not experiencing these circumstances (Kazdin et al., 1997). During late childhood and early adolescence, cognitive appraisals become increasingly important, with a positive association between cognitive appraisals of stress and vulnerability to disorders appears to emerge (Nolen-Hoeksema, Girgus, & Seligman, 1992; Turner & Cole, 1992).

Implications of stress. It is important to understand what role stress plays in terms of adolescents' short-term and long-term adjustment. Stress has been linked to various motivational and mental health constructs including, achievement, as well as internalizing and externalizing disorders. Stress can be detrimental to academic success and mental health, which in turn are related to physical health (Freudenberg & Ruglis, 2007; Knopf, Park, & Mulye, 2008). In terms of short-term implications, stress has been shown to be a barrier to academic achievement among adolescents (Alva & de Los Reyes, 1999; Cunningham, Hurley, Foney, & Hayes, 2002; McKnight, Huebner, & Suldo, 2002; Roeser, Eccles, & Sameroff, 2000). Moreover, students who perform well in school experience better mental health (Carlton et al., 2006; Muratori & Filippo, 1997). Early adolescents' stress is a risk factor for short-term and long-term mental health (i.e., internalizing and externalizing disorders); (see Grant et al., 2006; Jaser et al., 2005; U.S. Department of Health and Services, 1999). As previously indicated, one in five American youth (ages 9-17) have clinical disorders, highlighting the need to study stress before the onset of serious mental health concerns (U.S. Department of Health and Human Services, 1999). During early adolescence, the majority of mental illnesses become evident. It is estimated that one half of individuals who develop a lifetime mental disorder do so prior to the age of 14 (Kessler et al., 2005). However, multifinality

highlights the complex transactional nature of the relation between stress and mental health issues (Hinshaw, 2008), as there are many adolescents who are resilient, successfully navigating this developmental period in spite of facing various stressors.

Developmental considerations for stress. Although older children and adolescents have similar relations between stress and mental health outcomes as adults (e.g., as a risk factor for pathology), there are some notable differences. One difference is adolescents' perceptions of trauma and hassles often differ from adults. Adolescents who have experienced minor hassles often regard them as traumatic, and there is a negative association between these types of hassles and mental health (Sim, 2000). Goodyer et al. (2001) found adolescents perceive daily hassles as more traumatic than major life events for psychological outcomes, which Jindal-Snape and Miller (2008) hypothesized was due to their quantity and frequency. Much research has focused on examining significant life stressors among adolescents rather than perceived stress overall (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). It is important to explore adolescents' perceived stress, particularly when the amount of stress an individual reports exceeds his or her resources (Suldo, Shaunessy, & Hardesty, 2008). Consequently, the current study utilized a more general conceptualization and measurement of perceived stress among young adolescents.

Further, Self-Determination Theory suggests that adolescents strive for basic psychological needs, including autonomy, relatedness, and competence (Deci & Ryan, 2000). Early adolescence may be a time where individuals struggle for to meet and balance these needs for autonomy and relatedness. Consequently, early adolescents' dissatisfaction with middle school and increased vulnerability to stress may relate to

navigating a larger social environment, where they may perceive inadequate social support from teachers and classmates (e.g., less personal relationships with teachers and classmates).

Sources of stress among adolescents. Many youth face increased vulnerability while they undergo developmental and school structural changes, which is associated with negative patterns of adjustment (Eccles et al., 1993). Developmentally, early adolescents' vulnerability may be related to cognitive growth and changes in the brain, such as abstract reasoning (Spear, 2000). Although there are mixed findings, early adolescents experience an increase in perceived stress (Chung et al., 1998) and declines in motivation across the transition into middle school (Eccles et al., 1989; Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991), suggesting structural changes may be a factor. While the developmental and structural changes early adolescents encounter may appear trivial to adults, these changes may be incongruent with adolescents' developmental needs, as suggested by the stage-environment fit theory (Eccles et al., 1993). Many adolescents experience interpersonal and academic stress (Mathany et al., 1993), which contributes to the onset and continuance of reported health concerns (Torsheim & Wold, 2001). Given these developmental and school structural changes, potential classroom support within the school environment should be considered to offset perceived stress (Bronfenbrenner, 1977).

Protective factors for early adolescents. Although adolescence may be a vulnerable period, many individuals are resilient despite exposure to an assortment of stressors. Some of this variability among early adolescents' adaptation to stress is related to external and internal resources (Compas et al. 1986; DuBois et al, 2002; Frey &

Rothilberger, 1996; Wentzel, 1994, 1998). For example, as previously illustrated, the role of external resources (i.e., perceived support from teachers and classmates) is associated with better academic adjustment and mental health (DuBois et al, 2002; Wentzel, 1994, 1998). There are also internal resources that may help buffer the effects of stress, including youth's coping styles (Compas et al., 2001; Matheny, et al., 1993). Adaptive and maladaptive coping styles for dealing with stress are associated with various psychological, academic, and behavioral outcomes (Compas et al., 2001). Another internal resource is self-efficacy, which may serve as a protective factor against stress among young adolescents (Compas et al., 1986; Dumont & Provost, 1999; Frey & Rothlisberger, 1996; Windle, 1992). The current study examined academic self-efficacy in relation to a mental health risk factor, perceived stress, and determined the extent to which academic self-efficacy moderated the relation between support and perceived stress. Academic self-efficacy potentially serves as a protective factor, which in turn, might improve the likelihood of adaptive outcomes, and be associated with lower levels of perceived stress.

Perceived stress and group differences. Lastly, the current study determined whether there were group differences (i.e., gender, race, and/or gender x race) for perceived stress. Research suggests that females tend to perceive overall higher levels of stress and be more upset by life events than males (Basch & Kersch, 1986; Price et al., 1985; Wagner & Compas, 1990). Research suggests it is important to examine stress among a diverse sample, as higher stress levels may be experienced among Latino students, who may experience lower levels of social support from teachers, a factor associated with maladjustment (e.g., Demaray & Malecki, 2002a).

Group Differences

The current study investigated whether there were group differences (i.e., gender, race, and/or gender x race) among the three central variables (i.e., classroom support, academic self-efficacy, and perceived stress). Gender and race groups were examined in fifth and sixth grade in regards to their mean level differences. Research suggests that there are gender differences in males' and females' experiences in school (Wentzel et al., 1994, 2010) and their perceptions of stress (Basch & Kersch, 1986; Price et al., 1985; Wagner & Compas, 1990). The current study will also explore potential differences among races. While the study compared Caucasian and minority groups due to the sample size of each race, a majority of the minority youth are Latino. It is important to study the Latino population in relation to other races to determine if there were differences. Latinos are an expanding population within the United States (United States Census Bureau, 2001), and more than half of Latino students do not graduate high school within four years (Freudenberg & Ruglis, 2007). Analyses for gender and race for classroom support were exploratory based on the limited research.

Summary of Current Study's Aims and Hypotheses

This current study had five main aims. The first aim was to measure associations among classroom support (i.e., teacher and classmate), academic self-efficacy, and perceived stress during fifth and sixth grade. It was expected that teacher support, classmate support, and academic self-efficacy would have a significant negative association with perceived stress. The second aim was to measure change over time among early adolescents' classroom support (i.e., teacher academic and emotional support and classmate academic and emotional support), academic self-efficacy, and

perceived stress across the middle school transition. It was expected that classroom support and academic self-efficacy would decline across the middle school transition, while perceived stress would increase. The third aim was to explore whether there were differences between groups (i.e., gender and/or race, or race x gender) in the mean levels of the key variables (i.e., classroom support, academic self-efficacy, and perceived stress) among a diverse population. The fourth aim was to determine to what extent classroom support (i.e. teacher and classmate) predicted perceived stress during fifth and sixth grade, concurrently and prospectively. It was expected that teacher support would account for a substantial amount of variance in perceived stress, whereas classmate support would have a smaller but significant relation with perceived stress. The fifth aim was to explore to what extent, if any, academic self-efficacy served as a moderator between the relations of classroom support and perceived stress in fifth and sixth grade, concurrently and prospectively. It was hypothesized that students with higher self-efficacy would report lower levels of perceived stress, even if they reported low levels of teacher and classmate support. (Please refer to Figure 2 for the predicted theoretical model). The current study may provide an empirical basis to develop interventions to promote classroom support and academic self-efficacy and reduce perceived stress among early adolescents.

Researchers and school personnel need to determine what protective factors promote positive adjustment for young adolescents within the elementary and middle school contexts. Perceived teacher and classmate academic and emotional support are important factors for academic adjustment during early adolescence (Goodenow, 1993; Patrick et al., 2007; Ryan & Patrick, 2001). However, less is known about students'

perceptions of peer support than teachers (Fredricks et al., 2004; Ryan & Patrick, 2001), and few studies have examined teacher and classmate support in tandem, especially in relation to mental health (Wentzel, 1998). Interindividual or group changes should also be considered to determine which populations are more resilient or vulnerable.

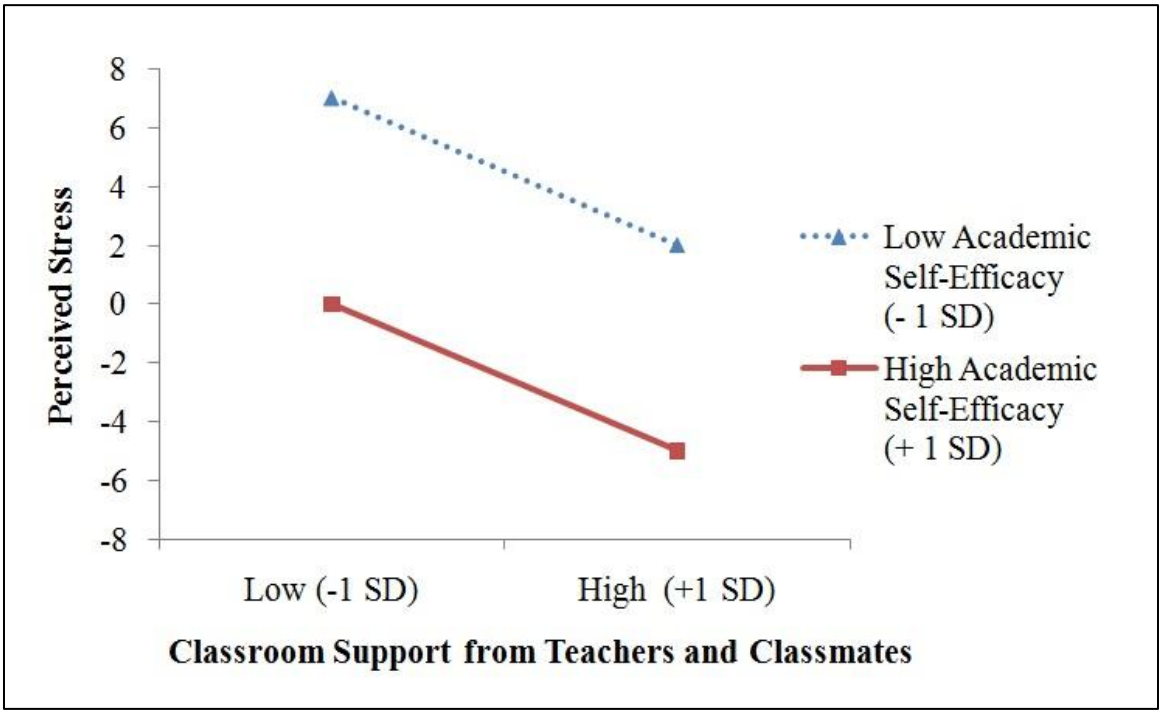

Figure 2. Predicting Perceived Stress from Classroom Support for Students with Low and High Academic Self-Efficacy.

Chapter III: Method

The current study examined the interrelations among support from teachers and classmates, academic self-efficacy, and perceived stress across the transition from elementary school into middle school. Specifically, the present study examined the associations and interrelations. Moreover, this study investigated where there is change over time from fifth into sixth. This study assessed the direct relations between teacher and classmate support and perceived stress, as well as academic self-efficacy as a potential moderator between teacher support and perceived stress and between classmate support and perceived stress. Lastly, this study also explored whether there were group differences (i.e., gender, race, and/or gender x race) for the key variables.

The current study utilized a short-term longitudinal design and was part of a larger study examining student motivation and adjustment across the transition from elementary school into middle school. This study included student self-reports from two data points: spring 2009 (fifth grade) and fall 2009 (sixth grade). Dr. Kiefer, a researcher from the Educational Psychology Program at University of South Florida, was the Primary Investigator for the larger study, which included three data points (spring 2009, fall 2009, and spring 2010). This section outlines the participants, setting, procedure, major variables, measures, as well as provides an overview of data analyses.

Participants

Data were collected as part of the University of South Florida Adolescent Motivation and Development Project, which was a one and a half year longitudinal study

examining changes in academic and social adjustment across the transition to middle school. The current researcher collaborated with the Principal Investigator on this study. The larger study's sample in the spring of 2009 consisted of 204 fifth grade students from elementary school. Approximately 34% of the sample was lost, as students attended non-participating middle schools. After accounting for these restrictions, the remaining sample consisted of 142 students (51% males, 49% females; 39% Caucasian; 61% minority youth).

Schools

The researchers used the statistics from the 2007-2008 No Child Left Behind Act Accountability Report to determine the elementary school demographics in terms of gender, socioeconomic status, and race (refer to Table 1). Three elementary schools were chosen for the study based on convenience sampling and their diverse populations. Two of the elementary schools served kindergarten through fifth grade, while School C also provided Head Start for preschool. These three elementary schools which were part of the sample had an average of 44% students on free or reduced fee lunch. In particular, School A and C were relatively similar in their percentages of students qualifying for free or reduced-fee lunch with about 30% and about 37%, respectively, which was lower than the district's level (at about 48%) and state's level (at about 46%). Elementary School B had the highest percentage of students considered as low socioeconomic status under the aforementioned criteria with about 66% qualifying. The elementary schools had an average of about 43% Caucasian, 37% Latino, 9 % African American, and 11% from other racial backgrounds (2 of the 3 schools ranged between 47% and 48% Caucasian students while the other school had about 25% Caucasian students; 2 of the 3 schools had

about 25% Latino students, while the other school had about 60% Latino students). In addition, the report listed ‘other’ as a racial category, which ranged among the three elementary schools from 8% to 13%.

The researchers used the statistics from the 2008-2009 No Child Left Behind Act Accountability Report to determine the middle school demographics in terms of gender, socioeconomic status, and race (refer to Table 2). The three middle schools which were part of the sample had an average of 32% students on free or reduced fee lunch. There was wide range of variability across the schools with School F with the lowest percent of free or reduced lunch fee (13%), with School D in the middle (30%), and School E with students with highest concentration of students from a low socioeconomic background (52%). The middle schools had an average of 56% Caucasian students, 26% Latino students, 8% African American, and 9% from other racial backgrounds. The greatest variability among the middle schools in terms of race was the Latino population, in which Schools D and F were similar with about 21% and 16%, respectively; however, School E had about 42%.

The sample was drawn from an accessible population of local schools, which indicates a convenience sampling was used. The Principal Investigator chose the school district based on its diverse population and the specific elementary and middle schools in order to follow students on a longitudinal basis. Since parental consent was required as the students were minors, there are some considerations in terms of generalizing findings from the study. Past research has found that students who obtain parental consent tend to be more popular with their peers and be more academically competent (Anderson, Cheadle, Curry, Diehr, Shultz, & Wagner, 1995). Consequently, this may have important

implications in the results' generalizability to the larger population. The researcher estimated there would be about 20% attrition based on Goodrich and St. Pierre's (1979) estimate for reasonable attrition, although this may be larger due to school feeder patterns into sixth grade and some of the schools have more students from a low-income background, which is associated with higher mobility rates (Gall, Gall, & Borg, 2007).

Table 1.Three Elementary Schools' 2007-2008 Population Demographics

Variable	School A	School B	School C
Gender			
Male	48%	50%	55%
Female	52%	50%	45%
Race			
Caucasian	58%	25%	47%
Latino	25%	57%	28%
African American	7%	10%	9%
Other	11%	8%	13%
Free or Fee Reduced Lunch	30%	37%	66%

Table 2. Three Middle Schools' 2008-2009 Population Demographics

Variable	School D	School E	School F
Gender			
Male	54%	51%	49%
Female	46%	49%	51%
Race			
Caucasian	60%	40%	69%
Latino	21%	42%	16%
African American	10%	7%	6%
Other	9%	10%	9%
Free or Fee Reduced Lunch	30%	52%	13%

Selection of middle schools was based on the feeder patterns between elementary and middle schools within the school district. The number of elementary schools varied among middle schools (3 elementary schools for Middle School D, 5 for Middle School

E, 3 for Middle School F). Reflecting these patterns, students from Elementary School A were likely to attend Middle School F, whereas students from Elementary School B feed into Middle School E. Lastly, the students from Elementary School C are likely to attend Middle Schools D and E (see Figure 3).There was a total of 456 sixth grade students from the three local middle schools. The total sample size of students who completed the survey during fifth and sixth grade was 142 students.

Participant Selection

Participants were recruited from three local elementary schools from all of the fifth grade classrooms in spring 2009, while additional participants were recruited from three local middle schools from all of the sixth grade classes in fall 2009. Students with medium to high English language proficiency were eligible to participate. This was determined largely by the schools. The Principal Investigator estimated there would be about approximately equal gender and racial distribution (Caucasian versus minority youth).

The current research study was longitudinal, examining changes across the middle school transition. Student participants who were involved in fifth and sixth grade and who had completed most items of the aforementioned scales (i.e., teacher and classmate support, academic self-efficacy, and perceived stress), with one item or less missing from each variable in the dataset, met the set criterion to be included in the current sample. There was a fourth middle school that was part of the larger dataset collected by Dr. Kiefer. This school was not included for analysis in the present dataset as it was a magnet school and not one of the major feeder schools.

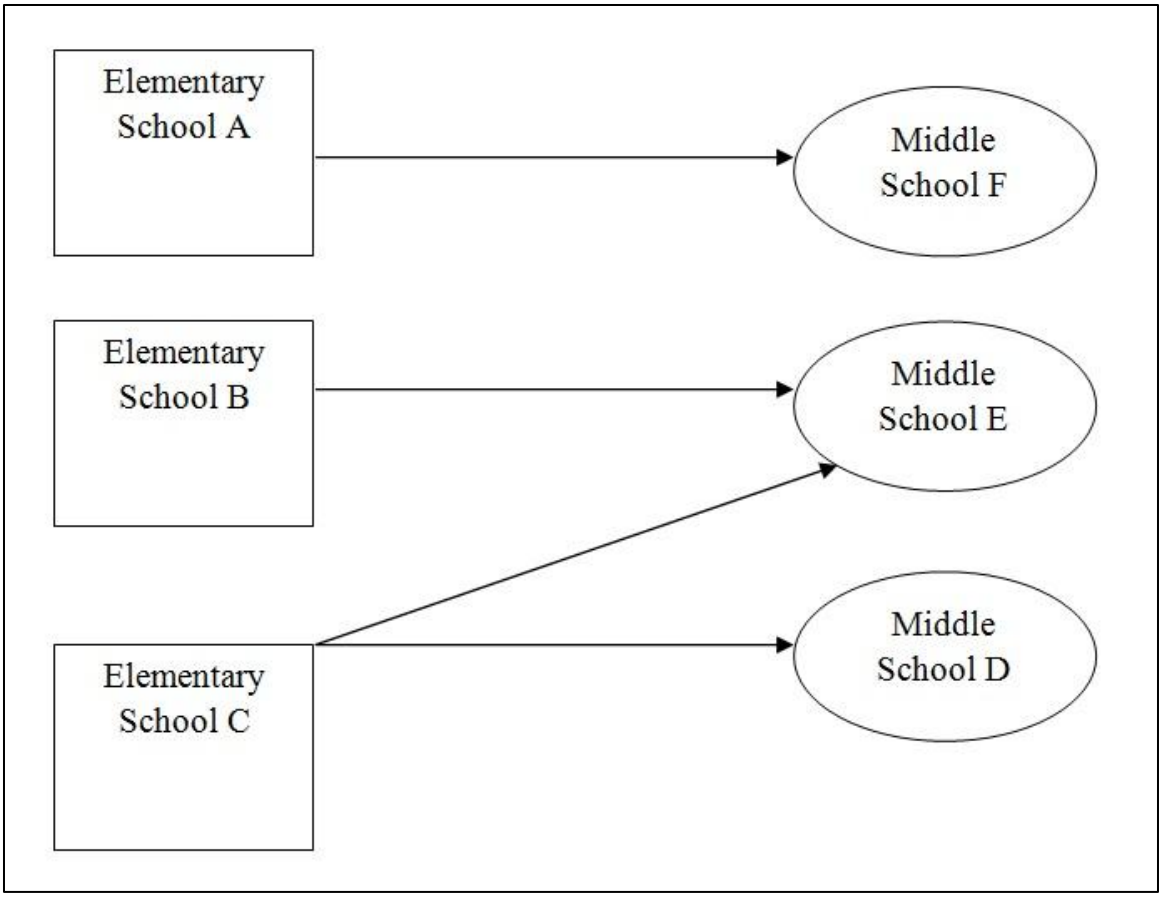

Figure 3. Typical Elementary to Middle School Transition Pattern

Table 3. Descriptive Statistics of Longitudinal Sample from Both Fifth and Sixth Grade and Attrition

Variable	*N*	%*
Gender		
Male	72	50.7%
Female	70	49.3%
Race		
Caucasian	55	38.7%
African American	9	6.3%
Latino	53	37.3%
Asian	6	4.2%
Multi-racial	19	13.4%
Total Longitudinal Sample Size	142	100.0%
Longitudinal Sample School Transition		
School A to Middle School D	1	0.7%
School A to Middle School F	51	36.6%
School B to Middle School E	52	35.9%
C to Middle School D	3	2.1%
C to School E	35	24.6%
Attrition		
Present in fifth grade but not in sixth grade	62	30.4%
Nonlongitudinal Sixth Grade		
Present in sixth grade but not in sixth grade	321	69.3%

**Note.* Percentages were rounded to the tenth place.

Attrition

Missing data were analyzed to determine if there were significant differences between the longitudinal and nonlongitudinal sample. The researcher evaluated if there were any significant differences among the key variables between the longitudinal sample and those students who were not included (i.e., participants in only fifth grade or sixth grade) in order to see if the longitudinal sample differed in the elementary school or middle school contexts through Multivariate Analysis of Variance (MANOVA). Significant differences were followed up with t-tests, using a Bonferroni correction. There were no significant differences found between the students who participated in

fifth and sixth grade and the students who only participated in fifth grade for teacher support, classmate support, academic self-efficacy, and perceived stress. The researchers also compared the remaining students to those who only participated in sixth grade and found there were no significant differences in teacher support, academic self-efficacy, or perceived stress. However, students in the longitudinal sample had significantly higher perceptions of perceived student support (M = 3.59, SD= 0.88) than students who only participated in the study in sixth grade (M = 3.40, SD= 1.00), F = (1, 424) = 5.46, $p < .05$. Students who participated in the study in only fifth or sixth grade are included in attrition analyses only and are not included in subsequent analyses.

Measures

Variables in the current study included classroom support (academic and emotional support from teachers and classmates), academic self-efficacy, and perceived stress. Each of these variables is described in the following section.

Socio-demographic variables. Gender and race were determined from the student's self-report in fifth and sixth grade (see Appendix A). For gender, students indicated whether they were a boy or a girl. For race, students selected one of the following racial categories: Asian American or Pacific Islander, Black or African American, Latino, Caucasian, Multi-racial, or Other (followed by an area to designate this information).

Teacher and classmate academic and emotional support. This scale is from the Classroom Life Instrument (Johnson & Johnson, 1983) and measures students' perceptions of academic and emotional support from both teachers and classmates (See Appendix B). The format is self-report, and it consists of 16 items, which are equally

divided among 4 subscales: teacher academic support, teacher emotional support, classmate academic support, and classmate emotional support. Each item uses a Likert type Scale which ranges from 1 (*not at all true*) to 5 (*very true*). Teacher academic support is defined as a belief that the teacher cares about and wants to optimize the student's learning experience (e.g., "In this class my teacher likes to see my work"). Teacher emotional support is defined as being cared about and liked (e.g., "In this class, the teacher tries to help me when I am sad or upset"). Classmate academic support is that a classmate cares about and wants to promote the quality of the student's learning (e.g., "In this class other students care about how much I learn"). Lastly, classmate emotional support is defined as whether the student perceives other classmates as caring about and liking him or her (e.g., "In this class other students care about me"). To determine the score for each subscale (e.g., academic teacher support, emotional teacher support, classmate academic support, and classmate emotional support), an average of the corresponding 4 items was calculated. A higher score indicated more perceived support while a lower score represented less perceived support from each source. The Classroom Life Instrument has been found to have good convergent validity with other variables, including self-efficacy (Ryan & Patrick, 2001). Furthermore, teacher emotional support is related to engagement, self-regulation, and task-related interaction (Patrick et al., 2007).

If a correlation of approximately .70 was reached between the two types of support (i.e., academic and emotional), then these two variables were combined, as they were in essence measuring a similar concept. Teacher academic and emotional support were combined into one measure of overall teacher support for both fifth and sixth grades, because they were highly correlated (*r*'s = .75 and .70, respectively). Classmate

academic and emotional support were also highly correlated in fifth and sixth grade (*r*'s = .82 and .66, respectively), and were combined into an overall measure of classmate support (see Exploratory Factor Analysis, page 73).

Academic self-efficacy. Student self-report of academic self-efficacy was evaluated through a subscale from the Motivational Scale from Patterns of Adaptive Learning Study (PALS; Midgley et al., 2000). The subscale consists of 5 items and each item ranges from 1 (*not at all true of me*) to 5 (*very true of me*). An example of an item is "I can do even the hardest work if I try" (refer to Appendix C for the scale). During exploratory factor analysis an item similar to the aforementioned one, which was "I can do almost all of the work in class if I don't give up", was deleted to reduce redundancy. This 4 item scale was administered in both fifth and sixth grade. Consequently, this item was not included in the sixth grade data collection. A Cronbach Alpha of .78 was found for academic self-efficacy within the PALS, which was based on a fifth grade sample (Midgley et al., 2000), demonstrating utility among young adolescent populations. Research suggests there is a correspondence between academic self-efficacy and orientation to task goals (e.g., Anderman & Young, 1994; Anderman & Midgley, 1997; Midgley & Urdan, 1995; Roeser et al., 1996).

Perceived stress. A shortened version of the Perceived Stress Scale (PSS) was used in the current study (Golden-Kreutz, Browne, Frierson, & Anderson, 2004). The measure was originally adapted from the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelistein, 1983). The scale measures the amount of stress the individual perceives in his or her life overall rather than being domain specific (i.e., school and home). There are 6 items that ask students about their distress during the last month rather than placing

am emphasis on daily hassles, and the Likert Scale ranges from 1 (*never*) to 5 (*very often*). An example of a question is "During the last month, how have you felt… difficulties were piling up so high that you could not overcome them?" (Please refer to Appendix D). This six-item version of the scale has found to have adequate psychometric properties. It has been used with high school students with a Cronbach alpha of .91 (Suldo, Shaunessy, & Hardesty, 2008). As Suldo et al. (2008) indicate past research has shown that there is a correspondence between clinical and non-clinical adolescents' scores on PSS and depression, anxiety, and underachievement (Martin, Kazarian, & Breiter, 1995; Schmeelk-Cone & Zimmerman, 2003).

Procedure

Student data collection. The following section describes how data were collected among fifth and sixth grade students. The current researcher is a graduate assistant for Dr. Kiefer and administered the survey on most occasions in elementary schools during spring 2009 and middle schools during fall 2009. Graduate assistants and the Principal Investigator collected data in elementary and middle schools. Prior to survey administration graduate students received training on survey administration, including how to answer student questions. Prior to data collection all students underwent IRB training and received initial training or a refresher course on survey administration. The Principal Investigator paired research assistants who administered the survey with students with less experience to ensure consistency across survey administration.

Active parental consent was obtained through sending a letter home through the student's respective school. Most students received English only forms; however, teachers provided English/Spanish forms to students who had Spanish speaking parents.

(Please refer to Appendix E for a sample of a consent form). If the student's parent/guardian consented, the student could take part in the study. There was no coercion to remain in the survey if the parent or child wanted to discontinue participation. Regardless of the parent or guardian's decision, any student who returned a consent form was eligible for a raffle prize of a movie ticket gift certificate at a local cinema.

Surveys were distributed and administered in a similar manner among fifth and sixth grade students. The only notable differences were a larger group of survey administrators during sixth grade survey administration. Fifth grade survey administration was conducted during the spring of 2009, while sixth grade survey administration occurred in the fall of 2009. Procedures remained consistent throughout the two times of data collection. Surveys were administered in classrooms or the media center, depending on availability and the preference of the school, during the period of Geography. Geography period was selected in order to ensure consistency across schools and because assistant principals indicated it was a convenient class to use for survey administration. Before administering the survey students were given an overview of the purpose of the survey, which was read to them. Students then were read a Verbal Assent Script and decided if they wanted to participate in the survey (see Appendix G). Students were informed that they could discontinue the study at any time. Prior to completing the survey, survey administrators gave an example of a typical survey item, which was part of the Administrator's Handbook, in order to familiarize students with the survey items.

Survey administration was about 45 minutes. During fifth and sixth grade survey administration, students could use a folder or a book to ensure privacy during survey administration. However, survey items should have caused minimal discomfort. Survey

administrators would alternate reading the survey out loud to the students, while the other assistant would answer any questions for the students along the way. These techniques were carried out to increase the students' comprehension of the questions. While reading the Perceived Stress Scale, survey administrators clarified that coping meant "to deal with" to address any confusion on vocabulary. After completing the survey during fifth and sixth grade, a small incentive of a mini pen/highlighter was offered to participants. The researchers visited schools an additional day to administer make-ups for students who were absent for survey administration.

Several steps were taken during survey administration to reduce threats to validity to responses. Similar training was provided to all survey administrators to ensure familiarity with procedures and measures. Furthermore, students were given a folder to help increase privacy and the anonymity of their answers was emphasized in efforts to increase the internal validity of the measures completed. No adverse events transpired that should affect the survey results.

Data integrity. Following data collection, graduate assistants reviewed and deidentified data. Then surveys were scanned into a scanning program Remark. Prior to scanning the surveys, a graduate assistant reviewed each survey to determine whether or not there were erratic patterns or if more than one answer per item was marked. If a student marked a multiple choice answer on two ends of the spectrum the answer was considered invalid and consequently was considered as missing data. However, if two answers next to each other or with only one space between them, the answer closest to the middle would be marked as the student's answer. Data were checked through a data exception feature in Remark, which a graduate assistant reviewed and corrected

accordingly, as well as an additional check through a graduate assistant review of every 10th survey in Remark, and finally through frequency and other analyses on SPSS Version 19 to ensure accuracy of data. There was also an analysis of missing data. Due to the longitudinal nature of this study, missing data were examined as a preliminary analysis to determine if there were any significant differences between the remaining participants in the longitudinal sample and those who were lost from fifth grade. The longitudinal sample was also compared to the entire sample from sixth grade as another preliminary analysis.

Missing data. In the current study, only students who participated in fifth and sixth grade were included in the Chapter IV analyses. When there was only one item missing per a scale, then an average was created for the scale. If the student was missing more than one item per scale, then the student was not included in the longitudinal sample. The researcher acknowledges some limitations of this technique, because if there is a large amount of missing data then correlations can be weakened and standard error bias can result (Bryne, 2001). In spite of these potential limitations, the researcher has reported the amount of missing data to acknowledge the potential extent of these biases.

Analysis Plan

The current study had five major aims for examining early adolescents during their transition into middle school. First, correlational analyses were utilized to determine if relations were consistent or vary among classroom support, academic self-efficacy, and perceived stress among fifth and sixth grade students for the longitudinal sample. Second, paired t-tests were conducted for fifth and sixth grade students' classroom support (i.e., teacher academic and emotional support and classmate academic and emotional support),

academic self-efficacy, and perceived stress to determine if there was change over time. Third, concurrent and prospective simultaneous multiple regression equations were conducted to determined whether classroom support predicted perceived stress. Fourth, concurrent and prospective simultaneous multiple regression equation were conducted to determine whether academic self-efficacy served as a moderator between classroom support in fifth and sixth grade, concurrently and prospectively. If a moderator was found then there was a follow-up decomposition conducted following the procedures outlined by Aiken and West (1991). In order to conduct decompositions an Excel spreadsheet with preprogrammed equations was used to determine the patterns of the moderator. The researcher entered the constant value of zero for the intercept of perceived stress (either for fifth or sixth grade), and the unstandardized coefficients of each of the centered variables and interaction terms. Centered values were used to ease with the interpretation of interactions. Lastly, Multivariate Analysis of Variance (MANOVAs) were conducted and if significant differences were found then follow up t-tests were conducted using Bonferroni to correct for multiple comparisons to determine if there were differences between groups (i.e., gender and/or race, or gender x race) in the mean levels of classroom support, academic self-efficacy, and perceived stress during fifth and sixth grade. If MANOVA results indicated significant group differences (e.g., gender, race, and/or gender x race) in the mean levels of the variables, then the researcher conducted concurrent and prospective multiple simultaneous regressions including these groups. The researcher used SPSS Version 19 to analyze all of the data from the two time points

Descriptive analyses. Analyses were conducted separately for fifth and sixth grade students from the longitudinal sample to determine the means, standard deviations, and other descriptive data (i.e., skewness and kurtosis) for the key variables.

Correlational analyses. Research Question 1: What were the associations among classroom support, academic self-efficacy, and perceived stress for early adolescents during fifth and sixth grade? To establish the associations among variables the researcher used correlation coefficients, which determined the strength and relationship direction (negative or positively sloped) at each time point. The researcher established a priori alpha criterion level of .05 to establish when the null hypothesis should be rejected.

Change over time. Research Question 2: To what extent, if any, did students perceive a change in classroom support from teachers and classmates, academic self-efficacy, and perceived stress across the transition from elementary into middle school? The researcher conducted zero order correlations to determine stability for the four major constructs (i.e., teacher and classmate support, academic self-efficacy, and perceived stress) from fifth into sixth grade. Additionally, the researcher ran paired sample t-tests to evaluate whether there was change over time in the four major constructs listed above.

Group differences. Research Question 3: To what extent are there group differences (i.e., gender, race, and/or gender x race) in the mean levels of classroom support, academic self-efficacy, and stress during fifth and sixth grade? As a preliminary analysis, elementary schools and middles schools were compared to each other to ensure there were no significant differences among the mean levels in the key variables. Then comparisons were made between genders, then between Caucasian students and minority students (e.g., Latino, multiracial, and African American), as well as for gender x race,

within the longitudinal sample for the four major constructs (i.e., teacher and student support, academic self-efficacy, and perceived stress) using a MANOVA. The researcher ensured that the assumptions had been met when conducting MANOVA: normality, equality of variances, and independence of cases (Glass & Hopkins, 1995). Significant group differences were followed up with t-tests using Bonferroni to correct for multiple comparisons. Furthermore, if significant group differences were found, these variables were included in concurrent and prospective regression analyses for research questions 3 and 4 to determine if there were significant group differences in terms of the relations between the key variables (i.e., teacher and classmate support, and perceived stress). In these analyses, the interaction of gender X race was evaluated. All analyses utilized an a priori level of .05 to be considered as statistically significant. Research Question 3 including group differences (i.e., gender, race, and/or gender x race):

Prospective regression for perceived stress (fifth grade → sixth grade).

Perceived Stress Sixth Grade = Fifth Grade Teacher Support

+ Fifth Grade Classmate Support

+ Gender

+ Race

+ Gender x Race

Concurrent regression for perceived stress fifth grade.

Perceived Stress Fifth Grade = Fifth Grade Teacher Support

+ Fifth Grade Classmate Support

+ Gender

+ Race

+ Gender x Race

Concurrent regression for perceived stress sixth grade.

Perceived Stress Sixth Grade = Sixth Grade Teacher Support

+ Sixth Grade Classmate Support

+ Gender

+ Race

+ Gender x Race

Concurrent regression for perceived stress fifth grade with gender and race (moderator research question 5).

Perceived Stress Fifth Grade = Fifth Grade Teacher Support

+ Fifth Grade Classmate Support

+ Fifth Grade Academic Self-Efficacy (ASE)

+ (Fifth Grade Teacher Support x Fifth Grade ASE)

+ (Fifth Grade Classmate Support x Fifth Grade ASE)

+ Gender

+ Race

+ Gender x Race

Concurrent regression for perceived stress sixth grade with gender and race. (moderator research question 5)

Perceived Stress Sixth Grade = Sixth Grade Teacher Support

+ Sixth Grade Classmate Support

+ Sixth Grade Academic Self-Efficacy (ASE)

+ (Sixth Grade Teacher Support x Sixth Grade ASE

+ (Sixth Grade Classmate Support x Sixth Grade ASE)

+ Gender

+ Race

+ Gender x Race

***Prospective regression for perceived stress sixth grade.* (*moderator research question 5*)**

Perceived Stress Sixth Grade = Fifth Grade Teacher Support

+ Fifth Grade Classmate Support

+ Fifth Grade Academic Self-Efficacy (ASE)

+ (Fifth Grade Teacher Support x Fifth Grade ASE)

+ (Fifth Grade Classmate Support x Fifth Grade ASE)

+ Gender

+ Race

+ Gender x Race

Concurrent and prospective regression analyses. Research Question 4: To what extent did classroom support predict perceived stress at each time point? The investigator used a concurrent, simultaneous multiple regression to examine whether teacher and classmate support was related to perceived stress in fifth and sixth grade. In

addition, the researcher used prospective regression to examine whether classroom support during fifth grade related to perceived stress during sixth grade. Concurrent and prospective regression equations are listed below:

Concurrent regression for perceived stress fifth grade.

Fifth grade Perceived Stress = Fifth grade Teacher Support

+ Fifth grade Classmate Support

Concurrent regression for perceived stress sixth grade.

Sixth grade Perceived Stress = Sixth grade Teacher Support

+ Sixth grade Classmate Support

Prospective regression for perceived Stress sixth Grade (fifth grade → sixth grade).

Sixth grade Perceived Stress = Fifth grade Teacher Support

+ Fifth grade Classmate Support

Moderator. Research Question 5: To what extent did academic self-efficacy moderate the relationship between classroom support and stress? Concurrent and prospective regressions used centered predictor variables by subtracting the group mean from each individual's score on the specific continuous variable (i.e., teacher support, classmate support, and academic self-efficacy) through a technique endorsed by Aiken and West (1991) to simplify decomposition, interpretation of interactions, and reduce multicollinearity. An a priori alpha level of .05 was established to be determined statistically significant. If a significant moderator was found, high and low groupings for each continuous variable (e.g., teacher support, classmate support, and academic self-efficacy) were formed based on one standard deviation above or below the mean. Below

are the prospective and regression equations, including potential moderators, which have parentheses around them:

Concurrent regression for perceived stress fifth grade.

Perceived Stress Fifth Grade = Fifth Grade Teacher Support

+ Fifth Grade Classmate Support

+ Fifth Grade Academic Self-Efficacy (ASE)

+ (Fifth Grade Teacher Support Fifth Grade x ASE)

+ (Fifth Grade Classmate Support x Fifth Grade ASE)

Concurrent regression for perceived stress sixth grade.

Perceived Stress Sixth Grade = Sixth Grade Teacher Support

+ Sixth Grade Classmate Support

+ Sixth Grade Academic Self-Efficacy (ASE)

+ (Sixth Grade Teacher Support x Sixth Grade ASE)

+ (Sixth Grade Classmate Support x Sixth Grade ASE)

Prospective regression for perceived stress sixth grade (fifth grade → sixth grade).

Perceived Stress Sixth Grade = Fifth Grade Teacher Academic Support

+ Fifth Grade Classmate Support

+ Fifth Grade Academic Self-Efficacy (ASE)

+ (Fifth Grade Teacher Support x Fifth Grade ASE)

+ (Fifth Grade Classmate Support x Fifth Grade ASE)

Chapter IV*:* Results

This chapter discusses the results of the current study. First, correlations among variables were conducted to examine the relations between classroom support, academic self-efficacy, and perceived stress. Second, paired t-tests results were conducted to determine if there was change over time in key variables (i.e., teacher support, classmate support, academic self-efficacy, and perceived stress) from elementary into middle school. Next, concurrent and prospective regression analyses are presented to determine if teacher and classmate support relate to perceived stress during fifth and sixth grade. Additionally, concurrent and prospective regression analyses were conducted to determine whether academic self-efficacy serves as a moderator between classroom support (i.e., teacher and classmate support) and perceived stress during elementary and middle school. Lastly, results from MANOVAs, follow-up t-tests using Bonferroni, as well as concurrent and prospective regression, are presented to determine if there were group differences (i.e., gender and race) among variables in fifth and sixth grade.

Data Screening

Data were screened through several techniques. Data were reviewed through manual checks prior to scanning, and Remark, followed by manual checks of every 10th survey entry within Remark database, and frequency checks in SPSS Version 19.0 to ensure data entry was accurate (for further information refer to data integrity, page 63. The researcher identified outliers as any student that was 3 standard deviations above or

below the group mean on any variable. No subjects were identified as outliers under this criterion. Of the 142 students who participated in fifth grade and sixth grade, 139 students were included in the concurrent fifth grade analyses and 141 students were included in the sixth grade concurrent and prospective analyses. For the fourth research question that examined academic self-efficacy as a moderator, 139 students were included in concurrent fifth grade regression and the prospective sixth grade regression analyses, and 140 students were included the concurrent sixth grade regression analyses. The sample size for each analysis was determined based on students only missing 1 item per scale.

Exploratory Factor Analysis

Three separate principal factor analyses with oblimin rotation were conducted with teacher and classmate support (16 items), academic self-efficacy (4 items), and perceived stress (6 item) measures in fifth grade for students who participated in fifth and sixth grade. In past research, sources of support (i.e., teacher and classmate) and types of support (i.e., academic and emotional) have been combined or used separately (Patrick et al., 2007; Wentzel, 1994, 1998). One reason why these two types of support have been combined is that they were highly correlated (Patrick et al., 2007; Wentzel, 1994), which suggests conceptual similarity. In the current study, as previously indicated, when correlations reached approximately .70, then measures were combined. Teacher academic and emotional support were combined due to their high correlations in fifth and sixth grade (*r*'s = .75 and .70, respectively). Moreover, classmate academic and emotional support were combined into one overall classmate support measure for both fifth and sixth grade (*r*'s = .82 and .66, respectively). An exploratory factor analysis was conducted in order to determine the number of appropriate dimensions for teacher and

classmate support. A factor was extracted when a factor's eigenvalue was greater than 1. For the teacher and classmate support measure, the analysis yielded two factors, with an eigenvalue of 8.36 and 2.17, respectively. The two factors corresponded with teacher and classmate support and accounted 52.25% and 13.57% of the variance, respectively. All factor loadings were above .66 on their primary factor. No item loaded onto another factor at greater than .22. The factor analysis was run again with varimax rotation and similar results were found, with the exception of one teacher support item had a cross-loading of .38 onto the classmate support factor. Next, an exploratory factor analysis was conducted for academic self-efficacy with four items and 63.91% of the total variance was accounted for by one factor with an eigenvalue of 2.56. Lastly, an exploratory factor analysis was conducted for perceived stress in fifth grade, and 53.78% of the total variance was accounted for by one factor, with an eigenvalue of 3.23. As far as the researcher is aware of, this is the first time that the shortened version of the Perceived Stress Scale [PSS] is being used among an early adolescent population and the exploratory factor analysis aligns with previous research of one factor (Suldo et al., 2008). Overall, the findings suggest that the factors correspond with previous factor analyses, which helps confirm the use of these scales among this fifth and sixth grade sample.

Scale Reliability

Prior to analyzing results, all scales (i.e., Classroom Life Instrument Scale, academic self-efficacy from the PALS, and Perceived Stress Scale [PSS] were assessed to determine the internal consistency of each measure. The Classroom Life Instrument's internal validity was strong, with Cronbach alphas ranging from 0.83-0.92. Please refer to

Tables 4 through 9 for the item-to-total correlations in fifth grade and sixth grade for teacher and classmate for academic, emotional, and combined academic and emotional support for each source, respectively. Please refer to Tables 10 and 11 for fifth and sixth grade item-to-total correlations for academic self-efficacy and perceived stress, respectively.

Table 4. Descriptive Statistics and Item-Total Correlation for Teacher Academic Support for Longitudinal Sample

	Fifth Grade[a]			Sixth Grade[b]		
Item	*M*	*SD*	Corrected Item-Total Correlation	*M*	*SD*	Corrected Item-Total Correlation
1….likes to see my work	4.38	0.98	0.60	4.18	0.96	0.82
2….cares about how much I learn	4.38	1.04	0.76	4.37	0.94	0.76
3….wants me to do my best in school	4.67	0.79	0.68	4.61	0.84	0.75
4….likes me to learn	4.41	1.02	0.75	4.20	1.01	0.76

Note. N has a range of 130 to 138.
[a]$\alpha = 0.85$. [b]$\alpha = 0.82$.

Table 5. Descriptive Statistics and Item-Total Correlation for Teacher Emotional Support for Longitudinal Sample

	Fifth Grade[a]			Sixth Grade[b]		
Item	*M*	*SD*	Corrected Item-Total Correlation	*M*	*SD*	Corrected Item-Total Correlation
1. …respects my opinion	4.05	1.12	0.70	4.07	1.11	0.69
2. …really understands how I feel about things	3.79	1.25	0.76	3.65	1.25	0.82
3. …tries to help me when I am sad or upset	3.97	1.26	0.79	3.81	1.28	0.66
4. …I can count on my teacher for help when I need it.	4.18	1.13	0.83	4.06	1.19	0.76

Note. *N* has a range of 130 to 140
[a]$\alpha = 0.89$. [b]$\alpha = 0.87$.

Table 6. Descriptive Statistics and Item-Total Correlation for Teacher Support (Academic and Emotional) for Longitudinal Sample

	Fifth Grade[a]			Sixth Grade[b]		
Item	*M*	*SD*	Corrected Item-Total Correlation	*M*	*SD*	Corrected Item-Total Correlation
1….likes to see my work	4.39	0.98	0.59	4.18	0.96	0.47
2. …cares about how much I learn	4.38	1.04	0.73	4.37	0.94	0.61
3. …wants me to do my best in school	4.67	0.79	0.69	4.61	0.84	0.61
4. …likes me to learn	4.40	1.02	0.80	4.20	1.01	0.77
5. …respects my opinion	4.04	1.11	0.70	4.08	1.11	0.76
6. …really understands how I feel about things	3.78	1.25	0.71	3.64	1.26	0.75
7. …tries to help me when I am sad or upset	3.95	1.27	0.82	3.84	1.28	0.66
8. …I can count on my teacher for help when I need it.	4.17	1.14	0.82	4.06	1.21	0.88

Note. *N* has a range of 130 to 137.
[a]$\alpha = 0.92$. [b]$\alpha = 0.90$.

Table 7. Descriptive Statistics and Item-Total Correlation for Classmate Academic Support for Longitudinal Sample

	Fifth Grade[a]			Sixth Grade[b]		
Item	*M*	*SD*	Corrected Item-Total Correlation	*M*	*SD*	Corrected Item-Total Correlation
1. …want me to do well in school	3.46	1.20	0.84	3.47	1.19	0.67
2. …care about how much I learn	2.85	1.38	0.83	2.99	1.30	0.72
3. …want me to come to class every day	3.46	1.28	0.84	3.82	1.33	0.47
4. …want me to be successful	3.49	1.19	0.79	3.48	1.22	0.80

Note. *N* has a range of 131 to 136.
[a]$\alpha = 0.86$. [b]$\alpha = 0.83$.

Table 8. Descriptive Statistics and Item-Total Correlation for Classmate Emotional Support for Longitudinal Sample

	Fifth Grade[a]			Sixth Grade[b]		
Item	*M*	*SD*	Corrected Item-Total Correlation	*M*	*SD*	Corrected Item-Total Correlation
1. .. are nice to me	3.85	1.09	0.70	4.10	1.00	0.58
2. …like me	3.66	1.21	0.70	3.95	1.10	0.67
3 …really care about my feelings	3.27	1.29	0.77	3.41	1.19	0.74
4. … really care about me	3.37	1.26	0.77	3.48	1.26	0.74

Note. N has a range of 133 to 139.
[a]α = 0.88. [b]α = 0.84.

Table 9. Descriptive Statistics and Item-Total Correlation for Classmate Support (Academic and Emotional) for Longitudinal Sample

	Fifth Grade[a]			Sixth Grade[b]		
Item	*M*	*SD*	Corrected Item-Total Correlation	*M*	*SD*	Corrected Item-Total Correlation
1. …want me to do well in school	3.47	1.20	0.68	3.47	1.19	0.61
2. …care about how much I learn	2.85	1.39	0.75	2.99	1.30	0.67
3. …want me to come to class every day	3.46	1.29	0.73	3.82	1.13	0.58
4. …want me to be successful	3.50	1.19	0.81	3.48	1.22	0.74
5. .. are nice to me	3.84	1.09	0.71	4.08	1.00	0.51
6. …like me	3.64	1.22	0.68	3.94	1.10	0.62
7 …really care about my feelings	3.24	1.30	0.81	3.39	1.19	0.76
8. … really care about me	3.34	1.26	0.82	3.47	1.26	0.72

Note. N has a range of 131 to 135.
[a]α = 0.93. [b]α = 0.88.

Table 10. Descriptive Statistics and Item-Total Correlation for Academic Self-Efficacy for Longitudinal Sample

	Fifth Grade[a]			Sixth Grade[b]		
Item	*M*	*SD*	Corrected Item-Total Correlation	*M*	*SD*	Corrected Item-Total Correlation
1. I'm certain I can master the skills taught in school this year.	4.11	0.76	0.60	4.14	0.94	0.66
2. I can do even the hardest schoolwork if I try.	4.08	0.95	0.62	4.04	1.10	0.74
3. Even if my schoolwork is hard, I can learn it.	4.24	0.83	0.59	4.14	1.03	0.78
4. I'm certain I can figure out even the most difficult schoolwork.	3.80	0.98	0.72	3.76	1.10	0.80

Note. *N* has a range of 141 to 142 students.
[a]$\alpha = 0.81$. [b]$\alpha = 0.88$.

Table 11. Descriptive Statistics and Item-Total Correlation for Perceived Stress Scale for Longitudinal Sample

	Fifth Grade[a]			Sixth Grade[b]		
Item	*M*	*SD*	Corrected Item-Total Correlation	*M*	*SD*	Corrected Item-Total Correlation
1. …been upset because of something that happened unexpectedly?	2.75	1.10	0.45	2.86	1.17	0.65
2. …felt that you were unable to control the important things in your life?	2.52	1.31	0.67	2.90	1.35	0.72
3. …felt nervous and "stressed"?	3.30	1.31	0.65	2.62	1.34	0.72
4. … found that you could not cope with all the things that you had to do?	2.82	1.20	0.52	3.27	1.40	0.74
5. …been angered because of things that happened that were outside of your control?	2.73	1.33	0.61	2.79	1.43	0.71
6. … felt difficulties were piling up so high that you could not overcome them?	2.64	1.40	0.68	2.45	1.23	0.76

Note. N has a range of 135 to 141.
[a]$\alpha = 0.83$.[b]$\alpha = 0.90$.

Descriptive Analyses

Descriptive statistics for the longitudinal dataset are displayed in Tables 12 and 13. To evaluate univariate normality, skewness, and kurtosis of the eight variables were calculated. For fifth grade, classmate academic support, classmate emotional support, and perceived stress were within a normal distribution of between +1 and 1. There were some exceptions to meeting normalcy under this criteria, including fifth grade teacher academic support (skewness = -2.24, kurtosis = 5.96), fifth grade teacher emotional support (skewness = -1.10, kurtosis = 0.64), fifth grade teacher support (i.e., teacher academic and emotional support; skewness = -1.60, kurtosis = 2.85), and fifth grade academic self-efficacy (skewness = -1.13, kurtosis = 1.63); (Patrick et al., 2007). During sixth grade, teacher emotional support, all three forms of classmate support, and perceived stress had normal score distributions. Although there some exceptions during sixth grade, including teacher academic support (skewness = -1.72, kurtosis = 4.18), teacher emotional support (skewness = -1.72, kurtosis = 4.18), teacher support (skewness = -1.16, kurtosis = 1.68) and academic self-efficacy (skewness = -1.26, kurtosis = 1.70). From this point forward only teacher support (i.e., academic and emotional) and classmate support (i.e., academic and emotional) values are reported based on the high correlations, which was discussed in the measures section. Although the skewness and kurtosis for fifth and sixth grade teacher support, as well as fifth and sixth grade academic self-efficacy, were slightly abnormal in terms of their distribution, these raw data were not transformed as Walker and Maddan (2008) recommend that an acceptable range is between -3.0 and +3.0. Refer to Table 14 for the means and standard deviations for the total longitudinal sample for fifth and sixth grade, as well as descriptive statistics for male and female students for

these two time points. Group differences are addressed later through MANOVAs (refer to page 86).

Table 12. Means, Standard Deviations, Ranges, Skewness, and Kurtosis of Variables for Fifth Grade Longitudinal Sample

Variable	*N*	*M*	*SD*	Range	Skewness	Kurtosis	α
Predictor							
Teacher Academic Support	141	4.47	0.79	1-5	-2.24	5.96	0.81
Teacher Emotional Support	141	4.00	1.03	1-5	-1.10	0.64	0.89
Teacher Support	141	4.23	0.85	1-5	-1.60	2.85	0.92
Classmate Academic Support	139	3.32	1.06	1-5	-0.04	-0.66	0.86
Classmate Emotional Support	141	3.55	1.04	1-5	-0.42	-0.19	0.88
Classmate Support	139	3.43	1.00	1-5	-0.17	-0.37	0.93
Academic Self-Efficacy	142	4.06	0.71	1.5-5	-1.13	1.63	0.81
Outcome							
Perceived Stress	142	2.80	0.94	1-5	0.31	-0.36	0.83

Note. Higher scores reflect increased levels of the construct indicated by the variable name.

Table 13. Means, Standard Deviations, Ranges, Skewness, and Kurtosis of Variables for Sixth Grade Longitudinal Sample

Variable	*N*	*M*	*SD*	Range	Skewness	Kurtosis	α
Predictor							
Teacher Academic Support	141	4.33	0.75	1-5	-1.72	4.18	0.82
Teacher Emotional Support	141	3.88	1.04	1-5	-0.78	-0.13	0.87
Teacher Support	141	4.10	0.83	1-5	-1.16	1.68	0.90
Classmate Academic Support	141	3.45	1.00	1-5	-0.15	-0.49	0.83
Classmate Emotional Support	141	3.72	0.95	1-5	-0.57	0.12	0.84
Classmate Support	141	3.58	0.89	1-5	-0.31	0.14	0.88
Academic Self-Efficacy	141	4.05	0.89	1-5	-1.26	1.70	0.88
Outcome							
Perceived Stress	142	2.80	1.11	1-5	0.19	-0.87	0.90

Note. Higher scores reflect increased levels of the construct indicated by the variable name.

Table 14. Means and Standard Deviations by Gender in Fifth and Sixth Grade for Longitudinal Sample

	Fifth Grade[a]			Sixth Grade[b]		
	Total	Males	Females	Total	Males	Females
Variables	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
1. Teacher Support	4.23	4.21	4.25	4.10	3.95	4.26
	(0.85)	(0.87)	(0.84)	(0.83)	(0.84)	(0.79)
2. Classmate	3.43	3.35	3.51	3.58	3.48	3.69
Support	(1.00)	(0.97)	(1.03)	(0.89)	(0.93)	(0.84)
3. Academic Self-	4.06	3.94	4.18	4.05	3.97	4.12
Efficacy	(0.71)	(0.72)	(0.68)	(0.89)	(0.94)	(0.83)
4. Perceived Stress	2.80	2.83	2.77	2.80	2.86	2.73
	(0.94)	(0.97)	(0.92)	(1.11)	(1.05)	(1.18)

Note. [a]*N* = 139; for gender, males = 71 and females = 68.
[b]*N* = 139; for gender, males = 70 and females = 69.

Correlational Analyses

Pearson product-moment correlations results are listed below for all continuous

variables in Table 15 for the longitudinal sample. Based on the high correlations between teacher academic support and emotional support in fifth and sixth grade (r = .75, p < .01 and r = .70, p < .01, respectively), these subscales were combined into one variable of teacher support. Classmate academic support and emotional support were also highly correlated in fifth and sixth grade (r = .82, p < .01 and r = .66, p < .01, respectively), and were combined into an overarching variable of student support. Two measures that were conceptually alike and reached or were close to .70 for their Pearson correlation (i.e., teacher academic and emotional support, as well as classmate academic and emotional support) were combined in the current study into an overarching variable (i.e., teacher support and classmate support, respectively; Wentzel,1998), as this Pearson value is considered to be highly reliable. In terms of the interrelations between predictor and outcome variables in the current study, teacher support was negatively correlated with perceived stress during fifth grade (r = -.14, p = .10) and sixth grade (r = -.31, p < .01), although the correlation was only moderate and significant between teacher support and perceived stress in sixth grade. Academic self-efficacy had a small, negative correlation with perceived stress in sixth grade (r = -.20, p <.05). As expected, higher levels of academic self-efficacy were related to lower levels of perceived stress. Based on the magnitude of the relations between fifth and sixth grade, teacher support had a stronger relation with perceived stress in sixth grade compared to fifth grade. Moreover, academic self-efficacy was more highly correlated with perceived stress in sixth grade than in fifth grade.

Table 15. Correlations among Classroom Support, Academic Self-Efficacy, and Perceived Stress for the Longitudinal Sample

Variables	1	2	3	4
1. Teacher Support	--	.60**	.19*	-.14+
2. Classmate Support	.35**	--	.30**	-.07
3. Academic Self-Efficacy	.30**	.10	--	-.13
4. Perceived Stress	-.31**	-.06	-.20*	--
M (SD) Fifth Grade	4.23 (0.85)	3.43 (1.00)	4.06 (0.71)	2.80 (0.94)
M (SD) Sixth Grade	4.10 (0.83)	3.58 (0.89)	4.05 (0.89)	2.80 (1.11)

Note. (N = 142) Fifth grade correlations are above the diagonal, and sixth grade correlations are below the diagonal.
$^{+}$ $p < .10$. * $p < .05$. ** $p < .01$.

Change over Time

Zero order correlations and paired t-tests were conducted in order to determine whether there is change over time during the transition from elementary into middle school (i.e., fifth into sixth grade). Zero order correlations indicated variables were moderately stable in the longitudinal sample from fifth into sixth grade (*r's* = .41 and .38) for teacher support and classmate support, respectively; for academic self-efficacy and perceived stress (*r*'s = .51 and .46). Next, paired t-tests were conducted to determine if there were statistically significant changes in the mean levels of the variables across this school transition. Contrary to the hypotheses that perceived stress and academic self-efficacy would decrease, there were no significant changes for these variables. Also contrary to the hypothesis, perceived classmate support increased. However, this change was only a nonsignificant trend from fifth grade (M = 3.42, SD = 1.00) to sixth grade (M =3.58, SD = 0.89); t = -1.78(137), $p < .10$. As expected perceived teacher support decreased over time. However, this change was only a nonsignificant trend from fifth grade (M = 4.23, SD = 0.85) to sixth grade (M = 4.10, SD = 0.83); t = 1.68(139), $p < .10$. Overall, contrary to prediction, there were no significant changes from fifth into sixth grade students for the key variables.

Group Differences

Several MANOVAs were conducted to determine if there were any significant group differences (i.e., gender, race, and/or gender x race). The researcher first examined whether there were any significant differences for the key variables (i.e., teacher support, classmate support, academic self-efficacy, and perceived stress) in fifth and sixth grade between elementary schools and between middle schools. The preliminary analysis found that were no significant differences found in fifth grade between elementary schools or in

sixth grade between middle schools through MANOVA in the mean levels of key variables (i.e., teacher and classmate support, academic self-efficacy, and perceived stress); consequently, no follow-up Bonferroni analyses were conducted. The researcher also wanted to determine if there were significant differences for males and females for the key variables at fifth and sixth grade. Gender, a dichotomous variable, was coded as 1 for females and 0 for males. There was a significant MANOVA for sixth grade students, indicating there were significant group differences ($F(3, 131) = 2.74$, $p < .05$). In a follow up t-test, there was a significant gender difference for teacher support $t(139) = -2.24$, $p < .05$, with females in sixth grade reporting higher levels ($M = 3.95$, $SD = 0.84$) than males ($M = 4.26$, $SD = 0.79$) in sixth grade. When the researcher included gender as a main effect into the concurrent fifth and sixth grade analyses in different models, with or without academic self-efficacy as a moderator, as well as in the prospective model, it was nonsignificant. Consequently, gender was not included as a main effect or an interaction term (i.e., gender x race) in any of the regression equations, as there were no significant gender differences, with the exception of teacher support in sixth grade.

When all of the different racial groups (Caucasian, Latino, Black or African American, Asian American or Pacific Islander, or Multi-racial), as well as gender x race groups, were compared at both fifth and sixth grade using MANOVA, there were no significant differences found between any of the groups for the key variables (i.e., teacher and classmate support, academic self-efficacy, and perceived stress). Race was also coded in a similar manner with 0 for Caucasian and 1 for minority youth. For gender x race, minority boys were coded as 0, 0, Caucasian boys were coded as 1, 0, minority girls were coded as 0,1, while Caucasian girls were coded as 1,1. There were no significant

differences found for Caucasian versus minority youth among the fifth grade students in any of the key variables (i.e., teacher support, classmate support, academic self-efficacy, and perceived stress).

Concurrent and Prospective Regression Analyses for Perceived Stress

Several simultaneous concurrent and prospective regressions were conducted to determine relations between perceived stress and main effects, as well as to examine moderator effects. Analyses were conducted using Aiken and West's (1991) recommendations to initially center main effects before examining potential interactions in order to avoid multicollinearity and facilitate understanding of beta coefficients. For both concurrent and prospective regressions teacher and classmate support were inputs to determine if they were related to perceived stress (Table 16). Moreover, concurrent and prospective relations examined whether academic self-efficacy served as a moderator between either source of classroom support and perceived stress (Table 17). These tables include unstandardized and standardized values. To be considered statistically significant, a beta coefficient's alpha level and critical value of .05 for *F* distribution needed to be met.

Fifth grade concurrent analysis. A concurrent regression equation was conducted, which included fifth grade teacher support and classmate support as predictors and fifth grade perceived stress as an outcome. There were no significant predictors found within this model, which was consistent with the associations between these different types of classroom support (i.e., teacher and classmate) and perceived stress.

Sixth grade concurrent analysis. For sixth grade, two separate regression equations, concurrent and prospective, were conducted. First, concurrent relations

between teacher support and perceived stress, as well as between classmate support and perceived stress were examined in the sixth grade. Teacher support significantly predicted perceived stress in sixth grade, (β = - 0.33), t (140) = -3.86, $p < .01$. Teacher support from sixth grade also accounted for a significant portion of variance for perceived stress in the sixth grade concurrent analysis, $sr^2 = .098$, $F(2, 140) = 7.72$, $p < .01$, which means teacher support accounted for about 9.80% of the variance within this model. Teacher support in sixth grade is associated with lower levels of perceived stress. The beta weight's magnitude associated with teacher support for the concurrent analysis suggests that teacher support was a stronger predictor of perceived stress than classmate support was in sixth grade.

Sixth grade prospective analysis. Second, prospective relations between teacher and classmate support from fifth grade were examined in relation to perceived stress in sixth grade. There were no significant results for the prospective regression analysis, which included teacher and classmate support in fifth grade.

Table 16. Unstandardized and Standardized Regression Coefficients for Predicting Perceived Stress from Teacher and Student Support (Fifth Grade and Sixth Grade)

				Parameter Estimates			Uniqueness Indices		
	R^2	*F*	*P*	*B*	*SE B*	β	sr^2	*t*	*p*
Fifth Grade Perceived Stress: Concurrent	0.02	1.29	0.28						
Fifth Grade Perceived Stress Intercept				2.80	0.79	-0.15	-	35.30	0.01
1. Teacher Support				-0.16	0.12	-0.15	0.14	-1.41	0.16
2. Classmate Support				0.02	0.10	0.02	0.00	0.22	0.82
Sixth Grade Perceived Stress: Concurrent	0.10	7.72	0.01**						
Sixth Grade Perceived Stress Intercept				2.80	0.090	-	-	31.10	0.01
1. Teacher Support				-0.45	0.12	-0.33	0.10	-3.87	0.01**
2. Classmate Support				0.06	0.12	0.06	0.00	0.69	0.49
Sixth Grade Perceived Stress: Prospective	0.00	0.12	0.90						
Sixth Grade Perceived Stress Intercept				2.80	0.10	-	-	29.34	0.01
1. Teacher Support				-0.02	0.14	-0.01	0.00	-0.12	0.91
2. Classmate Support				0.05	0.12	0.05	0.00	0.42	0.67

Note. **$p < .01$. ($N = 142$).

Fifth grade concurrent analysis with academic self-efficacy as a moderator. The researchers set out to explore whether teacher support, classmate support, and/or academic self-efficacy, were associated with perceived stress as an outcome for students transitioning from elementary into middle school (i.e., fifth into sixth grade; see Table 17). It was expected that when students perceive higher levels of classroom support (i.e., teacher and classmate) they would report less perceived stress; however, a more complex relation emerged, which will be discussed below. As indicated in the previous models, the main effects were initially tested in alignment with Tabachnick and Fidell's (2007) recommendations.

Academic self-efficacy was tested as a moderator between teacher support and perceived stress, as well as between classmate support and perceived stress during fifth grade. A series of multiple simultaneous regressions included several interaction terms (i.e., teacher support x academic self-efficacy, as well as classmate support x academic self-efficacy), were conducted at in fifth and sixth grade. High and low groupings were determined based on being one standard above or below the mean of each continuous, predictor variable (i.e., teacher support, classmate support, and academic self-efficacy). Academic self-efficacy was found to have two significant interaction terms, with teacher support and classmate support, respectively, in relation to perceived stress. When academic self-efficacy, along with the interactions terms, was included in the concurrent fifth grade model, teacher support x academic self-efficacy had a significant, negative interaction when predicting perceived stress, $\beta = .47$, $t(138) = 3.48$, $p < .01$. Teacher support x academic self-efficacy explained a significant proportion of variance in perceived stress, $sr^2 = .0835$, $F(5, 138) = 3.31$, $p < .01$, accounting for 8.35% of the

variance. For all of the predictor variables and interactions, the variables were first centered in accordance with Aiken and West's (1991) recommendations. For the first decomposition the standardized coefficients of the centered variables of teacher support, academic self-efficacy, teacher support x academic self-efficacy, and zero as a constant for the intercept of perceived stress were included within the preprogrammed Excel sheet. Within this model, the interaction of classmate support x academic self-efficacy was a significant predictor of perceived stress, $\beta = -.038$, $t(138) = -2.83$, $p < .01$. This interaction of classmate support x academic self-efficacy explained a significant proportion of variance for perceived stress in fifth grade, $sr^2 = .0566$, $F(5,138) = 3.31$, $p < .01$, accounting for 5.66% of the variance. For this second decomposition the standardized coefficients of the centered variables of classmate support, academic self-efficacy, and the interaction of classmate support x academic self-efficacy were included from each respective time point, in addition to zero as a constant for perceived stress within the preprogrammed Excel sheet. Teacher support was a stronger predictor of perceived stress ($\beta = -0.10$, $t(138) = -.0.944$, $p = NS$) than classmate support ($\beta = 0.05$, $t(138) = .429$, $p = NS$) was within the fifth grade model; however, neither of these types of classroom support (i.e., teacher or classmate support) had significant main effects within this model. Initially, predicted values for main effects and interaction terms within the standardized regression were centered. To determine significant interactions, predicted values were computed with unstandardized regression coefficients once variables had been centered (i.e., the mean was subtracted from each individual score of each construct) and simple slope tests were run. Graphs based on the predicted value of the outcome measure, perceived stress, were created that were one standard deviation

above and below the mean of the designated variable (i.e., teacher support, classmate support, and academic self-efficacy).

For concurrent fifth grade, academic self-efficacy efficacy served as moderator between teacher support and perceived stress, as well as between classmate support and perceived stress. The first significant interaction was teacher support x academic self-efficacy for perceived stress in fifth grade. Specifically, there was a positive association between teacher support and perceived stress for fifth grade students with high academic self-efficacy, while there was a negative association between teacher support and perceived stress for students with low academic self-efficacy (see Figure 4). High levels of perceived teacher support were associated with low levels of perceived stress, with students reporting low levels of academic self-efficacy reporting more stress. Students with high levels of perceived teacher support were associated with higher perceived stress. The second interaction was classmate support x academic self-efficacy for perceived stress. There was a negative association between classmate support and perceived stress for fifth grade students with high academic self-efficacy, while there was a positive association between classmate support and perceived stress for fifth grade students with low academic self-efficacy (see Figure 5). Thus, fifth grade students with high academic self-efficacy experienced less stress when they reported high levels of classmate support, while fifth grade students with low academic self-efficacy reported high levels of perceived stress when they perceived high levels of classmate support. Teacher support x academic self-efficacy was the stronger predictor of perceived stress (β = 0.544) compared to classmate support x academic self-efficacy (β = -0.442). These

findings suggest that teacher support and classmate support have different influences on perceived stress for students with low versus high levels of academic self-efficacy.

Sixth grade concurrent analysis with academic self-efficacy as a moderator. For the simultaneous concurrent sixth grade regression, there was a significant change. As in the earlier sixth grade concurrent model, there was a main effect for teacher support in relation to perceived stress, $\beta = -0.10$, $t(139) = 3.66$, $p < .01$). Teacher support explained a significant proportion of variance in perceived stress ($sr^2 = .001$, F (5, 139) = 3.31, $p < .01$, accounting for 1% of variance. However, unlike in fifth grade, academic self-efficacy did not serve as a significant moderator between reported classroom support (i.e., teacher or classmate support) and perceived stress in sixth grade. As this model did not find additional significant findings beyond the main effect of teacher support on perceived stress, the sixth grade concurrent analysis for research question three is the best model found to account for variance within this study.

Sixth grade prospective analysis with academic self-efficacy as a moderator. For the sixth grade prospective regression, several significant main effects and interactions were found. When fifth grade academic self-efficacy, along with the interaction variables (i.e., fifth grade teacher support x fifth grade academic self-efficacy and fifth grade classmate support x fifth grade academic self-efficacy) were entered into a regression equation with perceived stress in sixth grade as the outcome, the interaction terms from fifth grade (i.e., teacher support x academic self-efficacy and classmate support x academic self-efficacy) still had significant as carryover effects into sixth grade. There was a significant interaction term of teacher support x academic self-efficacy $\beta = .30$, $t(138) = 2.12$, $p < .05$). Teacher support x academic self-efficacy

accounted for a proportion of variance for perceived stress (sr^2 = .0324, F (5, 138) = 1.37, p = *NS*. Consequently, there was a positive association between teacher support x academic self-efficacy and perceived stress, accounting for 3.24% of the variance, which was less than it was during fifth grade, when it accounted for 8.35% of the variance. There was a nonsignificant trend of a negative association between classmate support x academic self-efficacy and perceived stress (β = -.24, t(138) =1.75, p <.10. For the total model, the F's alpha value was not significant and no trend was present. Consequently, the overall prospective relation for the moderator was not deemed significant in the prospective relation and no decomposition of the interaction was necessary.

Table 17. Unstandardized and Standardized Regression Coefficients for Perceived Stress from Teacher and Student Support, Academic Self- Efficacy, and Interactions (Fifth and Sixth Grade)

				Parameter Estimates			Uniqueness Indices		
	R^2	*F*	*p*	*B*	*SE B*	B	sr^2	*t*	*p*
Fifth Grade Perceived Stress: Concurrent	0.11	3.31	.01**						
Fifth Grade Perceived Stress Intercept				2.83	.08	-	-	35.63	0.01**
1. Teacher Support				-0.11	0.11	-0.10	0.01	-0.94	0.35
2. Classmate Support				0.04	0.11	0.05	0.00	0.43	0.67
3. Academic Self-Efficacy				-0.13	0.12	-0.10	0.01	-1.09	0.28
4. Academic Self-Efficacy x Teacher Support				0.54	0.16	0.47	0.08	3.48	0.01**
5. Academic Self-Efficacy x Classmate Support				-0.44	0.16	-0.38	0.05	-2.83	0.01*
Sixth Grade Perceived Stress: Concurrent	0.12	3.66	.01**						
Sixth Grade Perceived Stress Intercept				2.77	0.09	-	-	30.12	0.01
1. Teacher Support				-0.42	0.13	-0.31	0.07	-3.31	0.01**
2. Classmate Support				0.06	0.11	0.05	0.00	0.53	0.60
3. Academic Self-Efficacy				-0.14	0.11	-0.12	0.01	-1.25	0.21
4. Academic Self-Efficacy x Teacher Support				0.01	0.10	.010	0.00	0.10	0.92
5. Academic Self-Efficacy x Classmate Support				0.12	0.13	0.08	0.01	0.87	0.38
Sixth Grade Perceived Stress: Prospective	.05	1.37	.24						
Sixth Grade Perceived Stress Intercept				2.83	0.10	-	-	28.83	0.00
1. Teacher Support				0.03	0.140	0.02	0.00	0.20	0.85
2. Classmate Support				0.09	0.122	0.08	0.00	0.71	0.48
3. Academic Self-Efficacy				-0.19	0.14	-0.12	0.01	-1.36	0.18
4. Academic Self-Efficacy x Teacher Support				0.41	0.19	0.30	0.03	2.12	0.04*
5. Academic Self-Efficacy x Classmate Support				-0.34	0.19	-0.24	0.02	-1.75	0.08+

Note. $^{+}$ $p < .10$. *$p < .05$. **$p < .01$. ($N = 142$).

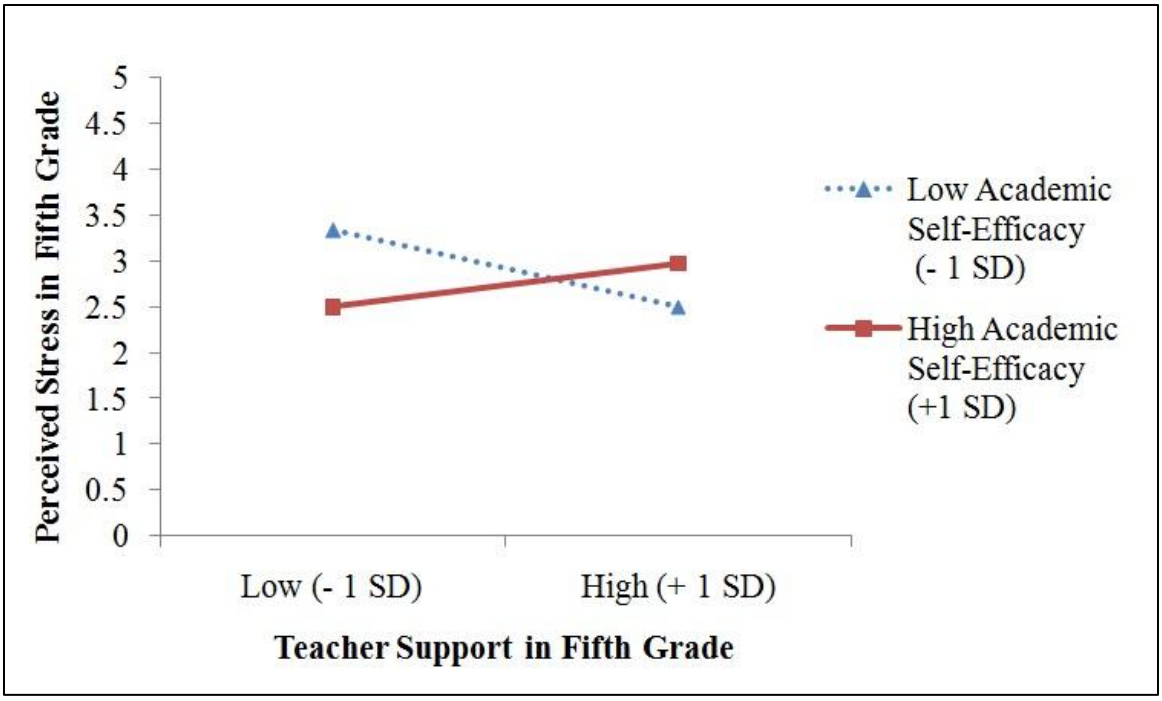

Figure 4. Predicting Perceived Stress from Teacher Support for Students with Low and High Academic Self-Efficacy (Fifth Grade).

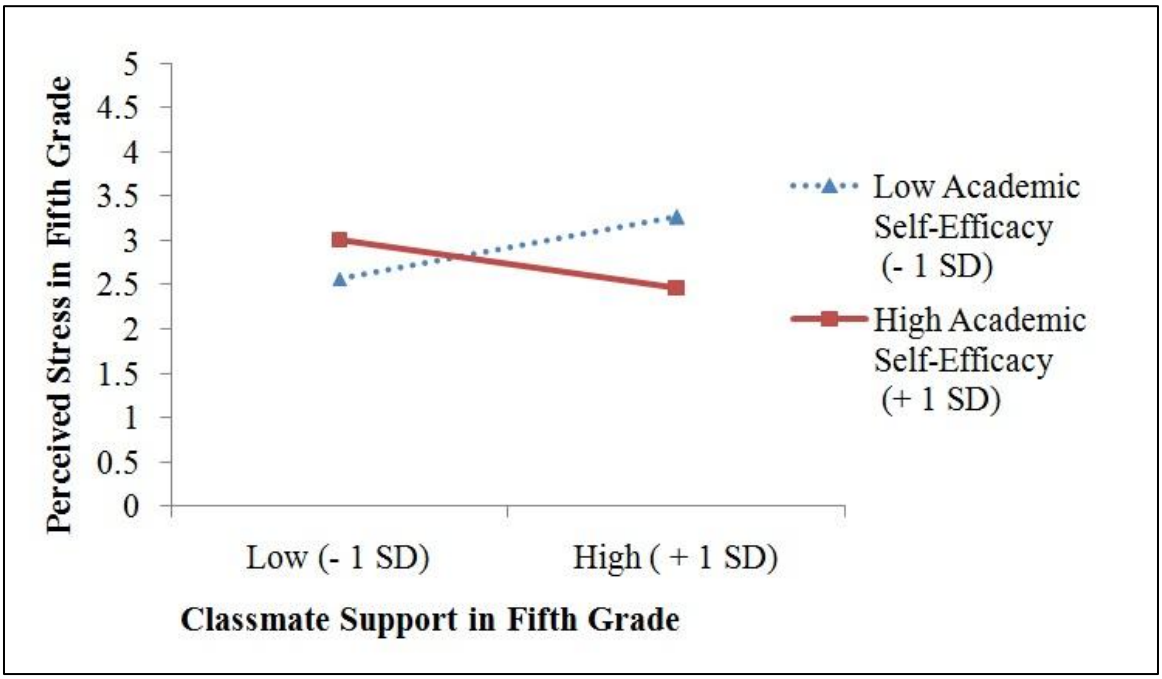

Figure 5. Predicting Perceived Stress from Classmate Support from Students with Low and High Academic Self-Efficacy (Fifth Grade).

Summary of Results

This chapter presented the results of classroom support, academic self-efficacy, and perceived stress, as well as interrelations between these key variables over time (i.e., from fifth into sixth grade). Based on the high correlations between academic and emotional support for teacher and classmate, respectively, each type of support was combined for each source of support (i.e., teacher support and classmate support). As expected, academic self-efficacy had a significant negative correlation with perceived stress, although this association was stronger in sixth grade. Teacher support had a significant negative association with perceived stress in sixth grade. There were no statistically significant changes across this transition for the key variables (i.e., teacher support, classmate support, academic self-efficacy, and perceived stress). As predicted, there was a decline in teacher support across the transition; however, this was an insignificant trend. Contrary to predictions, classmate support increased across the transition, although this was an insignificant trend. Also contrary to predictions, there were no significant group differences with the exception of females in sixth grade reporting significantly higher levels of teacher support than males in sixth grade. Gender did not have a main effect or serve as an interaction term for any of the sixth grade regression analyses.

There were some significant main effects and a moderating relation found within the concurrent regression analyses. During sixth grade, teacher support was associated with lower levels of stress, as predicted. Also as hypothesized, academic self-efficacy served as a moderator between perceived teacher support and stress, as well as between perceived classmate support and stress; however, this interaction was present only in fifth

grade and did not align with the anticipated theoretical model (Figure 2). Lastly, regression main effects and moderating effects were examined. Teacher support had a significant negative main effect with perceived stress among sixth grade students. Classroom support had a more complex relation than anticipated, as results indicated that the amount of stress varied by levels of academic self-efficacy and the source of support (i.e., teacher or classmate) in fifth grade. Fifth grade students with high levels of academic self-efficacy reported less perceived stress when they reported more support from classmates. However, there was the inverse relation with teacher support, with fifth grade students who reported high academic self-efficacy experiencing higher levels of stress when they perceived more support from teachers. Fifth grade students with low academic self-efficacy reported more perceived stress when they reported more support from classmates. However, when students with low academic self-efficacy perceived less stress they reported more support from teachers. Overall, results suggest teacher and classmate support serve different roles in how academic self-efficacy moderates the relations between support and perceived stress among the fifth grade.

Chapter V: Discussion

The current study explored the relations between classroom support, academic self-efficacy, and perceived stress among students transitioning from elementary into middle school (i.e., fifth into sixth grade). This chapter features the key findings and its implications for school psychology. This chapter provides a summary of the present study and addresses contributions the study makes to the literature, limitations, and recommendations for future research.

The purpose of the current study was to explore a component of mental health among early adolescents during the transition from fifth into sixth grade. The study had five main aims. The first aim was to determine the associations among the key variables (i.e., teacher support, classmate support, academic self-efficacy, and perceived stress) during fifth and sixth grade. The second aim was to analyze whether there was change over time in these variables from fifth into sixth grade. The third aim was to establish whether there were group differences (i.e., gender, race, and/or gender x race) for the key variables among a diverse sample population. The fourth aim was to examine whether teacher and classmate support predicted perceived stress in fifth and sixth grade, concurrently and prospectively. The fifth aim was to determine whether academic self-efficacy served as a moderator between classroom support (i.e., teacher and classmate support) and perceived stress.

Early adolescence can be a time of change when youth may experience an increase in stress across the transition from elementary into middle school (Chung et al., 1998), as students' developmental needs often do not align with the opportunities provided by their middle school (e.g., teacher and classmate support); (Eccles & Midgley, 1989). This developmental mismatch often results in declines in motivation, engagement, and achievement (Eccles et al., 1993). Overall, past research has focused on these academic declines, and the relations among teacher support, student support, academic self-efficacy, and academic outcomes (e.g., Bandura et al., 2001; Patrick et al., 2007). One facet of adolescent adjustment that has been overlooked is mental health. Mental health is related to academic performance, as well as physical health (Torsheim & Wold, 2001). The current study examined an understudied component of mental health, perceived stress, a risk factor for internal and external disorders, as the outcome measure (Grant et al., 2003; Kazdin et al., 1997).

There is a need to identify external and internal resources that may decrease stress as early adolescents navigate change, especially as there is high onset of lifelong mental health disorders during early adolescence (WHO, 1998). External and internal resources (i.e., classroom support and self-efficacy, respectively) have not been examined in relation to aspects of adolescent mental health in a comprehensive manner. For external support, two sources and two types of classroom support (i.e., teacher academic and emotional support, as well as classmate academic and emotional support) were examined in tandem. Teacher support was examined as it has been found to be the most significant contributor to students' academic and emotional adjustment across the middle school transition (Barber & Olson, 2004). Student support has also been examined, which has

had inconsistent findings in the past with mental health (DuBois et al., 2002; Wentzel, 1998). For example, Wentzel (1998) found that classmate support was negatively related to psychological distress among early adolescents, whereas DuBois and colleagues (2002) found that peer support had no significant relation with emotional adjustment. A contribution of the current study was that it examined academic and emotional aspects of both teacher and classmate support, which rarely have been examined together in prior studies (Wentzel, 1998). Regarding internal resources, self-efficacy may serve as a potential buffer from mental health concerns among early adolescents (Vieno et al., 2007). This may be especially true across the middle school transition, as student navigate multiple, new teachers, and larger social peer networks (Eccles et al., 1993; Giordano, 1995).

The current study's sample included a diverse sample population. While previous research has primarily examined Caucasian, middle class students (e.g., Wentzel, 1998), this study included a primarily Caucasian and Latino sample from a range of socioeconomic backgrounds. Prior research has suggested that teacher support can be particularly important for Latino students' academic outcomes (Plunkett et al., 2009) and that Latinos report higher rates of depression than other racial groups (Schraedley et al., 1999; Siegel et al., 1998). Consequently, the current study was able to extend the literature through exploring classroom support in relation to a risk factor of mental health, perceived stress, among a racially and economically diverse sample.

Associations between Classroom Support, Academic Self-Efficacy, and Perceived Stress

Several significant correlations were found in the relations among variables.

There was a positive association between teacher support and classmate support during both fifth and sixth grade, which aligned with previous findings (Wentzel, 1998). There was a stronger association between teacher support and classmate support in fifth grade than in sixth grade, which may be due to the smaller elementary school context with one main teacher throughout the day (Eccles et al., 1993). Teacher support had a significant negative correlation with students' perceived stress in sixth grade, which aligns with some of the previous research (Chung et al., 1998).

The current study found no significant relation between classmate support and perceived stress. Past research consists of mixed findings for the relation between peer support and mental health. Several studies suggest that psychological adjustment is related to general peer support among high school students (Dumont & Provost, 1999; Garnfeski & Diekstra, 1996), but this relation has been more ambiguous among middle school students (DuBois et al., 1992; 2002; Rueger, et al., 2008; Wentzel, 1998). Rueger et al. (2008) hypothesized that some of the variability in past findings may be attributed to peers being conceptualized in different ways (e.g., classmate, close friend, and/or peer).

In line with previous research, academic self-efficacy was correlated with several variables. A moderate, positive correlation was found between classmate support and academic self-efficacy during fifth grade, which aligns with Patrick and colleagues' findings (2007). As expected, there was a negative relation between academic self-efficacy and perceived stress, although this was only found among sixth grade students. This prediction was based on past research, which found a negative correlation between general self-efficacy in relation to psychological adjustment (Vieno et al., 2007), as well

as a negative correlation between self-efficacy and internalizing and externalizing disorders (Bandura et al., 1999; Muris, 2002). Additionally, previous research has found a direct negative relation between self-efficacy and stress among young adolescents (Compas et al., 1986; Dumont & Provost, 1999; Frey & Rothlisberger, 1996; Windle, 1992).

The current study has contributed to the field in various ways. This study investigated the role of teachers and classmates among a diverse sample with primarily Caucasian and Latino students during two time points (i.e., fifth and sixth grade), while Wentzel's (1998) study consisted of mainly Caucasian students at one-time point (i.e., sixth grade). The current study was longitudinal and featured two settings (i.e., elementary and middle school), which can provide a more robust understanding of relations between classroom support, academic self-efficacy, and perceived stress. In summary, the key correlational findings were that academic self-efficacy was associated with lower levels of perceived stress in sixth grade, and classmate support was not significantly related to perceived stress in either grade. Further, teacher support was related to lower levels of perceived stress among sixth grade students.

Change over Time

There was no significant change over time in the key variables (i.e., classroom support, academic self-efficacy, and perceived stress), although there were some insignificant trends in the data that suggest some change. There was a decrease in teacher support over time; however, this was a nonsignificant trend. There was also an increase in classmate support over time but this result was not significant. There were no significant changes or trends for either perceived stress or academic self-efficacy.

While it was expected that there would be significant changes in the key variables, there were only some nonsignificant trends found within the data. It was predicted that teacher and classmate support would decline from fifth into sixth grade based on previous findings (Eccles, 2004; Eccles et al., 1993). A decline in teacher support was only a nonsignificant trend across the transition from fifth into sixth grade. Moreover, perceived classmate support did not decline significantly and increased, although not significantly. A potential explanation for this result is that during early adolescence there is an increased saliency of peers, despite the change of school context (Larson & Richards, 1991).

Although the transition into middle school is generally considered a time of much change, the results found no significant changes in perceived stress or academic self-efficacy. A range of effects of mental health adjustment have been found from no effect (e.g., Hirsch & Rapkin, 1987), to negative effects (e.g., Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991), to small positive effects (e.g., McDougall & Hymel, 1998). The current study's findings aligned with Hirsh and Rapkin's (1987) results of no significant change in stress over time. Patterns of academic self-efficacy over time vary in the literature. Although past developmental studies suggest that perceptions of self ability change (Nicholls, 1990), with a potential decline in self-efficacy over time (e.g., Urdan & Midgley, 2003), the current study found that academic self-efficacy remained relatively stable. This aligns with Weiner's attribution theory (1985) and Covington's theory (1992), which suggest that general academic self-efficacy is fairly consistent over time. However, the current study may not have found a decline in self-efficacy based on

measuring general academic self-efficacy, rather than subject specific academic self-efficacy (Schunk & Meece, 2006).

Overall, there were not any significant changes across the transition into the middle school (i.e., sixth grade) among the major variables (i.e., teacher support, classmate support, academic self-efficacy, and perceived stress). A potential reason for this lack of change may be related to the small sample size, and a larger sample size may provide a more robust indicator of change over time. Another potential reason for the lack of change is the short timeframe of the study from the spring of fifth grade to the fall of sixth grade. Further, results from the current study may confirm results from prior research that stress does not significantly increase or change over time (Hirsh & Rapkin, 1987). Thus, the current study suggests that there were not significant changes in support from teachers and classmates, academic self-efficacy, and perceived stress across the transition into middle school.

Group Differences

The current study explored group differences regarding gender, race, and/or gender x race. There was a significant group difference for gender, with sixth grade females reporting higher levels of teacher support compared to sixth grade males. However, gender was not a significant predictor of perceived stress when it was entered into the concurrent regression or prospective regression equations for perceived stress in fifth and sixth grade. Race and gender x race did not significantly differ for the mean levels for key variables (i.e., teacher support, classmate support, academic self-efficacy, or perceived stress) in either fifth or sixth grade.

Although the group analyses conducted for this current study were exploratory, some of the findings align with past research. The current study's findings replicate studies that have found that female students reported higher levels of teacher support than males did (Malecki & Demaray, 2003; Wentzel et al., 2010). Further, no gender differences were found in the mean levels of academic self-efficacy (Bandura et al., 2001). In contrast to prior research, the current study did not find that females reported higher levels of overall stress (Basch & Kersch, 1986; Price et al., 1985; Wagner & Compas, 1990).

The current study contributed to the literature in group differences regarding teacher and classmate support, academic self-efficacy, and perceived stress. A possible explanation for the lack of differences in academic self-efficacy may be related to measuring general academic self-efficacy across subjects rather than subject specific academic self-efficacy (e.g. math), which may cancel out potential differences between groups (e.g., gender, race, and/or gender x race; Pajares & Usher, 2008). Overall, group differences were conducted as exploratory analyses and results indicated that adolescents reported similar levels of key variables across gender and race. Future researchers may still want to consider the role of group differences among larger or more diverse samples when including the key variables (i.e., teacher and classmate support, academic self-efficacy, and perceived stress).

Concurrent and Prospective Regression Analyses for Perceived Stress

Concurrent and prospective analyses were conducted to determine whether teacher and classmate support and academic self-efficacy were associated with perceived stress. First, concurrent regression analyses were conducted for fifth grade and then for

sixth grade with only teacher and classmate support as predictor variables for perceived stress as the outcome. Second, a prospective regression analysis was conducted to determine if there were carryover effects from fifth grade teacher and classmate support for perceived stress in sixth grade. Next, concurrent and prospective analyses were conducted in order to determine whether academic self-efficacy served as a moderator between teacher support and perceived stress, as well as between classmate support and perceived stress in fifth and sixth grade.

Fifth grade concurrent analysis. This model was used to determine whether teacher and/or classmate support in fifth grade were related to perceived stress in fifth grade. There were no significant results found for this model, which meant that neither fifth grade teacher or classmate support were significant factors for perceived stress in fifth grade. Teacher support was not a significant factor for perceived stress; however, it was unexpected that teacher support would not significantly predict students' perceived stress. Classmate support was also not found to be a significant factor of psychological adjustment. This aligns with a longitudinal study in which classmate support was not significantly associated with lower level psychological distress among middle school students (Dubois et al., 1992).

This fifth grade concurrent analysis model for perceived stress informs the literature in several ways. Teacher support and classmate support were not significantly associated with perceived stress for correlations, nor were they found to be a significant factor among fifth grade students in the regression results. However, an explanation for the lack of significant findings for teacher support and classmate support was due to the focus on solely direct relations. When academic self-efficacy was considered as a

moderator among fifth grade students, a complex set of relations emerged, with perceived stress varying based on the level of academic self-efficacy and the source of support (e.g., teacher versus classmate). These relations may be insignificant given that only the main effect of classroom support was examined.

Sixth grade concurrent analysis. This model was used to determine whether teacher and/or classmate support in sixth grade were related to perceived stress in sixth grade. Sixth grade students' perceptions of teacher support were significantly associated with perceived stress during sixth grade. Classmate support, similar to fifth grade findings, was not a significant factor of perceived stress. As expected, teacher support was a factor of perceived stress among sixth grade students. This finding is consistent with previous research that has found a relation between teacher support and psychological adjustment (Chung et al., 1998, Malecki & Demaray, 2003), and that teacher support is the most significant contributor of school context to a student's academic, personal, and interpersonal functioning across the middle school transition (Chung et al., 1998). The current study's findings (i.e., no significant relation between classmate support and psychological adjustment) were consistent with previous research among first year middle school students (e.g., Dubois et al., 1992).

The current study's concurrent sixth grade analysis contributes to the research in several ways. The study found that teacher support was a direct significant factor for perceived stress during sixth grade, unlike during fifth grade. Consequently, teacher support may be particularly important to students' perceived stress during their first year of middle school. Moreover, classmate support did not have a direct relation with perceived stress in both fifth and sixth grades, which underscores prior research regarding

the importance of teacher support for student adjustment (Chung et al., 1998; Cohen & Wills, 1985; Malecki & Demaray, 2003; Sarason et al., 1990).

Sixth grade prospective analysis. This model was used to determine whether teacher and/or classmate support in fifth grade had carryover effects for students' perceived stress in sixth grade. There were no significant findings for teacher or classmate support from fifth grade and students' perceived stress in sixth grade. Perceived stress is an understudied component of mental health. In a longitudinal study, Dubois and colleagues (2002) found a relation between classmate support and emotional adjustment a year later. However, the current study's findings for classmate support did not align with this study, as no significant relation was found between fifth grade students' perceptions of classmate support and their perceived stress in sixth grade. One possible explanation is a difference in contexts studied. DuBois and colleagues (2002) examined fifth through eighth grade students over four time points, but did not specify what types of school context(s) this took place in, whereas the current study examined students in both elementary and middle school contexts as they transitioned from elementary into middle school. Another explanation involves differences in measurement. DuBois and colleagues (2002) measured emotional adjustment through internalizing and externalizing disorders (Achenbach, 1991a, 1991b), whereas the current study measured perceived stress using a shortened version of the Perceived Stress Scale (Golden-Kreutz et al., 2004). DuBois et al. (2002) acknowledged that the high frequency of elevated scores on emotional adjustment in their study may be due to the high prevalence of students from economically disadvantaged backgrounds. The current

study's sample was more diverse than DuBois et al. (2002), which may partially explain this difference in findings.

The sixth grade prospective analysis can be informative for research. Unlike prior research, which found a significant relation between classmate support and mental health (i.e., internalizing and externalizing disorder; DuBois et al., 2002), the current study suggests that classmate support does not have a significant relation with perceived stress, an aspect of mental health. Given that this is an understudied topic and that these studies differed in regards to their sample's demographic composition and measures, more research needs to be conducted in order to clarify and replicate results.

Fifth grade concurrent analysis with academic self-efficacy as a moderator. This model was used to determine whether academic self-efficacy in fifth grade served as a moderator between teacher support and perceived stress in fifth grade, as well as between classmate support and perceived stress in fifth grade. Academic self-efficacy served as a moderator between fifth grade students' perceptions of support from teachers and fifth grade students' perceived stress, as well as between fifth grade students' perceptions of support from classmates and fifth grade students' perceived stress. Thus, the role of academic self-efficacy varied based on the source of support and level of academic self-efficacy.

Teacher support and classmate support did not serve as a protective factor among all fifth grade students but rather depended on students' levels of academic self-efficacy. The role of academic self-efficacy as a moderator also varied based on whether it was between teacher support and perceived stress, or between classmate support and perceived stress. Teacher support was negatively associated with perceived stress, with

high levels of teacher support associated with low levels of perceived stress for fifth grade students with low levels of academic self-efficacy, while teacher support was positively associated with perceived stress for fifth grade students with high levels of academic self-efficacy. On the other hand, classmate support had the inverse relation with the level of academic self-efficacy for perceived stress among fifth grade students. Classmate support was positively associated with stress, with high levels of classmate support associated with high levels of perceived stress for fifth grade students with low academic self-efficacy. However, classmate support was negatively associated with perceived stress, with high levels of classmate support related to low levels of perceived stress for fifth grade students with high academic self-efficacy (see Figures 4 and 5). Results illustrate academic self-efficacy's complex role as a moderator during fifth grade between teacher support and perceived stress, as well as between classmate support and perceived stress.

As predicted, academic self-efficacy served as a moderator between classroom support and perceived stress among fifth grade students. It was hypothesized that self-reports of high support from teachers and classmates would be negatively associated with perceived stress based on previous research (Wentzel, 1998). Self-efficacy, a potential internal resource, can serve a protective role among adolescents from mental health concerns, such as depression (Bandura, 1991; Bandura et al., 1999; Muris, 2002). Consequently, it was also hypothesized that students with lower academic self-efficacy would benefit more from external support (i.e., classroom support) than students with higher academic self-efficacy since these students have less to internally draw upon.

Results indicated that perceived stress differed based on the level of academic self-efficacy and the source of support (e.g., teacher versus classmate). This meant both teacher and classmate support were associated with lower levels of perceived stress but only among certain students and in particular conditions. Extant research supports a direct, concurrent relation between teacher support and psychological adjustment (Malecki & Demaray, 2003; Wentzel, 1998), as well as a relation between academic self-efficacy and psychological adjustment (Muris, 2002). Furthermore, past research found a positive association between teacher support and academic self-efficacy (Gutman & Midgley, 2000; Roeser et al., 1996). Since teacher support is usually associated with young adolescents' psychological adjustment (Malecki & Demaray, 2003) and with academic self-efficacy (Roeser et al., 1996), the researchers predicted that all students would benefit from this form of external support, but that teacher support would be especially beneficial for students lower in the internal resource of academic self-efficacy (see Figure 2). As expected, students with low academic self-efficacy benefitted more from this external source of support, reporting lower levels of perceived stress. This moderating relation was only found among fifth grade students with low academic self-efficacy. Students with high academic self-efficacy reported higher levels of perceived stress when they reported higher levels of teacher support.

There are several possible explanations for the intriguing moderator relation between fifth grade students' perceptions of teacher support and perceived stress. One potential explanation is that fifth students may perceive unsolicited support by their teacher as being incompetent. Graham and Parker (1990) found when youth viewed videos of students who received academic support they rated them as having lower ability

than students who did not receive help. It may be that students with high levels of academic self-efficacy are especially concerned if they perceive teacher support as unsolicited or unnecessary, as they report higher levels of perceived stress. Students with high academic self-efficacy may view teacher support as undermining their competency and autonomy, having implications for their levels of perceived stress. These students may feel that teacher support is not developmentally appropriate for them, hindering students' psychological growth and adjustment (Deci & Ryan, 1985; Eccles et al., 1993; Erikson, 1968). Overall, the current study found that teacher support only served as buffer among fifth grade students with low academic-self efficacy.

Academic self-efficacy's role as a moderator differed based on the source of support (i.e., teacher versus classmate). One possible explanation for the differences found among teacher support and classmate support relates to young adolescents' differing perceptions of teacher and student roles (Wentzel et al., 2010). In the current study classmate support buffered perceived stress but only for fifth grade students with high levels of academic self-efficacy. Fifth grade students with lower levels of academic self-efficacy reported higher levels of classmate support had higher levels of perceived stress, while there was the opposite relation for fifth grade students with low academic self-efficacy. Students with high levels of academic self-efficacy may want to garner more support from peers. This preference may relate to adolescents' changing developmental needs (Sternberg & Silverberg, 1986) and greater equality and reciprocity generally found among peer relationships (Hartup, 1989). This finding aligns with previous research that self-efficacy can serve an internal resource, enabling individuals to feel more competent (Vieno et al., 2007). It may be that when adolescents compare

themselves to peers, students with low levels of academic self-efficacy tend to perceive higher levels of stress and depression than students with higher levels of academic self-efficacy (Bandura, 1997; Eccles, 1999; Wigfield & Karpathian, 1991). The current study found students with high levels of general academic self-efficacy perceived lower levels stress, which aligns with previous research that found general academic self-efficacy was negatively associated with stress and anxiety (Usher & Pajares, 2006). In summary, fifth grade students with high levels of academic self-efficacy and classmate support were negatively associated with perceived stress, whereas students with low academic self-efficacy were positively associated with higher levels of perceived stress when they reported higher levels of classmate support.

The current study contributed to the literature in several important ways. The current study was among a younger, more diverse population in the United States across school contexts, which facilitates an understanding of these relations among different age groups and school contexts (i.e., elementary and middle schools). As far as the researcher is aware of, academic self-efficacy, or self-efficacy in general, has not previously been explored as a moderator between classroom support and perceived stress, providing a more nuanced understanding of these relations during early adolescence. Both preventative and developmental research support exploring the role of a potential moderator (Dearing & Hamilton, 2006; Fairchild & MacKinnon, 2009). Academic self-efficacy served different roles among fifth grade students in relation to students' perceived stress depending on their level of academic self-efficacy and the source of support (teacher versus classmate). Overall, the findings suggest fifth grade students may experience classroom support differently based on their levels of academic self-efficacy.

Sixth grade concurrent analysis with academic self-efficacy as a moderator. This model was used to determine whether academic self-efficacy in sixth grade served as a moderator between teacher support in sixth grade and perceived stress in sixth grade, as well as between classmate support in sixth grade and perceived stress in sixth grade. There were no significant factors for perceived stress within this model, which contrasts with the researcher's hypotheses. In the earlier concurrent sixth grade model, teacher support was a significant factor of lower levels of perceived stress within this model among all sixth grade students, which means it served as a protective factor, regardless of a student's level of academic self-efficacy.

Similar to sixth grade concurrent analyses, teacher support remained a significant factor. Past research has found that teachers have the most significant contribution to middle school adjustment (Chang et al., 1998). However, since there was no change in the *F* value, the current research suggests that the sixth grade concurrent regression analysis, which did not feature the moderator, best accounted for the factors among sixth grade students. One possible explanation for the results may be that a larger sample size would be more likely to detect a moderating relation between key variables. Thus, the current study suggests that academic self-efficacy may serve as a moderator between classroom support and perceived stress during fifth grade but not in sixth grade.

Sixth grade prospective analysis with academic self-efficacy as a moderator. This model was used to determine whether academic self-efficacy in fifth grade had carryover effects as a moderator between teacher support in fifth grade and perceived stress in sixth grade, as well as between classmate support in fifth grade and perceived stress in sixth grade. There were no significant carryover effects from fifth grade, which

aligns with prospective sixth grade analyses without a moderator. This prospective analysis contradicted what was expected, as there were no significant carryover effects. A contribution of this prospective analysis was accounting for these potential factors, which helped the researcher to examine the main effect of teacher support on perceived stress in sixth grade.

Implications for School Psychologists

It is important to have a developmentally responsive environment that provides classroom support and promotes academic self-efficacy (Eccles & Midgley, 1989). A developmentally responsive environment is essential for not only academic adjustment but for mental health (Wentzel, 1998). Past research suggests that a developmentally nonresponsive environment may be detrimental to motivation (Eccles et al., 1993), which predicts school failure and dropouts (Finn, 2006; Roeser & Eccles, 1998; Roeser, Eccles, & Strobel, 1998).

Early adolescence is a critical period due to the high onset of lifelong mental health disorders during this time (Kessler et al., 2005). Early adolescents' mental health should be considered, as it is linked with academic achievement and long-term adjustment (Roeser et al., 1998; Torsheim & Wold, 2001). School psychologists should be particularly aware of youth's mental health, as early adolescents in America have been found to report higher mental health concerns (i.e., emotional and physical problems) than youth in other Western countries (Juvonen et al., 2004). Perceived stress was chosen as an outcome for the current study, as stress is considered a risk factor for mental health disorders during adolescence (Grant et al., 2003). School psychologists can play an important role in reducing early adolescents' stress by creating more awareness about the

relations between classroom support and academic self-efficacy to create a more developmentally responsive classroom (Patrick et al., 2002).

The current study examined the extent to which potential external (i.e., teacher and classmate support) and internal resources (i.e., academic self-efficacy) that are associated with perceived stress across the elementary to middle school transition. Results aligned with previous research, as teacher support was significantly related to perceived stress among sixth grade students. There was a direct, negative relation between teacher support and perceived stress among sixth grade students, indicating that higher levels of perceived teacher support were associated with lower levels of perceived stress. Teacher support in fifth grade did not have a significant, direct relation with students' perceived stress in fifth grade. There were no direct, significant relations between classmate support and perceived stress in fifth or sixth grade.

However, a more complex relation emerged among fifth grade, as academic self-efficacy served as a moderator between classroom support and perceived stress, depending on fifth grade students' level of academic self-efficacy and source of support (i.e., teacher versus classmate). When fifth grade students with high levels of academic self-efficacy reported lower levels of teacher support, they reported lower levels of perceived stress. However, when fifth grade students with high levels of academic self-efficacy reported higher levels of classmate support, they reported lower levels of perceived stress. When fifth grade students with low levels of academic self-efficacy reported higher levels of teacher support, they reported lower levels of perceived stress. However, when fifth grade students with low academic self-efficacy reported higher levels of classmate support, they reported higher levels of perceived stress.

Prevention. Perceptions of teacher and classmate support play an important role in students' perceived stress. Relations between classroom support and perceived stress vary based on grade level, source of support, and level of academic self-efficacy. As previously indicated, stress was associated with greater vulnerability in terms of mental health disorders among adolescents (Grant et al., 2003). School psychologists can foster a developmentally responsive learning environment (Patrick, 2002) by building upon students' external and internal resources (i.e., teacher and classmate support and academic self-efficacy, respectively).

Prevention efforts may consist of class- and school-wide efforts to identify students with high levels of perceived stress among fifth and sixth grade students (i.e., one standard deviation above the mean), as well as level of teacher support (i.e., below an optimal score of '5') among sixth grade students. Given that there is a negative relation between teacher support and perceived stress among sixth grade students, it may be helpful to provide ongoing professional development to enhance teacher support in the class based on Showers' and colleagues' (1987) recommendations (i.e., theory, demonstration, opportunities to practice, and immediate corrective feedback). The current research also suggests that screening for general academic self-efficacy is particularly important among fifth grade students, as perceived stress is buffered differently based on levels of academic self-efficacy and type of support (i.e., teacher versus classmate). Potential implications for fifth grade students with high academic self-efficacy may be that they are longing for more autonomy from adults in their learning environment.

Past research has identified what middle school students perceive as key characteristics of a supportive teacher, including academic and emotional support. A

supportive teacher is conceptually similar to a caring teacher. In the current study the items that were used highlight a caring and supportive teacher (e.g., "In this class my teacher cares about much they help me learn," and "In this class this teacher tries to help me when I am sad or upset"; Johnson & Johnson, 1983). Ferreira and Bosworth (2001) found that middle school students perceived a caring teacher as one who helps with schoolwork, explains assignments and checks for understanding, encourages and respects students, listens to their personal dilemmas, upholds a well managed, disciplined, classroom, and offers fun activities. Furthermore, Ferreira and Bosworth (2001) suggest that a caring teacher attends students' extracurricular activities. Additionally, Suldo and colleagues (2009) found in a mixed methods study that middle school students perceived supportive teachers as having the following characteristics: utilizing an array of teaching strategies (including best practice), recognizing students' academic success, treating students fairly, and allowing a classroom climate open to questions, and trying to convey emotional support.

The current study found that female sixth grade students perceived teachers as being more supportive than sixth grade male students did, which aligns with previous research (den Brok et al., 2006; Goodenow, 1993; Wentzel et al., 1994; Wentzel et al., 2010). Gender differences in sixth grade students' perceptions of teacher support may relate to the nature of support. For example, Suldo and colleagues (2009) found that females perceive teachers as supportive when teachers attend to their emotional needs, whereas males describe a supportive teacher as providing pleasurable activities, assisting them in ameliorating grades, allowing questions, assigning a manageable workload, and employing fair punishment. Within a particular school context, teachers and school

psychologists can collaborate to determine through student assessment (i.e., what they perceive as supportive) and consultation to best meet students' developmental needs and consider gender differences in how students view support within the classroom.

In terms of prevention among fifth grade students, the current study suggests certain developmental considerations. Interestingly, perceived stress varied based on the source of classroom support and level of academic self-efficacy among fifth grade students. As far as the researcher is aware, this is the first time that academic self-efficacy has been found to moderate the relations between teacher support and perceived stress, as well as between classmate support and perceived stress. Consequently, results should be interpreted with some caution prior to replication. As a next step, it may be helpful to provide a way for fifth grade students to express what they perceive as a supportive teacher in order to promote optimal outcomes (i.e., lower levels of perceived stress).

Intervention. In terms of intervention, school psychologists can promote students' optimal outcomes through various approaches (e.g., consultation and professional development). In schools implementing Response to Intervention (RtI), resources are provided on a universal (schoolwide/classwide), secondary (selected groups), and tertiary (individual or small group) level, depending on the needs within the school system. After determining needs through a screening (e.g., teacher and classmate support, academic self-efficacy, and perceived stress) and interviewing students about their interpretation of a supportive teacher and classmate, school psychologists can consult with teachers for the ways to best provide support and promote academic self-efficacy. This approach may be particularly useful in the fifth grade, as this study suggests a complex relation exists, in which perceived stress varied based on the level of

academic self-efficacy and the type of support (i.e., teacher versus classmate). All students could benefit from the intervention, but it may be particularly useful among students with high levels of perceived stress.

School psychologists can also provide recommendations to bolster academic self-efficacy and appropriate teacher and classmate support. Past research indicates that students may interpret unsolicited support as a cue of inadequacy (Graham & Barker, 1990). School psychologists may suggest teachers implement classwide interventions that promote academic self-efficacy. Preliminary results for this type of intervention aimed at increasing academic self-efficacy are promising among fifth grade students given that math academic self-efficacy and achievement have been bolstered through teacher intervention (Siegle & McCoach, 2007). It may be important to examine aspects of teacher feedback to inform intervention given that teacher feedback is a known source of academic self-efficacy (Schunk & Miller, 2002), while teachers who provide specific praise (e.g., "you are doing good job continuing to work on that problem") rather than general praise (e.g., "good job") help students determine the particular skills acquired (Siegle & McCoach, 2007). For example, teachers should be careful not to overly praise easy tasks due to negative implications for academic self-efficacy and intrinsic motivation (Deci, Vallerand, Pelletier, & Ryan, 1991; Meyer, 1992). The current study suggests that teacher support is related to higher levels of perceived stress, which may be related to this type of feedback. Students with low academic self-efficacy seem to benefit the most when teachers attribute their failure to lack of effort rather than ability and continue to encourage them (Siegle & McCoach, 2007). This type of teacher support (i.e., feedback) may explain the lower mean level of perceived stress for students with low

academic self-efficacy compared to students with high levels of academic self-efficacy within the current sample. Moreover, teachers may want to consider using cooperative learning strategies in their classroom as low achieving students, who may also have low academic self-efficacy, often report group work as motivating and satisfying their social needs (Schmakel, 2008). Moreover, cooperative learning may also be beneficial as it can promote psychological health (Johnson & Johnson, 1999).

In addition to teacher support, classmate support should also be considered, as it may differ in its influence on early adolescents' perceived stress across the transition. There is little research about what particular behaviors students perceive as supportive from classmates. The current study suggests that fifth grade students with low academic self-efficacy perceived more perceived stress when they reported higher levels of classmate support, while students with high academic self-efficacy reported lower levels of perceived stress when they reported high levels of classmate support. Although less is known about peers, classmate support can be facilitated through specific strategies, such as cooperative learning (Johnson & Johnson, 1999). When cooperative learning occurs within a classroom, Johnson and Johnson (1999) specified that five key elements should occur: "…positive interdependence, individual accountability, promotive interaction, appropriate use of social skills, and periodic processing of how to improve the effectiveness of the group" (p. 73). Teachers can ensure positive interactions so students with low academic self-efficacy can feel empowered during these learning activities rather than feel less efficacious and perceive more stress. Future interventions should determine how teachers and classmates can bolster academic self-efficacy and reduce

perceived stress. More research is needed to determine what specific strategies teachers and classmates can use to academically and emotionally support students.

Implications for Researchers: Future Directions

Future research needs to be conducted to determine the generalizability of the results and to further explore academic self-efficacy as a moderator. This study found that academic self-efficacy served as a moderator between classroom support (i.e., teachers and classmates) and perceived stress among a diverse sample of fifth grade students in the Southeast. Future research can gain a more comprehensive understanding of classroom support, academic self-efficacy, and perceived stress through utilizing a multi-method approach (e.g., observations, interviews, and peer nominations). Future longitudinal research should be conducted to determine whether these results are replicated. Moreover, longitudinal studies should last for a longer timeframe (i.e., more than 2 waves) in order to examine when patterns start and whether patterns persist over time. Future studies can benefit from having a larger more diverse sample. More research should be conducted to maximize academic self-efficacy and teacher support and to minimize the negative effects of classmate support in order to decrease perceived stress during elementary school.

Contributions to the Literature

There were significant contributions to the literature. One key contribution was the current study was longitudinal, which is recommended within developmental research (Baltes & Nesselroade, 1979). A second contribution is the study was conducted across the transition from elementary into middle school, whereas most past longitudinal research was conducted within the same school context, where change is less likely to

occur (Malecki & Demaray, 2003). A third contribution is that the study provided a more comprehensive perspective of support through measuring two types of support (i.e., academic and emotional support) and sources of support (i.e., teacher and classmate). A fourth contribution is the study examined the concurrent and prospective relations of key variables (i.e., teacher and classmate support, academic self-efficacy, and perceived stress). A fifth strength of the study is that academic self-efficacy was explored for its main effects and as a moderator. Among fifth grade students, academic self-efficacy was found to be a moderator between reported classroom support and perceived stress, despite a relatively small sample size. A sixth strength is the study included a diverse sample, primarily consisting of Latino and Caucasian students from different socioeconomic backgrounds, whereas previous studies usually consist of primarily middle-class Caucasian and some African American students (DuBois et al., 1992; Wentzel, 1998; Wentzel et al., 2010). A final strength of the current study is that it explored potential group differences (i.e., gender and race) among a diverse sample, which informs research for potential treatment implications. No gender or race differences were found, with the exception of higher levels of reported teacher support among females than males in sixth grade.

Limitations

Although there are numerous strengths for the current study, there were several limitations. One limitation of the study is the use of a correlational design rather than an experimental design, which means directionality and causality cannot be clearly determined (Glass & Hopkins, 1995). This may mean that perceived stress may have caused higher or lower levels of classmate or teacher support depending on the level of

the student's academic self-efficacy. Furthermore, there may be bidirectional relations, meaning that there are reciprocal relations. For example, classroom support may be a predictor or perceived stress, but perceived stress may also be a potential predictor of perceived classroom support, which aligns with the complex transactional nature of the social cognitive theory (Bandura, 1986). A second limitation of the current study is it did not account for support outside of school. Although the current study accounted for two sources of support within the classroom (i.e., teachers and classmates), it did not account for support from the home environment (i.e., parents/guardians), which plays a major role in adolescents' adjustment (Demaray & Malecki, 2002b). A third limitation of the study is the constructs were measured through self-report, which may be associated with social desirability biases. A fourth limitation is the attrition rate was 30.4% which is 10.4% higher than the desirable, reasonable attrition rate established by Goodrich and St. Pierre (1979). However, the research was conducted within a state with high mobility rates and across the transition into middle school. Kiefer and Ryan (2008) found attrition is common when research is conducted across school transitions, which can be partially attributed to school feeder patterns. Lastly, this study was conducted among early adolescents, primarily Latino and Caucasian in the Southeast. Thus, results cannot be generalized beyond this population, and further studies are warranted to replicate results.

Summary of Findings

This study highlights the relations between young adolescents' perceptions of teacher and classmate support, academic self-efficacy, and perceived stress in fifth and sixth grade. Regarding change over time, there was a nonsignificant trend of teacher support decreasing, while there was a nonsignificant trend of classmate support

increasing across the transition into middle school. Academic self-efficacy and perceived stress did not significantly change. There were no gender and race differences found in the current study, with the exception that females reported higher levels of teacher support than males did in sixth grade, which aligns with previous research (Wentzel et al., 2010).

The current study found that academic self-efficacy moderated the relation between support and perceived stress in fifth grade, which varied based on the level of academic self-efficacy and source of support. Academic self-efficacy did not serve as a moderator between classroom support and perceived stress in sixth grade. During sixth grade, teacher support was negatively associated with perceived stress. A complex relation emerged during the fifth grade with academic self-efficacy as a moderator, depending on the source of support (i.e., teacher and classmate) and the level of academic self-efficacy. Teacher support was negatively associated with perceived stress, with high levels of teacher support associated with low levels of perceived stress for fifth grade students with low levels of academic self-efficacy, while teacher support was positively associated with perceived stress for fifth grade students with high levels of academic self-efficacy. On the other hand, classmate support had the inverse relation with the level of academic self-efficacy for perceived stress among fifth grade students. Classmate support was positively associated with perceived stress, with high levels of classmate support associated with high levels of perceived stress for fifth grade students with low academic self-efficacy. However, classmate support was negatively associated with stress, with high levels of classmate support related to low levels of perceived stress for fifth grade students with high academic self-efficacy.

Results indicated that teacher and classmate support served different roles as academic self-efficacy moderated the relations between classroom support and perceived stress among fifth grade students. This may relate to young adolescents' differing perceptions of teacher and classmate roles and may have implications for students' classroom experiences and adjustment in school (Wentzel et al., 2010). Thus, the current study suggests classroom support may differ for students based on their academic self-efficacy, and may have implications for what types of teacher and classmate support are the most appropriate for students to reduce perceived stress, a risk factor for mental health disorders (Grant et al., 2003).

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Appendices

Appendix A: Demographics Form

Student Demographics

Gender:

1 Boy

2 Girl

Race (choose one):

1 Asian American or Pacific Islander

2 Black or African American

3 Hispanic or Latino/a

4 White or European American

5 Multi-Racial

6 Other: _____

Stop!!! Do not continue until told to do so.

Appendix B: Classroom Life Instrument. (Johnson & Johnson, 1983)

Teacher and Student Support

In this class my teacher…	Not at All True		Some-what True		Very True
1. Respects my opinion.	1	2	3	4	5
2. Really understands how I feel about things.	1	2	3	4	5
3. I can count on my teacher for help when I need it.	1	2	3	4	5
4. My teacher likes to help me learn.	1	2	3	4	5
5. My teacher wants me to do my best in school.	1	2	3	4	5
6. My teacher cares about how much they help me learn.	1	2	3	4	5
7. My teacher tries to help me when I am sad or upset.	1	2	3	4	5
8. My teacher likes to see my work.	1	2	3	4	5
In this class other students…					
9. Want me to do well in school.	1	2	3	4	5
10. Really care about me.	1	2	3	4	5
11. Care about my feelings.	1	2	3	4	5
12. Are nice to me.	1	2	3	4	5
13. Want me to be successful.	1	2	3	4	5
14. Like me.	1	2	3	4	5
15. Care about how I learn.	1	2	3	4	5
16. Want me to come to class every day.	1	2	3	4	5

Appendix C: Motivational Beliefs Scale. (PALS, Midgley et al., 2000)

5 Point Likert Scale (*1 = not at all true of me, 3 = somewhat true of me, 5 = very true of me*)

Academic Self-Efficacy

	Strongly Disagree	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1. I'm certain I can master the skills taught in school this year.	1	2	3	4	5
2. I can do even the hardest schoolwork if I try.	1	2	3	4	5
3. Even if my schoolwork is hard, I can learn it.	1	2	3	4	5
4. I'm certain I can figure out even the most difficult schoolwork.	1	2	3	4	5

Appendix D: Six Item Perceived Stress Scale (Golden-Kreutz, Browne, Frierson, & Anderson, 2004).

The next questions ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate *how often* you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly.

In the last month, how often have you…	**Never**	**Almost Never**	**Some-times**	**Fairly Often**	**Very Often**
1. …been upset because of something that happened unexpectedly?	1	2	3	4	5
2. …felt that you were unable to control the important things in your life?	1	2	3	4	5
3. …felt nervous and "stressed"?	1	2	3	4	5
4. …found that you could not cope with all the things that you had to do?	1	2	3	4	5
5. …been angered because of things that happened that were outside of your control?	1	2	3	4	5
6. …felt difficulties were piling up so high that you could not overcome them?	1	2	3	4	5

Appendix E: Example of Elementary School Parental Consent Forms

Dear Parent or Caregiver:

This letter provides information about a research study that will be conducted at C Elementary School by Sarah Kiefer, a professor from the University of South Florida. My goal in conducting the study is to examine how students' motivation changes over time, and how it relates to students' social and academic adjustment in school. The purpose of the study is to gain a better understanding of motivation during early adolescence in order to help all students function well socially, be engaged in school, and perform up to their academic potential.

- ✓ Who I Am: I am Sarah Kiefer, Ph.D., a professor in the College of Education at the University of South Florida (USF). I am planning the study in cooperation with the principal and administrators of C Elementary School to ensure the study provides information that will be helpful to the schools.

- ✓ Why I am Requesting Your Child's Participation: This study is being conducted as part of a project entitled, "The Adolescent Motivation and Development Study." Your child is being asked to participate because he or she is a student at C Elementary School.

- ✓ Why Your Child Should Participate: We need to learn more about what motivates students what leads to school success during the teenage years! The information that I collect from students may help increase our overall knowledge of what motivates students in school and how teachers and schools can support students' success in school. In addition, information from the study will be shared with the teachers and administrators at C Elementary School in order to increase their knowledge of what motivates students to be successful academically and socially in school. Information from this study will provide a foundation from which to improve the schooling experiences of students at C Elementary School. Please note neither you nor your child will be paid for your child's participation in the study. However, all students who participate in the study will be given a small gift and those students who return completed parental consent forms will be entered into a drawing for a gift certificate.

- ✓ What Participation Requires: If your child is given permission to participate in the study, he or she will be asked to complete several paper-and-pencil questionnaires. These surveys will ask about your child's thoughts, behaviors, and attitudes towards school. Completion is expected to take your child about 40 minutes. I will personally administer the questionnaires at C Elementary School along with a trained team of researchers from USF during regular school hours. Questionnaires will be administered in classrooms to students who have parent permission to participate. Participation will occur during one class period this Spring semester, and again in the Fall and Spring semesters in sixth grade at Middle School E or Middle School D. In total, participation will take about 120 minutes of your child's time for the three semesters. If your student will attend a middle school that is not participating in the study, he or she will participate in the study this Spring semester only. In addition, students' school records will be reviewed for indications of academic achievement (GPA and FCAT) and if on reduced lunch status.

Appendix E: (Continued)

- ✓ Please Note: Your decision to allow your child to participate in this research study must be completely voluntary. You are free to allow your child to participate in this research study or to withdraw him or her at any time. If you choose not to participate, or if you withdraw at any point during the study, this will in no way affect your relationship with C Elementary School, Middle School E, Middle School D, USF, or any other party.

- ✓ Confidentiality of Your Child's Responses: There is minimal risk to your child for participating in this research. I will be present during administration of the questionnaires, along with a team of trained researchers, in order to provide assistance to your child if he or she has any questions or concerns. Additionally, school guidance counselors will be available to students in the unlikely event that your child becomes emotionally distressed while completing the measures. Your child's privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, and the USF Institutional Review Board may inspect the records from this research project, but your child's individual responses will not be shared with school system personnel or anyone other than us and our research assistants. Your child's completed questionnaires will be assigned a code number to protect the confidentiality of his or her responses. Only I will have access to the locked file cabinet stored at USF that will contain: 1) all records linking code numbers to participants' names, and 2) all information gathered from school records. Please note that although your child's specific responses on the questionnaires will not be shared with school staff, if your child indicates that he or she intends to harm him or herself, I will contact district mental health counselors to ensure your child's safety.

- ✓ What I'll Do With Your Child's Responses: I plan to use the information from this study to inform educators and psychologists about students' motivation in school, as well as to construct a plan for improving students' motivation and success in school during adolescence. The results of this study may be published. However, the data obtained from your child will be combined with data from other people in the publication. The published results will not include your child's name or any other information that would in any way personally identify your child.

- ✓ Questions? If you have any questions about this research study, please contact Dr. Sarah Kiefer at (813) 974-0155. If you have questions about your child's rights as a person who is taking part in a research study, you may contact a member of the Division of Research Compliance of the University of South Florida at (813) 974-9343.

- ✓ Want Your Child to Participate? To permit your child to participate in this study, complete the attached consent form and have your child turn it in to his or her first period teacher.

Sincerely,

Sarah Kiefer, Ph.D.

Assistant Professor of Educational Psychology

Department of Psychological and Social Foundations

Appendix E: (Continued)

Consent for Child to Take Part in this Research Study

I freely give my permission to let my child take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

_____

Printed name of child

_____ _____ _____

Signature of parent of child taking part in the study | Printed name of parent | Date

Statement of Person Obtaining Informed Consent

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

_____ _____ _____

Signature of person obtaining consent | Printed name of person obtaining consent | Date

Appendix F: Example of Middle School Parental Consent Forms

Dear Parent or Caregiver:

This letter provides information about a research study that will be conducted at Middle School E by Sarah Kiefer, a professor from the University of South Florida. My goal in conducting the study is to examine how students' motivation changes over time, and how it relates to students' social and academic adjustment in school. The purpose of the study is to gain a better understanding of motivation during early adolescence in order to help all students function well socially, be engaged in school, and perform up to their academic potential.

- ✓ Who I Am: I am Sarah Kiefer, Ph.D., a professor in the College of Education at the University of South Florida (USF). I am planning the study in cooperation with the principal and administrators of Middle School E to ensure the study provides information that will be helpful to the schools.

- ✓ Why I am Requesting Your Child's Participation: This study is being conducted as part of a project entitled, "The Adolescent Motivation and Development Study." Your child is being asked to participate because he or she is a student at Middle School E.

- ✓ Why Your Child Should Participate: We need to learn more about what motivates students what leads to school success during the teenage years! The information that I collect from students may help increase our overall knowledge of what motivates students in school and how teachers and schools can support students' success in school. In addition, information from the study will be shared with the teachers and administrators at Middle School E in order to increase their knowledge of what motivates students to be successful academically and socially in school. Information from this study will provide a foundation from which to improve the schooling experiences of students at Middle School E. Please note neither you nor your child will be paid for your child's participation in the study. However, all students who participate in the study will be given a small gift and those students who return completed parental consent forms will be entered into a drawing for a gift certificate.

- ✓ What Participation Requires: If your child is given permission to participate in the study, he or she will be asked to complete several paper-and-pencil questionnaires. These surveys will ask about your child's thoughts, behaviors, and attitudes towards school. Completion is expected to take your child about 40 minutes. I will personally administer the questionnaires at Middle School E along with a trained team of researchers from USF during regular school hours. Questionnaires will be administered in classrooms to students who have parent permission to participate. Participation will occur during one class period in the Fall and Spring semesters in sixth grade at Middle School E. In total, participation will take about 80 minutes of your child's time. In addition, students' school records will be reviewed for indications of academic achievement (GPA and FCAT) and if on reduced lunch status.

Appendix F: Continued

- ✓ Please Note: Your decision to allow your child to participate in this research study must be completely voluntary. You are free to allow your child to participate in this research study or to withdraw him or her at any time. If you choose not to participate, or if you withdraw at any point during the study, this will in no way affect your relationship with Middle School E, USF, or any other party.

- ✓ Confidentiality of Your Child's Responses: There is minimal risk to your child for participating in this research. I will be present during administration of the questionnaires, along with a team of trained researchers, in order to provide assistance to your child if he or she has any questions or concerns. Additionally, school guidance counselors will be available to students in the unlikely event that your child becomes emotionally distressed while completing the measures. Your child's privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, and the USF Institutional Review Board may inspect the records from this research project, but your child's individual responses will not be shared with school system personnel or anyone other than us and our research assistants. Your child's completed questionnaires will be assigned a code number to protect the confidentiality of his or her responses. Only I will have access to the locked file cabinet stored at USF that will contain: 1) all records linking code numbers to participants' names, and 2) all information gathered from school records. Please note that although your child's specific responses on the questionnaires will not be shared with school staff, if your child indicates that he or she intends to harm him or herself, I will contact district mental health counselors to ensure your child's safety.

- ✓ What I'll Do With Your Child's Responses: I plan to use the information from this study to inform educators and psychologists about students' motivation in school, as well as to construct a plan for improving students' motivation and success in school during adolescence. The results of this study may be published. However, the data obtained from your child will be combined with data from other people in the publication. The published results will not include your child's name or any other information that would in any way personally identify your child.

- ✓ Questions? If you have any questions about this research study, please contact Dr. Sarah Kiefer at (813) 974-0155. If you have questions about your child's rights as a person who is taking part in a research study, you may contact a member of the Division of Research Compliance of the University of South Florida at (813) 974-9343.

- ✓ Want Your Child to Participate? To permit your child to participate in this study, complete the attached consent form and have your child turn it in to his or her first period teacher.

Sincerely,

Sarah Kiefer, Ph.D.

Assistant Professor of Educational Psychology

Department of Psychological and Social Foundations-

Appendix F: (Continued)

Consent for Child to Take Part in this Research Study

I freely give my permission to let my child take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

_____

Printed name of child

_____ _____ _____

Signature of parent Printed name of parent Date

of child taking part in the study

Statement of Person Obtaining Informed Consent

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

_____ _____ _____

Signature of person Printed name of person Date

obtaining consent obtaining consent

Appendix G: Administrator Handbook

Student Verbal Assent Script

Introduction

Hello my name is _____. I am a student/teacher at the University of South Florida. Right now, I'm trying to learn about students' motivation and success in school. I would like to ask you to help me by being in a study, but before I do, I want to explain what will happen if you decide to help me. *(While one person discusses informed consent, the other person can write the survey example on the board and pass out the teacher survey and student surveys.)*

Informed Consent

I will ask you to fill out a survey. Filling out this survey is voluntary. If at any point you want to stop or skip a question that is ok. For survey questions, there are no right or wrong answers; we just want your opinions. By being in the study, you will help me understand students' motivation and success in school.

- Your survey is confidential. This means that your parents, teacher, and classmates will not know what you have written on your survey. When I tell other people about the study, I will not use your name, and no one will be able to tell who I'm talking about.

- Your mom/dad says it's okay for you to be in the study. But if you don't want to be in the study, you don't have to be. What you decide won't make any difference with your grades or about how people think about you. No one will be upset if you don't want to be in the study. If you want to be in the study now but change your mind later, that's okay. You can stop at any time. If there is anything you don't understand you should tell me so I can explain it to you.

- You can ask me questions about the study. If you have a question later that you don't think of now, you can call me (*or Dr. Kiefer*) or ask your parents or teacher to call or email me (*or Dr. Kiefer*).

Do you have any questions for me about the survey?

Would you like to be in the study and fill out the survey?

NOTE TO RESEARCHER: The student should answer "Yes" or "No." Only a definite "Yes" may be taken as assent to participate. Look for students saying yes, nodding of heads, thumbs up.

Appendix H: IRB and Informed Consent Certificate of Completion for Researcher

CITI Collaborative Institutional Training Initiative

Human Research Curriculum Completion Report

Printed on 12/8/2010

Learner: Krystle Preece (username: kkuzia21)
Institution: University of South Florida
Contact Information Department: Education
Phone: N/A
Email: krystlekuzia@gmail.com

Social / Behavioral Investigators and Key Personnel:
Stage 2. Refresher Course Passed on 10/21/10 (Ref # 5137743)

Required Modules	Date Completed	
Refresher Course 101 Introduction	10/21/10	no quiz
SBR 101 REFRESHER MODULE 1. History and Ethics	10/21/10	5/5 (100%)
SBR 101 REFRESHER MODULE 2. Regulatory Overview	10/21/10	5/5 (100%)
SBR 101 REFRESHER MODULE 3. Fundamental Issues.	10/21/10	5/5 (100%)
SBR 101 REFRESHER MODULE 4. Vulnerable Subjects	10/21/10	4/4 (100%)
SBR 101 REFRESHER MODULE 5. Additional Topics	10/21/10	5/5 (100%)
How to Complete The CITI Refresher Course and Receive the Completion Report	10/21/10	no quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.
Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator

About the Author

Krystle Kuzia Preece is a doctoral student in the School Psychology Program at the University of South Florida. Her research interests include school-based mental health, positive psychology, and prevention and early intervention. She believes that it is essential to provide access to mental health services within the school and expand these options through system change to optimize students' socioemotional and academic outcomes. Her research examines internal and external resources that reduce mental health issues, which aligns with best practices that call upon school psychologists to expand their role within the school system to best meet the needs of students.