

TEACHER-STUDENT RELATIONSHIPS, STUDENT ENGAGEMENT, AND  
ACADEMIC ACHIEVEMENT FOR EARLY ADOLESCENTS IN GENERAL AND  
LATINO YOUTH: A REVIEW OF THE LITERATURE

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## **ABSTRACT**

Yongmei Li: Teacher-Student Relationships, Student Engagement, and Academic Achievement for Early Adolescents in General and Latino Youth: A Review of the Research  
(Under the direction of Dr. Jill Hamm)

I critically reviewed and synthesized research on teacher-student relationships in relation to student engagement and academic achievement for early adolescents in general and Latino youth. I situated my review within an integrative theoretical framework involving self-determination theory and ecological theory. Teacher-student relationships (teacher emotional support, instrumental help, clear expectations, and classroom safety) and student engagement (behavioral, emotional, and cognitive) were both conceptualized as multidimensional constructs. In general, findings were more similar than different for early adolescents in general and Latino youth, with positive associations between teacher-student relationships and student engagement and academic achievement. The results on the moderation effect of gender for early adolescents in general were mixed. The quality of the literature for early adolescents in general was more rigorous and stronger, although both bodies of literature featured theoretical framework and reasonably rigorous methodologies. Future directions are provided by focusing on the overall findings and quality of the literature.

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## **Chapter 1: Introduction**

Early adolescence is a key period for youth to develop skills, capacities, interests, and relationships that are foundational to healthy adjustment. Student engagement and academic achievement are crucial components of competence for youth that predict school success and future career opportunities (Roorda, Koomen, Spilt, & Oort, 2011). Engagement has been related to a wide range of adolescent outcomes, such as academic success (Wang & Holcombe, 2010), school dropout (Rumberger & Rotermund, 2012; Wang & Fredricks, 2014), and mental health (Bond et. al, 2007). Unfortunately, student engagement appears to decline along with academic achievement (Mahatmya, Lohman, Matjasko, & Farb, 2012). It is estimated that 25 to 40 percent of youth show signs of disengagement (e.g., apathy, not paying attention, not trying hard; Yazzie-Minz, 2007).

The nation's Latino student population continues to grow. According to the Pew Hispanic Center, the total enrollment of Latino students in pre-kindergarten through 12<sup>th</sup> grade in 2011 accounted for 24 percent of the nation's public school enrollment (Fry & López, 2012). Staying engaged in school and thriving academically are challenging for early adolescents regardless of ethnic group, and Latino students are no exception. Suárez-Orozco, Rhodes, and Milburn (2009) found significant but gradual declines to student engagement and academic achievement among Latino youth. Katz (1999) and Stanton-Salazar (1997) described how Latino students in a middle school setting struggled in relationships with teachers, which negatively impacted their engagement and academic performance. Further, there is a wide achievement gap between Latino students and their Caucasian peers. For instance, on the 2013 eighth grade National Assessment of Educational Progress (NAEP) in

mathematics, 21 percent of Latino students performed at or above the proficient level, as compared to 45 percent for their Caucasian peers (National Center for Educational Statistics, 2013). The underachievement of Latino youth is partially attributed to their poor engagement (Bingham & Okagaki, 2012).

Teacher-student relationships have been recognized as one of the most important factors to engagement and school success for early adolescents in general, as well as for students of diverse ethnic groups (Bingham & Okagaki, 2012; Farmer, Lines, & Hamm, 2011). However, forging caring, trusting, and supportive teacher-student relationships can be challenging for both early adolescents and their teachers. During early adolescence, relationships between teachers and students within the classroom context are disrupted (Davis, 2003; Gehlbach, Brinkworth, & Harris, 2012). Middle school students typically perceive their teachers as less caring and supportive than their elementary school teachers (Davis, 2003). As they make the transition from elementary to middle school, changes within school context are often at odds with students' needs for developing relationships with their teachers (Eccles et al. 1993; Ryan, Shim, & Makara, 2013). For instance, class size in middle schools is typically larger than in elementary schools and the teacher-student ratio increases. Unlike in elementary schools in which students typically stay with one primary teacher throughout the day, students in middle schools move from classroom to classroom. They must adapt to the teaching styles and expectations of different teachers as they rotate between classrooms. Further, individualized instruction in elementary school changes to non-individualized and "departmentalized" instruction. Although teacher-student relationships typically deteriorate during the transition from elementary to middle school, the need for caring and supportive relationships with teachers does not diminish (Pianta, Hamre, & Allen, 2012).

Teacher-student relationships may be particularly important for Latino students in promoting engagement and academic success. School cultures usually mirror the culture of the dominant society. However, for Latino students, the cultural values at home may differ significantly from those of schools. Thus, these students may need teacher support to successfully navigate school (Bingham & Okagaki, 2012). Wentzel, Baker, and Russell (2012) point out that little is known about the reasons for underachievement among Latino youth; "...much less is known about those social factors that support Latino students who stay in school, display positive forms of behavior, and excel academically" (p. 609). Therefore, understanding the role of relationships with teachers in engagement and achievement among Latino early adolescents is a valuable undertaking, given that their school success is foundational to their future developmental pathways and functioning as effective citizens in the 21<sup>st</sup> century.

A growing body of research demonstrates that teacher-student relationships play a pivotal role in engaging students to learn and promoting academic success (Pianta et al., 2012; Wentzel, 2012). For example, a meta-analysis of 99 studies of school-aged students revealed substantial associations between teacher-student relationships (e.g., empathy, warmth) and engagement and academic achievement among the students (Roorda et al., 2011). The associations between teacher-student relationships and student engagement ranged from medium to large in magnitude, whereas the associations between teacher-student relationships and academic achievement ranged from small to medium. On the whole, stronger effects were found in higher grades. However, the meta-analysis did not explore the extent to which teacher-student relationships, student engagement, and academic achievement varied by students' developmental stages, especially for early adolescents. Nor did the study examine how such associations varied by the students' ethnic backgrounds, especially for Latino students.

The purpose of this review was to synthesize and critically evaluate the research literature on associations between teacher-student relationships, student engagement, and academic achievement for early adolescents in general and Latino youth. This review was intended to help researchers better understand the role of teacher-student relationships in engagement and achievement for these populations and to inform future research on this topic.

## **Chapter 2: Theoretical Framework**

I adopt two distinct but related theories to conceptualize the associations between teacher-student relationships and engagement and academic achievement among early adolescents and Latino youth in particular. Self-determination theory (Ryan & Deci, 2000) provides mechanisms to account for why teacher-student relationships are associated with engagement and achievement. Ecological theory (Bronfenbrenner, 1979) provides a framework for understanding teachers as a critical resource of student engagement and academic achievement for early adolescents. Ecological theory also serves as a basis for theorizing about key contextual factors (i.e., ethnicity, gender, socioeconomic status [SES], geographic locales, and cultural factors) in teacher-student relationships, student engagement, and academic achievement. Each contributing theory is necessary, but not sufficient. Therefore, I incorporate elements of both to develop a simplified, cohesive theoretical framework for guiding the review. The constructs of teacher-student relationships and student engagement are both considered as multidimensional constructs.

### **Conceptualization of Teacher-Student Relationships and Student Engagement**

Teacher-student relationships are considered as a multidimensional construct. Wentzel, Battle, Russell, and Looney (2010) recently theorized four dimensions of teacher-student relationships, including teacher emotional support, instrumental help, clear expectations, and classroom safety. Students are more likely to engage in school and experience academic success when (a) they feel being cared about, liked, and valued as individuals; (b) their efforts to meet the expectations are facilitated with teachers' help, advice, and instruction; (c) messages of classroom expectations are clearly delivered from the

teachers; and (d) their efforts are promoted by a safe classroom environment (Wentzel, et al., 2010). These dimensions have been recognized as essential characteristics of teacher-student relationships that have the potential to promote positive school outcomes especially for early adolescents.

Student engagement is also conceptualized as a multidimensional construct. According to Fredricks and McColskey (2012), student engagement involves three dimensions: behavioral, emotional, and cognitive. Behavioral engagement draws on the idea of participation. It includes students' involvement in school-based academic, social, or extracurricular activities (Finn, 1993), positive conduct such as following school and classroom rules and norms (Connell, 1990), and absence of disruptive behaviors (Connell, 1990). Emotional engagement emphasizes students' affective reactions to teachers, classmates, academics, or school (Skinner & Belmont, 1993). Emotional engagement is also conceptualized by some researchers as sense of identification with school (e.g, feeling of being important to school, valuing of achieving school-related goals; Finn, 1989; Voelkl, 1997). Cognitive engagement refers to the extent to which students invest in learning. It involves being strategic and willing to make an effort to comprehend complex ideas and master difficult skills (Corno & Mandinach, 1983; Fredricks et al., 2004; Meece, Blumenfeld, & Hoyle, 1988). The three dimensions of student engagement – behavioral, emotional, and cognitive – are embedded within each student, and characterize the way students act, feel, and think (Eccles, 2004; Ryan & Deci, 2000; Skinner & Wellborn, 1994; Wang & Eccles, 2013).

### **Self-Determination Theory**

Self-determination theory (Ryan & Deci, 2000) offers mechanisms to explain how relationships between the teacher and students affect students' engagement and academic success. Self-determination theory, a theory of human motivation in social contexts, has been



used to inform research on teacher-student relationships in relation to engagement and academic success for school-aged students in general (e.g., Fredricks, et al., 2004) as well as for Latino students in particular (Ryan & Deci, 2006). The theory identifies three universal psychological needs – autonomy, competence, and relatedness – that are essential to students’ optimal development and functioning (Deci & Ryan, 2012). The extent to which students perceive that the classroom context meets their needs for autonomy, competence, and relatedness determines the degree to which they are engaged or disengaged in school. That is, the fundamental psychological needs serve as a mediator between contextual factors within the classroom and student engagement. Therefore, when classroom contexts in which early adolescents develop and maintain relationships with their teachers fulfill their psychological needs for autonomy, competence, and relatedness, their engagement is likely to be promoted. Students exhibit engagement as a desired action, which in turn leads to desired outcomes including improved academic achievement (Roorda et al., 2011; Skinner & Belmont, 1993).

Autonomy reflects students’ desire for self-initiation and self-regulation of their behavior, rather than doing things because of the teacher’s control (Skinner, Furrer, Marchand, & Kindermann, 2008). The need for autonomy is most likely to be met when students experience classroom contexts in which teachers provide students choice, allow students to participate in shared decision making, give students relative freedom from teacher control, and design curriculum and instruction that are relevant to the students’ interests and lives (Skinner et al., 2008; Wang & Eccles, 2013). When students’ need for autonomy is met, they are likely to be engaged and successful in school (Assor, Kaplan, & Roth, 2002; Wigfield, Eccles, Scheifele, Roeser, & Davis-Kean, 2006).

Competence refers to students’ need to be effective in their pursuits and interactions with the environment (Elliot & Dweck, 2005). That is, students believe that they can determine their success, know what strategies to use to achieve desired outcomes, and feel

efficacious in doing so. The need for competence is fostered when students are provided with adequate information about how to successfully accomplish their goals (Skinner & Belmont, 1993; Wang & Eccles, 2013). Teachers can provide structure by setting clear expectations, providing consistent feedback, offering instrumental help and support, and adjusting teaching to the level of the students (Connell, 1990; Urdan & Midgley, 2003). The competence need satisfaction in turn promotes student engagement and academic success (Urdan & Midgley, 2003; Wang & Eccles, 2013).

Relatedness reflects students' need for supportive, caring, and respectful relationships with others, which is encouraged by teachers' emotional support (Connell & Wellborn, 1991; Ryan & Deci, 2000). Teachers can support early adolescents' need for relatedness by showing involvement, such as expressing interest in, caring for, and respecting students. When the need for relatedness is met, students are more engaged in classroom activities and academic tasks and succeed in academics (Shim, Cho, & Wang, 2013).

Although self-determination theory was developed originally from research on middle class White youth, researchers have tested tenets of the theory to determine its appropriateness to early adolescents from cultural backgrounds that are different from Caucasian youth. However, few studies have tested the validity of self-determination theory when applied to non-Caucasian populations. Moreover, the limited existent research on populations other than Caucasians tends to focus on students from Eastern collectivistic cultures. Some researchers have argued that the basic propositions of self-determination theory should not apply to students in Eastern collectivistic cultures (Markus & Kitayama, 2003; Markus, Kitayama, & Heiman, 1996). These critics argue that not all cultures endorse the same values, in particular, questioning whether or not autonomy is a universal psychological need. While Eastern collectivistic cultures value conformity, social harmony, and family interdependence, Western individualistic cultures tend to emphasize values such

as individuality, uniqueness, and independence (Chao & Tseng, 2002). Thus in Eastern collectivist cultures, in which emphasis is placed on social obligations and autonomy support is not a popular teaching style (Quoss & Zhao, 1995), psychological need satisfaction might not bring about the same positive educational outcomes as found in Western samples (Iyengar & DeVoe, 2003; Tseng, 2004).

However, some researchers have demonstrated the generalizability to students from cultural backgrounds that differ significantly from middle class Caucasian Americans. For example, Jang, Reeve, Ryan, and Kim (2009) tested self-determination theory with high school students in South Korea, where collectivism is the dominant culture in contrast to individualism in the western culture. Results supported the self-determination theory's cross-cultural generalizability. Like Caucasian students, Korean adolescents benefited from classroom experiences that satisfied their needs for autonomy support, competence, and relatedness. The need satisfaction experiences were positively associated with students' classroom engagement and achievement even after controlling for cultural and parental influences, including the collectivistic value orientation.

Like Eastern Asian cultures, Latinos cultures also feature collectivism, an approach to life focusing on the interdependence of members within the group and the importance of social bonds and group goals over personal needs (Arevaloa, So, & McNaughton-Cassillb, 2016). Group members function through social obligations rather than individual personalities. Research has shown that collectivism is a hallmark of the Latino population (Arevaloa, et al., 2016; Rinderle & Montoya, 2008; Segal, Gerdes, Mullins, Wagaman, & Androff, 2011). One form of collectivism among Latinos is close family ties (Schwartz et al., 2010). Because of their close-knit family relationships, Latino students primarily get social support from their families (Elder, Ayala, Parra-Medina, & Talavera, 2009). Latino cultures assume a social structure in which the family's needs supersede those of the individual needs.

Thus, the collectivist orientation of Latino cultures suggests that the need for autonomy based on self-determination theory may not apply to Latino students.

Moreover, Change (2015) argues that while close family relationships are essential to collectivism in both Eastern Asian and Latino cultures, the form of collectivism may be different between these cultures because of some specific cultural values and norms. For instance, Latino cultures promote emotional expression whereas Eastern Asian cultures restraint emotional expression (Butler, Lee, & Gross, 2007; Ruby, Falk, Heine, Villa, & Silberstein, 2012; Wang et al., 2010). Latinos consider family as an important social support resource (Bermúdez, Kirkpatrick, Hecker, & Torres-Robles, 2010). In contrast, Eastern Asians tend to underutilize family as a source of support (Kim, Li, & Ng, 2008). With regard to the need for emotional connection (relatedness of self-determination theory) with teachers, it may not apply to Latino students as they tend to obtain social support primarily from their families. Yet little is known about the extent to which aspects of self-determination theory applies to Latino youth concerning teacher-student relationships in relation to engagement and achievement in similar or different ways as compared to early adolescents from different collectivist cultures.

### **Ecological Theory**

Ecological theory posits that development involves an ongoing process of exchange between the individual student and the surrounding environment. The surrounding environment of an individual early adolescent is divided into five different levels of systems, including micro, meso, exo, macro, and chrono. The microsystem and macrosystem bear particular relevance to the study. The microsystem is the most influential level of environmental system of ecological theory. It is the system closest to the individual and contains the structures with which the student has direct contact. Examples of the structures in the microsystem are family, classroom, school, peer group, and neighborhood. In this

study, I focus on the classroom microsystem and specifically, teacher-student relationships. Within the classrooms microsystem, teacher-student relationships provide a critical context within which teachers influence individual students' experiences. Teachers create and involve students in activities in the classroom setting. The activities are behaviors that carry meaning and purpose to the developing student. The classroom setting influences students through the activities as a means, such as engaging students in the activity or drawing students' attention. Teachers engage students in activities through teacher practices to manage the classroom, provide instruction, or socialize students. Positive relationships with students promote the developmental impact of activities upon students, whereas negative relationships hinder the potential influence of activities on the development of students (Bronfenbrenner & Morris, 2006).

The macrosystem is the outermost layer in early adolescent's environment that influences their development. The macrosystem refers to the overarching pattern of ideology and organization that characterizes the cultural context. The macrosystem comprises "belief systems, bodies of knowledge, material resources, customs, life-styles, opportunity structure, hazards, and life course options" (Bronfenbronner, 1993, p. 40). I focus on the following components within the macrosystem that are relevant to the present study: ethnicity (White vs. Latino students), Latino cultural values, gender, socioeconomic status (SES), and geographic locale (rural, urban, or suburban). These selected components within youth's macrosystem ultimately affect the interactions between individual student and the teacher in the classroom microsystem (Bronfenbronner, 1993). Relationships between students and their teacher in turn influence early adolescents' engagement and academic achievement.

With regard to ethnicity in the macrosystem, the present study focuses on Latino early adolescents. Latino early adolescents face unique challenges of building relationships with their teachers. The schools in which Latino youth enroll may reflect the values of the

dominant culture (Balagna, Young, & Smith, 2013) and Latino students are likely to be taught by Caucasian teachers (Bingham & Okagaki, 2012). If the teachers are unfamiliar with Latino youth's home culture, misunderstanding and conflicts may occur between the teachers and their students (Bingham & Okagaki, 2012). In one study, Latino youth perceived that their Caucasian peers received more attention, care, and support from teachers than they did (Valenzuela, 1999). Such perceptions may lead them to believe that their teachers discriminate against them (Katz, 1999). Furthermore, many Latino early adolescents are identified as limited English proficient, which may make it difficult for teachers to communicate with them and develop caring and supportive relationships (Suárez-Orozco et al., 2009). Finally, Latino youth are more likely to be taught by less-qualified teachers than White youth (Adamson & Darling-Hammond, 2012; Suárez-Orozco et al., 2009). These teachers are often ill-equipped with specific knowledge and strategies needed to work with Latino students (Green, Rhodes, Hirsch, Suárez-Orozco, & Camic, 2008). Therefore, challenges in developing teacher-student relationships among Latino youth draw attention to an examination of the role of such relationships in these students' engagement and academic success.

Latino cultural values may play a significant role in teacher-student relationships for Latino youth. Failure to incorporate the Latino cultural values into practice for teachers may negatively impact their relationships with Latino youth. Teachers need to become familiar with the subtle nuances of Latino cultural values and explore how these values influence teacher-student relationships. Within the macrosystem of Latino youth, one distinctive cultural value is *respeto* (Woolley, Kol, & Bowen, 2009). Within the Latino culture, *respeto* implies deference to authority or those of higher status based on age, gender, or authority status (Halgunseth, Ispa, & Rudy, 2006). This value may influence the quality of interactions between teachers and students. For example, as a sign of *respeto*, Latino youth may not

question or openly express disagreement with their teacher for fear of being perceived as disrespectful toward the teacher. The teacher may interpret the students' reactions as not assertive or interested in engaging actively in school activities. The predominant White culture promotes individualism and the teacher may try to provide freedom and choice to the students to promote student autonomy. However, the same practice may not work for Latino students. Latino youth may want to have less autonomy, but to passively receive information from the teacher. For example, the teacher may want to encourage Latino youth to participate in shared decision making, whereas the Latino youth may not be actively involved. While the teacher may perceive these students as being passive and uninterested, the students may feel disrespectful toward the teacher if they share their own opinions. Such conflicts may impede the development of positive teacher-student relationships (relatedness in self-determination theory), which in turn negatively impacts engagement and academic success for Latino youth.

Another significant cultural value held by Latino youth is *familisimo* (Woolley et al., 2009). *Familisimo* is manifested by strong family ties and a strong sense of interdependence and loyalty (Halgunseth, et al., 2006). Latino youth look to their families as the primary source of decision making as they believe families contribute to their sense of identity and purpose. They often place the needs of their families above their own needs. For example, when Latino early adolescents make the decision to attend college, they may not only think about their own qualifications and academic backgrounds, but take their families' needs into consideration. If their families need them to find jobs to help support the families and take care of the siblings, the Latino youth may decide not to go to college even if they are academically prepared. However, the Latino cultural value of *familisimo* is at odds with the values in the dominant White American culture. Unlike *familisimo*, independence and individualization are highly valued. But such an orientation may be perceived as selfish by Latino youth and their families. The teacher wants to help Latino youth realize the

importance and benefit of pursuing specific goals such as going to college, whereas the Latino students may perceive this as being at odds with their strong family values. The teacher may try to promote competence for Latino students by providing helpful information in support of decisions and choices of these students, whereas Latino youth may not receive teachers' help well and thus may not feel emotionally connected to the teacher. If teachers did not recognize or value the important role of family in the individual Latino student's life, it might cause conflicts between teachers and students. This may negatively impact Latino students' interest in engaging at school and success in academics. Therefore, given the importance of these values in the Latino culture and the potential these values may have to produce differential meanings for relationships between teachers and Latino youth, there is a need to further understand the associations between relationships with teachers and engagement and academic achievement among Latino youth in particular.

In addition to ethnicity in the macrosystem, gender, SES, and geographic locale are factors that may impact teacher-student relationships. Male and female students may respond differently to teacher caring. Female students tend to relate to their teacher emotionally more easily than male students. Thus, female students may perceive their relationships with their teachers to be more positive than male students (e.g., Wentzel et al., 2010). Students' SES backgrounds may also influence the development of teacher-student relationships. It is likely that students with high SES are taught by teachers who are highly qualified and better equipped with professional knowledge and experience in working with early adolescents. In contrast, students of low SES may not be as fortunate as those of high SES. They may attend schools that are understaffed with teachers who are less experienced in interacting with students (Adamson & Darling-Hammond, 2012). Finally, geographic locale may also impact relationships between teachers and early adolescents. It is likely that schools in urban and rural areas tend to be equipped with students from low SES backgrounds and less qualified



teachers; whereas suburban schools are more likely to have students of high SES backgrounds and highly-qualified teachers. Thus, students from suburban schools may perceive their relationships with their teachers to be more positive than students from schools in urban or rural areas (Gallagher, Kainz, Vernon-Feagans, & White, 2013). As for Latino youth, they tend to come from low SES backgrounds and live in urban or rural areas. Latino students are more likely to be taught by less qualified teachers lacking knowledge and experience in developing positive relationships with these students (Adamson & Darling-Hammond, 2012).

### **Integration of Theories**

The theoretical framework for the present review involves elements of self-determination theory and ecological theory. This integrated framework provides a simplified, exploratory representation of how teacher-student relationships are associated with student engagement and academic achievement among early adolescents and Latino youth in particular. I incorporate the three basic needs for development from self-determination theory – autonomy, competence, and relatedness – to explain the mechanisms between teacher-student relationships, student engagement, and academic achievement for early adolescents. When these needs are met, students are most likely to be engaged in school and ultimately thrive academically. In order for this to happen, teachers play a pivotal role in creating social contexts that provide experience for youth to support their basic psychological needs for development through developing and maintaining caring and supportive relationships with these students.

Recall that there are four dimensions of teachers-student relationships, including teacher emotional support, instrumental help, clear expectations, and classroom safety. The fundamental significance of the dimensions of teacher-student relationships for explaining student engagement and academic achievement is highlighted in self-determination theory

(Ryan & Deci, 2009; Wentzel, et al., 2010). The need for autonomy emphasizes the significance of provision of choice and connection to students' lives in teacher instrumental help, competence underscores the importance of teacher expectations and structure in teacher instrumental help, and relatedness highlights the critical role of safe classroom environment and teacher emotional support.

Under ecological theory, student engagement and academic achievement occur through the interactions between an individual early adolescent and the teacher within the microsystem. In addition to the microsystem, I also adopt the macrosystem. I select the following factors within the macrosystem that are related to the present review, including ethnicity, gender, SES, geographic locale, and cultural factors. These factors within the macrosystem influence the teacher-student relationships for early adolescents.

### **The Current Study**

The challenges in developing teacher-student relationships faced by early adolescents, and Latino students in particular, call for examination of the role of such relationships in these students' engagement and achievement. The theoretical framework and the rationale suggest the following main questions to be addressed in this literature review:

1. To what extent are the associations between teacher-student relationships, student engagement, and academic achievement for early adolescents in general conceptualized and operationalized in the extant research?
2. To what extent are teacher-student relationships associated with student engagement and academic achievement for early adolescents in general? To what extent are such associations moderated by student gender, SES, and geographic locale?

3. To what extent are the associations between teacher-student relationships, student engagement, and academic achievement for Latino early adolescents conceptualized and operationalized in the extant research?
4. To what extent are teacher-student relationships associated with student engagement and academic achievement for Latino early adolescents? To what extent are such associations moderated by student gender, SES, and geographic locale, and Latino cultural factors?
5. To what extent does the research on the associations between teacher-student relationships, student engagement, and academic achievement for early adolescents in general compare with the research for Latino youth?

### **Chapter 3: Methods**

I conducted a systematic literature review using online databases for articles available as of August 2014. I used the *EBSCOhost Education* e-search database through the University of North Carolina at Chapel Hill Libraries website in searching for the research literature for the proposed review. I chose the following five sub-databases within the *EBSCOhost Education* e-search database: *Education Full Text (H. W. Wilson)*, *ERIC*, *PsychInfo*, *PsychARTICLES*, and *Families and Society Studies Worldwide*. I focused on these databases because they were likely to be commonly used in the field of education, psychology, or sociology. The keywords used for the literature search for studies with early adolescents in general included: “teacher-student relationships or teacher support,” “engagement, student engagement, or school engagement,” “achievement, academic achievement, or academic success,” and “early adolescents, youth, or middle school students.” The literature search for studies with Latino early adolescents also had the key word “Latino or Hispanic” in addition to the key words used for search for studies with early adolescents in general.

#### **Search Criteria**

I selected articles for the review based on the following criteria. Articles were included if they explored the associations between teacher-student relationships and student engagement or academic achievement with early adolescents in general or Latino early adolescents (between 10 and 14 years old). Further, articles were included if at least one dimension of teacher-student relationships (i.e., teacher expectations, instrumental help, classroom safety, and emotional support) had been examined. If student engagement was

included in the study, at least one dimension of student engagement (behavioral, emotional, and cognitive) or a composite view of engagement had to be explored. Only peer-reviewed empirical journal articles published within the past 26 years (i.e., since 1988) and studies conducted in the U.S. were included.

### **Search Procedure**

I conducted a literature search for studies with early adolescents in general and then followed the similar procedure to search for studies with Latino early adolescents in particular. For the first round search for studies with early adolescents in general, the keywords identified above for these studies were used within the five sub-databases in the *EBSCOhost Education e-search* database. Once articles that appeared to meet the inclusion criteria were selected, I followed a series of steps. First I read the abstract of each article to identify and select articles that appeared to be relevant to my review. Next, I retrieved and read the full text of each selected article. Results and other important information relevant to the proposed review were underlined and noted. Finally, I entered information related to the proposed review in a table (see Table 1), which included information about author and publication date, theoretical framework, key characteristics of methodologies (study design, sampling, sample size, participants' ethnicity, age, grade level, gender, and geographic locale, socioeconomic status [SES], measures, data collection, and data analysis), and results relevant to associations between teacher-student relationships, student engagement, and academic achievement among early adolescents in general. For the second search for studies with early adolescents in general, I scanned the reference list of each selected article to see if there were articles that appeared to be relevant to my study. I then obtained the text of each selected article and followed the same procedure as I did for the articles selected during the first round search. Additionally, I scanned the index of *Educational Psychology Review* and *Review of Educational Research* back to 2004 to see if reviews of research relevant to my

study existed. Once I finished searching for literature with early adolescents in general, I followed a similar procedure to search for studies with Latino early adolescents in particular by using the key word “Latino or Hispanic” in addition to the key words used for searching for studies with early adolescents in general (see Table 2).

### **Sample of Articles**

The search following these steps yielded 16 studies on associations between teacher-student relationships, student engagement, and academic achievement for early adolescents in general (Table 1) and 10 studies for Latino early adolescents in particular (see Table 2). For studies of early adolescents in general, the majority of the studies employed solely quantitative methods. About half were longitudinal and half were cross-sectional studies. Sample size for student participants ranged from 12 to 6,294. Sample size for teacher participants ranged from 4 to 135. Student participants were predominantly Caucasian, accounting for 44% to 98% of the participants. Student participants ranged from 7 to 17 years old, in third through twelfth grade; about half were male. The studies were conducted in various regions of the United States and mostly in suburban settings. Students’ socioeconomic status (SES) ranged from low to middle, with the majority being from low SES backgrounds.

For the 10 studies that focused specifically on Latino youth, the methodology was primarily quantitative. Three employed a longitudinal design and seven used a cross-sectional design. The majority ( $n = 7$ ) of the studies focused solely on Latino students. In most of the other studies ( $n = 3$ ) that involved both Latino students and students of other ethnic groups, the participants were comprised primarily of Latino students. One exception is that in Crosnoe, Johnson, & Elder’s (2004) study, the participants were primarily comprised of Caucasian students (54%). Although Latino students accounted for only 16 percent of the participants, the total number of participants was considerably large (10,991), therefore, the

total number of Latino student participants was fairly large as well (about 1,759). The sample size for Latino students in the quantitative studies ranged from 11 to 1,759. Half (n = 5) of the studies included middle school students only; participants' age ranged from nine to 18 years, and grade level ranged from three to twelve. The majority of the studies included both male and female students. The majority of the participants came from low SES backgrounds. The studies were conducted in various locations in the United States. Half of the studies identified the setting of the studies, with the majority (n = 4) in cities and one in a rural area.

### **Analytic Plan**

The results relevant to the research questions of the current review were analyzed systematically. For the first round of data analysis, I focused on the research questions concerning early adolescents in general: (a) To what extent are the associations between teacher-student relationships, student engagement, and academic achievement for early adolescents in general conceptualized and operationalized in the extant research?; (b) To what extent are teacher-student relationships associated with student engagement and academic achievement for early adolescents in general?; and (c) To what extent are such associations moderated by student gender, SES, and geographic locale? As I read the literature, I took notes of the key points for the following three parts of each study: theoretical framework, research methodology, and findings. I put the notes in a table (Table 1). I then analyzed the data to answer each of the research questions in order.

For the first question (To what extent are the associations between teacher-student relationships, student engagement, and academic achievement for early adolescents in general conceptualized and operationalized in the extant research?), I first focused on the coherence to theoretical framework and constructs, especially teacher-student relationships and student engagement. I reviewed my notes on overall theoretical framework in each study and sorted the studies by grouping studies using similar conceptual frameworks together. Then I

compared the theoretical framework used in the studies in each group with the theoretical framework proposed in the current review. If they were similar, then the theoretical framework used in the studies was coherent with the framework proposed in the current study. If the two theoretical frameworks were different, then there was no coherence. Once analysis of coherence to the overall theoretical framework was completed, I moved on to analyze the coherence to constructs. I reviewed the notes for conceptualization of teacher-student relationships first, and grouped the studies according to how each study defined the dimensionality of teacher-student relationships. I then compared these groups with the conceptualization of teacher-student relationships proposed in the review. If the group of the studies conceptualized teacher-student relationships in the same way as defined in the present review, then coherence was reached. Otherwise, there was no coherence. I followed the same procedure to examine coherence to the conceptualization of student engagement.

Next, I analyzed data relevant to operationalization of the studies. I focused on the research design, sampling, sample size, characteristics of the participants, and measurements of the constructs. With regard to characteristics of the participants, I selected the characteristics relevant to the present review, including gender, SES, geographic locale, ethnic background, and grade level. For example, for research design (longitudinal vs. cross-sectional, quantitative vs. qualitative), I reviewed the notes pertinent to research design of each study. Then I sorted the studies by grouping studies using a longitudinal design and those using a cross-sectional design. I then compared these two groups of studies by focusing on advantages and disadvantages of each design. I followed the same procedure in analyzing studies using quantitative, qualitative, or mixed methods. I followed the same procedure for critiquing sampling, sample size, characteristics of the participants, and measurements of the constructs used in the studies.



When administering a measure developed for White, middle class, American adolescents to adolescents of a different ethnic group, a particularly important aspect of the research design is whether or not the measures were determined to be appropriate for Latino students. (Carlo, Knight, McGinley, Zamboanga, & Jarvis, 2010; Knight & Hill, 1998; Knight, Tein, Prost, & Gonzales, 2002). Researchers need to attend to measurement equivalence because measurement nonequivalence can result in mean differences in the construct that are not a function of ethnic differences.

For the next research question (To what extent are teacher-student relationships associated with student engagement and academic achievement for early adolescents in general?), I first read through the results of each study and determined codes based on the key constructs of the proposed review, including teacher-student relationships, student engagement, and academic achievement. Specifically, the four dimensions of teacher-student relationships (teacher clear expectations, teacher instrumental help, classroom safety, and teacher emotional support) were coded as TCE, TIH, CS, and TES, respectively. The three dimensions of student engagement (behavioral, emotional, and cognitive) were coded as BE, EE, and CE, respectively. Academic achievement was coded as AA.

As I read the particular results within a study, I assigned codes to each finding that corresponded to the specific research question of my study. If a study had multiple findings, the same study was coded in multiple ways. I assigned a code “TCE-BE” to results indicating associations between teacher clear expectations and students’ behavioral engagement. Similarly, I assigned a code “TCE-EE” to results suggesting relationships between teacher clear expectations and students’ emotional engagement. A code “TEC-CE” was given to results suggesting associations between teacher clear expectations and students’ cognitive engagement. “TEC-AA” was used to code findings indicating associations between teacher clear expectations and students’ academic achievement. “TEC-BE-AA” was assigned to the

findings suggesting associations between teacher clear expectations and students' academic achievement mediated through students' behavioral engagement. I followed the same procedure to code the rest of the findings related to associations between teacher-student relationships, student engagement, and academic achievement among early adolescents in general. The codes were included in Table 1.

Second, once I assigned codes to results related to teacher-student relationships, student engagement, and academic achievement, I further examined these results by sorting them according to the codes assigned. Studies containing results with the same code were grouped together. For instance, studies with the results pertinent to associations between teacher clear expectations and student behavioral engagement (i.e., "TCE-BE") were grouped together. Studies with the results relevant to associations between teacher clear expectations and student emotional engagement (i.e., "TCE-EE") were grouped together, and so on. If a study had multiple results with different codes assigned, the study fell into multiple groups according to the codes. For example, if a study had two findings relevant to the research questions— with one finding indicating associations between teacher emotional support and early adolescents' cognitive engagement ("TES-CE"), and the other finding suggesting associations between teacher instrumental help and early adolescents' academic achievement through cognitive engagement as a mediator ("TIH-CE-AA") – the study were included in both groups of studies according to the findings.

Third, I further sorted the studies by findings relevant to associations between each dimension of teacher-student relationships, student engagement, and academic achievement for early adolescents in general. That is, studies with findings on associations between teacher clear expectations, engagement, and achievement were grouped together ("TCE-BE," "TCE-EE," "TCE-CE," "TCE-AA," "TCE-BE-AA," "TCE-EE-AA," and "TCE-CE-AA"). Studies with findings on associations between teacher instrumental help, engagement, and

achievement were grouped together (“TIH-BE,” “TIH-EE,” “TIH-CE,” “TIH-AA,” “TIH-BE-AA,” “TIH-EE-AA,” and “TIH-CE-AA”). Studies with findings on associations between classroom safety, engagement, and achievement were grouped together (“CS-BE,” “CS-EE,” “CS-CE,” “CS-AA,” “CS-BE-AA,” “CS-EE-AA,” and “CS-CE-AA”). Studies with findings on associations between teacher emotional support, engagement, and achievement were grouped together (“TES-BE,” “TES-EE,” “TES-CE,” “TES-AA,” “TES-BE-AA,” “TES-EE-AA,” and “TES-CE-AA”).

Fourth, within each of the four groups of studies, I further sorted the studies based on the relevance of the findings to associations between a dimension of teacher-student relationships and student engagement, or associations between a dimension of teacher-student relationships and academic achievement among early adolescents in general. For example, within the group of studies pertaining to associations between teacher clear expectations, engagement, and achievement, studies with findings relevant to associations between teacher clear expectations and engagement were grouped together (“TCE-BE,” “TCE-EE,” “TCE-CE”) and studies with findings relevant to associations between teacher clear expectations and achievement were grouped together (“TCE-AA,” “TCE-BE-AA,” “TCE-EE-AA,” and “TCE-CE-AA”). I followed the same procedure for analyzing studies with results suggesting associations between each of the other dimensions of teacher-student relationships, engagement, and achievement among early adolescents.

As for the third research question involving early adolescents in general (To what extent are such associations moderated by student gender, SES, and geographic locale?), I first read the results of each study by paying special attention to results related to student gender. Then I grouped the studies with similar results concerning the role of student gender as a moderator in the associations between teacher-student relationships, student engagement, and academic achievement for early adolescents in general. Next I summarized the results. I

followed the similar procedure in analyzing studies involving results concerning SES and geographic locale.

Once the analysis of studies involving early adolescents in general was completed, I moved on to the research questions concerning Latino youth in particular. The questions are (a) To what extent are the associations between teacher-student relationships, student engagement, and academic achievement for Latino early adolescents conceptualized and operationalized in the extant research?; (b) To what extent are teacher-student relationships associated with student engagement and academic achievement for Latino early adolescents?; and (c) To what extent are such associations moderated by student gender, SES, and geographic locale, and cultural factors? The results were summarized in Table 2. As the research questions for studies including Latino youth in particular were similar to studies involving early adolescents in general (except for the moderation effects of cultural factors), I followed the similar procedure in analyzing these studies. For the moderation effects of cultural factors, I read the results of each study related to Latino cultural values especially *respeto* and *familisimo*. Then I grouped the studies with similar results concerning the role of *respeto* as a moderator in the associations between teacher-student relationships, student engagement, and academic achievement for Latino early adolescents. Next I summarized the results. I followed the similar procedure in analyzing studies involving results concerning the moderation effects of *familisimo*.

Finally, with regard to the last research question of the present review (To what extent does the research on the associations between teacher-student relationships, student engagement, and academic achievement with Latino youth compare with the research with early adolescents in general?), I compared the two groups of studies in the following order: conceptualization, operationalization, key findings, and moderation effects. For example, in terms of conceptualization of the studies involving early adolescents in general compared to

that of the studies including Latino youth in particular, I focused on coherence to the overall theoretical framework first. For studies involving early adolescents in general, I sorted them by grouping together the studies in which the theoretical framework was in coherence with the framework proposed in the present review. I sorted the studies including Latino youth in particular by following the same procedure. I then compared these two groups of studies. For the remaining comparison points (coherence to constructs, research methodology, key findings including moderation effects), similar steps were followed.

## Chapter 4: Results

A total of 26 studies were found that addressed associations between teacher-student relationships, student engagement, and academic achievement for early adolescents in general (n = 16, see Table 1) or Latino youth in particular (n = 10, see Table 2). In the following sections, I critique the literature, summarize the findings, and compare studies for early adolescents in general with literature for Latino youth. The general critiques of the literature for early adolescents and Latino youth in particular provide a context for understanding how such associations are conceptualized and operationalized for each group of students. The critiques focus on conceptual framework as well as methodologies, because these are central to the quality of the studies. Components of conceptual framework include adherence to theoretical framework and constructs. Components of methodologies include study design, sampling, sample size, participants' characteristics, and measurements. Findings from the literature for each group of students are summarized according to the four dimensions of teacher-student relationships: (a) teacher emotional support, (b) teacher instrumental help, (c) teacher clear expectations, and (d) classroom safety.

### **Question 1. To What Extent Are the Associations between Teacher-Student Relationships, Student Engagement, and Academic Achievement for Early Adolescents in General Conceptualized and Operationalized in the Extant Research?**

**Adherence to theoretical framework.** One strength of the literature is that the majority of the studies were guided by theoretical frameworks. However, the extent to which the theoretical frameworks in the literature fully aligned with the framework (ecological theory and self-determination theory integrated) as proposed in the present review was very

limited. Not all studies were guided by an explicit theoretical framework; some were empirically grounded or relied on other theoretical bases.

Of the 13 studies which explicitly specified theoretical frameworks, only one (Wentzel et al., 2010) incorporated both self-determination theory and ecological theory jointly (this study also included social cognitive theory). The integration of these two theories provided the theoretical underpinning for the associations between teacher-student relationships and student engagement and academic achievement as well as for the basis for key environmental factors (i.e., teacher, student ethnicity, gender, SES, cultural values, and geographic locale) of each early adolescent.

A strong feature of the other studies that specified theoretical frameworks was their reliance on self-determination theory ( $n = 7$ ). Among these, the majority ( $n = 5$ ) utilized self-determination theory only (e.g., Wang & Holcombe, 2010), which provided a conceptual framework for why teacher-student relationships matter for student engagement and academic achievement. Self-determination theory also suggests the dimensions of teacher-student relationships (i.e., autonomy for teacher instrumental help, competence for teacher clear expectations and instrumental help, and relatedness for teacher emotional support and safe classroom environment) for early adolescents. Although in many studies the role of environmental factors was addressed analytically, no theoretical underpinning (i.e., ecological theory) for their role was provided.

While half of the studies adopted only self-determination theory, only two studies (Dotterer & Lowe, 2011; Wang & Eccles, 2012) adopted solely ecological theory as the theoretical framework for guiding the role of teacher-student relationships within the classroom. But, neither study used ecological theory to guide the examination of ethnicity, gender, SES, or geographic locale. Indeed, ecological theory provided a theoretical basis for explaining that environmental factors mattered for teacher-student relationships in relation to

engagement and achievement for early adolescents. However, without self-determination theory, the theoretical foundation for explaining why teacher-student relationships were associated with student engagement and academic achievement was missing.

A few studies (n = 3, Patrick, Ryan, & Kaplan, 2007; Ryan & Patrick, 2001; Wentzel, 1997) employed completely different theoretical frameworks than the framework proposed in the present review. The other theories used – social cognitive theory, stage-environment fit theory, and pedagogical caring – were not as complete as the integrated framework of self-determination theory and ecological theory. For example, Patrick et al. (2007) employed social cognitive theory (Bandura, 1986) to explore early adolescents' perceptions of various aspects of the classroom social environment (including teacher academic and emotional support) in relation to students' engagement and achievement in mathematics. Although social cognitive theory and self-determination theory both emphasize the central role of the individual student's social environment, social cognitive theory does not include individual needs (i.e., autonomy, competence, and relatedness), whereas self-determination theory integrates needs with social cognitive theory. Finally, a few studies (n = 3, Blumenfeld & Meece, 1998; Conner & Pope, 2013; Turner et al., 1998) did not provide a theoretical framework to guide the research questions and the specification of relationships among variables. Because of a lack of theory, it was not clear why the variables were related to one another.

**Adherence to constructs.** Teacher-student relationships and student engagement were defined as either multidimensional or unidimensional constructs. The extent to which the conceptualization of teacher-student relationships and student engagement aligned with the conceptualization of these constructs proposed in this review was limited. None of the literature conceptualized both teacher-student relationships and student engagement fully with the conceptualization of these constructs as proposed in this review.



*Teacher-student relationships.* Wentzel et al. (2010) study was the model for this study in including four dimensions (i.e., teacher emotional support, instrumental help, clear expectations, and classroom safety) of teacher-student relationships. Half of the studies specified multiple dimensions, but were inconsistent in terms of which dimensions were included. Half of the studies defined teacher-student relationships as a unidimensional construct;

The studies that defined teacher-student relationships as a multidimensional construct (n = 7, Blumenfeld & Meece, 1988; Gregory, Allen, Mikami, Hafen, & Pianta, 2014; Patrick et al., 2007; Skinner & Belmont, 1993; Turner et al., 1998; Wang & Eccles, 2013; Wang & Holcombe, 2010) included only two or three of the four dimensions or combinations of multiple dimensions (except for Wentzel et al. [2010] study). Specifically, Blumenfeld and Meece (1988) and Patrick et al. (2007) defined teacher-student relationships as a two dimensional construct involving either teacher instrumental help and clear expectations, or teacher instrumental help and emotional support. For the remaining studies in this group, teacher-student relationships involved at least one combination of four dimensions. For instance, in the Turner et al. (2014) study, although teacher observations on motivational support were coded into categories (belongingness – teacher emotional support and classroom safety, competence - instrumental help and clear expectations, autonomy – instrumental help, and meaningfulness - instrumental help), the quantitative analyses did not explore these distinct dimensions, but instead, combined these categories into one representing teacher motivational support. In Gregory et al. (2014) study, observations of teacher-student interactions in the classroom were coded into three categories (emotional support – teacher emotional support and classroom safety, classroom organization – teacher clear expectations, and instructional support – instrumental help). Emotional support actually involved both teacher emotional support and classroom safety (e.g., level of expressed

negativity such as irritability, frustration, and anger from the teacher) according to the description of this category in the study.

All four dimensions are ideal because they are important characteristics of teacher-student relationships that have the potential to promote positive school outcomes. As Wentzel et al. (2010) have indicated, students are more likely to be engaged in school and succeed in academics when (a) they feel they are being cared about (teacher emotional support); (b) their efforts to meet the expectations are facilitated with teachers' help (teacher instrumental help); (c) classroom expectations are clearly delivered to them (teacher clear expectations); and (d) their efforts are promoted by a safe classroom environment (classroom safety). Wentzel et al. (2010) examined the inter-correlations of these four dimensions, with significant correlation coefficients ranging from .24 to .67. But Wentzel et al. (2010) did not examine whether the four dimensions were distinct constructs (e.g., doing factor analysis).

Furthermore, these studies typically included teacher emotional support, whereas classroom safety was the least frequently examined dimension. While teacher emotional support (e.g., caring about and showing respect to students' opinions) may promote early adolescents' engagement and academic success, the importance of classroom safety should not be ignored. Wentzel et al. (2010) found that a safe and risk-free classroom environment was a significant predictor of middle school students' social goal pursuit and interest in social class. Perhaps historically, researchers have examined classroom safety as a single, independent construct instead of treating it as one dimension of teacher-student relationships. As a result, findings of the studies strongly reflected teacher emotional support, and much less classroom safety in relation to student engagement and academic achievement for early adolescents.

Similarly, the studies (n = 8; Conner & Pope, 2013; Dotterer & Lowe, 2011; Furrer & Skinner, 2003; Goodenow, 1993; Ryan & Patrick, 2001; Turner et al., 2014; Wang & Eccles,

2012; Wentzel, 1997) that treated teacher-student relationships as a single construct also focused primarily on teacher emotional support. As Wentzel et al. (2010) have pointed out, although results based on this whole construct suggested that perceived teacher-student relationships could be a strong motivator of student engagement and achievement, conclusions based on these findings are limited. Teacher emotional support as a global construct does not reflect adequately what relationships between teachers and students involve, nor does it reflect the complex nature of students' social interactions with teachers at school (Wentzel et al., 2010).

***Student engagement.*** For student engagement, only a few studies (n = 4; Conner & Pope, 2013; Wang & Eccles, 2012, 2013; Wang & Holcombe, 2010) specified student engagement as a three-dimensional construct, including behavioral, emotional, and cognitive engagement. All three dimensions are ideal because they capture the way students act (behavioral engagement), feel (emotional engagement), and think (cognitive engagement, Wang & Eccles, 2012, 2013). However, half (n = 8; Blumenfeld & Meece, 1988; Dotterer & Lowe, 2011; Furrer & Skinner, 2003; Patrick et al., 2007; Ryan & Patrick, 2001; Skinner & Belmont, 1993; Turner et al., 1998; Wentzel et al., 2010) of the studies defined student engagement as a two-dimensional construct, with a primary focus on behavioral engagement. The majority (n = 6) of these studies conceptualized student engagement as behavioral engagement and emotional engagement (n = 3; Furrer & Skinner, 2003; Skinner & Belmont, 1993; Wentzel et al., 2010), or behavioral engagement and cognitive engagement (n = 3; Blumenfeld & Meece, 1988; Patrick et al., 2007; Ryan & Patrick, 2001). Interestingly, Dotterer and Lowe (2011) combined emotional and cognitive engagement into psychological engagement, and defined student engagement as behavioral engagement and psychological engagement. Additionally, Turner et al. (1998) did not include behavioral engagement, but just addressed emotional and cognitive engagement. Results from these studies provide

strong evidence for the relationship between aspects of teacher support and behavioral engagement, but the evidence showing emotional or cognitive engagement is very limited.

In contrast, in four studies, student engagement was conceptualized as a unidimensional construct, which primarily reflected behavioral engagement (i.e., making an effort in class discussions) (Goodenow, 1993; Gregory et al., 2014; Turner et al., 2014; Wentzel, 1997). Although results based on this whole construct suggested that teacher-student relationships could be related to student engagement, conclusions based on these findings seem most relevant to behavioral engagement. Student engagement as a global construct does not reflect adequately what student engagement involves, nor does it capture the complex nature of the way students act, feel, or think.

**Research design.** For research design, I focus on the use of experimental or non-experimental design, longitudinal or cross-sectional design, and research methods (quantitative, qualitative, or mixed methods).

***Experimental and non-experimental design.*** Only two studies employed experimental designs (Gregory et al., 2014, Turner et al., 2014) whereas the majority were non-experimental, correlational studies. The experimental studies involved interventions through teacher professional development programs to enhance teacher-student interactions and student engagement. One study (Gregory et al., 2014) utilized a randomized controlled design and the other (Turner et al., 2014) used a quasi-experimental design. While the randomized controlled design supported causal relationships for the effects of the intervention on teacher-student interactions and student engagement, the quasi-experimental design as well as the other non-experimental correlational studies did not support such causal relationships, because the designs did not involve random assignment of the teachers to study conditions. Thus, the extent to which the positive changes in teacher-student relationships and student engagement were due to the intervention could not be inferred from these studies.

***Longitudinal or cross-sectional design.*** A strong feature of the literature on teacher-student relationships and student engagement and achievement is that about half ( $n = 9$ ) of the studies adopted longitudinal designs. The remaining studies used cross-sectional designs. As youth go through early adolescence, relationships with their teachers, and their level of engagement and academic achievement may also change. The longitudinal design offers the potential to capture the associations between changes in teacher-student relationships and changes in student engagement or achievement, whereas cross-sectional studies do not. For example, Wang and Eccles (2012) examined the influence of supportive relationships with teachers on trajectories of different dimensions of school engagement from middle to high school. Their findings suggested that increased social support from teachers was related to higher school compliance from 7<sup>th</sup> to 10<sup>th</sup> grade. In contrast, the cross-sectional design provided a snapshot of teacher-student relationships in relation to the target population at a single point in time. For instance, Wentzel et al. (2010) explored young adolescents' perceptions of teachers' support in relation to student engagement. Although multiple cohorts (6<sup>th</sup> – 7<sup>th</sup> grade) of students were included in the sample, each cohort was assessed only once. Changes in teacher support and student engagement as well as the associations between changes in these variables over time could not be determined.

Although the number of longitudinal studies included in the literature was a strength, only two studies (Turner et al., 2014; Wang & Eccles, 2012) assessed participants at more than two time points, whereas the majority of the longitudinal studies collected only two waves of data. More than two waves of data allowed the researchers to examine whether the associations between teacher-student relationships and student engagement and academic achievement were linear or non-linear (e.g., curvilinear) over time, whereas data at two time points assumed that such associations were linear. In fact, such associations may not be linear. Although some studies involved 3 or more data points, the researchers did not

actually test for nonlinear relationships. Moreover, neither of the studies with more than two waves of data examined the likelihood of non-linear relationships between changes in teacher-student relationships and changes in student engagement or achievement.

**Research methods.** Most of the studies used quantitative methods exclusively (n = 13) utilizing surveys, but a few utilized mixed methods (n = 3, quantitative and qualitative; Blumenfeld & Meece, 1988; Turner et al., 1998, 2014). In the mixed methods studies, quantitative and qualitative data were collected primarily through classroom observations. For example, Blumenfeld and Meece (1988) coded classroom observations into categories for teacher clear expectations and instrumental help, and coded student questionnaires into categories for behavioral and cognitive engagement. They conducted analysis of variance on these data to examine the relationship between teacher clear expectations (teachers' clarity of directions during instruction and instructional support) and student engagement (involvement in learning tasks and use of self-regulated learning) in social class. They also conducted student interviews to gather additional information about student engagement to supplement responses to the questionnaires. Qualitative methods were used to analyze the interview data by pulling themes pertaining to behavioral and cognitive engagement.

Using mixed methods enables researchers to balance efficient data collection through quantitative methods and analysis of contextual data through qualitative methods. That is, the quantitative data captured information about associations between teacher-student relationships, student engagement, and academic achievement from a large number of participants, while the qualitative data provided contextual information and facilitated understanding of interpretation of the quantitative data. However, this approach has been limited to only a few studies. Therefore, overall, the results across studies largely did not provide contextual information in explaining *why* teacher-student relationships were or were

not associated with student engagement and academic achievement among early adolescents in general.

**Sampling.** In terms of sampling methods for the participants, the majority ( $n = 12$ ) of the studies specified sampling methods. A strong feature of half (e.g, Gregory, et al., 2014; Turner et al., 2014; Wang & Eccles, 2013) of these studies was probability sampling (random sampling,  $n = 2$ ; stratified sampling,  $n = 4$ ), whereas the other half used convenience sampling (e.g., Dotter & Lowe, 2011; Wentzel, 1997). The use of probability sampling increased the likelihood that the researchers obtained samples that were representative of the target population. Although convenience sampling is quick, easy, inexpensive, and the samples are readily accessible, it is likely that such samples do not represent the early adolescent population. As a result, the sampling procedures used in studies could have introduced sampling bias. For example, samples included in some studies were predominantly (94% or more) Caucasian students from middle SES backgrounds (Furrer & Skinner, 2003; Patrick et al., 2007; Skinner & Belmont, 1993). The results from these studies were likely to represent the middle-class Caucasian student population but not students from other ethnic backgrounds or Caucasian students of low or high SES status.

Of the 14 studies that reported information about research sites, the majority ( $n = 10$ ) selected participants from multiple schools, while the remaining studies recruited students from only one school. Inclusion of multiple schools is likely to result in a larger sample. On the other hand, there might be variability among schools, which might affect student outcomes in different schools. However, school variability was not taken into consideration in analyses for any of the studies.

There was a wide range of sample sizes for the participants. Of the studies using surveys ( $n = 12$ ), about half ( $n = 5$ ) involved 100 to 350 students. The other studies involved much larger samples (600 to 1500 and one study involving 6,294 students) drawn from large-

scale research projects. Of the studies ( $n = 4$ ) using classroom observations, the total number of observation sessions ranged from 32 to 174. The number of participating teachers was 6, 7, 8, and 87, respectively. Forty-two and 194 student participants were also reported in two of these studies. The larger samples may carry more power, but without power analysis in any of these twelve studies, the extent to which the sample sizes were adequate could not be determined.

**Participant characteristics.** Representation of several important participant characteristics is critiqued, including (a) ethnic background, (b) grade level, (c) gender, (d) socio-economic status (SES), and (e) geographic locale. These characteristics are included because they serve as moderators for teacher-student relationships in relation to student engagement and academic achievement.

***Ethnic background.*** Most of the studies ( $n = 14$ ) reported participants' ethnic backgrounds. In most ( $n = 9$ ) of these studies, the majority of participants were Caucasian; in the other studies ( $n = 5$ ), however, the percentage of Caucasian participants was comparable to African American or Asian students (e.g., 44% Caucasian and 34% Asian; 54% Caucasian and 36% African American; 45% Caucasian and 55% African American; Conner & Pope, 2013, Wang & Eccles, 2012, 2013, respectively). Student ethnicity was included as a moderator in only two studies; results from both suggested that teacher-student relationships and student engagement did not differ for Caucasian students and African American students (Wang & Eccles, 2012, 2013).

Only two studies (Conner & Pope, 2013; Wentzel, 1997) reported on the percentage of Latino youth included, and these percentages were very small (2% and 6%, respectively). Although one (Conner & Pope, 2013) of these studies controlled for ethnicity in the analysis, ethnicity was coded as Caucasian and non-Caucasian without attention to Latino students in particular. Latino students were coded along with students of other ethnic backgrounds as



non-Caucasian. Conclusions concerning students who did not match the ethnic profile in the studies should be made with caution; overall study findings would generalize primarily to Caucasian students.

**Grade level.** The student participants' grade levels ranged from third to twelfth grade. Approximately half ( $n = 7$ ) of the studies included middle school students exclusively, while the other studies were conducted with students in Grades 3 – 6 ( $n = 6$ ) or students in middle and high schools ( $n = 3$ ). However, early adolescents were not examined separately from those who were not early adolescents in these nine studies. Therefore, it was not clear to what extent teacher-student relationships were associated with student engagement and academic achievement for early adolescents in particular.

**Gender.** The participants were evenly distributed by gender in each of the studies. But only three studies (Furrer & Skinner, 2003; Wang & Eccles, 2012, 2013) included gender as a moderator of the associations between teacher-student relationships, student engagement, and academic achievement.

**SES.** Most of the studies ( $n = 12$ ) reported information about students' SES; in most of these studies, the sample was described as coming from middle SES backgrounds. Given this sampling, it is likely that findings from the studies were generalizable primarily to students from middle SES backgrounds. However, the researchers characterized middle SES backgrounds differently across studies. In some studies, SES was defined by eligibility for subsidized lunch ( $n = 4$ ), family income ( $n = 3$ ), or parental educational level ( $n = 1$ ). The other studies ( $n = 4$ ) did not report how SES was defined, but just indicated that the participants were primarily from middle SES backgrounds. Further, none of the studies included SES as a moderator to explore the extent to which the associations between teacher-student relationships, student engagement, and academic achievement among youth in general varied by SES.

**Geographic locale.** All but three studies reported on the state(s) in which the studies were conducted. Only one was conducted in multiple states ( $n = 10$ ) of different regions across the country (Dotterer & Lowe, 2011). The other studies were conducted within one state in three regions (Mid-Atlantic,  $n = 7$ , Midwest,  $n = 3$ , and Northeast,  $n = 2$ ). Half of the studies also reported information about the geographic setting of the studies (i.e., urban, rural, or suburban). Overall, the research was conducted in various settings – suburban ( $n = 3$ ), rural ( $n = 2$ ), rural-suburban ( $n = 2$ ), or urban ( $n = 1$ ). Nonetheless, none of the studies included geographic locale as a moderator of the associations between teacher-student relationships, student engagement, and academic achievement for early adolescents. Therefore, the extent to which such associations varied by geographic locale could not be determined.

**Measurements of the key constructs.** Three types of measures were used to collect data for teacher-student relationships and student engagement: Students' self-reported and teachers' self-reported questionnaire, classroom observation, and student interviews. Student questionnaires were the most frequently used measure across the studies. Most commonly, students were asked to rate their perceptions of aspects of teacher-student relationships or/and engagement at school on a scale comprised of several items.

One strength of the measurement approach in this literature was inclusion of multiple informants (i.e., students and teachers) or multiple methods (e.g., classroom observations and questionnaires/interviews) in the same study. For example, in two studies (Furrer & Skinner, 2003; Skinner & Belmont, 1993), both student and teacher questionnaires were used to measure the same construct (e.g., teacher-student relationships: student and teacher questionnaires, student engagement: student and teacher questionnaires). Using multiple informants or methods helps to triangulate findings and to enhance the validity of constructs. However, about half ( $n = 7$ ) of the studies used student questionnaires as the only measure for

teacher-student relationships and student engagement. Although students' perceptions are critical to understanding their relationships with teachers and engagement in school, teachers' perceptions are important as well. Moreover, students' self-reported questionnaires may introduce social desirability bias. For instance, the students may believe the questions on the questionnaires contain items of a sensitive nature. These questions may prompt them to answer untruthfully in an attempt to provide a socially appropriate response. For example, when asked if their teachers treat them fairly, some students may give a positive response. But actually they may feel that their teachers do not treat them fairly, but choose not to report this truthfully for fear of their teachers finding out their answer.

An observational measure of behavioral engagement used in three studies (Dotterer & Lowe, 2011; Gregory et al., 2014; Turner et al., 2014) offered a more objective view of students' participatory behaviors compared to self-reports from students (questionnaires and interviews) or teachers (questionnaires). However, classroom observation as a measure of behavioral engagement has been critiqued (Fredricks et al., 2004), because observers cannot infer the extent to which students are cognitively engaged (e.g., paying attention, making efforts in thinking). For example, some students may appear to be attentive during class, whereas their minds actually wander away from the tasks. Other students may appear inattentive, but in fact they are putting much mental effort.

Academic achievement was assessed using grades or standardized tests in nine studies. Students' grades (either averaged grade points across major subjects or final grades in a subject) were the predominant measure. Further, the majority ( $n = 7$ ) of the studies used grades obtained from school records. Only a few studies ( $n = 2$ ) used teachers' or students' self-reported grades. A different measure of achievement, a standardized test score (e.g., Woodcock Johnson Psychological Battery) was used in two studies. Standardized achievement tests allow for student scores to be compared within the same school and across

schools. Standardized testing also tracks student progress longitudinally. But, students' grades may be a better indicator for academic achievement than standardized test scores, because grades capture more than just students' academic abilities assessed by standardized tests. Grades also measure typical performance based on ongoing daily observations of students in the classroom.

Finally, while reliability of the measures was reported in all studies, validity was missing in the majority of the studies. Two types of reliability were reported, including internal consistency reliability and interrater reliability. A strength of the literature is that overall, the measures of both teacher-student relationships and engagement had good to excellent reliabilities. For internal consistency reliability, a Cronbach's alpha of above .70 is considered acceptable. With a few exceptions, Cronbach's alpha in the majority of the studies ranged from .75 – .97. Goodenow (1993) reported a Cronbach's alpha coefficient of .52 for the teacher emotional support scale used in her study (Goodenow, 1993), and Wentzel et al (2010) reported a Cronbach's alpha coefficient of .68 for teacher clear expectations. The coefficient of .68 is marginally acceptable and the coefficient of .52 is unacceptable. The researchers did not provide a rationale for the low reliability coefficients or comment on the implications of the low reliability for teacher emotional support or clear expectations. Because of the low reliability, the findings related to teacher emotional support or teacher clear expectations in these two studies may not be reliable. As for determining interrater reliability among coders for classroom observations, a few statistics were used, including Keppa statistics (.74, Turner et al., 2014), intra-class correlation coefficient (.64 - .78, Gregory et al., 2014), and gamma (.87, Turner et al., 1998). These interrater reliabilities ranged from good to excellent.

Where information about construct validity was reported (6 studies), scales were acceptable. In the majority of these studies (n = 4; Patrick et al., 2007; Wang & Eccles, 2012,

2013; Wang & Holcombe, 2010), the researchers merely stated that the measures had good validity and no further information was given. Gregory et al. (2014) were the only researchers who provided further information. Findings from a validity study suggested that five dimensions of Classroom Assessment Scoring System (CLASS-S) were predictive of higher student achievement test scores at the end of the year. Given the validity results, Gregory et al. (2014) used only the five validated dimensions for teacher support from CLASS-S. Additionally, in the studies (n = 5) involving students from diverse ethnic backgrounds, none of the studies tested measurement equivalence. Thus, it was not clear the extent to which the measures developed for Caucasian, middle-class, American adolescents were appropriate for adolescents of other ethnic backgrounds.

**Summary.** The 16 studies for early adolescents in general were predominantly theoretically grounded, with many drawing on self-determination theory. Few studies integrated self-determination theory and ecological theory, which meant that the literature for early adolescents in general focused primarily on the mechanisms between teacher-student relationships and student engagement and academic achievement, while ignoring the critical role of the surrounding environment in teacher-student relationships. Teacher-student relationships were predominantly defined as a unidimensional, or two- or three-dimensional construct, with a focus on teacher emotional support, which meant that the findings of the literature for early adolescents in general primarily reflected the teacher emotional support dimension in relation to student engagement and academic achievement. Student engagement was commonly conceptualized as a two dimensional construct, with a focus on behavioral engagement. The majority of the studies were non-experimental, correlational studies, with few exceptions of experimental studies. But the extent to which the positive changes in teacher-student relationships and student engagement were due to the intervention could not be inferred from these studies, because these studies were correlational in nature and

causality could not be made. A strong feature of the literature on teacher-student relationships and student engagement and achievement is that about half of the studies adopted longitudinal designs, offering the potential to capture the associations between teacher-student relationships, student engagement, and achievement over time. A drawback of these longitudinal studies is that most studies collected only two waves of data, with few exceptions of collecting data at three time points. But none of the studies tested the likelihood of non-linear relationships between teacher-student relationships and student engagement or achievement. Most of the studies used quantitative methods exclusively using surveys, with few exceptions of mixed methods. Overall, the results across studies largely did not provide contextual information in explaining *why* teacher-student relationships were or were not associated with student engagement and academic achievement among early adolescents in general. Convenience sampling was more frequently used than random sampling, leading to questionable generalizability of the samples in terms of representing the target population in studies using convenience sampling. There was a wide range of sample sizes but researchers did not conduct power analysis to test the adequacy of the samples. As a result, it was unclear whether each sample size was sufficient for the specific study. The participants were predominantly Caucasian, evenly distributed on gender, from middle SES backgrounds, and lived in various geographic locations. Overall, the measures had good reliabilities but validity was largely not reported. It was unclear whether the measures developed for Caucasian, middle class, American adolescents were appropriate for adolescents of other ethnic backgrounds, including Latino youth.

**Question 2. To What Extent Are Teacher-Student Relationships Associated with Student Engagement and Academic Achievement for Early Adolescents in General? To What Extent Are Such Associations Moderated by Student Gender, SES, and Geographic Locale?**

In this section, I examine extant literature (16 studies) on teacher-student relationships, student engagement, and academic achievement for early adolescents in

general, and those studies that have not addressed Latino youth specifically. The findings are organized according to the four dimensions of teacher-student relationships (teacher emotional support, teacher instrumental help, teacher clear expectations, and classroom safety) proposed to affect student engagement and achievement.

**Teacher emotional support, student engagement, and academic achievement.**

Teachers have the potential to create classroom contexts characterized by emotional support that promote social and academic adjustment (Connell & Wellborn, 1991; Wentzel, 2009; Wentzel et al., 2010). For example, teachers provide emotional support through caring about students, showing respect to students' opinions, and developing personal relationships with students. Teacher emotional support is critical to early adolescents as they transition to middle school. They need continued teacher emotional support in order to succeed in school (Wentzel et al., 2010). Twelve studies investigated the associations between teacher emotional support and student engagement for early adolescents in general. Of these studies, about half ( $n = 5$ ) also investigated teacher emotional support as related to youth's academic achievement. Several aspects of teacher emotional support were examined. From students' perspective, teacher emotional support included students' perceptions of their teachers' liking and caring about them (e.g., Patrick et al., 2007; Wentzel et al., 2010), valuing and respecting students' ideas (e.g., Conner & Pope, 2013; Wang & Eccles, 2013), trying to establish personal relationships with the students (Conner & Pope, 2013; Ryan & Patrick, 2001), and students' feeling of being emotionally accepted or alienated from the teachers (e.g., Goodenow, 1993). Teacher-reports of teacher emotional support focused on their perceptions of teacher-student conflict (e.g., Dotterer & Lowe, 2011).

***Teacher emotional support and student engagement.*** The studies addressed multiple dimensions of student engagement, with the most attention to behavioral engagement but good representation for emotional and cognitive engagement.

*Behavioral engagement.* Eleven studies examined the relationship between teacher emotional support and behavioral engagement for early adolescents in general (Conner & Pope; Dotterer & Lowe, 2011; Furrer & Skinner, 2003; Goodenow, 1993; Patrick et al., 2007; Ryan & Patrick, 2001; Wang & Eccles, 2012, 2013; Wang & Holcombe, 2010; Wentzel, 1997; Wentzel et al., 2010). Aspects of behavioral engagement that were examined in the literature included behavioral involvement in learning activities (e.g., effort, persistence, attention, Furrer & Skinner, 2003; Ryan & Patrick, 2001), school compliance (e.g., positive conduct such as following the rules and adhering to classroom norms, absent of disruptive behaviors, Wang & Eccles, 2012), and participation in school activities (e.g., Wang & Eccles, 2013). Notably, the focus in the literature was on behavioral involvement during learning activities.

Teacher emotional support in relation to behavioral involvement in learning activities was investigated in seven studies, including two longitudinal (Furrer & Skinner, 2003; Wentzel, 1997) and five cross-sectional studies (Conner & Pope, 2013; Dotterer & Lowe, 2011; Goodenow, 1993; Patrick et al., 2007; Wentzel et al., 2010). Results from the longitudinal studies (Furrer & Skinner, 2003; Wentzel, 1997) suggested that sixth- through eighth-grade White students perceived that teacher caring (Wentzel, 1997) or their sense of relatedness to teachers (feeling being accepted and like someone special when being with the teacher, Furrer & Skinner, 2003) were positively and significantly associated with changes in their behavioral engagement over time, after controlling for previous behavioral engagement. Furrer and Skinner (2003) followed 641 third- through sixth-grade students across one school year, whereas Wentzel (1997) followed 248 sixth-grade students for three years through eighth grade. Wentzel's (1997) findings indicated that increases in students' academic effort (trying hard in class, paying attention) across three years was partially explained by students' perceptions of their teachers' social and academic caring even after students' past behavior,



gender, psychological distress, and control beliefs were taken into account. In contrast, in Furrer and Skinner's (2003) study, although relatedness to teachers increased significantly between third and fifth grade, following the transition to middle school in sixth grade, students' sense of relatedness to teacher and students' behavioral involvement in learning dropped significantly. Furthermore, contrary to expectation, relatedness to teachers was a more salient predictor of students' behavioral involvement in learning for older students compared to younger students. Furrer and Skinner (2003) were the only investigators who employed both students' reports and teachers' reports in measuring behavioral engagement. A weakness in both studies was that participants were assessed only twice. Whether there was a nonlinear relationship between teacher emotional support and students' behavioral involvement in learning activities over time could not be addressed.

The cross-sectional studies (Conner & Pope, 2013; Dotterer & Lowe, 2011; Patrick et al., 2007; Goodenow, 1993; Wentzel et al., 2010) had similar findings as the longitudinal findings regarding the associations between teacher emotional support and students' behavioral involvement in learning among typically developing (Goodenow, 1993; Patrick et al., 2007; Wentzel et al., 2010), high-achieving (Conner & Pope, 2013; Dotterer & Lowe, 2011), as well as academically struggling (Dotterer & Lowe, 2011) youth. Specifically, students (predominantly in sixth through eighth grade) who perceived that their teachers cared about them, liked them as a person, and tried to get to know students as a person were more likely to be actively engaged in learning in various subjects (English, math, and social studies, Goodenow, 1993; Patrick et al., 2007; Wentzel et al., 2010). Students tended to try harder, pay more attention in class, and make more effort in doing assignments than did their peers who perceived their teachers as less supportive emotionally. These three studies generally were strong conceptually and methodologically, grounded in self-determination theory (except for Patrick et al. [2007] study which adopted social-cognitive theory) and

featuring how teacher-student relationships were associated with student engagement and academic achievement. However, the reliability (.52) for teacher emotional support in Goodenow's (1993) study was unacceptable, and the researchers did not provide any explanation for this finding. Thus, caution needs to be used when interpreting the results from this particular study.

Unlike the sample included in most studies, the sample in Conner and Pope (2013) was drawn exclusively from high-performing schools (6,294 students from 15 middle and high schools). The sample was mostly comprised of Caucasian (44%) and Asian (34%) students. Holding school type (i.e., middle or high) and individual factors (gender, grade level, GPA, and academic worry) constant, teacher emotional support (e.g., teacher caring for students, valuing and listening to students' idea, and trying to get to know students) was strongly positively associated with behavioral engagement (effort, hard work, mental exertion and completion of homework). However, when interpreting the results from the Conner and Pope (2013) study, caution should be used because the study included only high-performing Caucasian and Asian students, and most students (91%) were from high schools rather than middle schools. Although the sample sizes were likely sufficient, the researchers did not test the extent to which teacher emotional support in relation to students' involvement in learning activities varied by ethnicity (Caucasian vs. Asian students) and grade level (middle vs. high school). Therefore, it was not clear the extent to the results applied to early adolescents in general, specifically, or if there were ethnic group differences.

While Conner and Pope (2013) involved only students in high-performing schools, Dotterer and Lowe (2011) conducted a study with a large sample (1,014) of high-performing and academically struggling students as well, from both middle and high schools. These investigators examined the broader classroom context of teacher emotional support in relation to students' behavioral engagement. The classroom context included teacher-student conflict,

instructional quality, and social/emotional climate. Teacher-student conflict was assessed using teachers' self-reports, whereas instructional quality was assessed by classroom observations. Social/emotional climate was measured by students' self-reports. The results showed that high-achieving as well as academically struggling students in classrooms characterized by less conflict with teachers, high instructional quality, and positive social/emotional climate were more attentive during class and engaged in learning. However, this study only examined the classroom context as a whole, not each of the components of classroom context, especially teacher-student conflict, as an indicator of teacher emotional support in relation to youth's behavioral involvement in learning.

School compliance (e.g., following school and school rules and policy, obeying teachers' disciplines) is another component of behavioral engagement that was examined in five studies (Ryan & Patrick, 2001; Wang & Eccles, 2012, 2013; Wang & Holcombe, 2010; Wentzel et al., 2010). Of these five studies, four were longitudinal (Ryan & Patrick, 2001; Wang & Eccles, 2012, 2013; Wang & Holcombe, 2010) and one was cross-sectional in design (Wentzel et al., 2010). In all studies, teacher emotional support was positively and significantly associated with school compliance for early adolescents in general. Wang and Eccles (2012) were the only researchers who collected data at three time points, whereas the other investigators assessed the participants only twice.

Findings from the longitudinal studies (Ryan & Patrick, 2001; Wang & Eccles, 2012, 2013; Wang & Holcombe, 2010) revealed that students' perceptions of teacher caring about and liking their students in seventh grade predicted student's school compliance (following rules and avoiding misconduct in school) in eighth grade (Ryan & Patrick, 2001; Wang & Eccles, 2013; Wang & Holcombe, 2010) and 11<sup>th</sup> grade (Wang & Eccles, 2012). A strong feature of these studies was that the reliabilities and validities of the measures were good. All of these studies were part of large scale longitudinal research projects and the majority drew

data from the same database and included large sample sizes (range: 1,046 -1,479, Wang & Eccles, 2012, 2013; Wang & Holcombe, 2010). Further, the sample in each of these four studies involved a slightly higher percentage of African American students (about 55% across studies) than Caucasian students (32% - 45% across studies). Although results from Wang and Eccles (2012, 2013) studies indicated that there were no significant differences between Caucasian and African American students in teacher emotional support in relation to changes in students' behavioral engagement, caution should be used in interpreting that the findings regarding the association between teacher emotional support and early adolescents' behavioral engagement for a population that does not match the ethnic profile in these studies.

In Wang and Eccles' (2012) longitudinal study, 1,479 students and 135 teachers were followed from seventh through 11<sup>th</sup> grade with three waves of data collection. Although the trajectories of student's school compliance (absent of misconduct, not having trouble getting homework done) declined, increases in social support (understanding students' feelings, respecting students' opinions, talking to students, helping students with personal or social problems) from the teachers were significantly associated with reduced decrease in students' school compliance from seventh to 11<sup>th</sup> grade. Specifically, a standard deviation increase in teacher emotional support was linked to a reduced rate of decline of 0.37 standard deviation in youth's school compliance. When interpreting the results from this study, however, it is important to keep in mind that the researchers did not directly investigate grade-level differences. Thus, the extent to which teacher emotional support was associated with behavioral engagement for early adolescents in particular could not be inferred.

With respect to school compliance in the cross-sectional studies, only Wentzel et al. (2010) examined teacher emotional support as associated with sixth through eighth graders' compliant behaviors (e.g., trying to do what the teacher asks to do). School compliance was

assessed along with students' involvement in learning activities during social science class using one measure. Although the results revealed a positive and significant relationship between teacher emotional support and students' behavioral engagement as a whole, the study did not test for students' involvement in learning and school compliance separately. Therefore, it was difficult to identify the extent to which teacher emotional support was associated with youth's school compliance in particular.

Finally, Wang and Eccles (2012) were the only researchers who investigated another aspect of behavioral engagement – participation in school activities. The trajectories of students' participation in extracurricular activities declined from 7<sup>th</sup> to 11<sup>th</sup> grade. Unexpectedly, increases in teacher social support (students' perceptions of their teachers' caring, trying to talk to students and understand them, and respecting students' opinions) in 7<sup>th</sup> grade were not a significant predictor of students' participation in school extracurricular activities in 11<sup>th</sup> grade. Instead, support from parents and peers were significantly associated with these students' increased participation in school extracurricular activities. The investigators did not interpret this finding but it may have been the case that teachers were not as directly involved in youth's extracurricular activities as parents (e.g., providing advice in choosing extracurricular activities, providing transportation) and peers (e.g., cheering for peers). A cautionary note about these findings is that the researchers did not explore grade-level effects. Thus, the role of teacher emotional support in students' participation in extracurricular activities early adolescents in particular could not be inferred.

Only a few studies (Furrer & Skinner, 2003; Wang & Eccles, 2012, 2013) explored the moderating effects of gender on the relationships between teacher emotional support and behavioral engagement among early adolescents in general, and the results from these longitudinal studies were mixed. Wang and Eccles (2012, 2013) reported no significant differences between boys' and girls' perceptions of teacher emotional support in relation to

their behavioral engagement over time. In contrast, Furrer and Skinner (2003) found that although boys reported a lower level of teacher emotional support than girls, boys showed stronger effects of teacher emotional support on their behavioral engagement. None of the studies explored the potential moderation effects of SES and geographic locale on the associations between teacher emotional support and behavioral engagement among early adolescents in general.

*Emotional engagement.* Seven studies examined the relationships between teacher emotional support and emotional engagement for early adolescents in general. Aspects of emotional engagement examined in these studies focused on emotional reactions toward the school and the teacher (e.g., interest, enjoyment, boredom, happiness, sadness; Conner & Pope, 2013; Furrer & Skinner, 2003; Turner et al., 1998; Wang & Eccles, 2013; Wentzel et al., 2010). In addition, Wang and colleagues (Wang & Eccles, 2012; Wang & Holcombe, 2010) investigated identification with school (sense of attachment one has with the school). Identification with school further included sense of belonging to school (perception of school membership) and valuing of school (appreciation of success in school-related outcomes). On the whole, teacher emotional support was positively associated with youths' emotional engagement.

One strong feature of these studies is that the majority ( $n = 5$ ; Conner & Pope, 2013; Furrer & Skinner, 2003; Wang & Eccles, 2012, 2013; Wang & Holcombe, 2010; Wentzel et al., 2010) had fairly large sample sizes from large scale research projects, mostly ranging from 358 to 1,500 student participants. Conner and Pope (2013) had an extremely large number of students (6,294), although the entire sample was drawn from high-performing schools. Additionally, in the Turner et al. (1998) study, for the quantitative data, surveys from a small sample of students ( $n = 42$ ) were collected; for the qualitative data, classroom

observations were conducted for a total of 34 sessions with seven teachers and 42 of their students.

Students' emotional reactions toward the school and the teacher were investigated in five studies, including two longitudinal (Furrer & Skinner, 2003; Wang & Eccles, 2013) and three cross-sectional studies (Conner & Pope, 2013; Turner et al., 1998; Wentzel et al., 2010). Results from the longitudinal studies (Furrer & Skinner, 2003; Wang & Eccles, 2013) suggested that holding previous emotional engagement constant, third- through eighth-graders' perceptions of their teachers as caring and warm (Wang & Eccles, 2012) or students' sense of relatedness to their teachers (Furrer & Skinner, 2003) were significant predictors of students' emotional reactions toward the school and the teacher. For example, Furrer and Skinner (2003) followed 641 third- through sixth-grade predominantly Caucasian students from fall to spring across the school year. They found that although students' emotional engagement (both teacher-reports and student-reports) in the spring was uniquely predicted by feeling of relatedness toward each social partner (teachers, parents, and peers) in the previous fall, students' emotional engagement depended on most heavily on relatedness to teachers. Students who felt appreciated by teachers were more likely to perceive academic activities as interesting and fun, and that they felt happy and comfortable in the classroom. On the contrary, students who felt unimportant or ignored by their teachers reported that they felt bored, unhappy, and angry when they participated in learning activities. It is a strength that Furrer and Skinner's (2003) study not only used students' reports but also teachers' reports to assess students' emotional engagement.

In the other longitudinal study (Wang & Eccles, 2013) of 1,157 seventh graders from 23 schools who were followed for two years through eighth grade, holding students' prior emotional engagement constant, students who perceived that their teachers were emotionally supportive at the beginning of seventh grade were more likely to report that at the end of

eighth grade, they felt schoolwork was interesting and exciting. However, the sample in the study appeared to be oversampled for African American students and undersampled for Caucasian students; more than half of the participants were African American (56%), nearly double the number of Caucasian participants (32%). Such sampling issues may introduce sampling bias, such as that the results may be more generalizable to African American early adolescents than to their Caucasian counterparts. Therefore, although the extent to which the associations between teacher emotional support and students' emotional reactions toward the school and the teacher did not differ significantly between African American and Caucasian students, the findings should still be viewed with some caution.

Results of the cross-sectional studies (Conner & Pope, 2013; Turner et al., 1998; Wentzel et al., 2010) revealed a positive link between teacher emotional support (liking and caring about students, valuing and listening to students' ideas, and trying to get to know students personally) and emotional reactions toward school and teachers (e.g., interest and enjoyment in schoolwork, feeling happy, sad, involved or uninvolved in class) for typically developing early adolescents as well as for high-achieving youth. Students in sixth through eighth grade who perceived that their teachers cared about and liked them reported that they enjoyed being in the social studies class and cared what happened in the class (Wentzel et al., 2010). Similarly, for students in high-performing middle and high schools, students' perceptions of their teachers as caring, and as valuing and listening to their ideas, and trying to get to know them personally, were positively associated with students' levels of interest in and enjoyment of schoolwork (Conner & Pope, 2013). That said, it was not clear the extent to which the results were generalizable to early adolescents in general, because the majority of the students were beyond early adolescence (91% high school, nine percent middle school) and the investigators did not examine the extent to which the associations between teacher



emotional support and students' emotional engagement differed for early adolescents and those who were not early adolescents.

The observational study by Turner et al. (1998) illustrated the benefit to strategic learning of a socially supportive and intellectually challenging environment for fifth- and sixth-graders in math classes. Using mixed methods (both quantitative and qualitative), the study involved 42 students and seven teachers. Data sources included audiotaped classroom discourse during regular mathematical instruction, classroom observations, and students' response logs. The audiotapes of lessons were the primary data source analyzed to understand how teachers involved students in learning. Classroom observations were the secondary data source to provide additional information about instructional activities that could not be deduced from audiotaped recordings. Raters were trained in coding the transcripts of the audiotaped lessons using a six-category scheme. Good interrater reliability was reached. The students' response logs were used to report their experiences indicative of involvement during instruction. Interestingly, in classrooms in which teachers created an emotionally supportive environment (e.g., respectful and encouraging), pressed for mastery of knowledge, and provided autonomy support, students were more emotionally engaged and were more strategic in learning. If the teachers focused only on creating a positive social environment but not academic support, students were more likely to be emotionally engaged and less likely to be strategic in learning. On the contrary, if teachers focused only on academic support but failed to attend to emotional support, students were more likely to experience emotional disengagement. The findings suggested that both positive social environment and academic support were necessary in promoting student engagement.

Only two studies have explored teacher emotional support in relation to identification with school for youth in general. Youth in seventh grade who perceived that their teachers cared about students, talked to students, tried to understand students, and respected students'

opinions reported higher levels of sense of belonging to school and valuing of learning in 8<sup>th</sup> (Wang & Holcombe, 2010) or 11<sup>th</sup> (Wang & Eccles, 2012) grade. For instance, a one standard deviation increase in teacher emotional support was associated with a reduced decrease of 0.58 standard deviation in identification to school (Wang & Eccles, 2012). Both studies involved a longitudinal design and were drawn from the same large scale longitudinal research project. But one limitation is that even though the study involved an oversampling of African American students and under-sampling for Caucasian students, the researchers did not explore the extent to which the relationships between teacher emotional support and identification with school varied by student ethnicity. In addition, Wang & Holcombe (2010) merely stated that the measures were drawn from existing measures with good reliabilities and validities, but did not provide further information to support this claim.

One set of researchers, Dotterer and Lowe (2011), combined emotional and cognitive engagement into a single construct, psychological engagement. They also included teacher-student conflict, instructional quality, and social/emotional climate to represent classroom context. They found that classroom context was positively and significantly related to psychological engagement for high-achieving students, but not for academically struggling students. The results suggested that for academically struggling students, high quality classroom contexts were not sufficient to promote their psychological engagement. Dotterer and Lowe (2011) pointed out that other factors needed to be taken into consideration, such as instructional methods (whole class vs. small group). Small group activities provided struggling learners a less risky environment for making an effort in learning, whereas whole class instruction discouraged them from trying hard because they wanted to avoid negative evaluations (Dotterer & Lowe, 2011). Since the study did not examine emotional engagement specifically, rather than a combination of emotional engagement and cognitive engagement, the results were limited in informing the present review.

Attention to gender differences in the relationship between teacher emotional support and emotional engagement was minimal, with mixed findings (Furrer & Skinner, 2003; Wang & Eccles, 2012, 2013). Results from two studies (Wang & Eccles, 2012, 2013) revealed no significant differences between boys and girls, but Furrer and Skinner (2003) found that girls' emotional engagement varied to a lesser extent as a function of their relatedness to their teachers, as compared to boys. None of the studies explored the potential moderation effects of SES and geographic locale.

*Cognitive engagement.* Six studies examined the relations between teacher emotional support and cognitive engagement for early adolescents in general, including three longitudinal studies (Ryan & Patrick, 2001; Wang & Holcombe, 2010; Wang & Eccles, 2012) and three cross-sectional studies (Conner & Pope, 2013; Patrick et al., 2007; Turner et al., 1998). Aspects of cognitive engagement examined in the literature focused primarily on students' use of self-regulated strategies in learning ( $n = 4$ ). The other studies examined the psychological investment in learning such as subjective value of learning (perceived motivation focusing on learning, personal improvement, and mastery of content and tasks, Wang & Eccles, 2012) and attitudes toward schoolwork, its value and importance (Conner & Pope, 2013). A strength of these studies is that internal consistency reliabilities for teacher emotional support and students' cognitive engagement were acceptable to good (range: .74 to .84).

Findings from three longitudinal studies of associations between teacher emotional support and cognitive engagement among early adolescents in general were mixed. Ryan and Patrick (2001) followed 233 middle school students in 30 different math classes from seventh to eighth grade. Students' increased use of self-regulated learning strategies across two school years was uniquely associated with their greater perceptions of teachers' emotional support. Similarly, Wang and Eccles (2012) found that increases in social support from the

teachers were significantly associated with reduced decreases in students' subjective value of learning from seventh through 11<sup>th</sup> grade. Wang and Holcombe (2010) did not find significant associations between students' perceived teacher emotional support at the beginning of seventh grade and their use of self-regulated learning strategies at the end of eighth grade. As stated by Wang and Holcombe (2010), it may be that in their study, the social aspect of teacher support was emphasized while the academic support was ignored. Therefore, students were less likely to be cognitively engaged in learning. The samples in all three studies included a high percentage of Caucasian students (32% - 45%) and African American students (54% - 56%). However, Wang and Eccles (2012) were the only researchers who tested for differences between these groups of students in the associations of teacher emotional support and cognitive engagement, finding no differences across ethnic groups (Caucasian students vs. African American students).

Of the cross-sectional studies ( $n = 3$ ), Patrick et al. (2007) conducted a study with 602 predominantly Caucasian fifth-graders from 31 classes in six elementary schools in a Midwestern state. Findings indicated that students' perceived teacher liking and caring about the students as a person were positively and significantly associated with students' use of self-regulation strategies in learning. Similar results were reported in a study with 6,294 students attending 15 high-performing middle and high schools (Conner & Pope, 2013). Students who perceived that their teachers cared about, valued and listened to students' ideas, and tried to get to know students personally were more likely to show positive attitudes toward schoolwork, its value and importance. However, when interpreting the results from this study, the findings are generalizable to students in high-performing schools only.

Interestingly, Turner et al (1998) found that both teacher emotional support and challenging schoolwork were necessary to promote students' cognitive engagement in math class. When teachers were perceived to be emotionally supportive and to present

intellectually challenging work, students showed higher levels of both emotional and cognitive engagement (being strategic in learning math). However, if teachers only presented challenging work, pressed for understanding, supported autonomy, but ignored emotional support, students were more engaged cognitively but less emotionally engaged. If teachers only provided emotional support but did not present intellectually challenging work, students were less cognitively engaged but more emotionally engaged.

Two longitudinal studies (Wang & Eccles, 2012, 2013) examined the moderation effects of gender on the relationships between teacher emotional support and cognitive engagement among early adolescents in general. Results revealed no significant differences between boys and girls in the associations between perceived teacher emotional support and early adolescents' cognitive engagement over time. None of the studies in the extant literature explored the potential moderation effects of SES or geographic locale on the associations between teacher emotional support and cognitive engagement among early adolescents in general.

***Teacher emotional support and academic achievement.*** Four studies (Dotterer & Lowe, 2011; Goodenow, 1993; Patrick et al., 2007; Wang & Holcombe, 2010) investigated the relationship between teacher emotional support and academic achievement for early adolescents in general. There were direct and indirect relationships between teacher emotional support and youth's academic achievement; for the indirect relationships, behavioral and emotional engagement served as mediators. No study examined indirect associations between teacher-student relationships and academic achievement with cognitive engagement as a mediator.

Longitudinal analyses from one study (Wang & Holcombe, 2010) revealed that students who perceived greater caring and support from teachers in seventh grade had higher GPAs in eighth grade. For indirect relationships between teacher emotional support and

youth's academic achievement, Wang and Holcombe (2010) found that student levels of school participation and school identification in eighth grade mediated the associations between perceived teacher emotional support in seventh grade and students' academic performance in eighth grade. That is, students who perceived their teachers to be emotionally supportive at the beginning of seventh grade were more likely to be actively engaged in school (behavioral engagement) and to show a strong feeling of school identification (emotional engagement) at the end of eighth grade. This in turn, was positively associated with these students' averaged GPAs across academic subjects at the end of eighth grade.

Results from the cross-sectional studies supported a direct relationship between teacher emotional support and academic achievement. Fifth through eighth grade students who perceived greater acceptance, inclusion, caring, and liking from teachers experienced higher final grades in math or English (Goodenow, 1993; Patrick et al., 2007). Patrick et al. (2007) also found cross-sectional support for engagement as a mediator. Students' belief that the teacher cared about and liked them as a person positively and significantly contributed to students' task-related interaction (behavioral engagement, such as the extent to which students answered questions, explained content, and shared ideas about math with classmates). This in turn, was positively related to math achievement.

However, the mediation effects of student engagement on the associations between teacher emotional support and academic achievement differed for high-achieving students and struggling students (Dotterer & Lowe, 2011). High-achieving students in classrooms characterized by less teacher-student conflict, high instructional quality, and positive social and emotional climate were more likely to achieve higher scores on standardized tests in reading and math. Further, behavioral and psychological engagement (emotional and cognitive engagement) mediated the link between classroom context and academic achievement for these students. High-achieving students in classrooms with less teacher-

student conflict, high instructional quality, and positive social and emotional climate tended to be more actively engaged in learning, feel more connected to school, and more competent and motivated in school. This in turn, promoted their academic success. In contrast, for struggling learners, student engagement did not mediate the link between classroom context and academic achievement. For behavioral engagement, regardless of the significant relationship between classroom context and behavioral engagement for struggling students, behavioral engagement was not significantly associated with their academic achievement. It may be that behavioral engagement was not sufficient to improve these students' academic performance. For psychological engagement, although struggling learners' perceived classroom context was positively associated with their academic achievement, classroom context was not related significantly to psychological engagement. As Dotterer and Lowe (2011) pointed out, it may be that for students with previous achievement difficulties, high quality classroom contexts (less teacher-student conflict, high instructional quality, and positive social and emotional climate) were not sufficient to increase these students' psychological engagement. A cautionary note when interpreting the results regarding psychological engagement is that as the study did not examine emotional or cognitive engagement separately, but rather combined them. To what extent emotional or cognitive engagement mediated the associations between emotional support and academic achievement could not be inferred.

None of these studies investigated potential moderation effects of gender, SES, and geographic locale on the associations between teacher emotional support and academic achievement among early adolescents in general.

**Teacher instrumental help, student engagement, and academic achievement.** In the classroom, teachers may contribute to student engagement and academic success by providing instrumental help. The instrumental resources provided by teachers may include

information and advice, learning opportunities and experiences, modeled behavior, or direct instruction of social behaviors (Wentzel, 2009; Wentzel, et al., 2010). Students rank their teachers as the most important source of instrumental help and informational guidance compared to parents and peers (Wentzel, 2012). Teacher instrumental help and emotional support are two distinct dimensions of teacher-student relationships, as demonstrated by factor analyses (Patrick et al., 2007) and classroom observations (e.g., Patrick, Anderman, Ryan, Edelin, & Midgley, 2001). However, researchers often incorporate instrumental help into emotional support because instrumental help and emotional support tend to be highly correlated (Blumenfeld & Meece, 1988; Gregory, Allen, Mikami, Hafen, & Pianta, 2014; Wentzel, 1997, 2012). Only three studies (Blumenfeld & Meece, 1988; Gregory et al., 2014; Wentzel et al., 2010) investigated the relationship between teacher instrumental help and student engagement. Teacher instrumental help focused on teachers' help during the instruction; teachers' provision of resources was studied to a lesser extent (Wentzel et al., 2010). No study explored teacher instrumental help in relation to academic achievement for early adolescents in general.

Overall, findings from the studies suggest that youth who perceived that their teachers provided instrumental help were more likely to be actively engaged behaviorally, emotionally and cognitively in school. For example, Gregory et al. (2014) involved a longitudinal study with a randomized controlled design in which 87 teachers participated in year-long professional development on promoting students' behavioral engagement. Control teachers received regular professional development, whereas intervention teachers were oriented to special coaching through a workshop aimed at promoting their interactions with students. The teachers and their students were observed during math, science, social studies, and English classes. The teachers in the intervention group showed significant increase in their abilities to facilitate their students' higher-order thinking skills (analysis and problem solving) than those



teachers in the control group. Such changes in turn, promoted students' behavioral engagement. The study is among the few randomized control trials to rigorously test whether personalized coaching and systematic feedback on teachers' interactions with students increase behavioral engagement.

In a non-experimental, longitudinal study, Wentzel et al. (2010) found that sixth-through eighth-graders who perceived that their teachers provided instructional assistance and resources reported greater interest in class (emotional engagement). Interestingly, Blumenfeld and Meece (1988) found that both teacher instrumental help and challenging task were necessary to promote middle school students' cognitive engagement. That is, students reported greater use of self-regulated learning strategies in science class when their teachers provided help during instruction and presented intellectually challenging tasks as well. Instructional help may include explaining concepts, modeling cognitive strategies, motivating, checking on progress, and reminding students about procedures.

No study explored teacher instrumental help in relation to youth's academic achievement, or gender, SES, or geographic locale as potential moderators of the associations between teacher instrumental help and student engagement for early adolescents.

### **Teacher clear expectations, student engagement, and academic achievement.**

Teachers communicate their expectations for specific academic and behavioral outcomes to students on a daily basis (Wentzel, 2009; Wentzel et al., 2010). They may communicate expectations by enforcing rules, encouraging students to share ideas, and asking students about their opinions and feelings (Elias & Schwab, 2006; Skinner & Belmont, 1993). Teachers also communicate their values for academic activities by demonstrating their passion for the subject area they teach (Wentzel, 2002). By communicating clear expectations, teachers provide structure to the organization of classroom experience so that students know what is expected and how to achieve the goals (Skinner & Belmont, 1993;

Wang & Eccles, 2013). Clear expectations from teachers support greater participation in academic tasks, promote students' attitude toward school, and facilitate self-regulated learning among students (Connell, 1990; Urdan & Midgley, 2003; Wang & Eccles, 2013).

A small number of studies (Blumenfeld & Meece, 1988; Gregory et al., 2014; Wentzel et al., 2010) explored the associations between teacher clear expectations and student engagement for early adolescents in general. No study was located concerning associations between teacher clear expectations and youth's academic achievement. Aspects of clear expectations that have been addressed include expectations for positive social behavior (e.g., sharing ideas with others) and academic engagement (e.g., learning new things), directions during instruction and providing feedback, and instructional learning formats.

Teacher clear expectations were measured by students' perceptions on a survey (Wentzel et al., 2010) or classroom observations (Blumenfeld & Meece, 1998; Gregory et al., 2014). Blumenfeld and Meece (1988) and Wentzel et al. (2010) utilized students' surveys and one study (Gregory et al., 2014) employed classroom observations to measure student engagement. The reliabilities of the measures for teacher clear expectations and student engagement ranged from low to excellent (.64 - .92) although information about validity of teacher clear expectations and student engagement was limited. Gregory et al. (2014) validated the measures for dimensions of teacher student relationships including teacher clear expectations by showing that these dimensions were predictive of students' academic achievement. Blumenfeld and Meece (1988) specified that the measure for cognitive engagement was valid through a correlation study between cognitive engagement and intrinsic motivation.

Teacher clear expectations were positively and significantly associated with students' behavioral, emotional, and cognitive engagement among early adolescents in general. For

example, sixth- through eighth-grade students who perceived that their teachers were clear in their expectations for positive social behavior and for academic engagement were more likely to be interested in class (Wentzel et al., 2010). In the longitudinal study with a randomized controlled design, Gregory et al. (2014) found that the teachers in the intervention group showed significant increase in their abilities to use varied instructional formats than those teachers in the control group. Such positive changes in turn, promoted students' behavioral engagement (constantly active in discussions and classroom tasks). An interesting finding from Blumenfeld and Meece's (1988) study was that teacher clear expectations and challenging task were both necessary in promoting fourth- through sixth-grade students' cognitive engagement in science class. When the teachers were clear in their expectations and provided constructive and timely feedback during instruction, as well as presented intellectually challenging tasks, students reported greater use of self-regulated learning strategies in class. Finally, none of the studies examined the moderation effects of gender, SES, and geographic locale on teacher clear expectations in relation to engagement for youth in general.

**Classroom safety, student engagement, and academic achievement.** Classroom safety is a dimension that has not been traditionally considered in research on teacher-student relationships. Nevertheless, teachers' efforts to create a safe classroom environment are critical for students' physical, psychological, and emotional health (Wentzel, 2009). Students are more likely to feel they are being cared about by teachers when they feel safe in the classroom (Crosnoe, Johnson, & Elder, 2004). In contrast, students may feel alienated when they are criticized or ignored by their teachers (Wentzel, 1997). Although research implies that peers might be the primary source of threat to students' well-being and functioning in the classroom, teachers can help avoid harm or alleviate negative impact on students' social and

emotional functioning afterwards through creating a safe classroom environment (Wentzel, 2009).

Wentzel et al. (2010) were the only researchers who investigated the role of classroom safety in behavioral and emotional engagement for youth in general. No study explored classroom safety in relation to cognitive engagement and academic achievement. Wentzel et al. (2010) found that middle school students who perceived their teachers to be less criticizing tended to exhibit higher levels of prosocial and compliant behaviors (behavioral engagement) and stronger interest in class (emotional engagement). However, Wentzel et al. (2010) did not explore the moderation effects of gender, SES, and geographic locale on the associations between classroom safety and student engagement.

**Combinations of dimensions of teacher-student relationships, student engagement, and academic achievement among early adolescents in general.** In addition to a single dimension of teacher-student relationships discussed above, a small number of studies ( $n = 4$ ) involved a combination of at least two dimensions of teacher-student relationships in examining its relationship to engagement and academic achievement for youth (Skinner & Belmont, 1993; Turner et al., 2014; Wang & Eccles, 2013; Wang & Holcombe, 2010). Four types of combinations have been investigated: (a) teacher instrumental help and clear expectations (Skinner & Belmont, 1993; Wang & Eccles, 2013; Wang & Holcombe, 2010), (b) teacher emotional support and instrumental help (Skinner & Belmont, 1993), (c) teacher emotional support and classroom safety (Skinner & Belmont, 1993), and (d) teacher emotional support, instrumental help, clear expectations, and classroom safety (Turner et al., 2014). The combination of teacher instrumental help and clear expectations were examined in more studies than the other types of combinations. In Wang and Eccles (2013) and Wang and Holcombe (2010) studies, in addition to combination

of teacher instrumental help and clear expectations, teacher emotional support was also included and examined as a single dimension.

All four studies focused on student engagement, whereas only one study (Wang & Holcombe, 2010) also concerned academic achievement. Because a combination of dimensions of teacher-student relationships were examined as a whole instead of each dimension in particular, the extent to which any single dimension of teacher-student relationships was associated with student engagement and academic achievement for youth could not be inferred.

***Combinations of dimensions of teacher-student relationships and student engagement.*** Findings from four studies suggest that there was a positive relationship between combinations of dimensions of teacher-student relationships and student engagement (behavioral, emotional, and cognitive) for early adolescents. With regard to teacher instrumental help and clear expectations in relation to students' behavioral, emotional, and cognitive engagement, students' perceptions of teacher provision of structure (teacher clarity of expectations, contingency, and instrumental help and support, and adjustment of teaching strategies) in fall significantly predicted behavioral engagement (effort, attention, and persistence during learning) for eighth through twelfth graders in spring (Skinner & Belmont, 1993). Similarly, Wang and Eccles (2013) followed 1,157 students from seventh to eighth grade. They found that students who had teachers providing structure in seventh grade were more likely to follow school rules and participate in school activities (behavioral engagement) and have feelings of acceptance, interest, and enjoyment at school (emotional engagement) in eighth grade. Using the same dataset, Wang and Holcombe (2010) found that students' perceptions of teachers as promoting mastery goal structure in seventh grade were positively related to their school participation (behavioral engagement), school identification (emotional engagement), and use of self-regulation strategies (cognitive engagement) in

eighth grade. In contrast, students' perceptions of teachers as promoting performance goal structure in seventh grade were negatively related to their school participation (behavioral engagement), school identification (emotional engagement), and use of self-regulation strategies (cognitive engagement) in eighth grade. Skinner and Belmont (1993) utilized both teachers' and students' reports of combined teacher instrumental help and clear expectations, whereas Wang and Eccles (2013) and Wang and Holcombe (2010) used students' reports only. Using multiple informants helps triangulate findings and improves construct validity. Students' self-reported questionnaires may introduce social desirability bias.

As for combined teacher emotional support and instrumental help, Skinner and Belmont (1993) found that students with teachers who showed liking, appreciation, and enjoyment of the students, and who offered dedicated resources in the fall were more likely to show effort, attention, and persistence in learning (behavioral engagement), as well as interest and feel happy in class (emotional engagement) in the following spring. Skinner and Belmont (1993) also examined combined emotional support and classroom safety in relation to students' behavioral and emotional engagement. When the teacher was less coercive but more respectful toward the students, and provided choice and related to the students' lives in the fall, the students were more likely to be actively engaged behaviorally (e.g., effort, attention, and persistence during learning activities) or emotionally (e.g., interest and happiness in the classroom) in the following spring. One weakness about this study is that the participants were predominantly middle-class Caucasian (94%) students. The findings from the study are generalizable to this population only.

Finally, in terms of the combination of all four dimensions of teacher-student relationships, Turner et al. (2014) conducted a longitudinal study with six teachers and their students from sixth through eighth grade. A professional development intervention on promoting students' behavioral engagement was provided to these teachers. Results showed

that three of the six teachers displayed an upward trend in motivational support over time, whereas the other three of the six teachers showed a downward or flat trajectory of motivational support. Teachers in the upward group improved their motivational support, which in turn, contributed to their students' behavioral engagement. Teacher motivational support included four categories: support for belongingness, competence, autonomy, and meaningfulness. Dimensions of teacher-student relationships were embedded in these categories and were therefore drawn from these categories for the present review. The dimensions drawn were teacher emotional support (e.g., being kind), instrumental help (e.g., provision of challenging and meaningful work with support for student effort), clear expectations (e.g., providing feedback), and classroom safety (being respectful or disrespectful to students). Students' behavioral engagement was reflected by students' behaviors such as being on task, providing responsive assistance for procedures or thinking, and providing and taking up opportunities to work with others or on content. A strong feature of the study is the use of quasi-experimental design, which allows for testing for intervention effects of professional development in promoting teachers' relationships with their students.

***Combinations of dimensions of teacher-student relationships and academic achievement.*** Only one study investigated combinations of dimensions of teacher support and academic achievement (Wang & Holcombe, 2010). Students who perceived their teachers to promote a mastery goal structure (emphasizing task mastery and self-improvement) and providing social support (e.g., caring) in seventh grade tended to perform better academically in eighth grade. In contrast, students who perceived that their teachers promoted a performance goal structure (emphasizing comparison, competition, and high grades) and provided social support in seventh grade tended to perform better poorly in eighth grade. Further, both of these associations were partially mediated through students' school participation (behavioral engagement), sense of school identification (emotional

engagement), and use of self-regulation strategies in learning (cognitive engagement) in eighth grade. One strength of the study is that it involved a large sample (1,046) selected through stratified sampling. However, although the participants were followed longitudinally, they were assessed only twice. As testing for non-linear relationships requires at least three waves of data collection, the possibility of existence of non-linear relationships combinations of dimensions of teacher support and academic achievement could not be determined.

**Summary.** On the whole, various dimensions of teacher-student relationships were positively associated with student engagement for early adolescents in general. Teacher-student relationships were also positively associated with academic achievement among early adolescents, either directly or indirectly through student engagement as a mediator. Specifically, all four dimensions of teacher-student relationships were positively related to behavioral and emotional engagement. There was very limited evidence suggesting that there was not a significant relationship between teacher emotional support and behavioral engagement represented by participation in extracurricular activities. Three out of the four dimensions of teacher-student relationships (except classroom safety) were also positively related to cognitive engagement. Teacher emotional support was positively and directly related to academic achievement, as well as indirectly related to academic achievement through behavioral and emotional engagement as a mediator. No study explored associations between classroom safety and cognitive engagement, direct associations between three (teacher instrumental help, clear expectations, and classroom safety) of the four dimensions of teacher-student relationships and academic achievement, indirect associations between these dimensions and academic achievement through student engagement as a mediator, or between teacher emotional support and academic achievement through cognitive engagement as a mediator. Additionally, a number of combinations of dimensions of teacher-student relationships were positively associated with dimensions of student engagement. As well,



combinations of dimensions of teacher-student relationships were positively associated with academic achievement directly and indirectly through dimensions of student engagement as a mediator. Another additional finding indicated that the mediation effects of student engagement on the associations between high quality classroom contexts (less teacher-student conflict, high instructional quality, and positive social and emotional climate) and academic achievement differed for high-achieving students and academically struggling students, with all three dimensions of student engagement serving as a mediator for high-achieving students, but not for academically struggling students. On the whole, there was more evidence for teacher-student relationships in relation to student engagement than teacher-student relationships in relation to academic achievement. One exception was that results from one study revealed no significant relationships between teacher emotional support and cognitive engagement. Teacher-student relationships focused primarily on teacher emotional support, and student engagement focused primarily on behavioral engagement. Classroom safety and cognitive engagement were the least frequently explored dimension in the literature.

Limited evidence regarding the moderation effects of ethnicity suggested that teacher-student relationships, student engagement, and academic achievement among early adolescents did not differ for Caucasian students and African American students. No study explored the differences between Caucasian students and Latino students. There was limited evidence showing the moderation effects of gender on teacher-student relationships and student engagement for early adolescents were mixed; where differences were found that boys showed stronger effects of teacher emotional support on behavioral and emotional engagement than girls, whereas no differences were found between boys and girls in terms of teacher emotional support in relation to behavioral, emotional, and cognitive engagement. No study examined the moderation effect of gender on teacher emotional support in relation to academic achievement for early adolescents, or the other dimensions of teacher-student

relationships in relation to student engagement and academic achievement. None of the studies explored the potential moderation effects of SES and geographic locale.

### **Question 3. To What Extent Are the Associations between Teacher-Student Relationships, Student Engagement, and Academic Achievement for Latino Early Adolescents Conceptualized and Operationalized in the Extant Research?**

Like the critique to the literature on early adolescents in general, the critiques of the 10 studies involving Latino youth also focus on theoretical and methodological issues. The findings from these studies are summarized according to the four dimensions of teacher-student relationships: (a) teacher emotional support, (b) teacher instrumental help, (c) teacher clear expectations, and (d) classroom safety.

**Adherence to theoretical framework.** One strength of the studies is that half provided theoretical frameworks in guiding the research. However, none of the theoretical frameworks aligned with the framework (ecological theory and self-determination theory integrated) as proposed in this review. Not all studies were theoretically grounded; some were empirically based or relied on other theoretical bases.

A strong feature of the studies that specified theoretical frameworks ( $n = 5$ ) is their reliance on ecological theory (Brewster & Bowen, 2004; Crosnoe, Johnson, & Elder, 2004; Garcia-Reid, 2007; Woolley et al., 2009). These studies also used another theory that was different from self-determination theory, such as social capital theory and social bond theory. Additionally, Murray's (2009) study adopted only one theory – attachment theory – as the framework. Ecological theory was used to provide a conceptual framework for explaining why environmental factors (such as gender, SES, geographic locale, and cultural backgrounds) mattered for teacher-student relationships, student engagement, and academic achievement among Latino youth. However, social capital theory, social bond theory, and attachment theory were not as complete as self-determination theory. For instance, Woolley et al. (2009) employed ecological theory and social capital theory as well as Latino family

values to theorize the role of teachers, family, and friends in the school success of Latino middle school students. Social capital theory is similar to self-determination theory in that it recognizes the importance of the resources in the individual student's social environment. However, unlike self-determination theory, social capital theory does not involve individual needs.

**Adherence to constructs.** None of the studies specified teacher-student relationships as a four dimensional construct (teacher emotional support, clear expectations, instrumental help, and classroom safety). Instead, the majority of the studies ( $n = 8$ ) considered teacher-student relationships as a unidimensional construct. Only two studies conceptualized teacher-student relationships as a two-dimensional construct involving teacher emotional support and clear expectations (Murry, 2009), or teacher emotional support and instrumental help (Mireles-Rios & Romo, 2010). The conceptualization of teacher-student relationships in all ten studies had a strong focus on teacher emotional support, whereas no studies addressed classroom safety. However, a safe classroom environment that allows for mistakes may be especially important for Latino youth (Brinegar, 2010; Suárez-Orozco & Suárez-Orozco, 2001). As Suárez-Orozco & Suárez-Orozco (2001) pointed out, Latino students can make unintentional “mistakes” as they try hard to adjust to a new cultural setting. They constantly transfer what they know as acceptable behaviors from their own culture to the U.S. classroom. Some Latino students may be anxious about speaking in class because they may be afraid of making mistakes in front of their peers and their teacher. Their silence could also be a sign of respect for the teacher as an authority (Latino cultural value of *respeto*) – and not a sign of their inability or refusal to participate.

None of the studies considered student engagement as a three-dimensional (behavioral, emotional, and cognitive engagement) construct. Rather, most ( $n = 8$ ) of the studies included student engagement as a unidimensional construct, with a focus on

behavioral or emotional engagement. In the other studies, student engagement was defined as a two dimensional construct, involving behavioral engagement and emotional engagement. However, no studies discussed cognitive engagement as one of the dimensions of student engagement. Although cognitive engagement is more difficult to observe, it is central to the condition of learning (Kim & Suárez-Orozco, 2015). Cognitively engaged students are deeply involved in learning about the content and there is evidence that immigrant youth who were more cognitively engaged in their schoolwork had a higher GPA than their peers who were less engaged (Kim & Suárez-Orozco, 2015).

**Research design.** All of the ten studies employed a non-experimental, correlational design. None of the studies employed experimental designs to examine positive changes in student engagement and academic achievement among Latino youth were attributed to intervention implemented to improve teacher-student relationships. Thus, only relational inferences can be made based on the findings from the studies about teacher-student relationships, student engagement, and academic achievement for Latino youth.

The majority of the studies ( $n = 7$ ) were cross-sectional in design, whereas only three of the studies employed a longitudinal design. Results from the cross-sectional studies revealed the associations between teacher-student relationships and student engagement and academic achievement for Latino youth at a fixed time point only, whereas findings from the longitudinal studies captured changes in such associations across time. However, data were collected at only two time points across one or two years in two of the longitudinal studies. Only one study (Green et al., 2008) included data collected at three time points. Findings from the study suggested that Latino students' perceptions of teacher support and engagement did not follow a linear trajectory over time. Students reported fluctuations in their perceptions of teacher support as well in engagement as they progressed through school. Teacher support and student engagement appeared to increase and decrease in tandem. Latino youth who

reported higher levels of teacher support relative to their personal means were more likely to report higher levels of engagement in that same years; those reporting less support than their own averages tended to report lower levels of engagement in that year.

A strong feature of this literature is that the majority ( $n = 9$ ) of the studies used quantitative methods exclusively, relying heavily on student surveys. Findings from these studies using quantitative methods are generalizable to the targeted population, but due to the lack of qualitative methods, contextual information about how teacher-student relationships were related to student engagement and academic achievement for Latino youth was missing. Balagna, Young, and Smith (2013) were the only researchers who employed qualitative methods. In the study, 11 Latino youth shared their perceptions and experiences of schooling using in-depth qualitative interviews. Balagna et al. (2013) argued for the need to consider lived experiences for these students at risk for emotional and behavioral disorders using qualitative inquiry. The maladaptive behaviors exhibited by an individual may vary from context to context, depending on Latino youth's experiences and environment. Effective interventions for these students, therefore, need to be aligned with lived experiences (Balagna et al., 2013). However, none of the studies utilized mixed methods (both quantitative and qualitative methods) so that the results obtained using quantitative methods could be generalized to the target Latino youth population, and the findings using qualitative methods would provide contextual information in explaining why teacher-student relationships were or were not associated with student engagement and academic achievement among Latino youth.

**Sampling.** The studies predominantly involved convenience sampling and only one study (Crosnoe, Johnson, & Elder, 2004) used random sampling in selecting participants. Crosnoe et al. (2004) study was based on data from the National Longitudinal Study of Adolescent Health (Add Health), which was an ongoing representative study of American

adolescents in Grades 7-12. Using a stratified sampling method, participants from 132 high schools were selected from a complete list of American high schools, based on their region, urbanicity, sector, racial composition, and size. Crosnoe et al. (2004) study included 10,991 participants in 126 schools. The use of random sampling in the study increased the likelihood that the samples were representative of the target Latino youth population. In contrast, although the samples drawn through convenience sampling provided easy access to the investigators to conduct research, it was likely that these samples did not represent the target population. Thus, findings from these studies could not be generalized to the target Latino youth population. For example, samples included in the majority of these studies were from low SES backgrounds (e.g., Garcia-Reid, 2007; Green et al., 2008; Mireles-Rios & Romo, 2010; Murray, 2009; Woolley et al., 2009). Findings from these studies were more likely to represent Latino youth from low SES backgrounds only, while Latino youth from high and middle SES families were left out.

A strong feature of the studies was the majority ( $n = 7$ ) of the participants were selected from multiple schools (ranging from 2 to 318 schools), whereas participants in a few studies (Garcia-Reid, 2007; Garcia-Reid, Reid, & Peterson, 2005; Murray, 2009) were drawn from one school for each study. However, none of the studies involving multiple schools tested for variability among schools in the analysis to examine teacher-student relationships in relation to student engagement and academic achievement for Latino youth.

There was a wide range of sample sizes for the participants. The majority of the quantitative studies involved samples of between 69 and 264 students. Two of the remaining quantitative studies, both of which were part of large-scale research projects, included larger samples (633 and 848, respectively). The remaining quantitative study involved an extremely large sample ( $n = 10,991$ ), a subset from a large scale national longitudinal study. Green et al. (2008) were the only investigators who conducted a power analysis to determine the

optimal sample size for the study assuring an adequate power to detect statistical significance. Power analysis indicated that with repeated measures on 139 Latino students, the power was expected to be above .80 to detect statistical significance with an alpha of .05.

As for the qualitative study (Balagna, Young, & Smith, 2013), 11 Latino students identified as at risk for emotional and behavioral disorders participated in interviews. The sample chosen appears to be appropriate, as participants were identified from a population of students screened in a large research study sponsored by a federal grant, focused on implementing positive behavior intervention supports in middle schools. Balagna, et al. (2013) specifically targeted the Latino students for their educational experiences. The participants were screened using the Systematic Screening for Behavior Disorders (SSBD). According to Balagna, et al. (2013), the SSBD has received adequate evidence of reliability and validity. Of the 24 Latino students chosen, nine did not participate due to various reasons, and four were not contacted because of data saturation after extensive interviews with 11 participants were conducted over several months.

**Participant characteristics.** The following important participant characteristics were reviewed: ethnic background, grade level, gender, SES, geographic locale, and cultural factors.

***Ethnic background.*** On the whole, the participants were predominantly Latinos. The majority (n = 8) of the studies included Latino students exclusively (in seven studies) or predominantly Latino students (i.e., 88%). There was a lack of information provided about students' country of origin, English language proficiency level, and generation status. Only two studies (Green, Rhodes, Hirsch, Suarez-Orozco, & Camic, 2008; Mireles-Rios & Romo, 2010) indicated participants' country of origin (Mexico or Central America), whereas the other studies used the term "Latino" without specifying the participants' country of origin. Latino students' English proficiency level was reported in only one study (Balagna et al.,

2013). All 11 participants were fluent in both English and Spanish. However, none of the quantitative studies reported on the Latino participants' English proficiency levels. Research has documented that immigrant youth with limited English language proficiency were less likely to be engaged at school, which contributed to lower academic performance over time (Kim & Suárez-Orozco, 2015). Many Latino youth face language barriers at school due to limited English language proficiency. It can be difficult for them to communicate with their teachers who speak English only. Conflicts may arise and therefore their language barriers can impede the development of positive relationships with their teachers. Latino youth's generation status was reported in three studies (Garcia-Reid, 2007; Garcia-Reid et al., 2005; Green et al., 2008). Latino youth included in Green et al. (2008) study were first generation immigrants as they all immigrated to the United States within five years prior to the interview for the study; Latino students in each of the other two studies were comprised of approximately 60% first generation immigrants (born outside of the United States and immigrated to the States with their parents) and 40% second generation immigrants (born in the United States). Generation status may likely affect Latino students' relationships with their teachers. As second generation Latino youth were born in the States, they had advantages in terms of English and culture as compared to their first generation Latino peers. Therefore, second generation Latino youth may have fewer barriers in establishing and maintaining positive relationships with their teachers. However, none of the studies that reported on Latino youth's generation status examined the extent to which generation status moderated the associations between teacher-student relationships and student engagement and academic achievement among Latino youth.

In the remaining studies, one study (Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008) included 264 students that included 47% Latino students; the majority of the rest of the participants were Caucasian (30%). The findings of the study suggested that Latino students



and Caucasian students did not differ in teacher-student relationships as associated with student engagement and academic achievement. However, caution should be used when interpreting the results because Latino students were oversampled, whereas Caucasian students were undersampled in the population. In the other study (Crosnoe, Johnson, & Elder, 2004) involving 10,991 students, Latino students accounted for 16% of the sample (Caucasian 54%, African American 22%, and other 8%). However, ethnicity was not tested as a moderator of the associations between teacher-student relationships, student engagement, and academic achievement.

**Grade level.** A strong feature of the studies is that half of studies included Latino students in sixth through eighth grade only. Of the remaining studies, three (Brester & Bowen, 2004; Crosnoe et al., 2004; Green et al., 2008) involved Latino students in both middle and high schools; two (Mireles-Rios & Romo, 2010; Valiente et al., 2008) included Latino students in elementary schools (grades 3-6 and 2-5, respectively). However, none of these studies involving Latino students in elementary or high schools tested for the extent to which teacher-student relationships in relation to student engagement and academic achievement differed for Latino early adolescents as compared to their peers who were not early adolescents.

**Gender.** A strength of the literature is that for the majority ( $n = 7$ ) of the studies, the sample included in each study were roughly half male and half female. Additionally, the qualitative study by Balagna et al. (2013) involved more male than female Latino students (8 were male, 3 were female) who were diagnosed as at-risk for emotional and behavioral disorders. Samples in two studies (Garcia-Reid, 2007; Mireles-Rios & Romo, 2010) were exclusively female Latino students. Results could be generalized to Latino female students only.

**SES.** All studies except one reported students' SES backgrounds. The majority of the students were described as coming from low SES backgrounds. In six of these studies, approximately 65% to 99% of the student sample qualified for free or reduced lunch. In the remaining studies, on average, the students either came from low-income families (yearly income of less than \$50,000) or had parents who earned a GED. Therefore, the results of the present review may apply primarily to Latino early adolescents who are from low SES backgrounds in particular.

**Geographic locale.** The studies were conducted in various locations within the United States. Some (n = 4) involved a single school, some (n = 3) were conducted across schools in one city, and some (n = 3) across several states. Half of the studies identified the setting of the studies, with four conducted in cities and one in a rural area. Only one study indicated that the study was conducted in a community where half of the residents were Latino, whereas the other studies did not specify whether the studies were conducted in areas of high concentrations of Latino students or not. Thus, the extent to which the findings of the studies were generalizable to Latino students in areas with high concentrations of such population is very limited.

**Cultural factors.** Although a few studies (Balagna et al., 2013; Brewster & Bowen, 2004; Garcia-Reid, 2007) indicated the importance of Latino culture in teacher-student relationships, the attention to these factors was limited. None of the studies explicitly discussed the specific Latino cultural values such as respeto and familisimo. For example, Brewster and Bowen (2004) and Garcia-Reid (2007) applied social capital theory in discussing teachers as an important resource to Latino youth's success at school. Although the researchers stated that it was important for teachers to understand Latino culture, they did not further explain their point beyond that, discussing importance of specific Latino cultural values such as respeto and familisimo. Balagna, Young, and Smith (2013) pointed out that

discrimination toward Latino students and home-school disconnection for these students might put them at a disadvantage in school. Negative assumptions about Latino students and the differences between their cultural values and those of majority students may increase the risks faces by Latino youth. However, the investigators did not dig further into the specific Latino cultural values in their discussion.

**Measurements of the key constructs.** With regard to measures for teacher-student relationships and student engagement, for studies using quantitative methods ( $n = 9$ ), the majority ( $n = 8$ ) of the studies employed only student surveys to collect data. Although students' reports provided information about the Latino youths' perspectives on their relationships with their teachers and engagement, relying on solely students' reports may lead to bias without taking into the teachers' perspectives into consideration. Their teachers may have a different perspective than the students in terms of teacher-student relationships and level of student engagement.

Valiente et al. (2008) were the only investigators who adopted both students' reports and teachers' reports on questionnaires for teacher-student relationships and student engagement for Latino youth. Teacher and student reports of teacher-student relationships were correlated (.31), and their reports of behavioral engagement (classroom participation) were correlated (.32). Because significant relations were found across reporters, and reports of the same construct across reporters were significant, to simplify the analyses, the investigators created composite scores by averaging across teachers and students. Balagna et al. (2013) conducted in-depth, open-ended semi-structured, qualitative interviews of school experiences with 11 individual Latino student identified being at risk for emotional or behavioral problems to identify ways to improve interventions targeted to promote these students' academic retention and success. The interview data were coded and analyzed using interpretative phenomenological analysis (IPA) to understand how these Latino students

made sense of their schooling experiences. Their descriptions were contextualized within relationships with their teachers, peers, and parents.

Student achievement was a dependent variable in six studies; in the majority ( $n = 5$ ) of the studies, students' grades were used to measure academic achievement. These grades were either reported by the students ( $n = 4$ ) or by the teachers ( $n = 2$ ), or obtained from the school records ( $n = 1$ ). The results reported by the teachers or obtained from the school records were likely to be more accurate than students' self-reported grades. In some studies, the average GPAs across subjects were used, whereas in other studies, grades in each subject (e.g., language arts, mathematics) were used. Interestingly, Murray (2009) used both standardized achievement tests (i.e., Iowa Test of Basic Skills) and teacher-reported students' final grades in language arts and mathematics as the indicators for students' academic achievement in reading and mathematics. When analyzing associations between teacher-student relationships and student engagement, because Iowa Test of Basic Skills performance in reading and mathematics and final grades in language arts and mathematics were cross-sectional data, students' Iowa Test of Basic Skills performance in reading and mathematics were entered as the achievement covariates. However, when Iowa Test of Basic Skills performance in reading and mathematics were the dependent variables, grades in language arts and mathematics were entered as covariates.

The measures in the studies overall had fairly good reliabilities. Most of the studies ( $n = 8$ ) adopted well-established measures. For example, half of these studies used the School Success Profile (SSP; Bowen & Richman, 1997) to teacher-student relationships and student engagement, whereas the other studies utilized measures such as Student-Teacher Relationship Scale (S-TRS; Hamre & Pianta, 2001), Research Assessment Package for Schools (RAPS; Connell & Wellborn, 1991), and measures developed for large-scale studies (National Longitudinal Study of Adolescent Health and Longitudinal Immigration Student

Adaptation). The majority of the reliability coefficients ranged from .70 to .94, indicating good to excellent reliabilities.

On the one hand, the studies reported strong reliabilities of the measures for teacher-student relationships and student engagement, indicating consistency of these measures when applied to Latino students. On the other hand, there was a lack of reporting on validity of these measures and testing of measurement equivalence for measurement tools developed for early adolescents in general when being used for Latino youth. None of the studies conducted deeper measurement assessment by testing measurement equivalence. This could lead to biased results. For example, Valiente et al. (2008) found that there was no significant difference between teacher emotional support and behavioral engagement or academic performance for Latino youth and their Caucasian peers. The results could be attributed to the absence of testing on measurement equivalence to show if the measure developed for Caucasian adolescents was appropriate for Latino youth.

Although Woolley et al. (2009) provided both English and Spanish versions of the measures for teacher-student relationships and student engagement, they failed to report the measurement equivalence of these measures. Even when great care was taken during translations of these measures from English to Spanish, empirical evaluations of measurement equivalence were necessary (Nair, White, Knight, & Roosa, 2009). Careful translation itself did not ensure that the bilingual versions of these measures were measuring the same constructs (teacher-student relationships and engagement), in the same way, in both early adolescents in general and Latino youth. To what extent the measures were similarly valid and reliable across early adolescents in general and Latino youth was unknown. If teacher-student relationships and engagement are not measured equivalently across early adolescents in general and Latino youth, findings from studies across early adolescents in

general and Latino youth and between-group comparisons may be misleading (Knight & Hill, 1998).

**Summary.** Approximately half of the studies were theoretically grounded, drawing primarily on ecological theory. None of the studies employed self-determination theory. However, no studies addressed meaningful cultural factors within ecological theory in teacher-student relationships for Latino youth. Although a few studies included some discussion on the importance of Latino culture for teachers in developing and maintaining positive relationships with the Latino students, no further explanations were provided on specific Latino cultural values such as respeto and familisimo. Teacher-student relationships were predominantly defined as a unidimensional construct, with a focus on teacher emotional support. Similarly, student engagement was also commonly conceptualized as a unidimensional construct, with a focus on behavioral or emotional engagement. The studies were predominantly cross-sectional, with few longitudinal in design. A strong feature of this body of literature is that the majority of the studies used quantitative methods exclusively, relying heavily on student surveys. Only one used qualitative methods and none adopted mixed methods. Convenience sampling was the predominantly used sampling method, with few exceptions utilizing random sampling. There was a wide range of sample sizes but without power analysis to test the adequacy of the samples. The participants were predominantly Latino, evenly distributed on gender, from low SES backgrounds, and in various geographic locations. With regard to the measurements for teacher-student relationships and student engagement, the studies employed predominantly student surveys, with few exception utilizing both students' reports and teachers' reports on questionnaires, or student interviews. Students' grades were used to measure academic achievement, with few exceptions also involving standardized test scores. Overall, the measures had good reliabilities but validity was largely not reported. The studies reported good to excellent

reliabilities, indicating consistency of the measures for teacher-student relationships and student engagement when applied to Latino students. However, none of the studies conducted deeper measurement assessment by testing measurement equivalence. Thus, it was unclear the extent to which the measures developed for early adolescents in general would apply to Latino youth.

**Question 4. To What Extent Are Teacher-Student Relationships Associated with Student Engagement and Academic Achievement for Latino Early Adolescents? To What Extent Are Such Associations Moderated by Student Gender, SES, and Geographic Locale, and Latino Cultural Factors?**

The findings on teacher-student relationships, student engagement, and academic achievement for Latino early adolescents are organized according to dimensions of teacher-student relationships (i.e., teacher emotional support, teacher instrumental help, teacher clear expectations, and classroom safety). Additionally, a combination of teacher emotional support and instrumental help is discussed.

**Teacher emotional support, student engagement, and academic achievement.**

Nine studies investigated teacher emotional support in relation to student engagement or academic achievement for Latino youth. Several aspects of teacher emotional support were examined, and mostly from students' perspectives, including teachers' caring about students; friendliness and respectfulness toward and encouragement of students; and willingness to work with their students. Teachers' perspectives on teacher emotional support focused on closeness and conflict between the teacher and the students.

*Teacher emotional support and student engagement.* Of the three dimensions of student engagement, behavioral engagement and emotional engagement have been examined. No study explored cognitive engagement.

*Behavioral engagement.* Approximately half ( $n = 6$ ) of the studies examined the relationship between teacher emotional support and behavioral engagement for Latino early adolescents (Balagna et al., 2013; Brewster & Bowen, 2004; Crosnoe et al., 2004; Murray,

2009; Valiente, et al., 2008; Woolley et al., 2009). Several aspects of behavioral engagement were examined, including attending class regularly, exhibiting problem behaviors, paying attention in class, completing homework, and making an effort at school work. The studies predominantly focused on class attendance (Balagna et al., 2013; Brewster & Bowen, 2004; Valiente, et al., 2008; Woolley, et al., 2009) and problem behaviors (Balagna et al., 2013; Brewster & Bowen, 2004; Crosnoe, et al., 2004; Woolley, et al., 2009). However, the studies that involved at least two aspects of behavioral engagement did not tease out a single aspect of engagement in relation to teacher emotional support.

Overall, findings from the studies revealed positive relationships between teacher emotional support and behavioral engagement for Latino youth. That is, Latino students who perceived that their teachers cared about and respected them were more likely to attend classes regularly, exhibit fewer behavioral problems, pay attention in class, complete homework in a timely manner, and work hard at school work. For example, findings from the year-long longitudinal study by Valiente et al. (2008) suggested that after controlling for fall GPA, absences, gender, SES, and effortful control, perceived positive teacher-student relationships in the fall were positively related to behavioral engagement (e.g., attending class regularly and paying attention to class) in the following spring. One strength of the study is that the measures of teacher-student relationships and student engagement were drawn from both teachers' and students' reported perspectives. Teacher and student reports of the teacher-student relationships and behavioral engagement were significantly correlated. Because significant relations were found across reporters, the researchers created composite scores (i.e., averages) across reporters to reduce the number of analyses. Using multiple informants enhances the validity of constructs, thus reducing social bias from each side of informants.



In another longitudinal study (Crosnoe et al., 2004), a much larger sample (n = 10,991) drawn from a large scale national research project was included. The sample was primarily Caucasian students (54%) and Latino students accounted for 16% of the participants. Results suggested that on the whole, after controlling for grade level, ethnicity, gender, SES, and behavioral problems at Time 1, students who perceived that their teachers cared about them and treated them fairly at Time 1 were less likely to have disciplinary problems at Time 2. A strong feature of the study is the use of stratified sampling method for selecting participants. One benefit of using random sampling is that a randomly selected sample of the population was used to estimate the distribution of perceptions about teacher emotional support and student behavioral engagement in the entire target population with statistical confidence. A limitation of the study is that it did not test for ethnic differences especially between Latino youth and their Caucasian peers on teacher emotional support and behavioral engagement.

For both longitudinal studies, although participants were assessed at two time points, teacher emotional support was assessed only once and during the first wave of data collection. As teacher emotional support may change from one time point to the other, neither of the studies examined the extent to which changes teacher emotional support might affect changes in Latino youth's behavioral engagement. Another major limitation of the studies is that although the measures used in these studies were valid and relate to observed indices of the relevant constructs (Crosnoe et al., 2004; Valiente et al., 2008), the participants were assessed with questionnaires only. The studies could have benefited from using observational assessments for teacher emotional support and behavioral engagement as well. Using multiple data sources for the same variable helps triangulate findings and enhances the validity of constructs.

A drawback of the literature on Latino students is that only two of the six studies that addressed teacher emotional support and behavioral engagement were longitudinal. Among the cross-sectional studies, most used quantitative methods. Woolley et al. (2009) conducted a study with 848 Latino students in sixth through eighth grade across schools in seven states. They found that Latino youth who perceived that their teachers were caring, encouraging, respectful, and willing to work with students were less likely to have absences in school. A strength of the study is use of a well-established measure from the School Success Profile study with good reliability and validity (Woolley et al., 2009). Murray (2009) conducted a study with 104 students in a low-income low-performing middle school. Latino students accounted for the majority (91%) of the participants. Students who perceived their teachers treated them fairly and liked them tended to work hard on school work. This study, too, used a well-established existing measure (Research Assessment Package for Schools) to assess teacher-student relationships and student engagement. In the study conducted by Brewster and Bowen (2004), however, the participants were identified as at risk of school failure from both middle and high schools. Results revealed a positive relationship between teacher emotional support and Latino students' school attendance regardless of school level (middle school vs. high school). While findings from Woolley et al. (2009) study could be generalized to typically developing Latino youth, results from Brewster and Bowen (2004) and Murray (2009) study had more specialized samples that affect generalizability. The studies also relied on self-reported questionnaires that may introduce social desirability bias. For instance, some of the questions on the questionnaire may prompt students to answer untruthfully in an attempt to provide a socially appropriate response. An observational measure of behavioral engagement may offer a more objective view of students' participatory behaviors compared to self-reports from students.

In the cross-sectional study using qualitative methods, Balagna et al. (2013) also conducted a study with non-typically developing Latino youth. These researchers interviewed 11 sixth-grade Latino students diagnosed as being at risk for emotional and behavioral disorders. The interview data were coded and one of the themes concerned teacher emotional support and behavioral engagement for Latino youth. Latino students were more likely to attend class regularly, avoid behavioral problems, and follow teachers' instruction in class, when they reported that their teachers communicated with a sense of warmth and caring. On the contrary, the Latino students who perceived that their teachers disliked them were more likely to skip classes, have behavioral problems, and disobey the teachers in class. For instance, one student said that she had difficulties in class until a teacher gave her more individual attention. The teacher talked to her about improving her behaviors. After the talk, the Latino student started cleaning up the classroom and being nice to others.

Only one study explored the moderation effect of ethnicity (Latino vs. Caucasian) on teacher emotional support in relation to student engagement, finding that Latino students did not differ from their Caucasian peers (Valiente et al., 2008). None of the studies in the extant literature explored the potential moderation effects of gender, SES, geographic locale, or cultural factors on the associations between teacher emotional support and behavioral engagement among Latino early adolescents. Thus, it was unclear the extent to which teacher emotional support and Latino youth's behavioral engagement differed by gender, SES, geographic locale, or cultural factors.

*Emotional engagement.* Half ( $n = 5$ ) of the studies examined the relations between teacher emotional support and emotional engagement for Latino early adolescents (Balagna et al., 2013; Brewster & Bowen, 2004; Garcia-Reid, 2007; Garcia-Reid et al., 2005; Woolley et al., 2009). Emotional engagement focused on students' perceived school meaningfulness

(e.g., finding school exciting, looking forward to learning new things at school, enjoying going to school).

All studies were cross-sectional in design. Most ( $n = 4$ ) of the studies utilized quantitative method and one employed qualitative methods. A strong feature of these studies is that the participants included in each study were solely Latino students. On the whole, teacher emotional support was positively associated with emotional engagement among Latino youth. Latino youth who perceived that their teachers cared about them and showed respect toward them were more likely to find school meaningful. Among the quantitative studies, while Brewster and Bowen (2004) involved Latino students at risk of school failure, Garcia-Reid et al. (2005) and Woolley et al. (2009) did not specify whether the Latino samples included were at risk of school failure. Garcia-Reid (2007) included only female Latino students who struggled at school. The findings from these studies were generalizable to different Latino youth population. One major limitation of the quantitative studies in research design is the use of convenience sampling in all these studies. Although using convenience sampling is easy and quick in gaining access to participants, the generalizability of the findings can be questionable. A strong feature of these studies in terms of measurement is that all four studies adopted the well-established School Success Profile measure with good reliability and validity.

Balagna et al. (2013) were the only researchers who employed qualitative methods. Through in-depth open-ended semi-structured interviews with 11 Latino sixth graders at risk of emotional and behavioral disorders, the researchers found that Latino youth were more likely to enjoy teachers and classes when they had teachers who demonstrated emotional support. For instance, Latino youth preferred teachers who were “nice,” demonstrated kindness and understanding, got to know students individually, and had a sense of humor. They disliked teachers who were “angry” and yelled at them. One student felt his teacher

embarrassed her and did not take a personal interest in him. So he did not want to get to know the teacher either.

None of the studies in the extant literature explored the potential moderation effects of gender, SES, geographic locale, or cultural factors on the associations between teacher emotional support and emotional engagement among Latino early adolescents.

***Teacher emotional support and academic achievement.*** Approximately half (n = 6) of the studies (Balagna et al., 2003; Crosnoe et al., 2004; Mireles-Rio & Romo, 2010; Murray, 2009; Valiente et al., 2008; Woolley et al., 2009) investigated the relationship between teacher emotional support and academic achievement for Latino early adolescents. The majority of the studies explored direct relationships between teacher emotional support and Latino youth's academic achievement (Crosnoe et al., 2004; Mireles-Rio & Romo, 2010; Murray, 2009; Valiente et al., 2008); two studies (Balagna et al., 2003; Woolley et al., 2009) investigated the indirect relationships between teacher emotional support and Latino youth's academic achievement through student engagement (behavioral or emotional engagement) as a mediator. No study explored the indirect association through cognitive engagement as a mediator.

The majority of these studies were cross-sectional; only two involved a longitudinal design. Findings from the longitudinal studies suggested that after controlling for students' GPA at Time 1, perceived teacher emotional support (caring about students, treating students fairly, having fewer conflicts with students) at Time 1 significantly predicted Latino youth's academic achievement at Time 2 (Crosnoe et al., 2004; Valiente et al., 2008). A strength in these studies is that academic achievement was examined at two time points. Prediction of Latino youth's academic competence at Time 2 was examined while controlling for their academic competence at Time 1. By controlling for grades at Time 1 when examining the contribution of teacher emotional support to Latino youth's grades at Time 2, the

investigators assessed how teacher emotional support related to academic achievement beyond Latino youth's preexisting academic ability. A major limitation of these studies is that teacher-student relationships were assessed at Time 1 only, which did not allow for testing for changes in teacher-student relationships in relation to changes in academic achievement over time.

Findings from the cross-sectional studies indicated that teacher emotional support was positively associated with Latino youth's academic achievement directly (Mireles-Rios & Romo, 2010; Murray, 2009) as well as indirectly through their behavioral or emotional engagement as a mediator (Balagna et al, 2013; Woolley et al., 2009). With regard to the direct associations, Latino early adolescents who perceived that their teachers cared about how they were doing in school, were friendly toward them, and treated them fairly tended to perform higher in academics (Murray, 2009). The findings also apply to Latino girls in early adolescence (Mireles-Rios & Romo, 2010). As for the indirect associations between teacher emotional support and Latino early adolescents' academic achievement through their behavioral or emotional engagement as a mediator, Latino youth who reported that their teachers were caring, encouraging, respectful, and willing to work with them and liked them were more likely to attend class regularly less likely to be involved in physical fights with other students, and more satisfied with school. This in turn, was positively associated with higher grades in school (Balagna et al, 2013; Woolley et al., 2009).

The findings reported in the studies are unique in that they highlight the importance of teacher-student relationships for Latino students' academic success during early adolescence in low-income low performance schools or for girls only. However, data in these studies was correlational in nature and in no way offer evidence of causality. Experimental and longitudinal research could have helped clarify the direction of these effects. Also, such design would provide greater insights of the importance of supportive teacher-student

relationships during early adolescence for Latino students. Another limitation concerns generalizability issue of the findings. For example, the sample in Murray (2009) study was comprised mainly of Latino youth in low-income low-performing schools. Mireles-Rios and Romo (2010) focused on Latino girls in early adolescence. Generalization of the findings should be restricted to populations similar to those included in these studies.

Among the quantitative studies involving Latino students and their Caucasian peers, Valiente et al. (2008) were the only researchers who explored the moderation effect of ethnicity (Latino vs. Caucasian) on teacher emotional support in relation to academic success. Findings suggested that Latino students did not differ from their Caucasian peers in the associations between teacher-student relationships and academic achievement. None of the quantitative studies examined the moderation effects of gender, SES, geographic locale, or cultural factors on the associations between teacher emotional support and academic achievement for Latino youth.

#### **Teacher instrumental help, student engagement, and academic achievement.**

Only two studies (Balagna, et al., 2013; Mireles-Rios & Romo, 2010) explored teacher instrumental help in relation to student engagement or academic achievement for Latino youth. Both studies examined teacher instrumental help in relation to behavioral and emotional engagement among Latino youth. No study of the associations between teacher instrumental help and cognitive engagement. Balagna et al. (2013) also investigated the associations between teacher instrumental help and Latino early adolescents' academic achievement. Aspects of teacher instrumental help in these studies focused on teachers' explaining things during class and talking about college with students.

Balagna et al. (2013) examined teacher instrumental help specifically in relation to Latino early adolescents' behavioral engagement. Latino students were more likely to attend classes regularly, pay attention during class, follow teachers' instructions, and complete

homework when they perceived their teachers as flexible and providing opportunities to have extra time and to make up work (Balagna et al., 2013).

Associations between teacher instrumental help and emotional engagement for Latino youth were explored in both studies (Balagna, et al., 2013; Mireles-Rios & Romo, 2010), but with inconsistent findings. Balagna et al. (2013) found that Latino students were more likely to enjoy their teachers and classes when their teachers provided instrumental help (e.g., telling life stories and experiences, making the content meaningful. Mireles-Rios and Romo (2010), however, reported that Latino girls who liked math and reading reported that their teachers talked little about college. The researchers speculated that the reasons for this surprising finding might be that the teachers were not emphasizing the trajectory of going onto college clearly enough to these students. Their teachers were more likely to view Latino minority students as less academically capable and to have lower expectations for their academic achievement.

Balagna et al. (2013) were also the only investigators who explored teacher instrumental help in relation to Latino early adolescents' academic achievement. They found that teacher instrumental help was positively and significantly associated with academic achievement among Latino early adolescents who were at risk for emotional or behavioral disorders through behavioral and emotional engagement as a mediator. Specifically, Latino students were more likely to attend class regularly and liked their teachers when their teachers cared about them, showed kindness and respect toward them. Their behavioral and emotional engagement, in turn, led to better grades.

One major limitation of these studies on teacher instrumental help, student engagement, and academic achievement is that both studies were cross-sectional in nature. Findings captured a snapshot for how teacher instrumental help was associated with Latino youth's behavioral and emotional engagement and academic achievement at one time point.



However, as the variables may change over time, it might be more meaningful to follow the participants for a period of time and collect at least two waves of data. This would allow investigators to examine changes in teacher instrumental help in relation to changes in student engagement and academic achievement among Latino youth. Another limitation is that the small sample size ( $n = 69$ ) included in Mireles-Rios and Romo (2010) study did not allow for rigorous statistical analyses of teacher instrumental help and emotional engagement for Latino early adolescent girls. The quantitative study Mireles-Rios and Romo (2010) did not examine the moderation effects of gender, SES, geographic locale, or cultural factors on the associations between teacher instrumental help, student engagement, and academic achievement for Latino youth.

**Teacher clear expectations, student engagement, and academic achievement.**

Only one study (Murray, 2009) examined teacher clear expectations in relation to student engagement (specifically, behavioral engagement) and academic achievement for Latino early adolescents. No study explored teacher clear expectations in relation to emotional engagement and cognitive engagement. Findings from Murray (2009) study suggested that Latino youth (91% of the participants) who perceived that their teachers provided clear expectations tended to work hard on school work and succeed in academics. The study did not examine the moderation effects of gender, SES, geographic locale, and cultural factors on teacher clear expectations in relation to Latino early adolescents' behavioral engagement or academic achievement.

**Classroom safety, student engagement, and academic achievement.** Classroom safety focused on teachers' providing a safe and risk-free environment for students so the students could be engaged in classroom activities. As Latino youth adjust to the mainstream classroom setting, which is different from their home culture, it's likely that they make unintentional mistakes due to cultural differences and limited English proficiency. They

constantly adapt their behaviors from their home culture to what's considered acceptable behaviors in the U.S. classroom. They feel apprehensive about making mistakes in front of the teacher and their Caucasian peers and are afraid of being ridiculed. Therefore, creating a safe and risk-free classroom environment is especially important of Latino youth.

However, Balagna et al. (2013) were the only researchers who investigated the associations between classroom safety and student engagement among Latino youth. Both behavioral and emotional engagement were explored. No study explored classroom safety in relation to cognitive engagement and academic achievement for Latino youth. Balagna et al. (2013) coded the interview data with 11 Latino students at risk for behavioral and emotional disorders. Results suggested that when Latino youth perceived the classroom environment being safe and risk-free, they tended to pay more attention during class and enjoy classes and teachers more. On the contrary, Latino students were more likely to clash with or dislike teachers who were angry or yelled at the students, or treating students differently from students of other races. None of the studies examined a safe classroom environment in relation to Latino early adolescents' academic achievement. No study explored the moderation effects of gender, SES, and geographic locale on student engagement and academic achievement for Latino youth.

**Combination of teacher emotional support and instrumental help in relation to behavioral engagement.** In addition to the studies that focused on a single dimension of teacher-student relationships among Latino early adolescents, one study (Green et al., 2008) examined the combination of two dimensions of teacher-student relationships (i.e., teacher emotional support and instrumental help) as related to Latino youth's behavioral engagement. It appears that Green et al. (2008) treated teacher-student relationships as a unidimensional construct, but the survey used to measure teacher-student relationships involved questions related to both teacher emotional support (e.g., treating students with respect) and

instrumental help (e.g., having at least an adult in school students can count on). However, Green et al. (2008) did not tease out each dimension in their analysis but instead examined the combination of these dimensions.

In the Green et al. (2008) longitudinal quantitative study, 139 seventh through twelfth grade Latino students from several school districts in the San Francisco area were followed for three years and assessed at three time points. The sample was drawn from a subset of the LISA study. The Behavioral and Relational Engagement Scale from the LISA study was used to measure teacher-student relationships and Latino youth's behavioral engagement at school. Findings suggested that rather than adhering to linear trajectories, perceptions of combination of teacher emotional support and instrumental help fluctuated from year to year. These fluctuations were associated with Latino youth's behavioral engagement in school (e.g., paying close attention in class, finishing homework) that year. That is, higher levels of combination of teacher emotional support and instrumental help were associated with higher levels of behavioral engagement; lower levels of combination of teacher emotional support and instrumental help were associated with lower levels of behavioral engagement. Additionally, the relationships between the average amount of perceived teacher-student relationships (i.e., combination of teacher emotional support and instrumental help) over three years and Latino youths' behavioral engagement differed somewhat for boys and girls. For girls, perceived average teacher-student relationships were positively associated with initial behavioral engagement, whereas for boys, perceived average teacher-student relationships were positively associated with changes in their behavioral engagement over time. The study is unique in that hierarchical linear modeling was used in analyzing the data. Hierarchical linear modeling enabled the researchers to dynamically model time-sensitive fluctuations. As Green et al. (2008) stated, students' perceptions on teacher-student relationships and their behavioral engagement may change over time. Hierarchical linear

modeling is ideal for examining longitudinal data where independent and dependent variables change over time. Another strength is that the study involved three waves of data collection, which allowed for the testing for the likelihood of non-linear relationship between changes in teacher-student relationships and changes in behavioral engagement for Latino youth over time.

Unfortunately, Green et al. (2008) did not test for the moderation effects of SES, geographic locale, and cultural values on the changes in the combination of teacher emotional support and instrumental help in relation to changes in behavioral engagement for Latino youth over time. One major limitation to this study is that teacher-student relationships and behavioral engagement were measured at the same time each year, not allowing for making inferences regarding causality over time. An experimental and longitudinal design could have resolved the issue. Another limitation is the study's dependence on Latino youth's subjective perceptions of support from their teachers. According to Green et al. (2008), the perceived support may not necessarily reflect the actual amounts of support that were enacted by their teachers. Students' perceptions are likely to be shaped by dynamically interacting factors, such as their emotional wellbeing and attachment history. The study could have involved teachers' perceptions to help better understand the extent to which teacher-student relationships contribute to Latino youth's behavioral engagement.

**Summary.** On the whole, results from limited research suggested that various dimensions of teacher-student relationships were positively associated with student engagement for Latino early adolescents. Teacher-student relationships were also positively associated with academic achievement either directly or indirectly through student engagement as a mediator. Specifically, all four dimensions of teacher-student relationships were positively related to behavioral engagement; three of the four dimensions of teacher-student relationships (except teacher clear expectations) were also positively related to

emotional engagement. There was very limited evidence indicating no significant associations between teacher instructional help and emotional engagement. Teacher emotional support, instrumental help, and clear expectations were positively and directly related to academic achievement. Teacher emotional support and instrumental help were also positively and indirectly related to academic achievement through behavioral and emotional engagement as a mediator. No study examined teacher-student relationships as related to cognitive engagement, associations between teacher clear expectations and emotional engagement, direct relationships between classroom safety and academic achievement, indirect associations between teacher emotional support and instrumental help and academic achievement through cognitive engagement as a mediator, or indirect relationships between teacher clear expectations and classroom safety and academic achievement through student engagement as a mediator. Additionally, combination of dimensions (teacher emotional support and instrumental help) of teacher-student relationships was positively associated with behavioral engagement. There was more evidence for teacher-student relationships in relation to student engagement than teacher-student relationships in relation to academic achievement. Teacher-student relationships focused primarily on teacher emotional support, and student engagement focused on behavioral and emotional engagement. Classroom safety was the least frequently explored dimension of teacher-student relationships in the literature. No study explored cognitive engagement in any type of associations.

Limited evidence suggested that Latino students did not differ from their Caucasian peers in the associations between teacher emotional support and behavioral engagement. None of the studies examined the moderation effects of gender, SES, geographic locale, or cultural factors on the associations between teacher-student relationships and student engagement and academic achievement for Latino youth.

**Question 5. To What Extent Does the Research on the Associations between Teacher-Student Relationships, Student Engagement, and Academic Achievement for Early Adolescents in General Compare with the Research for Latino Youth?**

The literature on the associations between teacher-student relationships and student engagement and academic achievement for early adolescents in general is compared with the studies for Latino youth with respect to the findings and quality of the literature.

**Comparison of findings.** Both bodies of literature share some similarities and also differ somewhat in terms of the findings.

**Similarities.** There was limited evidence from the same study involving both Latino youth and early adolescents in general suggesting that Latino youth did not differ from their Caucasian peers in teacher-student relationships in relation to academic achievement (Valiente et al., 2008). The majority of the studies in both bodies of literature did not compare early adolescents in general and Latino youth, but focused on either group of students in the same study. Findings revealed that for early adolescents in general and for Latino youth, the associations between teacher-student relationships and engagement and achievement were more similar than different. For both early adolescents in general and Latino youth, teacher-student relationships were positively associated with student engagement. Teacher-student relationships were also positively associated with academic achievement directly or indirectly through student engagement as a mediator.

In both literatures, the studies focused on the associations between teacher-student relationships and student engagement more than the associations between teacher-student relationships and academic achievement (see Table 3). For teacher-student relationships in relation to student engagement, the studies primarily focused on teacher emotional support and behavioral engagement. That said, all four dimensions of teacher-student relationships were positively associated with behavioral engagement in both literatures. Three of the four

dimensions (except teacher clear expectations) of teacher-student relationships were also positively associated with emotional engagement. In contrast, for the associations between teacher-student relationships and academic achievement, only three sets of associations were examined in both bodies of literature with a focus on teacher emotional support. That is, teacher emotional support was positively and directly associated with academic achievement, and indirectly related to academic achievement through behavioral and emotional engagement as mediators.

Nonetheless, several associations were not addressed in either body of literature, especially those involving classroom safety and cognitive engagement, which were the least examined dimensions of teacher-student relationships and student engagement. For instance, no study in either literature examined classroom safety as related to cognitive engagement and academic achievement, or its indirect associations with academic achievement through student engagement as a mediator. Similarly, teacher clear expectations in relation to academic achievement through student engagement as a mediator were not addressed in any of the studies. Neither literature explored the associations between teacher emotional support and instrumental help and academic achievement through cognitive achievement as a mediator. Finally, no study explored the moderation effects of SES and geographic locale on the associations between teacher-student relationships, student engagement, and academic achievement.

*Differences.* In addition to similarities in the findings from both bodies of literature, there are also a few minor differences. There were several findings in the literature for early adolescents in general that did not emerge in the literature on Latino students. For example, findings from the literature for early adolescents in general suggested that teacher emotional support, instrumental help, and clear expectations were positively associated with cognitive engagement. Teacher clear expectations were also found to be positively related to emotional

engagement. As for teacher emotional support and behavioral engagement, although the overall results revealed positive associations between these constructs, limited evidence suggested that increases in teacher social support did not significantly predict students' participation in extracurricular activities (behavioral engagement) for early adolescents in general. There was also limited evidence showing the mediation effects of student engagement on the associations between teacher-student relationships and achievement differed by students' achievement levels. For high-achieving students, all three dimensions of student engagement mediated the associations between high quality classroom contexts and academic achievement. In contrast, for academically struggling students, student engagement did not mediate the associations. Lastly, findings regarding the moderation effects of gender were mixed. Boys and girls either differed or did not differ in terms of teacher emotional support and engagement.

Similarly, there were several findings from the literature for Latino youth that were not evident in the literature on early adolescents in general. Teacher instrumental help and clear expectations were positively and directly associated with academic achievement. Teacher instrumental help was also indirectly associated with academic achievement through behavioral and emotional engagement as a mediator. These relationships were studied in the literature for Latino youth but not studied in the literature for early adolescents in general.

**Comparison of quality of the literature.** The quality of the literature is compared across the studies for early adolescents in general and the studies for Latino youth by focusing on theoretical framework and methodologies.

***Theoretical framework.*** Both bodies of literature were strong in that the relationships among constructs (teacher-student relationships, student engagement, and academic achievement) tended to be theoretically driven. However, the literature for early adolescents in general tended to be more theoretically grounded than did the literature for Latino youth.



That is, the majority of studies of early adolescents in general were theoretically grounded, whereas only half of the studies for Latino youth were guided by a theoretical framework. Moreover, the literature for early adolescents in general tended to approach the associations from different theoretical perspectives than did the studies of Latino youth. Research for early adolescents in general tended to be grounded in self-determination theory, emphasizing how the constructs (teacher-student relationships, student engagement, and academic achievement) were related. In contrast, literature for Latino youth relied on ecological theory, stressing the role of environmental factors. For example, Wang and Holcombe (2010) framed their study on middle school students' perceptions of school environment, engagement, and achievement within self-determination theory. The fundamental need for competence, autonomy, and relatedness that these students sought experiences to fulfill suggested three dimensions of teacher-student relationships (i.e., autonomy – teacher instrumental help, competence – teacher clear expectations, and relatedness – teacher emotional support and classroom safety). Thus, self-determination theory provided a theoretical underpinning for why school environment including teachers played a significant role in these students' engagement and achievement. In contrast, Wooley and Bowen (2009) employed ecological theory and social capital theory along with cultural constructs specific to Latinos to conceptualize the social context of school success for Latino middle school students with respect to direct and indirect influences of teachers, family, and friends. For influences of teachers in particular, ecological theory guided the examination of teachers in relation to Latino youth's academic achievement through behavioral and emotional engagement as a mediator (the study did not integrate cultural factors in ecological theory for its theoretical framework but included cultural factors as a separate component). Both self-determination theory and ecological theory are necessary in order to guide the mechanisms between

teacher-student relationships and student engagement and academic achievement, as well as the role of environmental factors.

Furthermore, although the studies in both bodies of literature utilized different frameworks to theorize the teachers' role, neither literature used ecological theory to conceptualize important factors such as gender, SES, Latino cultural factors, and geographic locale. The role of teachers was discussed as part of the microsystem, whereas the other factors which were not part of the microsystem but rather components of the macrosystem were not addressed within ecological framework.

With one exception, no study from the literature for early adolescents and Latino youth fully differentiated teacher-student relationships into four dimensions. However, the literature for early adolescents in general seemed to differentiate the construct more fully than the literature for Latino youth. Wentzel et al.'s (2010) study with early adolescents in general was the only one that conceptualized teacher-student relationships as a four dimensional construct involving teacher emotional support, instrumental help, clear expectations, and classroom safety. Among the other studies for early adolescents in general, half conceptualized teacher-student relationships either as a unidimensional construct or as a two- or three-dimensional construct. In contrast, the majority of the studies for Latino youth tended to conceptualize teacher-student relationships as a unidimensional construct. Similarly, the majority of the literature for early adolescents in general defined student engagement as a two-dimensional construct, whereas the literature for Latino youth predominantly conceptualized it as a unidimensional construct.

However, while both bodies of literature were limited in conceptualizing teacher-student relationships and student engagement as multidimensional constructs, both literatures did attend to teacher emotional support for teacher-student relationships and behavioral engagement for student engagement. Classroom safety and cognitive engagement were given

the least attention. This suggested that the findings from both bodies of literature reflected primarily the associations between teacher emotional support and behavioral engagement and academic achievement.

*Methodologies.* There were several comparison points concerning methodologies between the two bodies of literature, including study design, sampling, participants' characteristics, and measurements.

*Research design.* Specifically, both bodies of literature included primarily non-experimental, correlational studies, with a few exceptions of experimental studies within the literature on early adolescents in general. Only one of the two experimental studies utilized a randomized controlled design, which supported causal inferences about the effects of intervention on teacher-student relationships and student engagement.

The literature for early adolescents in general was also stronger than the studies for Latino youth in terms of longitudinal versus cross-sectional study design. While a strong feature of the literature for early adolescents in general was that more than half of the studies adopted longitudinal designs, fewer than half of the studies for Latino youth were longitudinal. Thus, while many of the studies of early adolescents in general traced changes in the associations between the constructs across time, the literature for Latino youth tended to be limited to a fixed time point. However, a common limitation concerning longitudinal studies included in both bodies of literature was that the majority of these studies collected two waves of data. Even in the studies that did involve at least three waves of data collection, testing for possible non-linear relationships for teacher-student relationships and student engagement and academic achievement over time was scarce (conducted in Green et al. [2008] study only).

A limitation of both studies was a lack of attention to context, which could have been addressed with qualitative methods. However, only a few studies adopted qualitative methods

to explore the contextual information. For example, Balagna et al. (2013) conducted interviews with 11 Latino students identified as at risk for emotional and behavioral disorders. The qualitative methods allowed the researchers to learn about these students' in-depth perspectives and lived experiences with respect to their relationships with teachers and its impact on their engagement and academic success. The findings provided insights for the researchers to develop and implement positive behavior intervention supports for these at-risk students.

*Sampling.* Both bodies of literature were weak in that they commonly used convenience sampling with a few exceptions of probability sampling. Samples obtained using convenience sampling possibly did not represent the target population. For instance, samples in the majority of research with early adolescents in general were from middle SES backgrounds, and samples in the majority of the studies for Latino youth were from low SES backgrounds. The generalizability of the results was limited to students from these backgrounds only. Additionally, the literature for early adolescents in general tended to be stronger with three studies employing probability sampling as compared to only one study for Latino youth. As for sample size, with very few exceptions, the majority of the studies in both literatures did not conduct power analysis to test the adequacy of the sample size in order to detect statistical significance in terms of teacher-student relationships as related to student engagement and academic achievement.

*Participants' characteristics.* As for participants' characteristics, a limitation in both bodies of literature is that they rarely involved ethnically diverse samples. The majority of the participants in the studies for early adolescents in general were Caucasian and most of the studies for Latino youth involved Latino students only. This suggested that the findings were likely to represent students from a single ethnic background (Caucasian or Latino). Even when a few studies did involve ethnically diverse samples, especially Caucasian students and

Latino students in the same study, the researchers did not tend to conceptualize or analyze potential ethnic group differences with respect to teacher-student relationships as related to engagement and achievement.

Another strong feature of both bodies of literature was that half of the studies in each body of literature included middle school students, suggesting that findings from these studies could be generalized to early adolescents. However, a common weakness in terms of grade level was that half of the studies in each both body of literature also included students from lower grades or high school. None of these studies tested for the extent to which teacher-student relationships in relation to engagement and achievement varied for early adolescents as compared to those who were not. Thus, the generalizability of the results to early adolescents in many studies could be questionable.

The majority of the studies in both bodies of literature involved half male and half female students (except for two studies for Latino youth focused on girls only), which was a strength. Having evenly distributed gender ensured that the findings regarding teacher-student relationships as a source of student engagement and academic achievement were generalizable to boys and girls, with no bias toward students of either gender identity. However, the literature for early adolescents in general offered the additional strength in testing for gender differences in the associations between teacher-student relationships and student engagement and academic achievement for early adolescents in general (Furrer & Skinner, 2003; Wang & Eccles, 2012, 2013). Gender comparisons were missing in the literature for Latino youth.

*Measurements.* Overall, measurement of key constructs in both bodies of literature was strong. For example, the majority of the studies used student questionnaires, surveys, or interviews for their perceptions on relationships with teachers and engagement in school. These measures are better than classroom observations as they directly reflect students'

perceptions, whereas classroom observations aren't likely to capture students' feelings and perspectives. Another strength is that to a limited extent, in both bodies of literature, researchers incorporated multiple informants of both students and teachers in the same study. For instance, Furrer and Skinner (2003) and Valiente et al. (2008) used both student and teacher questionnaires measure the same construct (e.g., teacher-student relationships or student engagement). Also, a strong feature of both bodies of literature is that the studies reported good to excellent reliabilities of the measures for teacher-student relationships and student engagement. In addition, the measurement of constructs was consistently strong in both literatures.

A difference in measurement between the two bodies of literature is that a few studies for early adolescents in general involved multiple methods (classroom observations and questionnaires, surveys, or interviews) to assess teacher-student relationships and student engagement in the same study, which also increased validity of these constructs. For example, Dotterer and Lowe (2011) used teachers' reports on their perceptions about relationships with students, and conducted classroom observations to assess the level of student engagement during classroom activities. In contrast, no study for Latino youth involved multiple methods in the same study. Both bodies of literature were weak in the lack of reporting validity on these constructs. Further, no studies involving diverse ethnic groups reported measurement equivalence of the measures. It was unclear whether the measures developed for Caucasian students were appropriate for students of other ethnic backgrounds. Studies involving predominantly Latino youth documented good reliabilities of the measures.

**Summary.** Taken together, in general, the results for both bodies of literature were more similar than different. Findings from both bodies of literature revealed positive associations between teacher-student relationships and student engagement and academic achievement, as well as student engagement serving as a mediator between teacher-student

relationships and academic achievement. The findings primarily reflected teacher emotional support in relation to behavioral engagement. No study examined the extent to which these associations varied by SES and geographic locale. For early adolescents in general, findings on the moderation effects of gender on the associations between teacher-student relationships and engagement and achievement were mixed. With respect to quality of the literature especially concerning theoretical framework and methodologies, both bodies of literature shared some common strengths and weaknesses. Both bodies of literature were theoretically driven, employed student surveys as the primary measure, and used reliable measures. There were several limitations in both bodies of literature. The majority of the studies did not integrate self-determination theory and ecological theory, or define teacher-student relationships and student engagement as multidimensional constructs. There was a lack of studies with experimental, longitudinal design and qualitative methods. Most of the studies used convenience sampling instead of random sampling. Power analyses were not conducted in most of the studies to test for sufficiency of the sample sizes. There was a lack of ethnical diversity among the samples. Validity of the measures was not reported in most of the studies. On the whole, the literature for early adolescents in general appeared to be stronger than the studies for Latino youth.

## **Chapter 5: Discussion**

There is a growing consensus that positive teacher-student relationships play a critical and central role in engaging students in school and their school success, for early adolescents in general as well as students of minority groups (Bingham & Okagaki, 2012). In the current study, I critically reviewed and synthesized the research literature on teacher-student relationships in relation to student engagement and academic achievement for early adolescents in general and Latino youth. I situated my review within an integrative theoretical framework involving self-determination theory and ecological theory. Teacher-student relationships (teacher emotional support, instrumental help, clear expectations, and classroom safety) and student engagement (behavioral, emotional, and cognitive) were both conceptualized as multidimensional constructs. In general, findings were more similar than different for early adolescents in general and Latino youth, with positive associations between teacher-student relationships and student engagement and academic achievement. The results on the moderation effect of gender for early adolescents in general were mixed. The quality of the literature for early adolescents tended to be more rigorous and stronger, although both bodies of literature featured theoretical framework and reasonably rigorous methodologies. The results of the current review raise two critical issues, with one issue concerning the findings, and the other issue regarding the quality of the literature. As I discuss these issues, I offer suggestions for future research.

### **Associations between Teacher-Student Relationships and Student Engagement and Academic Achievement**

**Overall findings.** The overall findings from my review support the notion that teacher-student relationships provide a significant platform for student school outcomes (e.g.,



Roorda et al., 2011). Moreover, different from the previous review by Roorda et al. (2011), I focused on associations between teacher-student relationships and student engagement and academic achievement for early adolescents in general and Latino youth in particular. The findings suggest that teachers play an important role in engaging youth in school and promoting their academic success through supportive relationships for both groups of students. For many students, early adolescence is a period of declines in school engagement and academic achievement. Early adolescence is also a period during which youth place more attention on relationships with adults, especially teachers, outside of the home and seek support and guidance from them (Murray, 2009; Wang & Eccles, 2009). However, relationships with their teachers are often disrupted as youth transition from elementary to middle school (Davis, 2003; Gehlbach, Brinkworth, & Harris, 2012). Research has shown that despite these challenges, compared to parents and peers, teachers play a particularly important role in reducing declines in school compliance (behavioral engagement) and sense of school identification and school meaningfulness (emotional engagement; Wang & Eccles, 2009) for early adolescents in general. The findings of my review are particularly important considering that early adolescents are commonly believed to be strongly influenced by their peers. Students who attend large and impersonal middle schools, in particular, can benefit from supportive relationships with their teachers in meeting their needs for autonomy, competence, and relatedness, which promotes their engagement in school (Wang & Eccles, 2009) and academic success (Wang & Holcombe, 2010). The positive associations between teacher-student relationships and engagement and achievement for Latino youth suggest that relationships with teachers may be especially important for these students as teachers help them navigate middle school in which the culture is different from their home culture.

The overall findings from my review revealed that research had not paid comparable attention to associations between teacher-student relationships and academic achievement as

to associations between teacher-student relationships and engagement. Indeed, as Wang and Holcombe (2010) have pointed out, while most of the literature on teacher social support examines engagement as an outcome, little is known about whether the relationships between teacher emotional support and engagement lead to other distal outcomes of interest, such as academic achievement. There is a dire need for research focused on the correlates of academic success among Latino youth, given the persistent lower levels of academic achievement among the Latino students. Further, given that engagement and achievement both tend to decline during early adolescence, and challenges youth face during transition to middle school especially for Latino youth, it is essential to study processes associated with Latino youth's academic outcomes, especially teacher-student relationships and engagement, in order to understand the most effective preventative interventions for promoting positive academic outcomes among these students. For example, future research could use an experimental design to examine causal relationships between teacher-student relationships and academic achievement through student engagement. Findings can help educators develop effective intervention strategies to foster teacher-student relationships so as to promote youth's academic achievement through engagement.

**Moderation effects.** The mixed results from a few studies regarding gender as a moderator for the associations between teacher emotional support and student engagement are interesting. On the one hand, limited evidence from the current review indicated that there were no gender differences in teacher emotional support and the three dimensions of student engagement for early adolescents in general. Girls typically reported more positive perceptions of relationships with teachers than boys. This difference may reflect gender socialization process and differential expectations from teachers (Eccles, 2007; Wang & Eccles, 2012; Wilkinson & Marrett, 1985). For example, teachers may respond to boys and girls differently, leading students to believe that different behavioral patterns associated with

gender are expected by teachers (Eccles, 2007; Wang & Eccles, 2012). Teachers may expect girls to display more emotional relatedness with teachers than boys, which may lead girls to engage in school more than boys. Boys may believe that it is not socially acceptable to admit higher levels of emotional connection to teachers. On the other hand, unexpectedly, although girls perceived more positive relationships with their teachers than boys for early adolescents in general, teacher-student relationships were a more salient predictor of behavioral and emotional engagement for boys. It may be that boys tended to have troublesome relationships with their teachers. Their teachers may have paid more attention and effort in developing supportive relationships with them. Given the limited evidence from the literature for early adolescents with respect to the moderation effect of gender on teacher-student relationships in relation to student engagement and achievement, future research could explore this issue further, for early adolescents in general as well as Latino youth. For example, as boys tend to show less positive perceptions of relationships with teachers than girls, research could focus on effective intervention strategies to promote boys' relationships with teachers.

Acknowledging and accounting for the diversity that exists in early adolescents in general and Latino youth with respect to SES and geographical locale is critical for understanding these early adolescents' experiences. There is a considerable need to understand students of different SES backgrounds. For example, the studies included in the review for Latino youth involved Latino students from low SES backgrounds only. However, the majority of Latino youth in the United States are not living in poverty. Our knowledge of the experiences about Latino youth from other SES backgrounds is vastly limited. It is important to understand the experience with teachers for Latino youth from other SES backgrounds and how the experience contributes to their engagement and academic success. In addition to SES, researchers must consider the geographical locale that shapes early adolescents' experiences at school. Gallagher et al. (2013) found that students in urban and

rural schools were more likely to be taught by less qualified teachers than students in suburban schools. Experiences with teachers are likely different in the unique geographic contexts and perhaps have different implications. For instance, it would be helpful to examine whether findings with Latino youth in New York would replicate with Latino adolescents living in Texas, as the dominant Latino population in New York is of Dominican origin as compared to the dominant presence of Mexican origin in Texas.

In addition to SES and geographic locale, Latino cultural factors especially *respeto* and *familisimo* were not studied as moderators in the literature for Latino youth. Although Latino youth are typically close to their families, their parents, especially if they are recent immigrants with language barriers, may not have sufficient knowledge about the American schooling system. Thus, Latino youth and their parents may turn to teachers as a vital source for information about schooling. Teacher-student relationships may complement the role of relationships with their parents for Latino youth. During the interactions with Latino youth, teachers need to take into consideration the Latino cultural values such as *respeto* and *familisimo*. Failing to do so may lead to conflicting relationships with the students. For example, as compared with their Caucasian peers, Latino youth may appear to be quiet in class as a way to show respect (*respeto*) to their teachers. But if their teachers are not aware of their cultural value of *respeto*, they may interpret these students' behaviors as passive and disengaging. Latino youth also hold strong family values (*familisimo*). When making a decision to going to college, they may put their family needs first and choose to stay at home and take care of their siblings. When advising these students, it is important for the teachers to keep *familisimo* in mind to understand the Latino youth's decisions due to this cultural value. Researchers could conduct in-depth interviews with Latino students to explore their perceptions about the role of their cultural values especially *respeto* and *familisimo* in their relationships with teachers through their lived experience. Understanding Latino students'

lived experiences is essential especially when teachers are not familiar with or have misunderstandings about Latino students' cultural backgrounds (Smith, 2010). A better understanding of their cultural values can decrease the risks of failing school for Latino youth (Smith, 2010). Findings could provide guidance for researchers in designing and coordinating systematic professional development with teachers focused on culturally relevant strategies aimed at specific Latino cultural values such as *respeto* and *familisimo* in order to enhance teachers' knowledge and skills in working with Latino youth. Also, if significant moderation effect of Latino cultural factors on the associations between teacher-student relationships and engagement and achievement were found, the overall findings for early adolescents in general and Latino youth could be different due to the significant role of the moderator of Latino cultural factors. Thus, it might be important to explore this moderation effect as Latino cultural factors appear to be the major differences between early adolescents in general and Latino youth.

A cautionary note when examining Latino cultural values (*respeto* and *familisimo*) as the moderator is that it is important to assess variability in their endorsement of cultural values among Latino youth. For example, depending on factors such as Latino youth's place of birth, length of stay in the United States, immigration generational status, English language proficiency level, individuals among Latino early adolescents may vary in the extent to which they endorse particular cultural values in their relationships with teachers. If a Latino student was born in the United States and has been educated in all English mainstream classrooms, it is likely that the student has been assimilated by the predominant cultural values which are different from their home cultural values. For second or third generation Latino students, Latino cultural factors are likely to have less impact on their relationships with their teachers than for Latino students who are first generation immigrants (Suárez-Orozco & Suárez-Orozco, 2001, 2013). Therefore, there is a need for future research on the extent to which

variability in Latino youths' endorsement of cultural values affects teacher-student relationships.

### **Quality of the Literature**

**Theoretical framework.** Overall, the evidence was limited in supporting an integrated framework involving self-determination theory and ecological theory, and each body of literature tended to focus on one of these theories. This gap in the literature points to a need to integrate self-determination theory and ecological theory in research on the associations between teacher-student relationships and engagement and achievement for early adolescents in general and Latino youth. Specifically, research for early adolescents in general needs to include ecological theory, and research for Latino youth needs to involve self-determination theory. The value in integrating these theories is that the integrative framework conceptualizes not only the mechanisms between teacher-student relationships and engagement and achievement (self-determination theory), but also the role of environmental factors (teachers, ethnicity, gender, SES, geographic locale, and Latino cultural factors). This integrative theoretical framework provides a comprehensive picture for how all these elements work together as the environmental factors within the macrosystem affect the interactions between teachers and students in the microsystem (i.e., classroom).

Findings from the present review support the contention that self-determination theory applies to Latino youth as related to teacher-student relationships. Such findings add to the literature that self-determination theory developed from research with Caucasian students applies not only to students of Eastern cultural backgrounds (Jang et al., 2009), but also Latino youth. Future research could explore similarities or differences between youth from Eastern cultures and Latino youth when applying self-determination theory to these populations as related to teacher-student relationships. Although these two populations tend to share a collectivist cultural value, there may be cultural nuances to the salience of specific

relational concerns. For instance, Chang (2015) explored the interplay between collectivism and social support processes among Asian and Latino American college students. Findings suggest that although both Asian and Latino American participants shared some similarities in utilizing social support, there were some differences as well. Both groups tended to underutilize social support and rely on themselves, expressed a need for emotional reassurance from their parents, and preferred seeking advice or comfort from others who went through similar situations. Asian American participants were motivated primarily to save face, whereas Latino American participants were most concerned about maintaining harmony. While Asian American participants were advised by their parents to seek self-control, Latino American participants were encouraged by their parents to ask for support. It is possible that Latino youth may reach out to their teachers for help more than their Asian peers, fulfilling the need for autonomy through developing positive relationships with their teachers and ultimately promoting engagement and achievement.

**Multidimensionality of teacher-student relationships.** The findings from the current review support the utility of a four dimensional definition of teacher-student relationships. The findings support the notion that a multidimensional model of teacher-student relationships provides a more comprehensive picture of the social affordance from the teacher in the classroom than do unidimensional models that focus solely on teacher emotional support. In line with prior research in this area, results of the current review provide further evidence that emotional support from teachers is an important, positive predictor of student engagement and academic achievement (e.g., Roorda et al., 2011; Wentzel et al., 2010). However, the three additional aspects (instrumental help, clear expectations, and classroom safety) of teacher-student relationships were also shown to positively predict student engagement and academic achievement. Therefore, aspects of student engagement and academic achievement appear to be contingent upon a set of beliefs

that reflect not only emotional support characterized by caring about and respecting students, but also provision of instrumental help, communication of high expectations for school engagement, and a safe and risk-free classroom environment.

In addition to contributions of each dimension to student engagement or academic achievement, to what extent the dimensions are correlated with each other needs to be explored. The four dimensions are likely to be intertwined. For example, as the teachers provide assistance to the students during the classroom instruction, it's mostly effective if the teachers care about the students and are interested in their success, explicitly tell the students about the expectations in a non-threatening and nurturing environment. Future research could conduct factor analysis by involving all four dimensions in the same model to explore the extent to which each dimension uniquely contributes to teacher-student relationships. Findings could be used to revisit the specification of the dimensions of teacher-student relationships, as well as to guide interventions of promoting student engagement and academic achievement by focusing on the most effective aspect of teacher-student relationships.

**Multidimensionality of student engagement.** The results of the review support the multidimensionality of student engagement as well. The fusion of all three aspects of student engagement presents a richer characterization of students in how they behave, feel, and think, than is possible in research on single component especially behavioral engagement. However, research has not benefited fully from the potential of student engagement as a multidimensional construct that encompasses behavior, emotion, and cognition. The present literature has treated student engagement primarily as a unidimensional construct focused on behavioral engagement. Findings from the present review support the notion that behavioral engagement makes significant contributions to student engagement or academic achievement. However, behavioral engagement reflects only how students behave, not how they feel or



think. Future research could explore the contributions of teacher-student relationships to other aspects of student engagement (emotional and cognitive engagement), or how these dimensions predict students' academic achievement. Moreover, to what extent the three aspects of student engagement are correlated with each other needs to be examined as well. It's likely that a student interested in school (emotional engagement) also makes an effort in following the school rule, attending classes, and monitoring himself or herself in learning (behavioral and cognitive engagement). Additionally, when examining teacher-student relationships in relation to cognitive engagement, it might be helpful to take tasks difficulty level into consideration. Research shows that when teacher instrumental help and challenging tasks were paired, early adolescents were more likely to be engaged cognitively (Blumenfeld & Meece, 1988).

**Methodological Issues.** One gap in the literature concerning research design is the lack of longitudinal studies. The few studies with longitudinal designs included in this review enabled the researchers to examine changes in teacher-student relationship, student engagement, and academic achievement over time. There was also limited evidence suggesting that the associations between teacher-student relationships and engagement and achievement for Latino youth over time were non-linear. The trajectory did not follow a linear relationship, but actually fluctuated from year to year. Going forward, more research is needed with a longitudinal design by following the participants at multiple time points in order to examine changes over time. It would also be helpful to collect at least three waves' data in order to test for linear or non-linear relationships for changes in teacher-student relationships in relation to engagement and achievement.

Similarly, with few exceptions, the studies included in my review were mostly nonexperimental correlational studies, which does not allow for determining causal relationships. An implication of this shortcoming is that more experimental studies are

needed to identify the extent to which the positive changes in student engagement and academic achievement are due to the intervention. Furthermore, findings from the studies could be used to design intervention strategies to promote student engagement and academic success through supportive teacher-student relationships. For example, both experimental studies (Gregory et al., 2014; Turner et al., 2014) included in my review involved interventions through teacher professional development programs to improve relationships with students and student engagement. The teachers in the intervention group showed significant increase in their abilities to facilitate their students' higher-order thinking skills (analysis and problem solving) than those teachers in the control group. Such changes in turn, promoted students' behavioral engagement. These findings indicate that teacher-student relationships can be enhanced through professional development. In addition to the need for longitudinal and experimental design, the use of qualitative methods may be an important step by those interested in examining how contexts for teacher-student relationships contribute to engagement and achievement. Qualitative methods could be used to dig into individual contextual information to complement quantitative methods.

With respect to sampling, the lack of random sampling suggests that generalizability of the findings to the target population was limited. Going forward, a critical step for future research is to employ random sampling more to increase the generalizability of the findings to the target population. It would also be helpful for researchers to conduct power analysis to detect the extent to which the sample size is sufficient. As for participants' characteristics, in addition to SES and geographic locale discussed earlier, for studies of Latino youth, research needs to report these students' English language proficiency levels, because research shows that immigrant youth with limited English language proficiency were less likely to be engaged behaviorally and emotionally, which in turn, lead to lower academic performance over time (Kim & Suárez-Orozco, 2015).

There is a need for future research to assess the match of ethnicity between teachers and students on Latino youth's relationships with their teachers, engagement, and achievement. As noted earlier, the Latino early adolescent population has been growing dramatically. However, teachers in public schools are predominantly White (U.S. Department of Education, 2007). Crosnoe et al. (2004) found that the proportion of White teachers in the school was positively related to White adolescents' ratings of emotional engagement, but was negatively related to Latino young girls' ratings of emotional engagement. As Bingham and Okgaki (2012) have pointed out, matching ethnicity between teachers and students may benefit minority students in their engagement and academic success. Matching on ethnicity for Latino students and their teachers may provide a common ground and increase comfort and feelings of belonging for Latino youth, while mismatches may hinder the ability of Latino youth and teachers to connect (Crosnoe et al., 2004). One possible mechanism driving the positive associations between teacher-student ethnicity matching and Latino youth's school outcomes is that a Latino teacher may be able to help the Latino youth better understand the cultural norms at school and differences between their home culture and the mainstream culture at school. The Latino teacher may be more tolerant of the Latino students who act in accordance with the Latino cultural norms (Crosnoe et al., 2004).

Findings from my review have highlighted the need to include reports from multiple informants, because results from different reporters of the same construct may vary. Although including multiple reporters is time-consuming and labor-intensive, the benefits are worth the costs. Thus, there is a need for future research to begin to disentangle when certain informants will be most informative for the research question of interest, and when perhaps the distinct perspectives on the same issue uniquely inform developmental outcomes and relevant processes.

Another concern is the common use of student or teacher surveys as the measures for teacher-student relationships and engagement. This suggests a need for use of multiple methods as measures to enhance our understanding of how and why teacher-student relationships contribute engagement and achievement. For example, the observational study by Gregory et al. (2014) that explored the effects of professional development with teachers on promoting relationships with students was critical for knowing where and how to intervene.

Finally, the lack of information about validity of the measures and measurement equivalence in the studies points to a need to report such information for future research. Further research should report validity of the measures to test the degree to which the measures succeed in describing or quantifying what they are designed to measure. Ways to evaluate measurement validity may include content validity, criterion-related validity, and construct validity. For studies involving students of diverse ethnic backgrounds (especially Caucasian, Latino ethnic groups), it is important to test measurement equivalence to examine the appropriateness of the measures for teacher-student relationships, engagement, and achievement developed initially for Caucasian students when applied to Latino students. A demonstration of measurement equivalence provides evidence that measured constructs represent similar entities across early adolescents in general and Latino youth in particular. The absence of measurement equivalence may lead to biased results. One common method is to examine the factorial structure of existing measures to help in the interpretation of findings (Knight & Hill, 1998; Michaels, Barr, Roosa, & Knight, 2007). When the factor structure (i.e., factor loadings and intercepts) can be constrained to equality across ethnic groups, there is evidence that the same construct is being measured in each group. For studies involving both English and Spanish versions of the measures for teacher-student relationships, student

engagement, and academic achievement, future research should empirically evaluate the cross-language measurement equivalence of translated scales.

## **Conclusion**

There is a solid base of research that has theoretical and methodological strengths concerning the associations between teacher-student relationship and student engagement and academic achievement for early adolescents in general and Latino youth. But researchers need to build on this base in ways to address significant gaps in the overall findings and quality of the literature. My review provides evidence that teacher-student relationships are positively associated with student engagement and academic achievement for early adolescent in general and Latino youth. My review also reveals gaps in the research literature, especially in terms of examination of associations between teacher-student relationships and academic achievement, exploration of moderation effects, and adhering to the integrative theoretical framework and teacher-student relationships and student engagement. There is also a need for longitudinal, experimental, and qualitative research design, random sampling and power analysis, examining participants' characteristics especially SES, geographic locale, and Latino cultural factors, and reporting validity of measures. It is my hope that this review helps us better understand the associations between teacher-student relationships and student engagement and academic achievement for early adolescent in general and Latino youth, and prompts researchers to further explore this important topic along the paths for future research as the findings of the review suggest.

Table 1

*Summary of Studies Selected for Review on Associations between Teacher-Student Relationships, Student Engagement, and Academic Achievement among Early Adolescents in General*

Author and Date	Theoretical Framework	Methods	Key Findings
<p>Blumenfeld &amp; Meece (1988)</p> <p>(task factors, teacher behavior, students' involvement of learning strategies in science)</p>	<ul style="list-style-type: none"> <li>(Perspective: Students develop knowledge and skills through working on and completing tasks, which include cognitive elements, format, and social organizations)</li> </ul>	<ul style="list-style-type: none"> <li>Design: mixed methods</li> <li>Sampling: convenience. Students were drawn from 8 classrooms from 4 middle-class schools. Teachers volunteered to participate. For interviews, children were selected from those who scored in the top and bottom quartiles of the class on Harter's (1981) measure of intrinsic motivation.</li> <li>Participants               <ul style="list-style-type: none"> <li>Sample size: (quantitative data) 194 students and 4 teachers; (qualitative data) 12 out of 194 students were interviewed, and the same 4 teachers and their 194 students were observed</li> <li>Ethnicity: NA</li> <li>Age/Grade: Grades 4 to 6</li> <li>Gender: NA</li> <li>Geographic locale: NA</li> <li>SES: medium. ("middle-class schools")</li> </ul> </li> <li>Measures               <ul style="list-style-type: none"> <li>TSRs (teacher behaviors were based on observations of lessons taught)                   <ul style="list-style-type: none"> <li>TCE: clarity of directions during instruction, providing feedback. Teacher</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Students reported greater use of learning and metacognitive strategies (i.e., cognitive engagement) in science when they were given challenging work and pressed for understanding by the teachers (clarity of directions during instruction, and providing feedback). (TCE-CE)</li> <li>Students reported greater use of learning and metacognitive strategies (i.e., cognitive engagement) in science when they were given challenging work and the teacher elicited and maintained student participation (checking on progress, reminding students about procedures, and prompting attention). (TIH-CE)</li> </ul>

		<p>behavior of creating press for mastery by communicating that students were expected to assume an active role in learning activities and to understand lesson content (asking all students to justify and explain their answers and asking questions that forced students to go beyond memorization of facts or reliance on rote solution).</p> <ul style="list-style-type: none"> <li>• TIH: explanation of concepts, use of advance organizers, modeling of cognitive strategies, questioning, and motivational techniques (task values, interest, or relation of content to students' experiences of current events). Teacher behavior of eliciting and maintaining student participation: checking on progress, reminding students about procedures, and prompting attention.</li> <li>• SE (student questionnaire and student interviews, drawn from existing measures) <ul style="list-style-type: none"> <li>• BE: task involvement in which students' attention was primarily focused on the task rather than on the self. (<math>\alpha = .92</math>)</li> <li>• CE: proportion of high-level strategies appropriate to the task that the child checked for each lesson, use of self-regulated learning strategies, such as attention, connecting, planning and monitoring along with use of help-seeking and effort-avoidant strategies. Includes both superficial form of engagement and</li> </ul> </li> </ul>	
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		<p>high-level strategies. (Validity: cognitive engagement scores were positively correlated with reported intrinsic motivation in a previously existing study.)</p> <ul style="list-style-type: none"> <li>• AA: composite scores on standardized test of student achievement</li> <li>• Data collection: (classroom observations and student questionnaires and interviews). Data were collected by graduate students in educational and clinical psychology. A total of 32 science lessons were observed over 3 months (4 lessons selected from 2 different units for each teacher). Students in each class completed a questionnaire after each of the four lessons that were observed. It took approximately 15 minutes to complete and was read to the entire class. If time permitted, interviews were conducted individually with four children following each lesson. Each interview lasted about 15-20 minutes.</li> <li>• Data analysis: Quantitative: ANOVA. Qualitative: patterns of teacher behavior were identified by examining observation narratives (32 sessions, 4 teachers, 194 students) and students' responses to the interview questions (12 students selected).</li> </ul>	
Conner & Pope (2013)	<ul style="list-style-type: none"> <li>• (Self-determination theory not</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: convenience, non-random sampling for schools; both random non-random sampling</li> </ul>	<ul style="list-style-type: none"> <li>• Holding gender, grade level, GPA, and other factors constant, perceptions of teacher support (really care for students, value and listen to students' ideas, and try to get to</li> </ul>



<p>(contextual factors and consequences of full-engagement among student in high-performing schools)</p>	<p>explicitly specified, but can be inferred in one statement concerning contextual factors that promote engagement.)</p>	<p>for students within schools (13 schools chose to administer the survey to the entire student body, and two randomly selected 40% - 60% of their student body for participation)</p> <ul style="list-style-type: none"> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 6,294 attending 15 different high-performing schools</li> <li>• Ethnicity: 44 % Caucasian, with the remainder of students reporting their ethnicity as Asian (34 %), Hispanic (6 %), African-American (4 %), Native American (1 %), or multi-ethnic (12 %).</li> <li>• Age/Grade: mean age = 15.3, 9% in middle school, 91% in high school</li> <li>• Gender: 54 % F, 46% M</li> <li>• Geographic locale: NA</li> <li>• SES: NA (82% reported that their parents were married.)</li> </ul> </li> <li>• Measures (drawn from existing measure, student reports) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TES: perceptions that teachers really cared for students, valued and listened to students' idea, and tried to get to students personally. Scale devised by other researchers. (<math>\alpha = .84</math>)</li> </ul> </li> <li>• SE <ul style="list-style-type: none"> <li>• BE: effort, hard work, mental exertion and completion of assignments (How</li> </ul> </li> </ul> </li> </ul>	<p>know students personally) of students in high-performing schools were associated with students' behavioral (effort, hard work, mental exertion and the completion of assignments), emotional (levels of interest in and enjoyment of schoolwork), and cognitive (attitudes towards schoolwork, its value and importance) engagement. (TES-BE, TES-EE, TES-CE)</p> <ul style="list-style-type: none"> <li>• Female students in high-performing schools tended to exhibit higher levels of behavioral, emotional, and cognitive engagement than male peers. (Gender – BE, Gender – EE, Gender – CE)</li> <li>• Grade level was positively and significantly related to emotional engagement, but negatively and significantly related to behavioral and cognitive engagement for students in high-performing schools (Grade – BE, Grade – EE, Grade – CE)</li> <li>• Fewer Asian and non-Asian students of color reported full engagement (high behavioral, emotional, and cognitive engagement) than expected, while more White students did than expected. (Ethnicity – SE)</li> </ul>
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		<p>often do you try as hard as you can?). (<math>\alpha = .79</math>)</p> <ul style="list-style-type: none"> <li>• EE: students' levels of interest in and enjoyment in schoolwork (How often do you find schoolwork interesting?). (<math>\alpha = .82</math>)</li> <li>• CE: students' attitudes toward schoolwork, its value and importance (How often do you find your schoolwork meaningful?) (<math>\alpha = .87</math>)</li> <li>• AA: self-reported GPAs</li> </ul> <ul style="list-style-type: none"> <li>• Data collection: Students with active parent consent and self-assent completed a 40-min online survey during the school day. Staff at the school sites administered the survey. They read a common script to students prior to the survey administration, and project researchers were available to answer student questions during this time.</li> <li>• Data analysis: regression analysis. (Gender, grade level, GPA, ethnicity [White vs. non-White], and other factors were held as constants.)</li> </ul>	
<p>Dotterer &amp; Lowe (2011)</p> <p>(classroom context, school engagement, and academic achievement)</p>	<ul style="list-style-type: none"> <li>• Ecological theory</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative (data drawn from a longitudinal study)</li> <li>• Sampling: convenience. Phase III of longitudinal NICHD Study of Early Child Care and Youth Development (SECCYD) between 2000 and 2005. Phase I began in 1991. Families</li> </ul>	<ul style="list-style-type: none"> <li>• The indirect associations between classroom context (teacher-student conflict, instructional quality, social/emotional climate) and achievement (average scores in standardized reading and math tests) through student engagement as a mediator varied by achievement level.</li> </ul>

		<p>were recruited through hospital visits to mothers shortly after the birth of a child.</p> <ul style="list-style-type: none"> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 1,014. Struggling learners (n = 151, 15%) and non-struggling learners (n = 863, 85%).</li> <li>• Ethnicity: 77% Caucasian, 23% other</li> <li>• Age/Grade: average age = 11 years, Grade 5</li> <li>• Gender: 50% F, 50% M</li> <li>• Geographic locale: urban (10 cities across the U.S.)</li> <li>• SES: medium. (Maternal education averaged 14 years. 15 years for non-struggling group and 13 years for struggling group.)</li> </ul> </li> <li>• Measures (drawn from existing measures) <ul style="list-style-type: none"> <li>• TSRs (teacher reports) <ul style="list-style-type: none"> <li>• TES: teacher-student conflict. (<math>\alpha = .90</math>)</li> </ul> </li> <li>• SE <ul style="list-style-type: none"> <li>• BE: (classroom observations) degree to which students were actively engaged in learning (paying attention, on task). (<math>\alpha = .97</math>)</li> <li>• EE and CE: combined into psychological engagement (student reports). Affective engagement (connectedness and belonging) and cognitive engagement (perceived competence, motivation). (<math>\alpha = .76</math>)</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• For non-struggling students, school engagement (combined measure of emotional and cognitive engagement, or behavioral engagement) mediated the link between classroom context (teacher-student conflict, instructional quality, and social/emotional climate) and academic achievement. (TES-BE-AA, TES-[EE+CE]-AA)</li> <li>• However, for struggling students, student engagement did not mediate the link between classroom context and academic achievement. <ul style="list-style-type: none"> <li>• Regardless of the significant relationship between classroom context and behavioral engagement, behavioral engagement was not significantly associated with academic achievement for struggling students. (TES-BE, no TES-BE-AA)</li> <li>• Specifically, although combined emotional and cognitive engagement was significantly related to academic achievement for struggling students, classroom context did not contribute significantly to combined emotional and cognitive engagement. (n. s. TES-[EE+CE], n.s. TES-[EE+CE]-AA)</li> </ul> </li> </ul>
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		<ul style="list-style-type: none"> <li>• AA: mean score of standardized test on reading math</li> <li>• Data collection: For classroom observations, trained observers collected data between January and April. Students were interviewed at home. Teachers completed questionnaires.</li> <li>• Data analysis: multi-group structural equation model. (Race, gender, and maternal education/SES were controlled for. Analysis was done for high- and low-performing students, respectively.)</li> </ul>	<ul style="list-style-type: none"> <li>• The findings indicate that for struggling students, enhancing the classroom context with low teacher-student conflict, high quality instruction, and positive social and emotional classroom climate may not increase students' engagement and academic achievement. Dotterer and Lowe (2011) pointed out that other factors may need to be considered, such as instructional methods and other aspects of behavioral engagement (e.g., completion of homework).</li> </ul>
<p>Furrer &amp; Skinner (2003)</p> <p>(sense of relatedness, academic engagement, and performance)</p>	<ul style="list-style-type: none"> <li>• Self-system model</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative, longitudinal</li> <li>• Sampling: (part of a longitudinal project)</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 641 in elementary schools</li> <li>• Ethnicity: 95% Caucasian, 5% other (for the sample for the whole project. Information for the present study was not reported.</li> <li>• Age/Grade: Grades 3-6, elementary schools (for the sample for the whole project. Information for the present study was not reported.)</li> <li>• Gender: 50% F, 50% M for the sample for the whole project (not this subset). Information for the present study was not reported.</li> <li>• Geographic locale: suburban-rural</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Students' feeling of relatedness to teachers predicted teacher-reported and student-reported students' behavioral engagement. (TES x Time - BE)</li> <li>• Students' feeling of relatedness to teachers predicted teacher-reported and student-reported students' emotional engagement. (TES x Time - EE)</li> <li>• Teacher-reports and student-reports of total relatedness (to teachers, parents, and peers) in the fall was a unique predictor of changes in teacher-reports and student-reports of total engagement from the beginning to the end of the school year. ([TES + relatedness to parents and peers] x Time - [BE+EE])</li> </ul>

		<ul style="list-style-type: none"> <li>• SES: low and medium. School district was comprised of mostly middle-class and working class families (for the whole project). Information for the present study was not reported.</li> <li>• Measures (<math>\alpha</math>: .75-.94) <ul style="list-style-type: none"> <li>• TSRs (student reports) <ul style="list-style-type: none"> <li>• TES: sense of belonging or relatedness to teachers (When I am with my teacher, I feel accepted. I feel like someone special. I feel ignored. I feel unimportant.)</li> </ul> </li> <li>• SE (student-reports and teacher-reports) <ul style="list-style-type: none"> <li>• BE: perceptions of students' effort, attention, and persistence during the initiation and execution of learning activities (In teacher-reported questionnaire, when we start something new in class, this student participates in discussions. In my class, this student does just enough to get by. In student-reported questionnaire, I participate when we discuss new material. In class, I just act like I am working.)</li> <li>• EE: perceptions of students' emotional involvement during learning activities (In teacher-reported questionnaire, in my class this student is enthusiastic. When working in my class, this student appears frustrated. In student-reported questionnaire, when we start something new in school, I feel</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-reports and student-reports of students' total engagement (behavioral and emotional) mediated the relationship between overall relatedness (to parents, teachers, and peers) and academic performance (<math>[\text{TES} + \text{relatedness to parents and peers}] \times \text{Time} - [\text{BE} + \text{EE}] \times \text{Time} - \text{AA}</math>)</li> <li>• Girls felt significantly more related to their teachers than did boys. (<math>\text{Gender} - \text{TES}</math>)</li> <li>• Relatedness to teachers increased significantly between third and fifth grade. However, following the transition to middle school in sixth grade, children's sense of relatedness to teachers dropped significantly. (<math>\text{Grade} \times \text{Time} - \text{TES}</math>)</li> <li>• Teacher-reports and student-reports of behavioral and emotional engagement increased significantly between third and fifth grade. However, following the transition to middle school in sixth grade, children's sense of relatedness to teachers dropped significantly. (<math>\text{Grade} \times \text{Time} - \text{BE}</math>. <math>\text{Grade} \times \text{Time} - \text{EE}</math>)</li> <li>• For relatedness to teachers and gender, significant interactions were found for teacher-reports of behavioral and emotional engagement as well as for child-reports of emotional engagement. The effect of relatedness to teachers on engagement was</li> </ul>
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		<p>interested. When working on classwork, I feel mad.)</p> <ul style="list-style-type: none"> <li>• AA: average GPAs from student records, from classes focusing on verbal performance and math performance.</li> <li>• Data collection: Trained interviewers collected data in three 45-minute sessions. Students filled out the questionnaires as one interviewer read aloud each item and the other interviewer monitored understanding and answered questions. Teachers were not present. Teachers filled out their questionnaires while students were doing the questionnaires. Data were collected in October and again in May.</li> <li>• Data analysis: regression. (Gender and grade were controlled for.)</li> </ul>	<p>more pronounced for boys than girls. Girls' engagement varied to a less extent as a function of their relatedness to their teachers. (TES x Gender x Time – BE, TES x Gender x Time – EE)</p> <ul style="list-style-type: none"> <li>• There was a significant interaction between grade and relatedness to teachers. The relationship between relatedness to teachers and teacher-reports of students' behavioral engagement was stronger for older students than younger students. (TES x Grade x Time – BE)</li> </ul>
<p>Goodenow (1993)  (classroom belonging, motivation, and achievement)</p>	<ul style="list-style-type: none"> <li>• Self-determination theory</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: convenience. (6<sup>th</sup> – 8<sup>th</sup> grade students present on the last spring testing day)</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 353 students evenly distributed across the three grades</li> <li>• Ethnicity: 93% Caucasian, 7% other (primarily Asian)</li> <li>• Age/Grade: Age 11-15, Grades 6-8</li> <li>• Gender: 166 M, 187 F</li> <li>• Geographic locale: suburban New England middle school</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• The overall teacher emotional support (student's self-report of perceptions of acceptance/inclusion vs. alienation from the teacher) was positively related to the overall students' effort in English class. (TES-BE)</li> <li>• The overall teacher emotional support (student's self-report of perceptions of acceptance/inclusion vs. alienation from the teacher) was positively and significantly related to effort in English class for six-grade students, but not for seventh- or eighth-grade students. (TES x Grade -BE)</li> </ul>

		<ul style="list-style-type: none"> <li>• SES: NA</li> <li>• Measures (drawn from existing measure) <ul style="list-style-type: none"> <li>• TSRs (student reports) <ul style="list-style-type: none"> <li>• TES: perceptions of acceptance/inclusion vs. alienation from the teacher (my science teacher is interested in what I have to say. The teacher enjoys talking with students.) (<math>\alpha = .52</math>)</li> </ul> </li> <li>• SE (teacher reports) <ul style="list-style-type: none"> <li>• BE: students' effort in English class. (<math>\alpha = .93</math>)</li> </ul> </li> <li>• AA: (teacher reports) students' final grade in English.</li> </ul> </li> <li>• Data collection: The questionnaire was administered by English teachers during regular English classes. Four parallel versions of the questionnaire were prepared concerning students' attitudes and experiences in their English, social studies, math, and science classes, respectively. They were identical in appearance, were mixed together and were distributed randomly. Student anonymity was preserved.</li> <li>• Data analysis: stepwise multiple regression. (Grade and gender were controlled for.)</li> </ul>	<ul style="list-style-type: none"> <li>• The teacher emotional support (student's self-report of perceptions of acceptance/inclusion vs. alienation from the teacher) was positively related to the overall students' final grade in English (TES-AA)</li> <li>• The overall teacher emotional support (student's self-report of perceptions of acceptance/inclusion vs. alienation from the teacher) was positively and significantly related to final grade in English for six-grade students, but not for seventh- or eighth-grade students. (TES x Grade -AA)</li> </ul>
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<p>Gregory, Allen, Mikami, Hafen, &amp; Pianta (2014)</p> <p>(effects of a professional development program on students' behavior engagement)</p>	<ul style="list-style-type: none"> <li>• Self-determination theory</li> <li>• Attachment theory</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative, longitudinal, randomized controlled experimental design (year-long intervention, professional development program – the My Teaching Partner – Secondary program, designed to increase students' behavioral engagement)</li> <li>• Sampling: stratified and random assignment. Teachers were grouped by district, school type (middle/high school), and their classroom subject (math/science, social studies/English). Teachers within each group were randomly assigned to the intervention or control group. Teachers and students participated in the study voluntarily.</li> <li>• Participants (Intervention and control teachers did not significantly differ on sociodemographic characteristics – gender, ethnicity, years of teaching experience. Their focal classrooms did not significantly differ on sociodemographic characteristics – student baseline achievement level, ethnicity, gender, SES, etc.) <ul style="list-style-type: none"> <li>• Sample size: 87 teachers in 12 different middle or high schools</li> <li>• Ethnicity: majority of teachers and students were Caucasian</li> <li>• Age/Grade: Teachers: 61% taught in middle schools and 39% taught in high schools. Students: average grade level – 8<sup>th</sup> grade.</li> <li>• Gender: Majority of teachers were female. Students: 51% M, 49% F</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• The teachers in the intervention group had significant higher increases in student behavioral engagement in their classrooms after one year of participation in the professional development program compared to the teachers in the control group. (Intervention Status x Time – BE)</li> <li>• Two dimensions of teachers' interactions with students – their focus on analysis and problem solving during instruction and their use of diverse instructional learning formats – mediated their effects on increased students' behavioral engagement. (Intervention Status x Time – TCE – BE, Intervention Status x Time – TIH – BE)</li> </ul>
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		<ul style="list-style-type: none"> <li>• Geographic locale: VA</li> <li>• SES: majority above low SES (On average, 39% eligible for subsidized lunch.)</li> <li>• Measures (interrater reliability: acceptable. Codes based on the same observations were within 1 point of each other 80% of the time) (Validity: five dimensions of the measure were predictive of higher student achievement test scores at the end of the year in a previously existing study)</li> <li>• TSRs (TCE + TIH + CS + TES) (ICC coefficient for inter-rater reliability: .64 – .78) (video recordings of instruction) five dimensions of the Classroom Assessment Scoring System – Secondary (CLASS-S): <ul style="list-style-type: none"> <li>• three dimensions of the Emotional Support domain (TES + CS) – positive climate (respectful/warm communications, shared positive affect), teacher sensitivity (teacher responsiveness to student needs), regard for adolescents’ perspectives (opportunities for students’ active, leadership roles and exposure to relevant course content)</li> <li>• one dimension from the Classroom Organization domain (TCE) – instructional learning formats (varied use of instructional modalities and strategies)</li> <li>• one dimension from the instructional support domain (TIH) - analysis and problem solving (engagement in activities)</li> </ul> </li> </ul>	
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		<p>that require synthesis, evaluation, and novel application of knowledge)</p> <ul style="list-style-type: none"> <li>• SE</li> <li>• BE: (ICC: .66) (video recordings of instruction) Students are consistently active in discussion and classroom tasks – they volunteer, ask questions, show little off-task behavior.</li> <li>• Data collection: Teachers in the invention group went through training and received on-going coaching. Teachers in both intervention and control groups videotaped their instruction. Coders were trained in coding the segments of the selected video recordings of instruction.</li> <li>• Data analysis: Analyses used coding of one 40-60-minute video recording of instruction at the beginning of the fall semester and one at the end of the spring. Each teacher's videotaped instruction was divided into two 20-minute segments. Each segment was assigned randomly to two coders. Their four scores for fall and spring were then averaged.</li> </ul>	
<p>Patrick, Ryan, &amp; Kaplan (2007)</p> <p>(classroom social environment, motivational beliefs, and engagement)</p>	<ul style="list-style-type: none"> <li>• Social-cognitive</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: (part of the young Adolescents' Motivation in Math Project)</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 602</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Belief that the teacher cared about and liked the student as a person contributed to students' task-related interaction (extent to which students answered questions, explained content, and shared ideas about math with classmates), which in turn was</li> </ul>

		<ul style="list-style-type: none"> <li>• Ethnicity: 95%-98% Caucasian in the participating schools</li> <li>• Age/Grade: 5<sup>th</sup> grade students from 31 classes in 6 elementary schools</li> <li>• Gender: 49% M, 51% F</li> <li>• Geographic locale: IL</li> <li>• SES: Medium. Predominantly middle class schools, 0%-12% eligible for free or reduced lunch in the participating schools</li> <li>• Measures <ul style="list-style-type: none"> <li>• TSRs (student reports, one of six scales assessing students' perceptions of classroom social environment) (drawn from existing measures, reliability and validity reported in previous studies)</li> <li>• TIH: teacher academic support, perceptions that the teacher cared about how much the student learned and wanted to help him or her to learn.</li> <li>• TES: belief that the teacher cared about and liked the student as a person.</li> <li>• SE: (student-reports) (drawn from existing measures, reliability and validity reported in previous studies)</li> <li>• BE: task-related interaction, the extent to which students answered questions, explained content, and shared ideas about math with classmates.</li> </ul> </li> </ul>	<p>related to later math achievement (TES-BE-AA)</p> <ul style="list-style-type: none"> <li>• Belief that the teacher cared about and liked the student as a person contributed to students' self-regulation strategies (extent to which students plan, monitor, and regulate their cognition). (TES-CE)</li> </ul>
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		<ul style="list-style-type: none"> <li>• CE: self-regulation strategies, the extent to which students plan, monitor, and regulate their cognition.</li> <li>• AA: students' final 4<sup>th</sup>- and 5<sup>th</sup>-grade math grades from their records</li> <li>• Data collection: Surveys were administered by trained research assistants in pairs. Students' participation was voluntary and confidentiality was protected.</li> <li>• Data analysis: SEM. (Gender and prior achievement were controlled for.)</li> </ul>	
<p>Ryan &amp; Patrick (2001)</p> <p>(classroom social environment and changes in motivation and engagement)</p>	<ul style="list-style-type: none"> <li>• Stage-environment fit</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative, longitudinal</li> <li>• Sampling: convenience. For the large study, students were recruited in 5<sup>th</sup> grade and 83% of them had permission from parents to participate.</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 233 (from a subsample of the total sample for a large-scale longitudinal study and they were from 30 different math classes taught by 15 teachers)</li> <li>• Ethnicity: 45% Caucasian, 55% African American</li> <li>• Age/Grade: 7<sup>th</sup> grade (Weave 1), 8<sup>th</sup> grade (Weave 2)</li> <li>• Gender: 43% M, 57% F</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Holding gender, race, prior achievement and prior engagement in 7<sup>th</sup> grade constant, perceptions of the teacher as supportive in 8<sup>th</sup> grade predicted decreased disruptive behaviors from 7<sup>th</sup> to 8<sup>th</sup> grade (TES x Time - BE)</li> <li>• Holding gender, race, prior achievement and prior engagement in 7<sup>th</sup> grade constant, increased self-regulated learning from 7<sup>th</sup> to 8<sup>th</sup> grade was associated uniquely with teacher support in 8<sup>th</sup> grade (TES x Time - CE)</li> <li>• Neither gender nor race predicted changes in behavioral or cognitive engagement. (Gender x Time - BE, Gender x Time - CE)</li> </ul>

		<ul style="list-style-type: none"> <li>• Geographic locale: 3 ethnically diverse middle schools in two Midwest school districts</li> <li>• SES: majority above low SES. (40% of the students in the participating schools were eligible for free or reduced lunch)</li> <li>• Measures <ul style="list-style-type: none"> <li>• TSRs (student reports) <ul style="list-style-type: none"> <li>• TES: perceptions of the extent to which their teacher promoted teacher-student relationships.</li> </ul> </li> <li>• SE (student reports) <ul style="list-style-type: none"> <li>• BE: disruptive behavior and negative conduct in math class (I disturb the less in math class, I behave in a way that annoys my math teacher, and I do not follow my math teacher's directions.) (<math>\alpha = .86</math>)</li> <li>• CE: self-regulated learning, extent to which students plan, monitor, and regulate their cognition (When I'm working on a math problem, I think about whether I understand what I'm doing. When I finish my math work, I check to make sure it's done correctly.) (<math>\alpha = .76</math>)</li> </ul> </li> <li>• AA: students' math grades from the final semester of 7<sup>th</sup> grade, from school records.</li> </ul> </li> <li>• Data collection: Surveys were administered to students in groups of 25-45 in the school library or cafeteria by trained research assistants in the spring of 7<sup>th</sup> grade (Weave 1) and in the fall of</li> </ul>	
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		<p>8<sup>th</sup> grade (Weave 2). Students' participation was voluntary and confidentiality was protected.</p> <ul style="list-style-type: none"> <li>• Data analysis: hierarchical multiple regression. (Gender, race, prior engagement, and prior achievement were controlled for.)</li> </ul>	
<p>Skinner &amp; Belmont (1993)</p> <p>(reciprocal effects of teacher behavior and student engagement across school year)</p>	<ul style="list-style-type: none"> <li>• Self-system processes</li> </ul>	<ul style="list-style-type: none"> <li>• Design: longitudinal quantitative</li> <li>• Sampling: NA</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 144 children and 14 female teachers</li> <li>• Ethnicity: 94% Caucasian, 6% predominantly African American</li> <li>• Age/Grade: age 8-12, Grades 3-5 (participants were equally divided by gender and grade)</li> <li>• Gender: 50% F, 50% M</li> <li>• Geographic locale: rural-suburban school district in upstate New York</li> <li>• SES: medium. (Low middle to middle class)</li> </ul> </li> <li>• Measures (teacher reports and student reports, drawn from existing measures) <ul style="list-style-type: none"> <li>• TSRs (average <math>\alpha = .84</math>, range: .79 - .90) <ul style="list-style-type: none"> <li>• Teacher involvement (TIH and TES): teacher affection (liking, appreciation, and enjoyment of the students), attunement, dedication of resources (aid, time, and energy), and dependability.</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Students' behavioral and emotional engagement were influenced both by their perceptions of teachers and directly by teachers' actual behaviors.</li> <li>• Students' behavioral engagement (student report) in spring was primarily a function of student perceptions of teacher structure in fall. Students who experienced their teachers as providing clear expectations, contingent responses, and strategic help were more likely to be more effortful and persistent. ([TCE+TIH] x Time - BE)</li> <li>• Students' emotional engagement (student report) in spring was primarily a function of student perceptions of teacher involvement in fall. When students experienced their teachers as warm and affectionate, students felt happier and more enthusiastic in class ([TIH+TES] x Time - EE)</li> <li>• Teacher perceptions of both behavioral and emotional engagement were influenced uniquely by teacher involvement and autonomy support (coercive behavior,</li> </ul>

		<ul style="list-style-type: none"> <li>• Structure (TCE and TIH): teacher clarity of expectations, contingency (consistency and predictability of response), instrumental help and support, and adjustment of teaching strategies.</li> <li>• Autonomy support (CS and TES): teacher coercive behavior, respect, choice, and relevance.</li> <li>• SE (average <math>\alpha = .83</math>, range: <math>.79 - .88</math>) <ul style="list-style-type: none"> <li>• BE: students' effort, attention, and persistence during learning activities</li> <li>• EE: students' interest, happiness, anxiety, and anger in the classroom</li> </ul> </li> <li>• Data collection: questionnaires were administered by trained interviewers during 3 40-min sessions in their normal classrooms in October and April of the school year. Teachers completed their questionnaire while students were completing theirs.</li> <li>• Data analysis: time-lagged path analysis</li> </ul>	<p>respect, choice, relevance). (<math>[TIH+TES] \times \text{Time} - BE/EE</math>, <math>[CS+TES] \times \text{Time} - BE/EE</math>)</p>
<p>Turner, Christensen, Kackar-Cam, Trucano, &amp; Fulmer (2014)</p> <p>(effects of intervention student engagement)</p>	<ul style="list-style-type: none"> <li>• Self-determination theory</li> </ul>	<ul style="list-style-type: none"> <li>• Design: mixed methods, longitudinal, quasi-experimental (3-year long intervention)</li> <li>• Sampling: (All 32 teachers in one middle school participated in the intervention.) Two teachers from each of four content areas (math, language arts, social studies, and science) were randomly selected for classroom observation (<math>n = 8</math>)</li> </ul>	<ul style="list-style-type: none"> <li>• For the upward group, teacher motivational support and student engagement increased across three years, whereas in the stable group, teacher motivational support and student engagement showed stable or declining trajectories over three years. (<math>[TCE+TIH+CS+TES] \times \text{Time} - BE</math>)</li> </ul>

		<ul style="list-style-type: none"> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 6 teachers with complete data across 3 years (2 out of 8 dropped out.) (number of student participants unknown.)</li> <li>• Ethnicity: (student body in the school) 84% Caucasian, 5% multi-ethnic, 5% African American, 3% Hispanic, and 3% Native American.</li> <li>• Age/Grade: Grades 6 - 8</li> <li>• Gender: Teachers: 5 F, 1 M (3 in upward group, 3 in stable group)</li> <li>• Geographic locale: public school, rural, northern IN.</li> <li>• SES: majority of the students above low SES. (34% eligible for subsidized lunch.)</li> </ul> </li> <li>• Measures (Observation instrument was developed by researchers. Average inter-rater reliability Kappa = .74 for all categories across three years) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TCE+TIH+CS+TES: observation categories for motivational support – belongingness (feeling of mutual respect in classroom, evidence of productive collaboration among students), competence (focus on improvement and self-evaluation, provision of challenging work with support for student effort), autonomy (opportunities for decision making and multiple interpretations), and meaningfulness (knowledge constructed</li> </ul> </li> </ul> </li> </ul>	
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		<p>through inquiry, focus on deep understanding, and elaborated responses required) (<math>\alpha = .95</math>)</p> <ul style="list-style-type: none"> <li>• SE <ul style="list-style-type: none"> <li>• BE: (called “student engagement” by researchers) observation categories for student engagement – behavioral engagement (on task behavior), responsive assistance for procedures, responsive assistance for thinking, quality/quantity of student talk, student providing of and taking up opportunities for work with others, and student providing of and taking up opportunities for work on content. (<math>\alpha = .91</math>)</li> </ul> </li> <li>• Data collection: The teachers were observed four times each year for 3 years. Each 60-minute observation coded when observers were on site. Each observation was also videotaped and coded by trained observers.</li> <li>• Data analysis: Quantitative (on-site observations) – state space grid (SSG) technique and unit analysis. Qualitative (on-site observations and videotapes to provide examples) – the third observation from Year 3 was analyzed. These analyses (a total of 6 sessions from 6 teachers) focus on the observation categories.</li> </ul>	
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<p>Turner, et al. (1998)</p> <p>(context for involvement in mathematics)</p>	<ul style="list-style-type: none"> <li>• (Conceptual framework for involvement and scaffolding)</li> </ul>	<ul style="list-style-type: none"> <li>• Design: mixed methods</li> <li>• Sampling: Six student participants were randomly selected by gender from each participating classrooms from those who agreed to participate</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 42 students and their 5<sup>th</sup>- and 6<sup>th</sup>-grade teachers (7 total)</li> <li>• Ethnicity: NA</li> <li>• Age/Grade: Grades 5 and 6</li> <li>• Gender: Students: 50% F, 50% M. Teachers: 6 F, 1 M.</li> <li>• Geographic locale: seven classrooms in 3 elementary schools in a small, mostly Caucasian, middle-class town in rural PA</li> <li>• SES: medium. middle –class town</li> </ul> </li> <li>• Measures (average inter-rater <math>\alpha = .87</math> for coding classroom observations) <ul style="list-style-type: none"> <li>• TSRs (audiotaped classroom discourse during regular mathematics instruction, classroom observation instrument) <ul style="list-style-type: none"> <li>• TES: encouraging and respecting students' ideas</li> <li>• TIH: providing help during instruction, scaffolding, negotiating understanding</li> </ul> </li> <li>• SE (response log of students' perceptions of instructions)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• When teachers were both emotionally supportive and presented intellectually challenging work, students showed higher levels of both emotional engagement and cognitive engagement (i.e., were more strategic about learning math; Turner, et al., 1998). If teachers only presented challenging work, pressed for understanding, and supported autonomy, but did not provide emotional support, students were less likely to be emotionally engaged. On the contrary, if teachers focused only on the emotional support but neglected creating an intellectually challenging environment, students were less likely to be engaged cognitively. (TES-EE, TES-CE, TIH-EE, TIH-CE)</li> </ul>
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<p>Wang &amp; Eccles (2012)</p> <p>(effects of social support on 3 dimensions of school engagement)</p>	<ul style="list-style-type: none"> <li>• Bio-ecological theory</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative, longitudinal</li> <li>• Sampling: Stratified sampling for participant selection. Part of an ongoing longitudinal study. Participants were recruited from 23 schools in a single large and ethnically diverse county near Washington, DC. A stratified sampling procedure was followed to obtain a representative sample.</li> </ul>	<ul style="list-style-type: none"> <li>• Supportive teachers played a particularly important role in reducing the declines in school compliance, sense of school identification, and subjective valuing of learning at school across the secondary school years.</li> <li>• Increases in social support from teachers were related to higher school compliance from 7<sup>th</sup> to 11<sup>th</sup> grades. A standard deviation</li> </ul>

		<ul style="list-style-type: none"> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 1,479 students</li> <li>• Ethnicity: 54% African American, 36% Caucasian, (10% biracial or other, not included in the sample for the study)</li> <li>• Age/Grade: mean age between 13 and 17 years, Grades 7-11</li> <li>• Gender: 52% F, 48% M</li> <li>• Geographic locale: urban, 23 schools in a single large and ethnically diverse county near Washington, DC.</li> <li>• SES: medium. Annual income ranged from \$5,000 to above \$75,000, mean between \$45,000 and \$49,999, 54% caregivers had high school education and 40% college education. (SES was about the same for both ethnic groups)</li> </ul> </li> <li>• Measures (drawn from well-established measures with good internal consistency and validity) <ul style="list-style-type: none"> <li>• TSRs (teacher reports) <ul style="list-style-type: none"> <li>• TES: teacher social support (How often do you help this student out when he or she has a personal or social problem at school? How often do you talk to this student about how things are going in his or her life? How often do you really understand how this student feels? How often do you really respect this student's opinions?) (<math>\alpha = .74</math>)</li> </ul> </li> <li>• SE (student reports)</li> </ul> </li> </ul>	<p>increase in teacher social support was linked to a reduced rate of decline of 0.37 standardized deviation in students' school compliance. (TES x Time – BE)</p> <ul style="list-style-type: none"> <li>• There was no significant relationship between teacher social support and changes in students' participation in extracurricular activities from 7<sup>th</sup> to 11<sup>th</sup> grades. (TES x Time – BE)</li> <li>• Students were more likely to identify themselves with schools when they had increased social support from teachers from 7<sup>th</sup> to 11<sup>th</sup> grades. With one standard deviation increase in teacher support, students experienced a reduced decrease of 0.58 in school identification. (TES x Time – EE)</li> <li>• Increases in social support from teachers were associated with reduced decreases in subjective task valuing from 7<sup>th</sup> to 11<sup>th</sup> grades. A one standard deviation increase in teacher support reduced the decline of students' subjective valuing of learning by 0.42. (TES x Time – CE)</li> <li>• There were gender differences in seventh-grade level of school compliance, extracurricular activities, school identification, and subjective valuing of learning in 7<sup>th</sup> grade, but not in the rate of</li> </ul>
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		<ul style="list-style-type: none"> <li>• BE: student self-reported school compliance (extent to which the students engaged in misconduct and had trouble getting homework done, <math>\alpha = .76</math>) and participation in extracurricular activities (<math>\alpha = .75</math>)</li> <li>• EE: school identification (sense of school belonging and valuing of education). Scale focused on students' feelings about school, the degree to which they felt part of their school, and felt it important to go to school. (In general, I like school a lot. I have to do well in school if I want to be a success in life.) (<math>\alpha = .75</math>)</li> <li>• CE: subjective value of learning (perceived motivation focusing on learning, personal improvement, and mastery of content and tasks). (I go to school because I enjoy my classes/learning makes me smart/I like what I am learning.) (<math>\alpha = .79</math>)</li> <li>• Data collection: Participating students were given a \$20 compensation during each wave of data collection Administrators consisted of primarily women with bachelor's degrees. The race of the administrator was matched with the race of the student. The questionnaire took about 30 minutes to complete. During the same testing periods, teachers completed assessments of relationships with the students and classroom interactions with each student. Data were</li> </ul>	<p>change. Boys reported less school compliance, participated in less extracurricular activities, lower levels of school identification, and subjective valuing of learning than did girls in 7<sup>th</sup> grade. There were no moderation effects of gender on the relation between teacher social support and school engagement. (Gender – BE, Gender – EE, Gender – CE, Gender x Time – BE, Gender x Time – EE, Gender x Time – CE, Gender x TES x time – BE, Gender x TES x Time – EE, Gender x TES x Time – CE)</p> <ul style="list-style-type: none"> <li>• There were ethnic differences in seventh-grade level of school compliance but not in the rate of change. African American students reported less school compliance and less extracurricular activities, but higher levels of school identification and subjective valuing of learning than did Caucasian students in 7<sup>th</sup> grade. There were no moderation effects of ethnicity on the relation between teacher social support and school engagement. (Ethnicity – BE, Ethnicity – EE, Ethnicity – CE, Ethnicity x Time – BE, Ethnicity x Time – EE, Ethnicity x Time – CE, Ethnicity x [TIH+CS+TES] x Time – BE, Ethnicity x TES x time – EE, Ethnicity x TES x Time – CE)</li> </ul>
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		<p>collected for Waves 1 (7<sup>th</sup> grade), 2 (8<sup>th</sup> – 9<sup>th</sup> grade), and 3 (11<sup>th</sup> grade).</p> <ul style="list-style-type: none"> <li>Data analysis: multilevel growth modeling (Gender, ethnicity, SES, and prior achievement were controlled for. Moderators: ethnicity, gender.)</li> </ul>	
<p>Wang &amp; Eccles (2013)</p> <p>(school context, achievement motivation, and academic engagement)</p>	<ul style="list-style-type: none"> <li>Self-determination theory</li> <li>Stage environment fit theory</li> </ul>	<ul style="list-style-type: none"> <li>Design: quantitative, longitudinal</li> <li>Sampling: Stratified sampling for participant selection. Part of an ongoing longitudinal study -- Maryland Adolescent Development in Context Study. Participants were recruited from 23 schools in a single large and ethnically diverse county near Washington, DC. Students were recruited through letters to their parents. Participation was voluntary.</li> <li>Participants <ul style="list-style-type: none"> <li>Sample size: 1,157 students</li> <li>Ethnicity: 56% African American, 32% Caucasian, and 12% biracial or other, not included in the sample for the study</li> <li>Age/Grade: Grades 7-8</li> <li>Gender: 52% F, 48% M</li> <li>Geographic locale: urban, 23 schools in a single large and ethnically diverse county near Washington, DC.</li> <li>SES: medium. Annual family income ranged from \$5,000 to above \$75,000, mean was between \$45,000 and \$49,999.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Students' perceptions of school structure at the beginning of seventh grade were positively associated with students' behavioral and emotional engagement at the end of eighth grade. ([TCE+TIH] x Time - BE, [TCE+TIH] x Time - EE)</li> <li>Teacher emotional support at the beginning of 7<sup>th</sup> grade was positively associated with students' behavioral and emotional engagement at the end of 8<sup>th</sup> grade (TES x Time - BE, TES x Time - EE)</li> <li>There were no significant differences in gender or ethnicity in the relationships between teacher-student relationships (TCE, TIH, and TES) and changes in students' engagement (behavioral, emotional, and cognitive) from beginning of 7<sup>th</sup> grade to the end of 8<sup>th</sup> grade. (Gender x [TCE+TIH] x Time - BE/EE/CE, Gender x TES x Time - BE/EE/CE, Ethnicity x [TCE+TIH] x Time - BE/EE/CE, Ethnicity x TES x Time - BE/EE/CE)</li> </ul>

		<ul style="list-style-type: none"> <li>• Measures (student reports, drawn from well-established measures with good internal consistency and validity) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TCE + TIH: school structure. Teacher clarity of expectations, consistency and predictability of response, instrumental support, and adjustment of teaching strategies (How often do you know what your teacher expects of you in school?)</li> <li>• TES: student perceived level of care and support from teachers (How often can you depend on teachers to help you out when you have a personal or social problem at school?)</li> </ul> </li> <li>• SE <ul style="list-style-type: none"> <li>• BE: the extent to which students follow the school rule and participation in activities in school (How often do you get schoolwork done on time? How often do you participate in class discussion actively?)</li> <li>• EE: feelings of acceptance, interest, and enjoyment at school (I find schoolwork interesting. I feel excited by the work in school.)</li> <li>• CE: use of self-regulated learning strategies such as self-monitoring and evaluation to help understand learning materials (How often do you make academic plans for solving problems? How often do you try to</li> </ul> </li> </ul> </li> </ul>	
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		<p>relate what you are studying to other things you know about?)</p> <ul style="list-style-type: none"> <li>• Data collection: A questionnaire was administered to the students at home during Wave 1 (early fall of 7<sup>th</sup> grade) and Wave 2 (end of 8<sup>th</sup> grade) of data collection. The questionnaire took about 30 minutes to complete. Participating students were given a \$20 compensation during each wave of data collection. Administrators consisted of primarily women with bachelor's degrees. The race of the administrator was matched with the race of the student.</li> <li>• Data analysis: SEM (control variables: ethnicity [African American vs. Caucasian], gender, SES, prior academic achievement, prior behavioral/emotional/cognitive engagement. Moderators: ethnicity, gender.)</li> </ul>	
<p>Wang &amp; Holcombe (2010)</p> <p>(school environment, engagement, and academic achievement)</p>	<ul style="list-style-type: none"> <li>• Self-determination theory</li> <li>• Self-system theory</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative, longitudinal</li> <li>• Sampling: Stratified sampling for participant selection. Part of an ongoing longitudinal study -- Maryland Adolescent Development in Context Study. Participants were recruited from 23 schools in a single large and ethnically diverse county near Washington, DC. Students were recruited through letters to their parents. Participation was voluntary.</li> <li>• Participants</li> </ul>	<ul style="list-style-type: none"> <li>• Students' perceptions that teachers promoted mastery goals at the beginning of 7<sup>th</sup> grade were positively related to school participation, school identification, and use of self-regulation strategies at the end of 8<sup>th</sup> grade, while perceived promotion of performance goals at the beginning of 7<sup>th</sup> grade was negatively associated with school participation and school identification, and negatively associated with use of self-regulation strategies at the end of 8<sup>th</sup> grade.</li> </ul>



		<ul style="list-style-type: none"> <li>• Sample size: 1,046 students</li> <li>• Ethnicity: 56% African American, 32% Caucasian, and 12% biracial or other, not included in the sample for the study</li> <li>• Age/Grade: Grades 7 – 8</li> <li>• Gender: 52% F, 48% M</li> <li>• Geographic locale: 23 schools in a single large and ethnically diverse county near Washington, DC.</li> <li>• SES: medium. Annual family income ranged from \$5,000 to above \$75,000, mean was between \$45,000 and \$49,999.</li> <li>• Measures <ul style="list-style-type: none"> <li>• TSRs (student reports, drawn from well-established measures with good internal consistency and validity) <ul style="list-style-type: none"> <li>• TCE+TIH: school mastery goal structure (students' perceived level of how much their teachers emphasized task mastery and self-improvement) and school performance goal structure (students' perceived level of how much their teacher emphasized comparison, competition, and high grades)</li> <li>• TES: teacher social support (students' perceived level of care and support from teachers)</li> </ul> </li> <li>• SE (student reports, drawn from well-established measures with good internal consistency and validity)</li> </ul> </li> </ul>	<p>([TCE + TIH] x Time - BE, [TCE + TIH] x Time - EE, [TCE + TIH] x Time - CE)</p> <ul style="list-style-type: none"> <li>• Students' perceptions of teachers' social support at beginning of 7<sup>th</sup> grade were positively related to students' school participation and school identification at the end of 8<sup>th</sup> grade. (TES x Time – BE, TES x Time – EE, n.s. TES x Time - CE)</li> <li>• Students' perceptions that teachers promoted mastery goals and teacher social support at the beginning of 7<sup>th</sup> grade positively contributed to GPA at the end of 8<sup>th</sup> grade, while perceptions of teacher promotion of performance goals at the beginning of 7<sup>th</sup> grade negatively contributed to GPA at the end of 8<sup>th</sup> grade. ([TCE+TIH] x Time – AA, TES x Time – AA)</li> <li>• Student level of school participation and school identification in 8<sup>th</sup> grade partially mediated the associations of promotion of performance goals, mastery goals, and teacher social support in 7<sup>th</sup> grade to academic performance in 8<sup>th</sup> grade. The effects of teacher emphasis of achievement goal structures and teacher social support on student academic performance were partially explained by the degree to which students actively participated in school or identify with school. ([TCE+TIH] x Time – BE – AA, [TCE+TIH] x Time – EE – AA, TES x</li> </ul>
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		<ul style="list-style-type: none"> <li>• BE: school participation (students' level of distraction in school, the extent to which students were distracted in classes and had trouble getting schoolwork done). (How often do you have trouble in school because it is hard for you to sit in your seat for a long time?)</li> <li>• EE: school identification (students' sense of school belonging and valuing of school, i.e., feelings about school, the degree to which they feel part of their school, and the degree to which they feel it is important to go to school). (In general, I like school a lot. I have to do well in school if I want to be a success in life.)</li> <li>• CE: perceived use of a strategic approach to learning (How often do you try to relate what you are studying to other things you know about?)</li> <li>• AA: averaged GPAs in 8<sup>th</sup> grade from school records (average of students' grades in the core academic subjects, including English, math, science, and social sciences)</li> <li>• Data collection: A questionnaire was administered to the students at home during Wave 1 (early fall of 7<sup>th</sup> grade) and Wave 2 (end of 8<sup>th</sup> grade) of data collection. The questionnaire took about 30 minutes to complete. Participating students were given a \$20 compensation during each wave of data collection Administrators consisted of primarily</li> </ul>	<p>Time – BE – AA, TES x Time – EE – AA, n. s. TES x Time – CE – AA)</p> <ul style="list-style-type: none"> <li>• Student level of use of self-regulation strategies in 8<sup>th</sup> grade partially mediated the associations of promotion of performance goals and mastery goals in 7<sup>th</sup> grade to academic performance in 8<sup>th</sup> grade. The effects of teacher emphasis of achievement goal structures on student academic performance were partially explained by the degree to which students use self-regulation strategies. ([TCE+TIH] x Time – CE – AA)</li> </ul>
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		<p>women with bachelor's degrees. The race of the administrator was matched with the race of the student.</p> <ul style="list-style-type: none"> <li>• Data analysis: SEM. (Ethnicity, gender, SES, and prior GPA were controlled for.)</li> </ul>	
<p>Wentzel (1997) (pedagogical caring and student motivation)</p>	<ul style="list-style-type: none"> <li>• Pedagogical caring</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative, longitudinal</li> <li>• Sampling: convenience. Students were recruited through letters to their parents. Participation was voluntary.</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 248 students</li> <li>• Ethnicity: 92% Caucasian 2% African American, 2% Latino, 3% Asian American, and 1% other</li> <li>• Age/Grade: Grades 6-8 (followed from 6<sup>th</sup> to 8<sup>th</sup> grade)</li> <li>• Gender: 123 F, 125 M</li> <li>• Geographic locale: a suburban middle school in a mid-Atlantic state</li> <li>• SES: NA</li> </ul> </li> <li>• Measures (<math>\alpha</math>: .83-.91) <ul style="list-style-type: none"> <li>• TSRs (student reports, drawn from existing measure) <ul style="list-style-type: none"> <li>• TES: perceived caring from teachers (My teacher really cares about me. My teacher cares about how much I learn.) (average</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Changes in students' academic effort from sixth to eighth grade was partially explained by students' perceptions of their eighth-grade teachers' caring, even after past behavior, students' gender, psychological distress, and control beliefs were taken into account. (TES x Time – BE)</li> </ul>

		<p>social and academic caring score in 6<sup>th</sup> and 8<sup>th</sup> grade)</p> <ul style="list-style-type: none"> <li>• SE <ul style="list-style-type: none"> <li>• BE: academic effort (How often do you really try in each of these classes? How often do you really pay attention during each of these classes?)</li> </ul> </li> <li>• AA: Averaged end-of-year cumulative GPAs obtained from student files</li> <li>• Data collection: The author administered all measures during regular class sessions in late spring.</li> <li>• Data analysis: hierarchical regression (motivation, behavior in 6<sup>th</sup> grade, gender, and other variables were controlled for.)</li> </ul>	
<p>Wentzel, Battle, Russell, &amp; Looney (2010)</p> <p>(social support from teachers and peers and academic and social motivation)</p>	<p>(Theories to support four dimensions of social support from teachers and peers)</p> <ul style="list-style-type: none"> <li>• Ecological theory</li> <li>• Self-system processes</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: NA</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 358 (120 6<sup>th</sup> graders, 115 7<sup>th</sup> graders, and 123 8<sup>th</sup> graders)</li> <li>• Ethnicity: 75% Caucasian 22% African American, 3% other</li> <li>• Age/Grade: Grades 6-8</li> <li>• Gender: 50% F, 50% M</li> <li>• Geographic locale: a suburban middle school in a mid-Atlantic state</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Teacher emotional support and classroom safety significantly predicted sixth through eighth grade students' social goal pursuit. (CS – BE, TES – BE)</li> <li>• Each type of teacher-student relationships positively and significantly predicted sixth through eighth grade students' interest in social class. (TCE – EE, TIH – EE, CS – EE, TES – EE)</li> <li>• Girls reported more frequent social goal pursuit, higher level of emotional support from teachers, higher levels of safety with teachers, and stronger expectations from</li> </ul>

	<ul style="list-style-type: none"> <li>• Social cognitive theory</li> <li>• Self-determination theory</li> </ul>	<ul style="list-style-type: none"> <li>• SES: majority above low SES (17% were eligible for free or reduce price lunch.)</li> <li>• Measures (student reports, drawn from existing measures, <math>\alpha</math>: .68-.89)             <ul style="list-style-type: none"> <li>• TSRs                 <ul style="list-style-type: none"> <li>• TCE: expectations for positive social behavior (In this class, the teacher wants me to share ideas and materials with other students.) and expectations for academic engagement (The teacher calls on me to answer questions. The teacher expects me to learn new things.) (.68)</li> <li>• TIH: instrumental help (My teacher helps me so I can get done quicker. My teacher lends me things if I need them.) (.89)</li> <li>• CS: safety, reflecting criticism (My teacher makes me feel bad when I don't have the right answer.) (.72)</li> <li>• TES: emotional support, how much the student perceived the teacher to like and care about him/her (My teacher really cares about me. My teacher likes me as much as he/she likes other students.) (.82)</li> </ul> </li> <li>• SE                 <ul style="list-style-type: none"> <li>• BE: pursuit of social goals reflecting prosocial and compliant behaviors (How often do you try to share what you've learned with your classmates? How often do you try to do what your teacher asks you to do?) (.84)</li> </ul> </li> </ul> </li> </ul>	<p>teachers for socially competent behaviors than boys. (Gender – BE, Gender – TCE, Gender – CS, Gender – TES)</p> <ul style="list-style-type: none"> <li>• Sixth graders reported the highest levels of emotional support and expectations for social behavior from teachers. (Grade – TCE, Grade – TES)</li> <li>• Compared to boys, girls reported greater interest in class in 7<sup>th</sup> grade but less interest in 8<sup>th</sup> grade, more teacher support in 6<sup>th</sup> grade and 8<sup>th</sup> grade but not in the 7<sup>th</sup> grade, less criticism from teachers in 6<sup>th</sup> grade and 8<sup>th</sup> grade but more criticism in 7<sup>th</sup> grade, and less help from teachers in 7<sup>th</sup> grade but more help from teachers in 8<sup>th</sup> grade. (Gender x Grade – EE, Gender x Grade – TIH, Gender x Grade – CS, Gender x Grade – TES).</li> </ul>
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		<ul style="list-style-type: none"> <li>• EE: interest in class (I really enjoy being in this class. I really don't care what happens in this class.) (.87)</li> <li>• Data collection: The author administered all measures during regular social studies class sessions in late spring.</li> <li>• Data analysis: hierarchical regression (Gender, grade level, teacher, and classroom were controlled for.)</li> </ul>	
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*Note.* TSRs = teacher-student relationships. TCE = teacher clear expectations. TIH = teacher instrumental help. CS = classroom safety. TES = teacher emotional support. SE = student engagement. BE = behavioral engagement. EE = emotional engagement. CE = cognitive engagement. AA = academic achievement.

Table 2

*Summary of Studies Selected for Review on Associations between Teacher-Student Relationships, Student Engagement, and Academic Achievement among Latino Early Adolescents*

Author and Date	Theoretical Framework including Attention to Cultural Factors	Methods	Key Findings
<p>Balagna, Young, &amp; Smith (2013)</p> <p>(school experiences for early adolescent Latino students at risk for emotional and behavioral disorders)</p>	<ul style="list-style-type: none"> <li>• Theory: NA</li> <li>• (Cultural factors were discussed a little bit in rationale, findings, and discussions.)</li> </ul>	<ul style="list-style-type: none"> <li>• Design: qualitative</li> <li>• Sampling: convenience sampling (screened in a large study focusing on implementing positive behavior intervention supports in secondary settings. Identified in 6<sup>th</sup> grade as being at risk for emotional or behavioral problems)</li> <li>• Participants               <ul style="list-style-type: none"> <li>• Sample size: 11 (who were identified as being at risk for emotional or behavioral problems in sixth grade)</li> <li>• Ethnicity: Latino (Latino/a students at risk for emotional and behavioral disorders)</li> <li>• Age: 11-13</li> <li>• Gender: 8M, 3F</li> <li>• Geographic locale: Midsized city in the U.S. intermountain west</li> <li>• SES: NA</li> <li>• Place of birth: 5/11, U.S.</li> <li>• English language fluency: 11/11</li> <li>• Spanish language fluency: 10/11</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Latino students were more likely to attend classes regularly, pay attention during class, follow class rules, and complete homework when their teachers were flexible and provided choice (e.g., allowing extra time, allowing students to make up assignments and correct previous work) and instructional help (e.g., sitting down one on one with the student and explaining things, coming over and helping students during class). (TIH – BE)</li> <li>• Latino students were more likely to enjoy the teachers and classes when their teachers provided instructional help (e.g., telling life stories and experiences, making the content meaningful). (TIH-EE)</li> <li>• Latino students were more likely to pay attention during class when teachers were active, engaging, energetic, upbeat, creative, and fun. Students felt relaxed in the safe classroom environment. (CS-BE)</li> <li>• Latino students were more likely to enjoy the classes and the teachers who were active, engaging, energetic, upbeat, creative, and fun.</li> </ul>

		<ul style="list-style-type: none"> <li>• Primary language spoken at school: English</li> <li>• Spanish as primary or exclusive language spoken at home: primary for 4 homes, exclusive for 4 homes.</li> <li>• Parents: Parents were born in Mexico or Central America. All (20/20) of the parents spoke Spanish. 4/20 spoke English fluently, and 17 of the 20 parents moved to the U.S. as adults, 3 of the 20 parents attended school in the U.S. as children.</li> <li>• Interview language: English</li> <li>• Measure: (student-reports) (interview) In-depth, open-ended, semi-structured, qualitative interviews of school experiences with individual Latino student. (reliability and validity: good. Questions were verified and pilot was done. Initial interpretations were conducted followed by home visits for confirmation and follow-up questions.)</li> <li>• Data collection: Data were collected during the 6th-grade year and beginning of the 7th-grade year.</li> <li>• Data analysis: interpretative phenomenological analysis.</li> </ul>	<p>Students felt relaxed. On the contrary, Latino students were more likely to clash with or dislike teachers who were angry or yelled at the students, or treating students differently from students of other races. (CS-EE)</p> <ul style="list-style-type: none"> <li>• Latino students were more likely to attend classes regularly, stick to the rules of the classroom, and pay attention during class when they had teachers who demonstrated emotional support (e.g., showing kindness and understanding, taking time to get to know students individually, not being hard, and being understanding). On the contrary, Latino students were more likely to skip classes, act out, or refuse to do the class work or what the teachers told them to do when they had teachers who did not like them or understand them. (TES-BE)</li> <li>• Latino students were more likely to enjoy teachers and classes when they had teachers who demonstrated emotional support (e.g., showing kindness and understanding, taking time to get to know students individually, not being hard, and being understanding). On the contrary, Latino students tended to be depressed when they had teachers who did not like or understand them, or embarrassed them. (TES-EE)</li> <li>• Latino students were more likely to participate in classroom activities when their teachers</li> </ul>
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			<p>provided instructional help. Their behavioral engagement, in turn, led to better grades. (TIH-BE-AA)</p> <ul style="list-style-type: none"><li>• Latino students were more likely to like teachers when their teachers provided instructional help. Their emotional engagement, in turn, led to better grades. (TIH-EE-AA)</li><li>• Latino students were more likely to attend class regularly when their teachers provided emotional support. Their behavioral engagement, in turn, led to better grades. On the contrary, when teachers disliked the students, the students tended to skip classes or did not want to do what the teachers told them to, which in turn contributed to poor grades. (TES-BE-AA)</li><li>• Latino students were more likely to like teachers when their teachers provided emotional support. Their emotional engagement, in turn, led to better grades. On the contrary, when teachers disliked the students, the students were more likely to dislike the teachers, which in turn contributed to poor grades. (TES-EE-AA)</li><li>• The students spoke frequently about social interactions (e.g., with teachers) and infrequently of personal issues. This appears to reflect one of the Latino cultural values</li></ul>
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			<p><i>personalismo</i> (emotional support, connection, and encouragement between people). Teachers who acknowledged and incorporated the cultural values (e.g., <i>respeto</i> and <i>familism</i>) in their interaction with Latino students promoted support relationships with students. Lack of interpersonal connections with teachers indicated a lack of <i>respeto</i> (interpersonal respect). (Culture)</p>
<p>Brewster &amp; Bowen (2004)</p> <p>(teacher support and school engagement of Latino middle and high school students at risk of school failure)</p>	<ul style="list-style-type: none"> <li>• Ecological theory</li> <li>• Social capital theory (importance of teacher understanding of Latino culture included)</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: convenience? (sample was a subset of a larger dataset comprising 5,016 students from middle and high school, and from multiple races and ethnic backgrounds. These students were identified as at risk of school failure.)</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 633 (30% or 189 in middle school, grades 6-8; 70% or 444 in high school, grades 9-12, at risk of school failure)</li> <li>• Ethnicity: Latino</li> <li>• Grade: grades 6-12 (middle and high school)</li> <li>• Gender: 49% M, 51% F</li> <li>• Geographic locale: 53 middle and high schools in 10 states (e.g., 38% FL, 17% NC, 17 PA; and 14% KS.)</li> <li>• SES: low, 65% received free or reduced lunch. About 43% of the students lived</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Perceived teacher emotional support (caring, encouraging, respectful, and willing to work with them) significantly influenced Latino students' affective engagement and behavioral student engagement at school, beyond the influence of demographic factors and parental support. (TES – BE, TES – EE)</li> <li>• There were no significant interaction effects between teacher emotional support and gender/SES/school level on problem behavior and perceived school meaningfulness (TES x Gender – BE, TES x SES – BE, TES x School Level – BE)</li> </ul>

		<p>with two parents; 57% lived with one parent, lived alone, or lived in another situation.</p> <ul style="list-style-type: none"> <li>• Measures (student-reports) (existing measure - School Success Profile [SSP] survey, rigorously tested diagnostic tool) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TES: teacher support, degree to which students perceive their teachers as caring, encouraging, respectful, and willing to work with them. (my teachers really care about me. My teachers really listen to what I have to say. My teachers care about whether or not I come to school. My teachers are willing to work with me after school. I received a lot of encouragement from my teachers. I am respected and appreciated by the teachers.) One of the items concerns cultural differences: “My teachers understand racial and cultural differences.” (<math>\alpha = .81</math>)</li> </ul> </li> <li>• SE <ul style="list-style-type: none"> <li>• BE: problem behavior in school. (Items related to attendance or negative behavior at school: cut at least one class. Showed up for school late unexcused. Fought, have been suspended)</li> </ul> </li> </ul> </li> </ul>	
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		<ul style="list-style-type: none"> <li>• EE: perceived school meaningfulness. (I find school fun and exciting. I look forward to learning new things at school. I look forward to going to school.) (<math>\alpha = .77</math>)</li> <li>• Data collection: Feb. 11, 1998 – Oct. 31, 2000.</li> <li>• Data analysis: hierarchical linear regression (School level [high school vs. middle school], gender, and SES were controlled for.)</li> </ul>	
<p>Crosnoe, Johnson, &amp; Elder (2004)</p> <p>(intergenerational bonding in school: the behavioral and contextual correlates of student-teacher relationships)</p>	<ul style="list-style-type: none"> <li>• Social bond theory</li> <li>• Ecological theory</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative, longitudinal</li> <li>• Sampling: stratified sampling based on data from the National Longitudinal Study of Adolescent Health (Add Health), an ongoing nationally representative study of American adolescents in Grades 7-12 that began in 1994</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 10,991 adolescents in 126 schools</li> <li>• Ethnicity: Caucasian (54%), African American (22%), Latino (16%), and other (8%)</li> <li>• Age/Grade: Grades 7-12</li> <li>• Gender: 48% F, 44% M (excluding other ethnicities)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• All students were less likely to get in trouble in school when they had more positive views of teachers in terms of emotional support. Stronger intergenerational bonding at school in Wave I was associated with a lower likelihood of disciplinary problems in Wave II, especially for White girls than White boys and students of other ethnic groups. (TES x Time - BE)</li> <li>• Stronger intergenerational bonding at school in Wave I was associated with high academic achievement (GPA across subject areas) in Wave II, especially for Hispanic American girls. (TES x Time - AA)</li> <li>• In comparison with White girls, Hispanic American girls tended to perceive their teachers with a higher level of emotional support. However, Hispanic American boys did</li> </ul>

		<ul style="list-style-type: none"> <li>• Geographic locale: NA</li> <li>• SES: parental education (mean = 4.99, almost completed a GED)</li> <li>• Measures (student-reports) (2 waves of In-Home interview) (drawn from existing measure, from Add Health) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TES: “teacher bonding”, from Add Health, Wave I of In-Home Interview (extent which student had trouble getting along with teachers, felt that teacher cared about them, and believed that teachers treated them fairly in their school.) (<math>\alpha = .68</math>)</li> </ul> </li> <li>• SE <ul style="list-style-type: none"> <li>• BE: disciplinary problems (In Waves I and II, whether or not they had ever been suspended or expelled from school, or in the past year.)</li> <li>• AA: self-reported averaged GPAs (Waves I and II. Math, science, English, and social studies)</li> </ul> </li> </ul> </li> <li>• Data collection: dataset from Add Health (2 waves of in-home interview for the study)</li> <li>• Data analysis: linear regression modeling and multilevel modeling (Grade level, gender, ethnicity, and SES were controlled for.)</li> </ul>	<p>not differ from White girls in perceptions of level of teacher emotional support. (Ethnicity x Gender – TES)</p> <ul style="list-style-type: none"> <li>• Students in seventh grade were more likely to perceive that their teachers were caring and supportive emotionally than the comparison group of students in tenth grade. (Grade Level – TES)</li> <li>• Higher SES was positively and significantly related to higher level of perceived teacher emotional support. (SES – TES)</li> <li>• The association between teacher-bonding and the racial-ethnic composition of the student body was mostly strongly positive among Hispanic American girls. They felt most positively about their teachers when they attended schools with a larger number of other Hispanic American students. Such association was significant for Hispanic girls as compared to White girls, the control group, but not significant for Hispanic boys. (Ethnicity x Gender x Culture – TES)</li> <li>• The association between the proportion of White teachers and teacher emotional support was not significantly different between White girls and Hispanic American girls or boys. (Ethnicity x Gender x Culture – TES)</li> </ul>
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<p>Garcia-Reid (2007)</p> <p>(social capital as a mechanism for improving school engagement among low income Latino girls)</p>	<ul style="list-style-type: none"> <li>• Ecological theory</li> <li>• Social capital theory</li> </ul> <p>(Importance of understanding Latino culture for teachers was mentioned briefly as a component when social support as a measure of social capital and mechanism for improving engagement was discussed. The statement focused on that many teachers were not prepared to educate children from cultural backgrounds that were different from their own.)</p>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: convenience? Subset of a larger dataset. Hispanic students in the school were asked to participate in a study that focused on identifying risk and protective factors for school engagement. The sample setting was chosen because it was one of the top 30 poorest districts in NJ. Approximately 30% (480/1600) of the students in the middle school were assigned to the health portion of a gym/health requirement, part of a study focused on identifying risk and protective factors for school engagement. About 53% (253/480) of these students completed the survey. Of these 253 students, 226 (90%) were of Latino students, 133 (59%) were female, 93 (41%) were male. The study focused exclusively on the 133 Latino female students.</li> <li>• Participants <ul style="list-style-type: none"> <li>• N = 133</li> <li>• Ethnicity: Latino</li> <li>• Age: 13-14 (53%) (middle school)</li> <li>• Grade: 7<sup>th</sup></li> <li>• Gender: F</li> <li>• Geographic locale: in a large middle school in Northern New Jersey (among the top 30 poorest districts in the state)</li> <li>• SES: low. 87% school lunch recipients.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Compared to support from parents and friends, teacher support offered the greatest contribution to school engagement among Latino girls residing in marginalized environment. Teacher emotional support (e.g., caring, encouragement, respect, appreciation, and praising) was directly and significantly related to emotional engagement (e.g., finding school fun and exciting, looking forward to learning new things at school, looking forward to going to school) among Latino middle school girls. (TES-EE)</li> </ul>
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		<ul style="list-style-type: none"> <li>• Country of birth: Slightly more than 2/5 were born in the U.S.</li> <li>• Measures (student-reports) (drawn from existing measure, SSP) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TES: students' reports of teachers' attitudes and behaviors toward them. (<math>\alpha = .77</math>)</li> </ul> </li> <li>• SE <ul style="list-style-type: none"> <li>• EE: students' commitment in the school process (finding school fun and exciting, looking forward to learning new things at school, looking forward to going to school) (<math>\alpha = .75</math>)</li> </ul> </li> </ul> </li> <li>• Data collection: Fall of 2002</li> <li>• Data analysis: SEM</li> </ul>	
<p>Garcia-Reid, Reid, &amp; Peterson (2005)</p> <p>(school engagement among Latino youth in an urban middle school context: valuing the role of social support)</p>	<ul style="list-style-type: none"> <li>• NA</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: convenience? Subset of a larger dataset. Hispanic students in the school were asked to participate in a study that focused on identifying risk and protective factors for school engagement. The sample setting was chosen because it was one of the top 30 poorest districts in NJ. Approximately 30% (480/1600) of the students in the middle school were assigned to the health portion of a</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher emotional support (e.g., caring, encouragement, respect, appreciation, and praising) was directly and significantly related to emotional engagement (e.g., finding school fun and exciting, looking forward to learning new things at school, looking forward to going to school) among Latino middle school students. (TES-EE)</li> </ul>

		<p>gym/health requirement, part of a study focused on identifying risk and protective factors for school engagement. About 53% (253/480) of these students completed the survey. Of these 253 students, 226 (90%) were of Latino students. The study focused exclusively on these 226 Latino students.</p> <ul style="list-style-type: none"> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 226</li> <li>• Ethnicity: Latino</li> <li>• Age: 13-14 (55%) (middle school)</li> <li>• Grade: 7th</li> <li>• Gender: 93 (41%) M, 133 (59%) F</li> <li>• Geographic locale: in a large middle school in Northern New Jersey (among the top 30 poorest districts in the state)</li> <li>• SES: low. 85% received subsidized lunch. Nearly 2/3 were living in two-parent households. About 93% of participants had at least one parent being gainfully-employed.</li> <li>• Country of birth: Almost 2/5 were born in the U.S.</li> </ul> </li> <li>• Measures (student-reports) (drawn from existing measure, SSP) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TES: students' reports of teachers' attitudes and behaviors toward them. (<math>\alpha = .77</math>)</li> </ul> </li> </ul> </li> </ul>	
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		<ul style="list-style-type: none"> <li>• SE</li> <li>• EE: students' commitment in the school process (finding school fun and exciting, looking forward to learning new things at school, looking forward to going to school) (<math>\alpha = .75</math>)</li> <li>• Data collection: Fall of 2002</li> <li>• Data analysis: SEM</li> </ul>	
<p>Green, Rhodes, Hirsch, Suárez-Orozco, &amp; Camic (2008)</p> <p>(supportive adult relationships and academic engagement of Latin America immigrant youth)</p>	<ul style="list-style-type: none"> <li>• NA</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative, longitudinal</li> <li>• Sampling: convenience sampling. Subset of Longitudinal Immigration Student Adaptation (LISA) participants, 408 newly-arrived immigrant youth from Central America, China, the Dominican Republic, Haiti, and Mexico. Participants in the present study were recruited from several public school districts in the San Francisco area because these districts had high densities of immigrant students. LISA study focused on youth who had immigrated within five years prior to the first interview (1997-98). The present study used data collected during the third wave through fifth and final wave of collection for the LISA study. Youth were required to have spent at least 2/3 of their lives in the country of origin. In the first year of the LISA study, on average, 80 students were selected from each cultural</li> </ul>	<ul style="list-style-type: none"> <li>• The relationships between the average amount of school-based support perceived over three years and youths' engagement differed somewhat for boys and girls. For girls, support was positively associated with initial engagement, whereas for boys, it was positively associated with changes in engagement. (<math>[TES + TIH] \times Gender - BE</math>, <math>[TES + TIH] \times Gender \times Time - BE</math>)</li> <li>• Rather than adhering to linear trajectories, perceptions of support from teachers and adults at school fluctuated from year to year. These fluctuations were associated with youth's engagement in school that year. Higher levels of support were associated with higher engagement. Lower levels of support were associated with lower engagement. (<math>[TES + TIH] - BE</math>)</li> </ul>

		<p>group. The attrition rate was about 5% on average annually.</p> <ul style="list-style-type: none"> <li>• Participants <ul style="list-style-type: none"> <li>• N = 139 (Power analyses indicated that with repeated measures on 139 students, it would be reasonable to expect power to be well over .80 to detect an alpha of .05).</li> <li>• Ethnicity: Latino</li> <li>• Age: 11-16, grades 5-10 (1999-2000 academic year, first year of data collection for the current study); age 14-19, grades 7-12 (third and final year of data collection)</li> <li>• Gender: 49% M, 51% F</li> <li>• Geographic locale: San Francisco area from several public school districts</li> <li>• SES: low. (About 25% were at the lowest income bracket with household making under \$20,000 yearly. 75% or more of household incomes \$10,000 - \$50,000. Majority of the participants lived in families with two parents during the third and final year of study. Average household size: 6.4. Parental educational level: Latino students born in Central America: 17% of mothers and 24% of fathers completed high school. Latino students born in Mexico: 30% of mothers and 18% of fathers completed high school. Employment</li> </ul> </li> </ul>	
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		<p>outside the home: Latino students born in Central America: 87% of mothers and 67% of fathers. Latino students born in Mexico: 70% of mothers and 66% of fathers.)</p> <ul style="list-style-type: none"> <li>• Country of birth: 76 born in Mexico, 63 born in Central America</li> <li>• Measures: (from LISA study, Behavioral and Relational Engagement [Support from Adults and Teachers at School Scale; Academic Engagement Scale) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TES+TIH: students' perceptions of being supported by teachers and staff at school, including emotional and academic needs. (There is at least one adult in school I can always count on. Teachers do not treat me with respect.) (<math>\alpha = .80, .84, \text{ and } .76</math> for Y1, Y2, and Y3 of the current study)</li> </ul> </li> <li>• SE <ul style="list-style-type: none"> <li>• BE: finishing homework, turning in homework on time, and paying close attention in class (<math>\alpha = .69, .80, \text{ and } .73</math> for Y1, Y2, and Y3 of the current study)</li> </ul> </li> </ul> </li> <li>• Data collection: three waves across three academic years, once a year. Bilingual and bicultural research assistants interviewed</li> </ul>	
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		<p>each student individually at school or after school. It was done orally in the student's language(s) of choice. Each interview took 1.5-2 hours.</p> <ul style="list-style-type: none"> <li>• Data analysis: HLM (Control Variables: age, study completion. Variables that remain constant: gender, average teacher-student relationships over three years. )</li> </ul>	
<p>Mireles-Rios &amp; Romo (2010)</p> <p>(maternal and teacher interaction and student engagement in math and reading among Mexican American girls from a rural community)</p>	<ul style="list-style-type: none"> <li>• NA</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: convenience sampling. (Mexican American girls were recruited from a community-based youth organization and from two after-school programs.)</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 69</li> <li>• Ethnicity: Latino (Mexican American)</li> <li>• Age: 8-13., mean = 10</li> <li>• Grade: grades 3-6</li> <li>• Gender: F</li> <li>• Geographic locale: agricultural community in CA. (Half of the residents were Latino. About 88% of the students in the two schools identified as Latino. About 45% and 33% of the Latino students performed below grade level in reading and in math, respectively, as compared to 13% and 10% for Caucasian peers.)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Perceived teacher caring significantly and positively predicted Latino female students' self-reported math grades. Student reporting high math grades perceived that their teachers cared more about their education than student with low grades. Student with higher reading grades also perceived their teachers to be more friendly. (TES – AA)</li> <li>• For subject likeability, students who liked math and reading reported that their teachers talked little about college. (TIH – EE)</li> </ul>

		<ul style="list-style-type: none"> <li>• SES: low. Two thirds of the students in the two schools qualified for reduced or free lunch</li> <li>• Measures (student-reports) (survey) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TES: perceptions that teachers cared about their education, perceptions of teacher friendliness, and perceptions of teacher communicating about college. (My teacher cares about my class work. My teacher cares about my homework. My teacher cares about me getting a good education. My teacher cares about me getting good grades in math/reading.) (<math>\alpha = .94</math>)</li> <li>• TES: teacher friendliness. (My teacher is friendly/a good listener.) (<math>\alpha = .73</math>)</li> <li>• TIH: teacher communication about college (My teacher talks to me about college and getting a career/about where to get help for college.) (<math>\alpha = .94</math>)</li> </ul> </li> <li>• SE <ul style="list-style-type: none"> <li>• EE: academic subject likeability (how much students liked math and reading)</li> </ul> </li> <li>• AA: Academic self-reported grades: current grades in reading and math.</li> </ul> </li> </ul>	
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		<ul style="list-style-type: none"> <li>• Data collection: Testing was conducted either in at a youth organization or at an elementary after-school program. The interviewers, the author, and two other graduate students helped them read and understand the questions.</li> <li>• Data analysis: regression analysis for quantitative data.</li> </ul>	
<p>Murray (2009)</p> <p>(parent and teacher relationships as predictors of school engagement and functioning among low-income urban youth)</p>	<ul style="list-style-type: none"> <li>• Attachment theory</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: convenience sampling.</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 104</li> <li>• Ethnicity: 91% Latino, 4% African American, and 5% Caucasian</li> <li>• Grade: grades 6-8</li> <li>• Gender: 46% M, 54% F</li> <li>• Geographic locale: a low-income low-performing middle school in a large Midwestern city</li> <li>• SES: low. (About 99% of the students in the school qualified for free or reduced lunch.)</li> <li>• Approximately 11% of the participants received special education services for learning disabilities. About 65% of the students at the school performed below national averages. Latino students accounted for 90% of all students in the school.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• After controlling for achievement and parent-child relationships, the set of teacher-student relationships variables accounted for a significant amount of variance in students' perceptions of engagement, language arts grade, mathematics grades, and mathematics achievement. Positive aspects of relationships with teachers such as closeness-trust made the greatest unique contributions to student adjustment and functioning. Students' scores on this variable accounted for almost half the variance in their own rating of engagement in school. Student with higher closeness-trust with teachers had greater school engagement than did students with lower rated closeness-trust with teachers. (TES – BE)</li> <li>• Students with greater unclear expectations scores had low engagement than did students with lower unclear expectations. (TCE – BE)</li> <li>• Students' perceptions of teacher relationships made a small but significant contribution to student grades in language arts and</li> </ul>

		<ul style="list-style-type: none"> <li>• Measures (Measures for TSRs and SE were drawn from existing measure Research Assessment Package for Schools [RAPS])</li> <li>• TSRs (student reports) (Three dimensions were based on attachment theory.) <ul style="list-style-type: none"> <li>• TES: closeness-trust. E.g., The teachers are fair with me. The rules in my classroom are clear. (<math>\alpha = .75</math>)</li> <li>• TES: positive involvement. E.g., My teachers like to be with me. My teachers care about how I do in school. (<math>\alpha = .71</math>)</li> <li>• TCE: unclear expectations. E.g., My teachers don't explain why we have to learn certain things at school. My teachers are not fair with me. (<math>\alpha = .71</math>)</li> </ul> </li> <li>• SE (student reports) <ul style="list-style-type: none"> <li>• BE: behavioral engagement (I work very hard on my school work.) (<math>\alpha = .75</math>)</li> </ul> </li> <li>• AA: (teacher-reports) final grades in language arts and math, and achievement scores on Iowa Test of Basic Skills obtained from school records.</li> </ul>	<p>mathematics. Positive involvement with teachers made a marginally significant contribution to language arts grades. Students who reported greater positive involvement with teachers had higher language arts grades than did student with lower positive involvement. (TES – AA)</p> <ul style="list-style-type: none"> <li>• Closeness-trust made a significant contribution to mathematics grades. Students who reported greater closeness-trust with teacher had greater mathematics than did students with lower closeness-trust. (TES – AA)</li> <li>• Unclear expectations made a significant unique contribution to achievement in reading. (TCE-AA)</li> <li>• Closeness-trust made a significant and positive contribution to math grades and students' performance on math standardized test. (TES – AA)</li> </ul>
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		<ul style="list-style-type: none"> <li>• Data collection: survey was administered by two graduate assistants. All items were read aloud.</li> <li>• Data analysis: MANOVA (control Vs for the model involving engagement as the DV: achievement and parent relationships)</li> </ul>	
<p>Valiente, Lemery-Chalfant, Swanson, &amp; Reiser (2008)</p> <p>(prediction of children's academic competence from their effortful control, relationships, and classroom participation)</p>	<ul style="list-style-type: none"> <li>• (No theoretical framework explicitly specified. Research evidence was discussed regarding relations between children's relationships/classroom participation and academic competence.)</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative, longitudinal</li> <li>• Sampling: convenience. Participants were recruited from two schools. Participation was voluntary. Information sent to parents was available either in English or Spanish. Sample represents gender and ethnic composition of the classrooms.</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 264 students and 22 teachers from 22 regular education classrooms</li> <li>• Ethnicity: 47% Latino, 30% Caucasian, 5% African American, 8% Native American, and 10% other</li> <li>• Age/Grade: age 7-12</li> <li>• Gender: 122 M, 142 F</li> <li>• Geographic locale: 2 schools in a SW U.S. city</li> <li>• SES: low. Mean range of family income was \$15,000 to \$150,000 per year, mean range: \$30,000 to \$50,000.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student relationships (emotional support) were negatively related to spring absences beyond fall GPA or absences, gender, SES, and effortful control. (TES x Time - BE)</li> <li>• Teacher-student relationships (emotional support) were positively related to spring GPA beyond fall GPA or absences, gender, SES, and effortful control. (TES x Time - AA)</li> <li>• There was no significant difference between Latino students and Caucasian students on spring absences. (Ethnicity – BE)</li> <li>• There were no significant interactions between ethnicity and teacher emotional support on spring absences or GPA. (Ethnicity x TES – BE, Ethnicity x TES – AA)</li> <li>• There was no significant difference between Latino students and Caucasian students on spring GPA (Ethnicity – AA)</li> </ul>



		<ul style="list-style-type: none"> <li>• Measures (drawn from existing measures) <ul style="list-style-type: none"> <li>• TSRs (teacher reports and student reports) (Student-Teacher Relationship Scale which was a questionnaire) <ul style="list-style-type: none"> <li>• TES: closeness and conflict of TSRs (teacher reports <math>\alpha = .90</math>; student reports <math>\alpha = .92</math>)</li> </ul> </li> <li>• SE <ul style="list-style-type: none"> <li>• BE <ul style="list-style-type: none"> <li>• Classroom participation (teacher reports and student reports). Teacher reports (This child follows instructions. This child challenges him/herself to do well. Student rated classroom participation using an age-appropriate version). Student reports (I follow my teacher's instructions). (teacher reports <math>\alpha = .94</math>; student reports <math>\alpha = .67</math>)</li> <li>• Absences, official school records of averaged full school days missed and tardies from fall to spring.</li> </ul> </li> </ul> </li> <li>• AA: averaged fall and spring GPAs in language, vocabulary, and math from official school records</li> </ul> </li> <li>• Data collection: All questionnaires were completed between March and April. Questionnaires for students were administered by a research assistant in their classrooms during the school day.</li> </ul>	<ul style="list-style-type: none"> <li>• There was no significant difference between girls and boys on spring absences. (Gender – BE)</li> <li>• There was no significant difference between girls and boys on spring GPA (Gender – AA)</li> <li>• There was no significant difference between low- and high-SES on spring absences. (SES – BE)</li> <li>• SES was positively related to spring GPA. (SES-AA)</li> </ul>
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		<ul style="list-style-type: none"> <li>• Data analysis: mixed model regressions (fall GPA, absence, gender, and SES were controlled for.)</li> </ul>	
<p>Woolley, Kol, &amp; Bowen (2009)</p> <p>(social context of school success for Latino middle school students: direct and indirect influences of teachers, family, and friends)</p>	<ul style="list-style-type: none"> <li>• Ecological theory</li> <li>• Social capital theory</li> <li>• Cultural constructs? (Note that the authors used the cultural factors to discuss parents' role in particular, not teacher-student relationships.)</li> </ul>	<ul style="list-style-type: none"> <li>• Design: quantitative</li> <li>• Sampling: convenience sampling. (Subset from the School Success Profile study)</li> <li>• Participants <ul style="list-style-type: none"> <li>• Sample size: 848</li> <li>• Ethnicity: Latino</li> <li>• Age: 11-14</li> <li>• Grade: grades 6-8</li> <li>• Gender: 431 M, 417 F</li> <li>• Geographic locale: across 318 schools across seven states</li> <li>• SES: low. (About 76% received free or reduced lunch. About 75% had two parents in the home. About 90% had an adult at home working.)</li> <li>• Twenty-one percent repeated one or more grades.</li> <li>• 752 completed SSP in English and 95 in Spanish.</li> </ul> </li> <li>• Measures (student-reports) (SSP) <ul style="list-style-type: none"> <li>• TSRs <ul style="list-style-type: none"> <li>• TES: teacher support (My teachers care about me) (<math>\alpha = .82 - .83</math> for total sample, English and Spanish items)</li> </ul> </li> <li>• SE</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Perceived teacher emotional support (caring, encouraging, respectful, and willing to work with them) was positively and indirectly linked to Latino students' academic achievement (grades from the most recent report cards) through behavioral engagement (school behavior) as a mediator. (TES-BE-AA)</li> <li>• Perceived teacher emotional support (caring, encouraging, respectful, and willing to work with them) was positively and indirectly linked to Latino students' academic achievement (grades from the most recent report cards) through emotional engagement (school satisfaction) as a mediator. (TES-EE-AA)</li> </ul>

		<ul style="list-style-type: none"> <li>• BE: school behavior. (I cut at least one class. I got in a physical fight with another student. I was given an out-of-school suspension) (<math>\alpha = .66- .75</math> for total sample, English and Spanish items)</li> <li>• BE: time on homework</li> <li>• EE: school satisfaction (I enjoy going to this school.) (<math>\alpha = .49 - .70</math> for total sample, English and Spanish items)</li> <li>• AA: (student reports) grades from most recent report cards.</li> <li>• Data collection: 2001-05</li> <li>• Data analysis: SEM (control Vs: gender, SES, grade repeat)</li> </ul>	
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*Note.* TCE = teacher clear expectations. TIH = teacher instrumental help. CS = classroom safety. TES = teacher emotional support. BE = behavioral engagement. EE = emotional engagement. AA = academic achievement. CE (cognitive engagement) did not apply to the findings.

Table 3.

*Associations between Teacher-Student Relationships and Student Engagement and Academic Achievement That Were Examined or Not Examined in the Literature*

	BE	EE	CE	AA	BE – AA	EE – AA	CE – AA
TES							
Early Adolescents in General	√	√	√	√	√	√	x
Latino Youth	√	√	x	√	√	√	x
TIH							
Early Adolescents in General	√	√	√	x	x	x	x
Latino Youth	√	√	x	√	√	√	x
TCE							
Early Adolescents in General	√	√	√	x	x	x	x
Latino Youth	√	x	x	√	x	x	x
CS							
Early Adolescents in General	√	√	x	x	x	x	x
Latino Youth	√	√	x	x	x	x	x

*Note.* TSRs = teacher-student relationships. TES = teacher emotional support. TIH = teacher instrumental help. TCE = teacher clear expectations. CS = classroom safety. BE = behavioral engagement. EE = emotional engagement. CE = cognitive engagement. AA = academic achievement. “√” denotes that at least one study examined the associations. “x” denotes that no study examined the associations.

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