TEACHER-CHILD RELATIONSHIP QUALITY AND CHILDREN’S SCHOOL
OUTCOMES: EXPLORING GENDER DIFFERENCES ACROSS ELEMENTARY
SCHOOL GRADES

by

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A Dissertation Submitted to the Faculty of the
NORTON SCHOOL OF FAMILY AND CONSUMER SCIENCES

In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF PHILOSOPHY

In the Graduate College
THE UNIVERSITY OF ARIZONA

2009
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ACKNOWLEDGEMENTS

I want to thank first and foremost my wonderful committee, Angela Taylor, Emily Butler, and Sue Koerner. Their time, feedback, and thoughtful suggestions have been invaluable. But I would especially like to thank my advisor, Angela Taylor, for supporting me, guiding me, mentoring me, challenging me, and most importantly of all, always believing in me.

Another special thank you goes out to NICHD for use of their excellent data set. Without their extraordinary time and effort, this study never would have been possible.

I also want to thank all my friends and extended family at the Norton School for making my graduate career fun as well as productive. I especially want to thank all the graduate students I was fortunate enough to cross paths with, especially Dr. Ana Lucero-Liu and (soon to be Dr.) Yumi Shirai. I cannot think of a more supportive, encouraging, intelligent bunch of people!

Lastly, I want to thank my parents, Louise and Bill Ewing, for loving me unconditionally and my sister, Lila, for being my first and one of my greatest friends.
DEDICATION

I dedicate this dissertation to my parents for always loving me, supporting me, and encouraging me to shine as bright as I can.
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ABSTRACT

Past research highlights the important role of the teacher-child relationship in children’s school adjustment and success. The primary purpose of the present study was to examine the role of child gender in teacher-child relationship quality across elementary school grades. Specifically, this study explored: 1) stability of teacher-child relationship quality over time for girls and boys, 2) gender differences in relationship quality at first, third, and fifth grade, 3) possible relational mechanisms that could mediate the association between child gender and teacher-child relationship quality, 4) child gender as a moderator between relationship quality and child outcomes both concurrently and over time and 5) the influence of teacher gender and teacher-child gender match on relationship quality. Using data from the NICHD Study of Early Childcare and Youth Development (SECCYD), these questions were explored in a sample of 682 children at first, third, and fifth grade. Analyses revealed relative stability in teacher-child relationship quality across grade level with no significant gender differences in stability. However, girls were consistently rated higher in closeness and boys higher in conflict across the grade levels. The child’s affiliative orientation toward the teacher was found to partially mediate the link between child gender and relationship quality, such that girls’ greater affiliation predicted greater closeness and lower conflict with the teacher. Child gender was found to moderate associations within grade level, such that closeness was associated with greater social competence for girls than boys. Conflict was also associated with more externalizing behaviors for girls than boys. Teacher-child gender match was also found to play a significant role in predicting teacher-child closeness.
This study highlights important and significant contributions gender makes to teacher-child relationship quality.
CHAPTER 1: INTRODUCTION

Teachers play a critical and unique role in children’s school adjustment. Teachers not only teach children academic skills, but they help children learn self-regulation, offer behavioral, instrumental, and emotional support, teach coping skills, and help children transition from home to school (Birch & Ladd, 1997; Mashburn & Pianta, 2006). There is also some evidence that teachers may play a role in buffering against negative outcomes of at-risk children (Lynch & Cicchetti, 1992).

Multiple studies have found links between the quality of the teacher-child relationship and children’s academic and behavioral outcomes. Teacher-child closeness has been linked to children’s greater academic performance, increased school liking, greater self-directedness, and increased prosocial behaviors (Birch & Ladd, 1997; Howes, Hamilton, & Matheson, 1994). Children who feel close to their teachers may feel more comfortable seeking support from them and using their teachers as secure bases from which to explore their environments. On the other hand, teacher-child conflict has been linked to negative school outcomes. Teacher-child conflict has been associated with less school liking, more school avoidance, less self-directedness, more internalizing and externalizing behaviors, and less cooperation (Birch & Ladd, 1997; Pianta & Nimetz, 1991). When conflict is present, the child may not trust the teacher and may seek to avoid the unfriendly classroom environment. The teacher-child relationship, therefore, has a unique and special role in contributing to children’s school adjustment.

Although past studies have established strong links between teacher-child relationship quality and children’s academic and behavioral outcomes, past research
suggests that relationship quality and its effects may differ significantly for boys and girls. Past researchers have found that teachers report differences in the quality of their relationships with boys and girls; teachers report more closeness with girls and more conflict with boys (Birch & Ladd, 1997; Hamre & Pianta, 2001). However, these studies have only looked at the teacher-child relationship in the early elementary school grades; the current study will extend on these past studies by exploring teacher-child relationship quality stability from first to fifth grade, examining both the stability of individual differences and gender differences over time.

In addition, no study to date has examined possible mechanisms that could account for these gender differences in teacher-child relationship quality. This study aims to expand on what is known by exploring some possible mechanisms from a gender schema/gender socialization perspective. Although teacher, child, and classroom characteristics likely all play an important role, this study will focus on possible child relational characteristics. Specifically, children’s affiliations with teachers, positive peer group orientations toward school, and negative peer group orientations toward school will be explored as possible mediators of the link between child gender and teacher-child relationship quality.

Children’s own feelings, or affiliations, with their teachers could differ by gender. According to work on gender socialization, girls are socialized by society and one another to seek closer, more affectionate relationships with their teachers; boys, on the other hand, are socialized to be more independent and not seek close relationships with their teachers. Gender schema theory states that children identify with what they label as
gender appropriate (Bem, 1981; Martin, Ruble, & Szkrybalo, 2002). If girls label teachers (who are primarily female in elementary school) as gender appropriate, they will gravitate more towards their teachers and identify more with them; boys will identify less with their female teachers. Therefore, girls will seek stronger affiliations with their teachers than boys.

Peer groups also play a strong socializing role; girl peer groups are more likely to reinforce close teacher relationships than boy peer groups (Grant, 1985). In addition, girl peer groups tend to be more study and school oriented, while boy peer groups are not as oriented towards school achievement (Van Houtte, 2004). In other words, girl peer groups are socializing one another to identify with school and teacher; therefore girls may be more invested in establishing close teacher relationships. On the other hand, boys could experience more conflict with their teachers because their peer groups may place less value and importance than girls on doing well in school or associating with the teacher.

This study also explores how gender might moderate the associations between teacher-child relationship quality and child outcomes. This is an important area of study because past research suggests that boys and girls experience different outcomes from the quality of their relationships. For example, girls seem to benefit more than boys from positive relationships with their teachers while negative teacher relationships are associated with more harmful academic and behavioral outcomes for boys than girls (Baker, 2006; Ewing & Taylor, 2009). The finding that girls experience closer teacher-child relationships and benefit more from closeness can be interpreted in terms of the
literature on gender socialization. This work supports the notion that children benefit more when the quality of the teacher-child relationship is consistent with gender-based relational styles and traditional gender role expectations. The past finding that boys are more negatively impacted by teacher-child conflict could be supported by the academic risk perspective. This perspective posits that children who are at greater risk of school adjustment difficulties and problems would have more “to gain, or lose, through their ability to adapt to the social environment of the classroom” (Hamre & Pianta, 2001, p. 627). Given the evidence that boys as compared to girls experience more academic and behavioral problems in the early school grades (Kindlon & Thompson, 2002), this perspective leads to the prediction that the association between teacher-child relationship quality and school adjustment would be strongest for boys. If it is true that children who are at the greatest risk for school failure are more influenced by the quality of the teacher-child relationship, then it is imperative to study the association between teacher-child relationship quality and children’s school outcomes throughout the later elementary school grades, as these children will be at an increased risk for school failure and dropout.

The final goal of this study is to explore the influence of teacher gender and gender match on teacher-child relationship quality. Past studies have found girls to be consistently rated higher in teacher-child closeness and lower in conflict as compared to boys (e.g., Birch & Ladd, 1997). However, in these studies, all the teachers have been female, reflecting the dominance of females as elementary school teachers. The lack of male teachers in elementary school has made it difficult to study the effects of teacher
gender and teacher-child gender match, although it is reasonable to believe that both may be contributing to differences in teacher-child relationship quality. This is a particularly important question to study given the different implications of teacher-child relationship quality for boys and girls.

In summary, this study focuses on gender differences in teacher-child relationship quality across the elementary school grades. The present study adds to this body of research by exploring the stability of teacher-child relationship quality across time, examining gender differences in relationship quality at first, third, and fifth grade, testing for child relational mechanisms that affect gender differences in teacher-child relationship quality, exploring gender as a moderator for the associations between relationship quality and child outcomes both concurrently and over time, and examining the possible effects of teacher gender and teacher-child gender match on teacher-child relationship quality.
CHAPTER 2: LITERATURE REVIEW

This chapter begins with a review of the theoretical and empirical literature on elementary schools as contexts for development, including a review of Bronfenbrenner’s bioecological theory and literature on early school adjustment and later academic success. Then a discussion of attachment theory and its relevance to this study is presented. Next there is a review of the empirical research on the teacher-child relationship and children’s school adjustment. This is followed by a discussion of research on gender development and schooling, including a review of gender socialization in the classroom and gender schema theory. Next there is a discussion on gender and the teacher-child relationship, including gender differences in relationship quality, explanatory mechanisms of gender differences, gender as a moderator, and the role of teacher gender and teacher-child gender match. The literature review concludes with the present study’s purpose, research questions, and hypotheses.

Elementary Schools as Contexts for Development

Schools are one of the most important contexts for children’s development (e.g., Pianta, 2006). One of the reasons schools are so influential is the amount of time children spend in them. By the time an individual graduates from high school, he/she will have spent more than 10,000 hours in school (Meece & Daniels, 2008). Another reason schools are so important is because schools play a major socializing role in children’s lives; in school settings, children learn and hone academic (e.g., reading and writing), social (e.g., making friends, working in groups), and behavioral (e.g., self-regulation, following rules) skills. Children acquire and develop these skills through
interactions with the school environment, including teachers, peers, and curricula. The main theoretical perspective that offers support for the study of child development in context and the importance of interactions with the environment is developmental systems theory.

*Developmental Systems Perspectives: Bronfenbrenner’s Bioecological Theory*

Developmental systems theory highlights the importance of studying individuals in the contexts in which development occurs and the important interactions that occur in these settings. Developmental systems theory’s roots are in general systems theory (GST), a multidisciplinary field of study that seeks to explain complex living systems. The core principle of GST is that systems must be understood as a whole and that the system’s parts must be studied in relation to one another and not in isolation (Whitchurch & Constantine, 1993). There are many important key components of systems theory. First, development is caused by relationships among systems (interrelated units that act together to promote the whole). Second, in order to understand one system, it is imperative to look at other systems, both proximal and distal, that influence and interact with that particular system. Third, one must understand the whole to understand the individual parts. Fourth, interactions between systems are reciprocal and bidirectional. Fifth, the system is motivated to change; change is derived from interactions between the individual and the environment (Pianta, Hamre, & Stuhlman, 2003).

One of the leading developmental systems theorists is Urie Bronfenbrenner (1979, 1994). Bronfenbrenner’s bioecological model examines the various nested, interdependent contexts in which human development occurs, ranging from the proximal
to the distal. At the center of the model is the individual. The innermost level, the microsystem, contains the individual’s immediate, face-to-face surroundings. In the microsystem, proximal processes occur; Bronfenbrenner described proximal processes as the driving force of human development. Proximal processes involve bidirectional interactions between the individual and the environment and involve increasingly more complex tasks over an extended period of time. The next level of Bronfenbrenner’s model is the mesosystem, which consists of connections between two or more microsystems. Third, the exosystem contains settings which do not directly involve the individual, but still influence her/his development. The fourth level is the macrosystem, containing the laws, cultural values, beliefs, and customs that influence the other systems. The fifth level is the chronosystem, which examines the influence of time on the individual and environment.

Bioecological theory stresses that the primary driving force of child development is enduring interactions between children and adults in immediate, face-to-face settings. Therefore, within the school context (one of the child’s primary settings), it is the interactions between the child and teacher that drive development (Pianta et al., 2003). In this sense, teacher-child relationships can be conceptualized as proximal processes. Developmental systems theory can therefore be used as a framework for stressing the dynamic nature and centrality of the teacher-child relationship in driving children’s development. The teacher-child relationship is thusly conceptualized as an active system that is influenced by characteristics of both the teacher and the child, the individuals’ mental representations of the relationship, and the context in which the relationship
occurs (Pianta et al., 2003).

Teacher characteristics include the teachers’ own attitudes about her/his role, self-efficacy, expectations, as well as personal characteristics, such as gender, education, experience, and ethnicity. Child characteristics include gender, ethnicity, age, and the child’s general feelings about school and teachers. Contextual characteristics include grade level, structural variables of the classroom, such as teacher-student ratio, and the general school climate (Pianta et al., 2003). Child gender, teacher gender, teacher and child mental representations, as well as grade level are all pertinent to this study. In sum, developmental systems theory lays the framework for studying teacher-child relationships in schools, and the critical role that teacher-child relationship quality plays in terms of children’s school adjustment.

*Early School Adjustment and Later Academic Success*

Elementary schools are also very influential contexts for development because children’s adjustment and academic success in early schooling is related to academic achievement throughout the rest of their lives. For example, researchers have shown that school adjustment and academic success in the early years of school is related to achievement test scores and cognitive competencies throughout middle and high school (Chen, Lee, & Stevenson, 1996; Luster & McAdoo, 1996; Stipek, 2001) and is associated with a lower high school dropout rate (Garnier, Stein, & Jacobs, 1997). Decreasing the dropout rate has positive implications for society as a whole; dropping out of high school is linked with a number of problems, such as crime, drug abuse, and unemployment (Webster-Stratton & Reid, 2003).
Much of the research on elementary school success has focused on the transition into elementary school (grades K-3). Due to the many crucial biological, developmental, social, and situational changes children experience during the transition to school, this period has often been conceptualized as a critical period for school success (Entwisle & Alexander, 1993). During this time period, children move from preoperational to concrete operational thought and acquire basic math and literacy skills on which all later skills are built. Children also transition into a new social world and spend more time with peers. Children also begin to be sorted and tracked based on academic abilities. This educational sorting stays with the child throughout her/his school career, helping to determine the amount and type of instruction the child receives, others’ expectations, and the child’s self-image. Another reason the early grades are so important is because after third grade, children’s academic trajectories remain relatively stable and their scholastic performance during third grade is a good indicator of performance throughout school (Entwisle & Alexander, 1993). Some studies have even linked performance in first grade with high school dropout (Stipek, 2001).

Less research has been conducted on the later elementary school grades (fourth to fifth/sixth grade). However, these grades deserve more attention because there is a need to study the linkages between early and later elementary school grades and the possible unique effects of experiences in these grades on children’s school outcomes. In addition, although the early school years may be critical for laying the foundations for children’s developmental pathways, experiences in the later elementary school years can maintain or alter children’s trajectories (Huston & Ripke, 2006). For example, it is
possible that a very supportive teacher-child relationship in the later grades can help
buffer against negative outcomes of at-risk children (Lynch & Cicchetti, 1992).
Therefore, this study will examine children’s teacher-child relationship quality and
outcomes from first to fifth grade.

Attachment Theory Perspective on the Teacher-Child Relationship

Caregiver-Child Attachment

Research on the teacher-child relationship originally was influenced by
attachment theory. Attachment theory focuses on the emotional bond between child and
caregiver. The ethological theory of attachment emphasizes that an infant’s emotional tie
to a caregiver is an evolved biological response to promote survival (Bowlby, 1982).
Infants are born with a set of signals and behaviors (e.g., crying, grasping, smiling) that
keep the adult caregiver near to ensure that the baby is protected and cared for. The
development of attachment is a four phase process. The first phase, preattachment, lasts
from birth until six weeks and consists of the infant’s built-in signals to bring the
caregiver near. In this phase, the infant is not yet attached to the caregiver. The second
phase, attachment in the making, lasts from six weeks to six to eight months. During this
phase, infants respond differently to familiar and strange people and develop a sense of
trust. The third phase, called clear-cut attachment, lasts from six to eight months to 18
months to two years; during this phase, attachment to the caregiver is evident and the
infant displays separation anxiety. The last phase, formation of a reciprocal relationship,
lasts from 18 months to two years and older. During this phase, the child and caregiver
learn to negotiate with each other.
Four main styles of attachment have been conceptualized reflecting differences in the quality of caregiver-child attachment: secure, insecure-avoidant, insecure-ambivalent, and insecure-disorganized (Ainsworth, Bell, & Stanton, 1971; Ainsworth, Blehar, Waters, & Wall, 1978). These styles are assessed by the Strange Situation test where babies are exposed to a series of stressful events (i.e., child is taken into an unfamiliar environment, stranger enters, mother leaves, mother returns). Based on infants’ behavior during the Strange Situation test, attachment is characterized by four qualities: proximity-seeking (wishing to be near the caregiver), secure base (the infant uses the attachment figure as a base from which to explore; if the infant is scared, he/she can refer back to the caregiver), anxiety at separation, and safe haven (viewing the caregiver as such) (Ainsworth et al., 1978).

Securely attached infants react negatively when their mothers leave the room but upon their return are quickly comforted and return to exploring their surroundings. Secure infants display proximity-seeking (wanting to be close to the caregiver), use the mother as a secure base, express anxiety at separation, and view the caregiver as a safe haven. Insecure-avoidant babies pay little attention to their mothers; insecure-disorganized babies are confused and disoriented. Insecure-ambivalent babies do not explore the environment, cry when their mothers leave, and are not comforted when they return. Insecure-ambivalent children are overly dependent and afraid to branch out on their own. Attachment theorists make a key distinction between closeness and over-dependency; it is positive for children to be close to caregivers, but negative to be too dependent. In time, dependency should decrease and children should feel safe to explore
their environments. It is important that caregivers act as secure bases from which children can explore these new environments (Ainsworth et al., 1978).

Another important key concept of attachment theory is the formation of internal working models for relationships. Through reoccurring interactions with adults, children form a set of expectations about their caregivers (e.g., whether the caregiver is consistent and reliable or inconsistent and unreliable) and about themselves in relationships (e.g., whether they are worthy of love or not). These expectations, known as the internal working model, become generalized into a theory about the self and others and are carried over into future relationships (Howes & Matheson, 1992). Over time, internal working models change and evolve as children encounter new relationships (Bretherton, 1992); however, they still act as a guide for all future relationships. Internal working models are, therefore, the mechanisms through which early attachment relationships affect later development (Shaw & Dallos, 2005).

Attachment researchers have found that the quality of children's attachment to the caregiver affects their later social, emotional, and cognitive development. Securely attached children perform better on academic tasks and are more socially competent than insecurely attached children (Howes & Matheson, 1992; Pianta & Steinberg, 1992). They are also more likely to form close relationships and get along better with parents, teachers, and peers (Elicker, Englund, & Sroufe, 1992; Fagot, 1997). Securely attached children have positive internal working models (i.e., positive expectations about both others and themselves in relationships); therefore they are more likely to cultivate positive relationships. They also feel more confident about exploring and being actively
engaged in new environments. On the other hand, insecurely attached (avoidant, ambivalent, and disorganized) children are more likely to display inhibition, hostility with peers, and receive more negative reactions from peers (Fagot, 1997). These children are more likely to distrust others or view themselves as unworthy of love; therefore, these negative internal working models affect their interactions and attitudes towards others.

Teacher-Child Attachment

Attachment theorists initially focused on the parent-child relationship, but researchers later posited that children can form multiple attachments with other caregivers, including teachers (Van IJzendoorn, Sagi, & Lambermon, 1992). In order for an attachment relationship to exist, the child must be strongly inclined to seek proximity to the caregiver, especially in times of distress (Bowlby, 1982). Van IJzendoorn et al. (1992) concluded that teacher-child relationships could be classified as attachment relationships based on these relationships meeting the following five criteria: 1) there is not an overrepresentation of avoidant classifications; 2) there is not an overrepresentation of unclassified cases; 3) teacher-child classifications are independent of child-parent classifications; 4) teachers’ sensitivity is related to classifications; and 5) teacher-child classifications predict later socioemotional functioning. Other researchers have concluded that teacher-child relationships can be conceptualized as attachment relationships because teachers engage in many basic caregiving tasks, including providing children with emotional and instrumental support (Hamilton & Howes, 1992).

Using the key constructs of attachment theory, Howes and Hamilton (1992) used the Waters and Deane (1985) Attachment Q-sort to assess teacher-child relationship
quality in preschool aged children. The Q-sort contained 75 items describing children’s behaviors towards their teachers. Two observers sorted the 75 item statements into nine piles from most to least descriptive based on their observations of the teacher and child. Based on the Q-sort ratings, Howes and Hamilton (1992) categorized teacher-child relationships into secure, insecure-avoidant, and insecure-ambivalent (the same categories Ainsworth et al. (1978) used to classify parent-child attachment relationships). They found that the attachment styles for teacher-child relationships were very similar to those of parent-child relationships, further lending evidence to the idea that children can form attachment relationships with their teachers. Children with secure teacher attachments were more likely to approach teachers directly and successfully maintain social interactions. Insecure-avoidant children were unaware of and unresponsive to their teachers. Insecure-ambivalent children were easily distressed and demanded attention from their teachers (Howes & Hamilton, 1992).

Teacher-Student Relationship Quality

Using attachment theory as a guide, Pianta and colleagues have explored the teacher-child relationship from the teachers’ perspectives. Their work became very influential in the teacher-child relationship field and yielded the Student-Teacher Relationship Scale (STRS), the most widely-used measure of teacher-child relationship quality in research examining the contributions of the teacher-child relationship to children’s early school adjustment (Hamre & Pianta, 2001).

Pianta (1988) developed the first version of the STRS to measure teachers’ perceptions of their relationships with their students. The 16-item scale measured
teachers’ own feelings towards their student, their perceptions of how the student felt about them, and their observations of the child’s behavior towards them. The scale was designed to assess security and insecurity (the major dimensions of parent-child attachment), and the items were meant to mirror behaviors used to classify parent-child attachment.

Pianta and Nimetz (1991) used this 16-item STRS scale to assess teacher-child relationship quality in kindergarten children and their teachers. A factor analysis of the measure yielded three factors: secure, improved, and dependent. The secure factor was characterized by trust, comfort, and feelings of safety; this factor is similar to a secure parent-child attachment relationship. The improved factor represented a positive improvement in the quality of the teacher-child relationship. The dependent factor was characterized by children constantly seeking out and needing reassurance from the teacher and becoming anxious at separation. This factor is similar to an insecure-ambivalent relationship in the attachment literature. The researchers then looked at correlations between the three factors and parents’ ratings of children’s competence, acting out, and internalizing. Secure teacher-child relationships were found to be correlated with child competency while dependent relationships were correlated with acting out behaviors.

Based on the previous 16-item scale (Pianta & Nimetz, 1991), attachment theory, and teacher-child relationship literature, Pianta and Steinberg (1992) created the Student-Teacher Relationship Scale (STRS), a 31-item scale to assess teachers’ representational models of their relationships with their students. Their scale was designed to assess
warmth/security, anger/dependence, and anxiety/insecurity in the teacher-child relationship. A factor analysis of kindergarten teachers’ responses on the STRS yielded five dimensions: conflicted/angry, warm/close, open, dependent, and troubled/closed. Conflicted/angry was characterized by a constant struggle between teacher and child; warm/close consisted of positive feelings between teacher and child; open was characterized by open communication and the sharing of personal information between teacher and child. Dependent reflected the child’s constant requests for help and anxiety at separation; troubled/closed was indicated by the child’s refusal to accept help from the teacher. Correlations were also explored; warm relationships correlated with competence, and conflict and closed communication were associated with acting out behaviors.

Later psychometric work on the STRS yielded a three-factor solution: closeness, conflict, and dependency (Pianta, Steinberg, & Rollins, 1995). In this study, teacher-child relationship quality was assessed at kindergarten, first, and second grade. Closeness was characterized by warmth, open communication, and the child using the teacher as a secure base from which to explore the environment. This characteristic is equivalent to what is labeled a secure attachment in parent-child literature. Dependency is characterized by possessiveness and clinginess that interferes with the child’s exploration and adjustment. Attachment theory makes an important distinction between closeness and dependency; while closeness is a positive quality, dependency is viewed as problematic because the child is not branching out and exploring his/her environment (Birch & Ladd, 1997). This classification is similar to the insecure-ambivalent
attachment. The third dimension is conflict, where the teacher-child relationship is filled with friction, anger, and a constant struggle between teacher and child. The dimension of conflict is consistent with an insecure attachment. This three-factor STRS or the shortened two factor version, which only assesses conflict and closeness, has become the most widely used measure of teacher-child relationship quality (Hamre & Pianta, 2001).

**Stability of the Teacher-Child Relationship over Time**

Another key concept of attachment theory that pertains to the teacher-child relationship quality is the internal working model. An internal working model is one’s generalized theory about and expectations for one’s self and others in relationships. Applying this concept to teacher-child relationships, children form expectations and ideas about their relationships with their teachers and carry these notions into future teacher relationships. Therefore, one would expect a certain degree of stability in the teacher-child relationship quality over time.

Using Pianta’s (1992) *Student-Teacher Relationship Scale*, various researchers examined the stability of teacher-child relationship quality over the early school grades. Pianta and Stuhlman (2004) looked at the stability of closeness and conflict in teacher-child relationships from preschool to first grade in a sample of children from the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD). Their results revealed stability in both conflict and closeness, with greater stability in conflict, over the first years of school. They suggested that conflict may be more stable because it is driven more by child characteristics (e.g., temperament) while closeness may be more influenced by goodness-of-fit between
teacher and child.

O’Connor & McCartney (2006), also using the NICHD SECCYD, examined the stability of the teacher-child relationship in preschool, kindergarten, and first grade. They found that the quality of the relationship in preschool predicted to relationship quality in kindergarten and first grade and that the teacher-child relationship in kindergarten predicted to relationship quality in first grade. Howes, Phillipsen, and Peisner-Feinberg (2000) also found moderate stability in closeness, conflict, and dependency from preschool to kindergarten. All these studies found evidence of stability across grade levels and offer support to the concept that children develop internal working models of the teacher-child relationship and apply these models to later relationships.

On the other hand, O’Connor and McCartney (2007), in a later study using data from the NICHD SEECYD, found significant changes in teacher-child relationship quality from kindergarten to third grade. Although they found an overall slight decrease in relationship quality, the majority of children actually experienced a slight increase in relationship quality over time. This overall decrease was due to a small group of children who experienced great decreases in relationship quality. However, no known study has explored relationship stability beyond the third grade. This study aims to fill this gap in the literature by examining the stability of teacher-child relationship quality through fifth grade.

Teacher-Child Relationship Quality and Children’s School Adjustment

Multiple studies have found links between teacher-child relationship quality
(closeness, conflict, and dependency as assessed by the STRS) and children’s academic, behavioral, and social outcomes both concurrently and prospectively over time. Closeness has been consistently linked with a number of positive outcomes. In the academic domain, there is evidence that teacher-child relationship closeness contributes to children’s language and academic skills (e.g., Birch & Ladd, 1997; Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002) and to school grades and academic achievement throughout elementary school (e.g., Baker, 2006; Hamre & Pianta, 2001). With regards to children’s social and behavioral outcomes, teacher-child relationships that are high in closeness are associated with reduced hostile aggression and antisocial behavior, increased prosocial behavior, school competence, and positive school attitudes (Birch & Ladd, 1997, 1998; Howes, 2000; Howes et al., 1994).

In contrast, relationships high in conflict and dependency have been associated with a number of negative outcomes. Although conflict and dependency are conceptualized as two different constructs, studies have found the two to be strongly positively correlated with one another (e.g., $r = .69, p < .001$; Birch & Ladd, 1997). In addition, both conflict and dependency display similar patterns of correlation with adjustment indicators. This may not be too surprising given that in Pianta and Steinberg’s (1992) earlier conceptualization of the STRS, they grouped anger and dependence into one construct on the basis that both conflict and dependency reflect the insecurity dimension in an attachment relationship. Studies have found both conflict and dependency to be associated with externalizing problems, hostile aggression with peers, decreased cooperation, self-directedness, prosocial behavior and school competence,
more negative attitudes toward school, and less positive school engagement (Birch & Ladd, 1997, 1998; Howes et al., 1994; Pianta et al., 1995).

Within grade level, Ewing and Taylor (2009) found associations between closeness and conflict and child outcomes within preschool. They found closeness was associated with higher school behavioral competence and conflict was associated with higher hostile-aggression and lower school competence. Birch and Ladd (1997) found kindergarten ratings of closeness, conflict, and dependency to be associated with children’s outcomes in kindergarten. Dependency was associated with less positive school engagement, poorer academic performance, and more negative school attitudes. Conflict was associated with less school liking, more school avoidance, and less self-directedness and cooperation. Closeness was associated with better academic performance, school liking, and self-directedness. Pianta and Stuhlman (2004) also found that ratings of closeness in first grade were associated with higher academic achievement and lower internalizing and externalizing behaviors. Conflict in first grade was associated with lower academic performance, more internalizing and externalizing, and lower social competence.

Longitudinal studies have also explored how early teacher-child relationship quality predicts children’s later academic and behavioral outcomes. Birch and Ladd (1998) found that conflict in kindergarten significantly predicted less prosocial behavior in first grade. Pianta et al. (1995) explored the teacher-child relationship from kindergarten through second grade. They found that positive teacher-child relationships in kindergarten predicted to greater school adjustment in second grade and that early
negative relationships were associated with less school adjustment and more behavior problems in second grade. In addition, Hamre and Pianta (2001) conducted a longitudinal study that followed children from first to eighth grade. They found that teacher-child relationships high in conflict and dependency in first grade were linked to behavioral and academic problems, including lower standardized test scores, lower grades, and poorer work habits in eighth grade.

Gender Development and Schooling

A major focus of this study is the effects of gender on teacher-child relationship quality. Past researchers have found that teachers report differences in relationship quality with boys and girls; teachers report more closeness with girls and more conflict with boys (Birch & Ladd, 1997; Hamre & Pianta, 2001). Past findings also suggest that boys and girls may experience different outcomes from the quality of their teacher relationships (Ewing & Taylor, 2009). This study extends on these past studies by exploring patterns of gender differences in teacher-child relationship quality at first, third, and fifth grade, testing possible mechanisms that could explain these gender differences, and exploring gender as a moderator of the effects of teacher-child relationship quality on children’s school outcomes across the elementary school grades.

This section begins with a discussion of schools as a gender socializing agent, followed by a review of gender schema theory. A discussion of research on gender and the teacher-child relationship follows. Next there is a discussion on gender and the teacher-child relationship, including information on possible explanatory mechanisms for gender differences and the role of gender as a moderator for the associations between
relationship quality and children’s school outcomes, concluded by a section on teacher
gender and teacher-child gender match.

*Gender Socialization in the Classroom*

Schools provide children with many messages about gendered norms through
differential treatment, reinforcement and expectations, and exposure to staffing patterns
and curricula (Ruble, Martin, & Berenbaum, 2006). One of the ways in which schools
socialize boys and girls differently is through teachers interacting differently with girls
and boys. Research has found that teachers engage in more positive and negative
interactions with boys than girls (Van Houtte, 2007). Teachers both praise and criticize
boys more, while girls are more likely to be singled out as model students. Teachers also
call on boys more and are less likely to reprimand a boy who interrupts class (Basow,
2004; Meece & Scantlebury, 2006). Although gender stereotyping in the classroom
appears to have lessened over the past twenty years, recent studies show that girls and
boys are still treated differently in the classroom and receive different messages about
appropriate classroom behaviors (Koch, 2003). For example, boys still receive more
positive and negative attention from teachers, while girls are typically praised for being
quiet and compliant (Altermatt, Jovanovic, & Perry, 1998; Duffy, Warren, & Walsh,
2001; Sadker & Sadker, 1994).

Teachers also reinforce stereotypical gender behavior. Fagot (1977) found that
preschool teachers praised boys for engaging in traditionally male activities (e.g.,
building with blocks, hammering) but criticized boys for doing stereotypically feminine
activities (e.g., dress-up); the reverse was true for girls. In another study, Fagot, Hagan,
Leinbach, and Kronsbert (1985) found that care providers were more responsive to boys’ assertive behaviors and to girls’ attempts to communicate with the caregiver. When these same children were observed one year later, the boys were more assertive towards other children, and the girls talked more with teachers.

Teachers also have different expectations for girls and boys’ performances and behavior in school. Teachers view boys as better at math and science than girls (Ruble et al., 2006). Teachers also have different attitudes about the acceptability of different behaviors in boys and girls; one study found that teachers viewed lying and cheating as more undesirable in girls and hyperactivity and quarrelsomeness as more undesirable in boys (Borg, 1998).

Schools also expose children to different gendered expectations through staffing patterns and school materials. In terms of staffing patterns, men are disproportionately in positions of power while women are more likely to engage in caregiving roles or teach lower grades (Meece & Scantlebury, 2006). In elementary and secondary schools, over 90% of teachers are female while only 40% of principals are women. When men are teachers, they are more likely to teach older grades and/or teach math and science (Ruble et al., 2006). By being exposed to these staffing patterns, boys and girls can learn about gendered expectations around authority and areas of expertise. Another way schools expose children to gendered expectations is through textbooks and other school materials. Although less gendered than in the past, textbooks still are more likely to portray boys as leaders and adventurous, while girls are more likely to be passive observers or cheerleaders (Meece & Scantlebury, 2006).
In summary, schools act as socializing agents by providing children with an array of gendered messages through differential treatment, reinforcement and expectations, and exposure to staffing patterns and curricula. Through the gendered messages they send, schools aid in children’s development of gender attitudes and schemas. The next section details gender schema theory which provides a useful theoretical framework for understanding children’s gender development and its role in teacher-child relationships and school adjustment.

*Gender Schema Theory*

With regards to this study, gender schema theory can be used to explain why girls cultivate closer relationships with their teachers (who are primarily female in the elementary school grades). Girls label their teachers as gender appropriate and identify more with them. On the other hand, boys label their female teachers as gender inappropriate and distance themselves from their teachers.

Gender schema theory emphasizes the combination of social learning and children’s own cognitions in gender development (Martin et al., 2002). As children become capable of forming cognitive representations, or schemas, about their world, they start to organize behaviors, objects, and activities as “feminine” and “masculine.” In this way, children play a very active role in their own gender development, both in processing information and in being motivated to conform to gender-appropriate behaviors. Children classify objects, activities, and behaviors as gender appropriate or inappropriate and they identify with what they have labeled as appropriate to their own gender (Bem, 1981; Martin et al., 2002). For example, if a boy categorizes dolls as for girls and he
understands he is a boy, he will not play with dolls and instead select toys he has labeled as suitable for boys. Gender schemas actively influence children’s behavior through two mediating processes: one, children are more likely to pay attention to and remember that which they associate with their own gender; and two, children are motivated to behave in accordance with their gender to help form an identity.

Gender schema researchers also explore why children categorize based on gender. Cognitive theorists argue that humans classify and organize information into meaningful and relevant categories. Bem (1981) argues that children categorize by gender because society insists on creating a gender dichotomy and making gender such a central facet of one’s identity. Therefore, since gender is such a salient classification in society, children use it to categorize information. Cognitive theorists also emphasize other principles of schema development. Once a category is formed, there is believed to be some shared or underlying similarity between all members of the group. This can lead individuals to believe that groups are more different than they actually are and that members within the same group are more similar than they actually are. Categorization also leads to inductive reasoning, where the individual can generalize knowledge about one item in the group to all group items. This allows the schema to grow even without direct experience (Martin et al., 2002).

Past studies have found that children are more likely to pay attention to toys, activities, and objects associated with their own gender and avoid those associated with the other gender (Martin, Eisenbud, & Rose, 1995; Martin, et al., 2002). Martin et al. (1995) examined children’s toy preferences. When children were shown unfamiliar toys
and told that this was a toy that either boys or girls particularly liked, the children rated their preferences along gender lines. For example, if a girl were shown an attractive toy but was told it was a “boys’ toy”, she liked the toy less. Children also made gender-based inferences about what toys other children would like; for example, a boy would assume boys would like the same toys as him and girls would like different toys. Studies have also found that children are more likely to remember the names of toys labeled appropriate for their own sex than toys labeled appropriate for the other sex (Martin & Dinella, 2001). Children also prefer games when they are labeled as gender appropriate (Martin et al., 2002).

With regards to teacher-child relationships, girls may be labeling their teachers as gender appropriate, while boys label their female teachers as gender inappropriate. Therefore, these preferences towards what children label as gender appropriate may lead girls to seek closer relationships with their teachers than boys.

**Gender and the Teacher-Child Relationship**

**Gender Differences in Teacher-Child Relationship Quality**

Gender differences have been found in a number of studies of teacher-child relationship quality as assessed by the STRS. Teachers have consistently reported more closeness with girls and more conflict with boys (Birch & Ladd, 1997, 1998; Hamre & Pianta, 2001). These gender differences have been found at kindergarten (Birch & Ladd, 1997; Hamre & Pianta, 2001; Silver, Measelle, Armstrong, & Essex, 2005) and first grade (Birch & Ladd, 1998). At the preschool level, Ewing and Taylor (2009) found that girls were rated higher in closeness, but they did not find significant gender differences
for conflict. Baker (2006) examined a group of children in kindergarten through fifth grade and found girls to be rated higher in closeness and boys higher in conflict, suggesting that these patterns may be found beyond the early grades. In one study, examining teacher-child relationship quality from preschool to kindergarten, teachers also reported more dependency in relationships with girls (Howes et al., 2000). However, in Birch and Ladd’s (1997) study, no gender differences were found with respect to dependency. This study extends on what is currently known by exploring gender differences in teacher-child relationship quality from first to fifth grade.

*Explanatory Mechanisms of Gender Differences*

Although gender differences in teacher-child relationship quality have been well-documented, few studies have directly explored possible mechanisms for why these differences exist. For the present study, mechanisms were explored from a gender socialization/gender schema theory perspective. Specifically, the focus of this study was on how differences in girls’ and boys’ relational styles might affect their teacher-child relationship quality through their own feelings towards their teachers and through their peer group influences. Specifically, three possible child relational mechanisms were explored: children’s affiliations with teachers, positive peer group orientations towards school, and negative peer group orientations towards school.

*Children’s affiliations with teacher.* One of the reasons for the gender discrepancies could be that girls are more affiliated with their teachers. Affiliation is conceptualized as the child’s positive feelings and value placed on the teacher-child relationship. This greater affiliation could be influenced by gender role socialization.
Girls are socialized by society to seek closer, more affectionate relationships with others, including their teachers, and they are reinforced for doing so. Boys, on the other hand, are socialized to be more independent and not seek close relationships with their teachers. When boys do have close relationships, they may not be as reinforced as girls.

Gender schema theory also speculates that children identify with what they label as appropriate to their own gender (Bem, 1981). If girls label teachers (who are primarily female in elementary school) as gender appropriate, they will gravitate more towards their teachers and identify more with them; boys will identify less with their female teachers. Therefore, girls will have greater affiliations with their teachers than boys, leading to girls having generally closer teacher-child relationships.

*Peer group orientations towards school.* Another possible explanation for gender differences in teacher-child relationship quality is that girls and boys have different peer group cultures regarding academic achievement and attitudes toward school. In elementary school, peer groups are highly divided by gender, and boys and girls exhibit differences in play, group size, behaviors, and attitudes (Thorne, 1986). Peer groups also act as powerful socializing agents in terms of children’s gender development. Peer groups strongly reinforce traditional gender roles and discourage any cross-gender behaviors; this pressure to conform may be even more prevalent in boy than girl peer groups (Leaper & Friedman, 2007). These gendered norms span from what toys are acceptable to play with to attitudes toward academic achievement.

Boy peer groups may not view getting along with the teacher or doing well in school as masculine and may label academic achievement as feminine (Renold, 2001;
Van Houtte, 2004). According to gender schema theory, boys will devalue what they label as feminine, and therefore may avoid school and associating with their female teachers. Van Houtte (2004) tested this hypothesis in a sample of high schoolers in Belgium. Students reported on their feelings towards studying and motivation for learning as well as the study-related beliefs and attitudes of their peer groups. Van Houtte found that boys’ peer group cultures were indeed less study oriented than girls, and this did negatively affect boys’ school performance, as assessed by their grades. Warrington, Younger, and Williams (2000) examined the effects of peer pressure on boys’ and girls’ school achievement in a sample of secondary students from England. Through focus groups and observations, they concluded that it was more acceptable for girls to work hard and achieve in the classroom. On the other hand, boys were more likely to face ostracism from their peers if they did well in school and were not thought of as being “cool” if they worked hard.

Grant (1985) examined how children’s experiences in the classroom vary systematically by gender and race and the influences of peer groups on these experiences in a sample of first-grade students in six classrooms in the United States. She found that not only were girls closer, more loyal, and more obedient to their teachers, but that peer groups influenced children’s teacher attitudes. She found that girl groups (particularly white girl groups) were more likely to advocate for loyalty and obedience to the teacher while boys were more likely to encourage disobedience and defiance. Therefore, it would appear that girls’ and boys’ peer groups play an important role in school and teacher attitudes. Since girls’ peer groups are socializing each other to cultivate closer
teacher-child relationships, girls may be more rewarded for doing so. On the other hand, boys may be discouraged from cultivating close teacher-child relationships, or when boys do experience conflict in these relationships, they may be less motivated to resolve this conflict.

*Gender as a Moderator between Relationship Quality and Child Outcomes*

Although links between the three dimensions of teacher-child relationship quality (closeness, conflict, and dependency as assessed by the STRS) and children’s school adjustment have been well-established, the question of whether patterns of association between relationship quality and children’s adjustment are comparable for boys and girls has received limited attention in the literature. Only a few studies have examined gender as a moderator of the association between teacher-child relationship quality and children’s school outcomes. Analyses have yielded two distinct findings. One is that positive teacher-child relationships are more advantageous for girls than boys (Baker, 2006; Ewing & Taylor, 2009; Hamre & Pianta, 2001) in terms of academic and behavioral outcomes. Ewing and Taylor (2009) found that teacher-child relationship closeness was associated with greater social competence for girls than boys in a sample of preschool children. Baker (2006) also found that closeness was associated with greater social skills, reading grades, and standardized reading scores for girls than boys in a sample of elementary school students. Hamre and Pianta (2001), in a longitudinal study of children from kindergarten to eighth grade, found that closeness in kindergarten predicted positive outcomes for girls in later elementary school grades, including more positive work habits in the lower elementary school grades (first through fourth grade).
and fewer disciplinary problems in the upper elementary school grades (fifth through sixth). On the other hand, boys’ kindergarten ratings of closeness were not associated with later school outcomes.

On the other hand, researchers have found conflict and dependency to be associated with more negative outcomes for boys than girls. In the same longitudinal study, Hamre and Pianta (2001) found that teacher reports of conflict and dependency in kindergarten were more strongly associated with negative outcomes throughout elementary school for boys than girls. Boys rated high in conflict and dependency in kindergarten had more problem behaviors and less positive work habit marks in upper elementary school and middle school, whereas girls’ early teacher conflict and dependency were not related to their later outcomes. Ewing and Taylor (2009) also found that conflict was associated with more hostile-aggressive behavior and less social competence for preschool boys than girls. The present study aims to extend on the current literature by exploring gender moderation within grade at first, third, and fifth grades as well as prospectively over time.

*The Role of Teacher Gender and Teacher-Child Gender Match*

Another unanswered question in the literature is: What are the effects of teacher gender and teacher-child gender match on teacher-child relationship quality? In terms of teacher-child relationship quality, girls have been consistently rated higher in closeness and lower in conflict than boys (e.g., Birch & Ladd, 1997, 1998; Hamre & Pianta, 2001). However, in these studies, all or nearly all of the teachers have been female. This is not surprising given that in elementary schools over 90% of teachers are female (Blakemore,
Berenbaum, & Liben, 2009), and this percentage is even higher in preschool and kindergarten classrooms. For example, in Saft and Pianta’s (2001) study on how teachers’ perceptions of student relationships vary by gender, only 1% of the teachers were males; therefore, the effects of teacher gender could not be examined. The lack of male teachers in elementary school makes it difficult to disentangle the effects of teacher gender, child gender, and teacher-child gender match on teacher-child relationship quality.

One possible hypothesis is that teachers would rate children of their own gender more positively than children of the other gender. Support for the notion that teacher-child similarity could lead to more positive relationships is found in literature that looks at teacher-child ethnic match. Saft and Pianta (2001) found that teacher-child ethnic match was associated with greater closeness and less conflict and dependency in the teacher-child relationship among preschool and kindergarten children and their teachers. Howes and Shivers (2006) also found that children tended to form more secure teacher-child attachments when the teacher was of the same ethnicity. Similar findings might be expected for teacher-child gender match. It is possible that children view teachers of the same gender as role models, while both children and teachers may identify more with each other and teachers may have more of an investment in children of their own gender.

On the other hand, relationship quality could be driven not by teacher-child gender match, but by child gender or teacher gender. Klein (2004) explored the influences of child and teacher gender on children’s academic grades and evaluations of behavior. His sample consisted of Israeli students in fifth through eleventh grades, half
with female teachers and half with male teachers. He found that, regardless of teacher gender, girls were given higher marks than boys. However, the same study found that teacher gender played a more significant role in contributing to children’s academic achievement than student gender with male teachers more likely to assign high marks to girls than boys (Klein, 2004).

Literature on parent-child relationships and gender development lends support to the idea that teacher gender may play a critical role. Past research suggests that fathers, more than mothers, reinforce and promote gender stereotypical behavior in their children (Bronstein, 1988). In addition, fathers have been found to treat boys and girls more differently than mothers (Siegal, 1987; Snow, Jacklin, & Maccoby, 1983). Therefore, it is possible that similar patterns could be found with regard to teacher gender. Male teachers may reinforce gender stereotypical behavior more than female teachers, thus rewarding girls more than boys for cultivating close, warm teacher relationships.

However, this remains a topic relatively unstudied in the literature. The present study aims to fill in this gap by testing the influences of teacher-child gender match, teacher gender, and child gender on teacher-child relationship quality.

**Research Questions and Hypotheses**

This study focuses primarily on gender differences in teacher-child relationship quality in terms of closeness and conflict (dependency was not included in the present analyses) across the elementary school grades. Specifically, the present study explores the stability of teacher-child closeness and conflict from first to fifth grade and whether there are gender differences in this stability. Second, this study examines whether there
are teacher-child relationship quality differences for boys and girls at first, third, and fifth grade. Next, specific child mechanisms that could account for gender differences in teacher-child relationship quality will be explored as possible mediators. This study also explores whether gender moderates the association between teacher-child relationship closeness and conflict and children’s academic and behavioral school outcomes concurrently and over time. Lastly, the final goal is to study the influences of teacher-child gender match, teacher gender, and child gender on relationship quality.

**Research Question #1:** Is teacher-child relationship quality (closeness and conflict) stable over the elementary grades (first, third, and fifth grade)? Are there gender differences in the stability of teacher-child relationship quality?

**Hypothesis #1:** Teacher-child closeness and conflict will show moderate stability across the elementary school grades (first, third, and fifth grade). In other words, children high in closeness will tend to remain high in closeness; children low in closeness will tend to remain low in closeness. There are no empirical or theoretical bases to believe that stability will differ for boys and girls.

**Rationale:** Relative stability in teacher-child relationship quality is supported by the attachment concept of an internal working model. Internal working models are the mechanisms through which early attachment relationships affect later development (Shaw & Dallos, 2005). Through reoccurring interactions with an adult caregiver, the child forms a set of expectations about that caregiver (e.g., whether the caregiver is consistent and reliable or inconsistent and unreliable). These expectations become generalized into a theory about the self and others and are carried over into future
relationships (Howes & Matheson, 1992). Each child therefore forms an internal working model of what to expect from their relationships with their teachers. Only moderate stability is expected because, with different experiences and due to developmental changes in the child and school context, the internal working model is subject to change (Bretherton, 1992).

**Research Question #2**: Are there gender differences in teacher-child relationship quality across grade level (at first, third, and fifth grade)?

**Hypothesis #2**: There will be gender differences in teacher-child relationship quality at first, third, and fifth grade. Girls will be rated higher in closeness and boys will be rated higher in conflict at all three time points.

**Rationale**: In regards to gender differences, past literature has found that teachers consistently report more closeness with girls and more conflict with boys in the early grades (Birch & Ladd, 1997, 1998; Hamre & Pianta, 2001). One of the goals of this study is to determine whether these patterns will be consistent over the elementary school grades.

**Research Question #3**: Do children’s teacher and peer orientations (teacher affiliation, positive and negative peer orientations toward school) mediate the link between child gender and teacher-child relationship quality?

**Hypothesis #3**: This study will specifically explore three child mechanisms that may influence gender differences: children’s affiliations with their teachers, positive peer group orientations towards school, and negative peer group orientations towards school. It is hypothesized that gender differences will be found in regards to all three
mechanisms: girls will have greater affiliations with their teachers; girls’ peer groups will
be more positively oriented towards school; and boys’ peer groups will be more
negatively oriented towards school. These three mechanisms will in turn influence
teacher-child relationship quality; girls’ greater teacher affiliation and more positive peer
group orientations toward school will lead to girls’ having closer, less conflictual teacher-
child relationship. On the other hand, boys’ more negative peer group orientations
towards school and lower teacher affiliations will influence them to have more conflict
and less closeness in their teacher-child relationships (see Figure 5).

Rationale: First, it is hypothesized that boys and girls will have different
affiliations with their teachers, with girls having more positive affiliations. Girls will
seek closer relationships with their teachers, while boys will remain more distant. This
hypothesis is supported by gender role socialization theory. Girls are being socialized by
society and one another to seek closer, more affectionate relationships with others,
including their teachers, and they are receiving reinforcement for doing so. Boys, on the
other hand, are being socialized to be more independent and not seek close relationships
with their teachers, and when they do have close relationships, they may not be as
reinforced as girls. Gender schema theory also speculates that children identify with
what they label as gender appropriate to their own gender (Bem, 1981). If girls label
teachers (who are primarily female in elementary school) as gender appropriate, they will
gravitate more towards their teachers and identify more with them; boys will identify less
with their female teachers. Gender socialization could help to explain why girls are
consistently being rated higher by their teachers in closeness.
Second, gender differences could be influenced by different peer group orientations towards school. Past research suggests that boy peer groups are less school and study oriented than girl peer groups (Van Houtte, 2004). Since peer groups in middle childhood play such a strong socializing role, boy peer groups could encourage negative school and teacher attitudes. On the other hand, girl peer groups are more likely to reinforce close teacher relationships (Grant, 1985). Therefore, girls might not only have closer teacher relationships, but also could be receiving positive peer reinforcement for doing so, thus encouraging them to maintain positive teacher relationships.

**Research Question #4a:** Does gender moderate the association between teacher-child relationship quality (closeness and conflict) and children’s school outcomes (externalizing behavior, social competence, and academic achievement) within grade level at first, third, and fifth grades?

**Research Question #4b:** Does gender moderate the association between teacher-child relationship quality (closeness and conflict) and children’s school outcomes (externalizing behavior, social competence, and academic achievement) over time (from first to fifth grade)?

**Hypothesis #4:** Since little work has been done on this topic, no specific hypotheses were made. However, past studies (Baker, 2006; Ewing & Taylor, 2009) that have explored gender moderation have found that positive teacher-child relationships are more advantageous for girls in terms of academic and behavioral outcomes. On the other hand, conflict has been associated with more negative outcomes for boys, including more hostile-aggressive behavior and lower social competence (Ewing & Taylor, 2009).
However, these studies primarily focused on the early grades and within grade level; therefore, this study will explore whether these gender differences are evident across the elementary school grades within grade (Figure 8) and over time (see Figure 20).

**Rationale:** In regards to gender moderation, two different perspectives yield different hypotheses. Based on gender socialization work, one might expect children to benefit more when the quality of the teacher-child relationship is consistent with gender-based relational styles and traditional gender role expectations. Girls might be more strongly affected than boys by a close relationship with the classroom teacher due to girls' stronger orientations towards intimate social relationships (Maccoby, 1998). This greater emotional connectedness with the teacher might put girls in a better position to benefit from the teachers’ closeness with respect to classroom adjustment. For boys, teacher-child conflict might be expected to have a less negative impact to the extent that interpersonal conflict is associated with male-valued qualities of aggression and dominance and is more consistent with boys’ social relational styles.

**Research Question #5:** What is the role of teacher gender and teacher-child gender match in predicting teacher-child relationship quality?

**Hypothesis #5:** The effects of teacher gender and teacher-child gender match on teacher-child relationship closeness and conflict will be tested. Since this is a relatively unstudied subject and since competing evidence exists, specific hypotheses were not made.

**Rationale:** Several different mechanisms could be at work. One possible hypothesis stresses the importance of teacher-child gender match. Akin to work done on
teacher-child ethnic match, teachers might rate children of their own gender more positively than children of the other gender. From this perspective, it is possible that children and teachers may identify more with each other, and teachers may have more of an investment in children of their own gender. On the other hand, past research and work done on the parent-child relationship and gender differences suggests the importance of teacher gender. Men, more than women, are influenced by child gender and are likely to enforce gender stereotypical behavior; therefore, male teachers might reward girls more than boys for cultivating close teacher relationships. The effects of teacher-child gender match, teacher gender, and child gender will be explored in the present study.
CHAPTER 3: METHODS

Participants

The data for this study were drawn from the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD). The NICHD SECCYD is a comprehensive longitudinal study started in 1991 to answer the many questions about the relationship between child care experiences and children's developmental outcomes. The study followed children from birth through adolescence; data were collected in three phases: phases I (birth through 36 months), II (54 months through first grade) and III (second through sixth grade). Participants for the NICHD SECCYD were selected from 24 hospitals near 10 data collection sites across the United States: Arkansas, Southern California, Kansas, Massachusetts, Pennsylvania, Virginia, North Carolina, Washington, and Wisconsin.

In-hospital screenings were conducted on 8,986 mother-newborn pairs. Initial participants were selected in accordance with a conditionally random sampling plan, which was designed to ensure that the recruited families included both mothers who planned to go back to work and those who intended to stay home. The sample was also selected to reflect demographic diversity in terms of socioeconomic status, education, and ethnicity. The screening process involved reviewing hospital records as well as interviewing mothers. Mother-newborn pairs were excluded from the study for a number of reasons, including if the mother was under 18 or didn’t speak English, if the mother or infant was ill, or if the mother declined participation (NICHD Early Child Care Research Network, 2005). All potential participants who met the eligibility criteria received phone
calls two weeks later. A total of 1,364 families were officially enrolled in the study after completing all the interviews through the first month of the child’s life.

The sample for the current study consisted of 682 children (333 boys and 349 girls) assessed in first, third, and fifth grade. Only children who had teacher-child relationship quality data at each grade were included in the present study. In addition, if children shared the same teacher at any time point, one child was randomly selected to remain in the sample. There were 1,006 children with teacher-child relationship data at first grade; 890 children had teacher-child relationship data at first and third grade. This number was reduced to 784 children who had data at first, third, and fifth grade. The sample was further reduced to 682 after children who shared the same teacher were eliminated (except for one child who was randomly selected to stay). The majority of the children (84.5%) were identified as White; 10.1% were Black or African American; 4.4% were other, 0.9% were Asian or Pacific Islander; and 0.1% were identified as American Indian/Eskimo/Aleut. In a separate question, asking parents to identify whether their child was of Hispanic origin, 5.9% indicated yes. In regards to maternal education, 7.2% of mothers did not graduate high school; 18.8% had a high school diploma or GED; 33.1% had some college; 25.2% had a Bachelor’s degree; and 15.7% had a degree higher than a Bachelor’s (Masters, law, or Doctorate). The mean income to needs ratio at 6 months was 3.9 and the median was 3.2 (with less than 1 indicating poverty and between 1 and 2 indicating near poverty).

Chi-square analyses were conducted to test whether there were significant differences between the participants with teacher-child relationship data at all three time
points and participants without teacher-child relationship data at all three time points. Significant differences were found with regards to child gender and child ethnicity. Girls were more likely than boys to have teacher-child relationship data at all three time points ($\chi^2 = 4.8, p < .05$); 81% of girls had teacher-child relationship data at all three time points as compared to 75% of boys. In addition, children with teacher-child relationship quality data at all three points times were more likely to be White versus non-White; 80% of White children versus 69% of non-White children had data at all three time points ($\chi^2 = 14.9, p < .01$). The two samples did not differ significantly with regards to maternal education ($\chi^2 = 16.3, p = .09$), income-to-needs ratios ($\chi^2 = 453.0, p = .10$) or early cognitive abilities ($\chi^2 = 75.1, p = .26$).

Procedures

Observations, telephone interviews, and paper questionnaires were used to gather data throughout the three phases of the NICHD SECCYD. Phone calls were made to the families every three months until the child was 36 months old, every 4 months until the child started kindergarten, and every 6 months while the child was in school, with a phone call in fall and one in spring (NICHD Early Child Care Research Network, 2005).

Once the child started school, data were also collected from teachers. At each grade level, teachers received a packet of questionnaires to complete about the target child. Regarding variables of interest for the present study, these packets included the Student-Teacher Relationship Scale, the Social Skills Rating System, and the Teacher Report Form. Teachers completed the questionnaires independently. Data for the present study were also collected from the study children. The measures of interest for
this study, children’s reports on affiliation with teachers and peer group school orientations, were verbally administered by research assistants during fifth grade lab visits.

Measures

All measures for this study were from the NICHD SECCYD Phases I, II and III. The present study focused on three time points: first, third, and fifth grade. This study only focused on these three time points because the outcome measure for academic achievement, the Woodcock Johnson, was only assessed at these time points. Furthermore, these grades represent important developmental points in a child’s schooling. First grade is part of early elementary school; third grade represents a critical transitional year; and fifth grade is part of later elementary school. The Student-Teacher Relationship Scale, measuring teacher-child relationship quality, was assessed at first, third, and fifth grade. Children’s school outcomes, as measured by the Woodcock Johnson subscale of Achievement, the Social Skills Rating System, and the Teacher Report Form, were assessed at first, third, and fifth grade. For exploring the mechanisms that account for gender differences, children’s reports on affiliation with teachers and peer group school orientation measures were only available at fifth grade.

Teacher-Child Relationship Quality

A short form of the Student-Teacher Relationship Scale (STRS; Pianta, 1992) was employed to assess teachers’ perceptions of their relationships with each student. The STRS contains 15 items designed to assess the teacher-student relationship on two qualities: closeness on an 8-item subscale (e.g., “I share an affectionate, warm
relationship with this child”) and conflict on a 7-item subscale (e.g., “This child and I always seem to be struggling with each other”). Dependency was not assessed in the short form of the STRS. Responses were rated on a 5-point Likert scale, from 1= definitely does not apply to 5= definitely applies. The scores for the subscales were imputed by proportional weighting. Scores on the closeness subscale fell along a possible range of 8 to 40, with a higher score indicating more closeness between teacher and child. Likewise, conflict scores were on a possible range of 7 to 35, with higher scores indicating more conflict. Internal reliability, assessed by Cronbach’s alpha, was good at .90 for conflict and .84 for closeness.

Mechanisms for Gender Differences

Three possible child relationship mechanisms were tested as potential mediators for the association between child gender and teacher-child relationship quality. These three mechanisms were: children’s affiliations with teachers, children’s positive peer group orientations towards school, and children’s negative peer group orientations towards school.

Children’s affiliations with teachers. In fifth grade, children completed the Relatedness Questionnaire and Security Questionnaire (Wellborn & Connell, 1987). For purposes of the present study, two subscales were used to assess teacher affiliation: Security in Relationship comprised of eight items (e.g., “It’s easy to trust my teacher”), and Emotional Quality comprised of ten items (e.g., “When I’m with this teacher, I feel important”). Students rated the questionnaire items on a four-point Likert scale (1= not at all true to 4= very true). Scores for the two scales were imputed by proportional
weighting. Scores ranged from 1 to 4, with a higher score indicating higher degrees of security and emotional quality in the teacher-child relationship. Cronbach’s alpha for the two scales was .73 and .87, respectively.

**Peer group orientations towards school.** Children responded to the *Kids I Know* (adapted from Olivieri & Reiss, 1987) scale, answering seven questions about their group of friends on two subscales, positive social network (e.g., “These kids work hard”) and negative social network (e.g., “These kids get into a lot of trouble”). Responses were on a 5-point Likert scale, from 1=definitely never to 5=definitely always. The possible scores on the positive social network scale ranged between 4 and 20, with higher scores indicating more positive orientations towards school. Cronbach’s alpha was acceptable at .71. The negative social network scale ranged between 3 and 15, with higher scores indicating a more negative orientation towards school. Cronbach’s alpha was .77. Both subscales were included in the present study.

**Children’s School Outcomes**

**Externalizing behavior problems.** Children’s externalizing behavior problems were assessed using the *Teacher Report Form* (TRF; Achenbach, 1991). The TRF is modeled on the Child Behavior Checklist (CBCL) and is designed to obtain teachers’ reports of their students functioning and problem behaviors. One hundred eighteen items were rated on a three-point scale from 0 (not true of the child) to 2 (very true of the child) on two broad scales for internalizing and externalizing. Scores higher than 50 designate a raw score greater than the mean in the norming population. For purposes of this study, only the externalizing subscale was used. Sample items for the externalizing subscale
include “Argues a lot”, “Disobedient at school”, and “Gets in many fights.” The TRF/CBCL is the most widely used screening instrument for behavior problems in children and has excellent past reliability and validity.

School social competence. Teachers completed the Social Skills Rating Scale (SSRS; Gresham & Elliott, 1990) to rate children on cooperation, assertion, responsibility, and self-control. Teachers rated students on 30 items on a three-point scale from 0 (never) to 2 (very often). Sample items include “Uses free time acceptably,” “Volunteers to help peers,” and “controls temper with peers.” Validity and reliability have been well established in past studies (e.g., Gresham & Elliott, 1990). Scoring of this scale was done by the ASSISTTM Software. This scoring software checked for missing data and computed raw scores for all subscales. In addition, the software computed a standardized score, indicating the extent to which a child’s raw score exceeds or falls below the mean score of similar peers with whom the instrument was standardized. Scores were standardized with a mean of 100 and a standard deviation of 15. For purposes of this study, the total scale of social skills was used to represent children’s overall school social competence.

Academic performance. Children’s achievement was assessed using the Achievement subscale of the Woodcock Johnson Psycho-Educational Battery-Revised (WJR; Woodcock & Johnson, 1989). There are five subscales to the Achievement scale: Applied Problems, Word Attack, Letter-Word Identification, Passage Comprehension, and Calculation. The Applied Problems subscale assesses children’s skill in analyzing and solving practical problems in mathematics; to successfully solve problems, the child
must recognize the procedure that needs to be done and then perform relatively simple calculations. Word Attack measures the child’s ability to apply phonic and structural analysis skills to the pronunciation of unfamiliar printed words; the child reads aloud letter combinations that are linguistically logical in English but that do not make actual words in the English language. Letter-Word Identification tests the child’s ability to match pictographic representations of words with actual pictures of the objects, as well as the child’s reading identification skills in identifying isolated letters and words. In Passage Comprehension, children are presented with multiple choice questions in which they must point to the picture represented by a phrase; children are also required to read short passages and identify missing key words. Calculation measures children’s abilities to perform mathematical calculations. Scores were standardized with a mean of 100 and a standard deviation of 15. The average of the subscales was computed to represent a total Achievement score. For the entire Achievement scale, Cronbach’s alpha was high at .91. In addition, the WJR has excellent validity and reliability over time (McGrew & Knopik, 1993).
CHAPTER 4: RESULTS

Overview of Data Analysis

The goal of this study was to examine gender differences in teacher-child relationship quality across the elementary school grades. First, using structural equation modeling in AMOS, the stability of the teacher-child relationship quality and gender differences in this stability were examined. Next, repeated measures ANOVAs were used to determine whether boys and girls differed in teacher-child relationship closeness and conflict across time at first, third, and fifth grade. Then, a path model in AMOS was tested to examine child mechanisms that might mediate the association between child gender and teacher-child relationship quality at fifth grade. Next, moderation analyses in structural equation modeling were conducted to test if the associations between closeness and conflict and child outcomes were significantly different for boys and girls concurrently at first, third, and fifth grade and over time. Finally, a two-way ANOVA was used to examine the effects of teacher-child gender match, teacher gender, and child gender on relationship quality at fifth grade.

Structural equation modeling. Several of the analyses for this study were done using structural equation modeling in AMOS. Structural Equation Modeling has several important advantages over other methods, including being able to include multiple dependent variables, being able to better explore complex pathways (e.g., looking at multiple mediators), and most importantly, correcting for measurement error. For all the models run in AMOS, the scale was set by fixing the latent variances to 1.0.

Model fit was assessed and reported using chi-square statistics as well as three
practical fit indices: the NFI, CFI, and RMSEA. Chi-square is a statistical fit index that indicates the plausibility of the implied and observed variance/covariance matrices being the same. The goal is to fail to reject the null hypothesis, meaning that the implied and observed matrices are the same. Although chi-square statistics are useful, they are overly influenced by sample size. If a model has too much power (or too large a sample size), it is likely the null hypothesis will be rejected. This is particularly salient to note given the large sample size (over 600 participants) in the present study. Given the limitations of chi-square statistics, it is important to evaluate practical fit indices as well.

Practical fit indices represent the amount of model misfit. There are two types of practical fit indices: relative fit indices, which report the fit of a model relative to a null model and absolute fit indices, which represent the fit of a model without reference to a null model. Relative fit indices report how well a proposed model fits the data relative to a null model (the worst possible model of the data) on a scale of zero to one, with one being the best fitting model. Generally, 0.9-1.0 is considered good model fit. There are a number of relative fit indices, but the two that are reported in this study are the Normed Fit Index (NFI) and the Comparative Fit Index (CFI). Absolute fit indices measure the amount of model misfit per degree of freedom without comparison to a null model. The most commonly used is the Root Mean Square Error of Approximation (RMSEA). Lower RMSEAs indicate less misfit, with greater than .10 indicating poor fit, .08-.10 indicating mediocre fit, .05-.08 acceptable fit, .01-.05 close fit, and .00 exact fit.

**Missing data.** To handle missing data, the default on AMOS is to compute maximum likelihood estimates for missing values. Maximum likelihood estimates are
the parameter values most likely to fit the model, thus leading to the most efficient and consistent estimates. One of the assumptions of maximum likelihood estimates is that the missing values are missing at random. Since only children with teacher-child relationship data at all three time points were included in the present study, the only missing data measures were in regards to relational mechanisms and child outcomes. There was very little missing data. For the relational mechanisms (teacher affiliations and positive and negative peer orientations towards school), 45 children had some missing data (93% had no missing data). T-tests and chi-square analyses were conducted to test whether the children with missing data differed significantly from those without missing data on gender, closeness, and conflict at fifth grade. No significant differences were found for gender ($\chi^2=.37, p=.54$), closeness ($t(680) = -1.6, p=.10$) or conflict ($t(680) = .72, p=.50$).

In regards to missing outcome data, 93 children had missing data (86% had complete data). Once again, analyses revealed no significant differences for gender ($\chi^2=.13, p=.72$), closeness at first grade ($t(680) = .03, p=.98$), third grade ($t(680) = .83 p=.41$), or fifth grade ($t(680) = -1.4, p=.17$), or conflict at first grade ($t(680) = .67, p=.51$), third grade ($t(680) = .86, p=.39$), or fifth grade ($t(680) = .59, p=.56$). The fact that the groups did not differ significantly on any of the variables of interest supports the notion that the data were missing at random. Since it appears the data were missing at random, maximum likelihood estimation was an acceptable method of handling missing data.

**Research Question #1: Stability of Teacher-Child Relationship Quality across Time**

It was hypothesized that teacher-child closeness and conflict would show
moderate stability across first, third, and fifth grade. Stability was tested using path diagrams in AMOS (see Figure 1) with first grade closeness predicting third and fifth grade closeness and third grade closeness predicting fifth grade closeness and first grade conflict predicting third and fifth grade conflict and third grade conflict predicting fifth grade conflict. Initially, boys and girls were treated as two different groups. Model fit was good at $\chi^2 (8, n=682) = 5.7, p=.68$. The CFI was 1.0; NFI was .99. The RMSEA was .00 with a confidence interval of 0.000-.0.035, signifying excellent fit.

To test whether the model differed significantly for boys and girls, the paths between closeness and conflict over time were constrained to be equal for both genders. The resulting model (see Figure 2) had good model fit at $\chi^2 (14, n=682) = 8.0, p=.89$. The CFI was 1.0; NFI was .99. The RMSEA was .00 with a confidence interval of 0.000-.0.017. A chi-square change test was then conducted to test whether the constrained model was significantly different from the unconstrained model, $\Delta \chi^2 (6) = 2.26, ns$. Since the models were not significantly different, boys and girls do not differ with respect to the paths between closeness and conflict over time. In the constrained model, closeness in first grade predicted closeness in third grade ($\beta=.29, p<.001$) and fifth grade ($\beta=.18, p<.001$); closeness in third grade predicted closeness in fifth grade ($\beta=.23, p<.05$). Likewise, conflict in first grade predicted conflict in third grade ($\beta=.45, p<.001$) and fifth grade ($\beta=.26, p<.001$) and conflict in third grade predicted conflict in fifth grade ($\beta=.33, p<.01$).
Research Question #2: Gender Differences in Teacher-Child Relationship Quality over Time

It was hypothesized that gender differences would be found in teacher-child relationship quality at first, third, and fifth grade, with girls being consistently rated higher in closeness and boys higher in conflict. These differences were tested using repeated measures ANOVA to assess the influence of child gender, grade level, and the interaction between child gender and grade level on teacher-child relationship closeness and conflict.

Preliminary analyses. Means and standard deviations were computed separately for boys and girls, and t-tests were conducted to compare means on teacher-child relationship closeness and conflict at first, third, and fifth grade (see Table 1). T-test results revealed significant gender differences with respect to teacher-child relationship quality; girls were rated significantly higher in closeness at first \( t(680) = -3.9, p<.001 \), third \( t(680) = -5.4, p<.001 \), and fifth grade \( t(680) = -3.9, p<.001 \). On the other hand, boys were rated significantly higher in conflict at all three time points \( t(680) = 5.0, p<.001 \); \( t(680) = 5.1, p<.001 \); \( t(680) = 4.9, p<.001 \) for first, third, and fifth grade, respectively).

Repeated measures ANOVAs. Two 2x3 repeated measures ANOVAs were run on child gender (male, female) and grade level (first, third, and fifth) with closeness (see Figure 3) and conflict (see Figure 4) as the dependent variables. First, means and standard deviations were computed for closeness (see Table 2) and conflict (see Table 3) by child gender and grade level. Next, before analyses were done, Mauchly’s test was
conducted to ascertain whether the assumption of sphericity (the assumption that the
variances of differences between conditions are equal) was met. For closeness, the two
main effects and the interaction term did not violate the assumption of sphericity,
indicating that the $F$-ratios are valid and that the variances are not significantly different.
Child gender had a significant main effect on closeness, $F(1,332) = 39.78, p < .001$. The
effect size (in terms of eta-squared) was .11. Female students ($M = 33.9, SD = 3.5$) were
rated significantly higher in closeness than male students ($M = 32.1, SD = 3.8$) $p < .001$.
There was also a significant main effect for grade level, $F(2,664) = 38.66, p < .001$. The
effect size (in terms of eta-squared) was .19. Closeness in first grade ($M = 34.01, SD = 3.4$) was significantly higher than third grade ($M = 33.05, SD = 3.6$), $p < .001$ and fifth
grade ($M = 31.86, SD = 3.7$), $p < .001$. Closeness in third grade was also significantly
higher than fifth grade, $p < .001$. The interaction between gender and grade level was not
significant, $F(2,664) = 1.05, p = .35$.

In regards to conflict, Mauchly’s test indicated that the assumption of sphericity
had not been violated for the interaction term or the main effect of gender, but it had been
violated for the main effect of grade level, $\chi^2(2) = 6.2, p < .05$. Therefore, degrees of
freedom were corrected using Huynh-Feldt estimates of sphericity. The results showed
that there was no significant main effect of grade level on conflict, $F(2,664) = .54, p$
$= .06$. There was a main effect for child gender, $F(1,332) = 43.0 p < .001$. Boys ($M = 12.2, SD = 4.7$) were rated significantly higher in conflict than girls ($M = 10.1, SD = 3.7$).
Effect size (in terms of eta squared) was .12. In addition, the interaction between child
gender and grade level was not significant, $F(2,664) = .57, p = .57$. 
Research Question #3: Child Mechanisms that Account for Gender Differences

It was hypothesized that children’s affiliations with teachers, positive peer orientations towards school, and negative peer orientations towards school would mediate the path between gender and teacher-child relationship quality. It was predicted that girls would have greater teacher affiliation, more positive peer orientations towards school, and less negative peer orientations towards school; these differences would in turn predict greater closeness and less conflict for girls. This mediation model was tested using structural equation modeling in AMOS (see Figure 5).

Preliminary analyses. Before the meditational models were tested, t-tests were conducted on the three child mechanisms to test for gender differences. Means, standard deviations, and t-test results are reported in Table 1. Girls reported significantly more teacher affiliation, as assessed by the two subscales of security (t(638) = -3.3, p < .001) and emotional quality (t(638) = -4.0, p < .001). Girls also reported more positive peer orientations towards school (t(657) = -4.0, p < .001). On the other hand, boys reported greater negative peer orientations towards school (t(656) = 5.8, p < .001).

Bivariate correlations were also conducted among child gender, teacher-child relationship closeness and conflict, the two subscales of teacher affiliation (security in relationship and emotional quality), positive peer orientations towards school, and negative peer orientations towards school (see Table 4). Gender was dummy coded as zero for boys and one for girls. Child gender was correlated with all the other measures in the hypothesized directions. Gender (female) was associated with more closeness (r(682) = .15, p < .001), lower conflict (r(682) = -.18, p < .001), greater relationship
security ($r(640) = .12, p < .001$), greater emotional quality ($r(640) = .13, p < .001$), more positive peer orientations towards school ($r(659) = .15, p < .001$), and less negative peer orientations towards school ($r(658) = -.22, p < .001$). Closeness was correlated with more felt security ($r(640) = .14, p < .001$) and greater emotional quality ($r(640) = .12, p < .001$), but not with either of the peer group orientations. Conflict was correlated with less security ($r(640) = -.27, p < .001$), lower emotional quality ($r(640) = -.23, p < .001$), less positive peer orientations ($r(659) = -.20, p < .001$), and greater negative peer orientations ($r(659) = .23, p < .001$).

**Meditational models.** Three nested path models were tested: an indirect-effect model in which the direct paths from gender to closeness and conflict were constrained to be zero, a model where both the indirect and direct pathways were freely estimated, and a direct-effect model in which the mediation pathways through teacher affiliations and peer group orientations were fixed at zero. In the model where the direct paths were constrained to be zero (see Figure 6), model fit was $\chi^2(6, n=682) = 33.26, p < .001$. The CFI was .98 and the NFI was .97. The RMSEA was .082 with a confidence interval of .056-.110. In the model where all parameters were freely estimated (see Figure 7), model fit was at $\chi^2(4, n=682) = 14.53, p < .01$. Both relative and absolute fit indices indicated good model fit. The CFI and NFI were both .99. The RMSEA was .062 with a confidence interval of .030-.098. In the model where the indirect paths were constrained to be zero, model fit was at $\chi^2(13, n=682) = 99.82, p < .001$. The CFI was at .92 and the NFI was .91. The RMSEA indicated poor fit at .099 with a confidence interval of .081-.118.
The freely estimated and indirect path models had significantly better model fit than the direct path model ($\Delta \chi^2 (9) = 85.29, p < .001$ and $\Delta \chi^2 (7) = 66.56, p < .001$ respectively). In addition, the freely estimated model had better fit than the indirect path model ($\Delta \chi^2 (2) = 18.73, p < .001$).

According to Baron and Kenny (1986), for mediation to be present, four conditions must be met. First, one must establish a significant relationship between the independent and dependent variables, in this case, between child gender and teacher-child relationship closeness and conflict. In the freely estimated model, gender significantly predicted closeness ($\beta = .14, p < .001$) and conflict ($\beta = -.13, p < .001$). Second, one must show that the independent variable (gender) is associated with the mediator (affiliations, positive peer orientations, and negative peer orientations); in this case, there is a significant relationship between gender and all three possible mediators. Gender predicted all three mechanisms: teacher affiliation ($\beta = .14, p < .001$), positive peer orientations toward school ($\beta = .15, p < .001$), and negative peer orientations toward school ($\beta = -.22, p < .001$). Third, one must establish a significant relationship between the mediator and the dependent variable; here, only teacher affiliation significantly predicted closeness and conflict. Of the three mechanisms, teacher affiliation significantly predicted closeness ($\beta = .16, p < .01$) and conflict ($\beta = -.19, p < .001$). Negative peer orientations towards school predicted conflict ($\beta = .11, p < .05$); however, this pathway was no longer significant when controlling for the direct link between gender and conflict ($\beta = .09, p = .07$). The paths between teacher affiliation and closeness ($\beta = .15, p < .01$) and conflict ($\beta = -.18, p < .001$) remained significant when controlling for the direct paths.
Therefore, only teacher affiliation met the first three conditions to be tested as a mediator. In order for complete mediation to be found, the fourth condition is for the path from gender to conflict/closeness to be zero when the mediator is included in the analyses. This condition was not met in the present analysis. Since the paths from gender to closeness/conflict and the path from teacher affiliation to conflict/closeness were both still significant when included in the analysis together and did not differ statistically from one another, partial mediation was evident.

*Research Question #4: Gender Moderation*

This question examined whether gender would moderate the links between teacher-child relationship quality and child outcomes concurrently and over time. Moderation was tested using structural equation modeling in AMOS for the concurrent analyses (see Figure 8) and over time analyses (see Figure 17).

*Research question #4a: Preliminary analyses.* Before moderation was tested, bivariate correlations among closeness, conflict, academic achievement, social competence, and externalizing behavior at all three time points were computed separately for boys and girls (see Table 5). In general, for both genders, similar patterns were found with closeness being positively correlated with positive school outcomes (i.e., higher academic achievement and greater social competence) and conflict being positively correlated with more negative outcomes (i.e., greater externalizing behaviors).

For boys and girls, closeness in first grade was significantly correlated with higher academic achievement and greater social competence at all three time points. For both boys and girls, closeness in third grade was significantly correlated with more social
competence and less externalizing behaviors at third and fifth grade. In addition, Fifth grade closeness was significantly associated with greater social competence at fifth grade for both genders.

Some gender differences were also found. For boys, but not girls, closeness at first grade was correlated with less externalizing behavior at first grade. For boys, but not girls, third grade closeness was significantly correlated with greater academic achievement at third and fifth grade. Fifth grade closeness was correlated with less externalizing behaviors for girls but not boys.

First grade conflict was significantly correlated with less social competence and more externalizing behavior at first, third, and fifth grade for both girls and boys. First grade conflict and academic achievement were negatively correlated for girls and boys at first and third grade. In addition, third grade conflict was significantly correlated with lower social competence and greater externalizing at third and fifth grade. Conflict at fifth grade was significantly associated with all three outcomes (more externalizing behavior, lower social competence, and lower academic achievement) at fifth grade for both genders.

Once again, some gender differences were found in regards to teacher-child relationship conflict. First grade conflict was negatively correlated with academic achievement at fifth grade for girls, but not boys. For girls, but not boys, third grade conflict was associated with lower academic achievement at third and fifth grade.

In addition, t-tests were employed to test for gender differences in externalizing behavior, social competence, and academic achievement at first, third, and fifth grade.
Research question #4a: Gender moderation concurrently within grade. Separate analyses were conducted to test whether the associations between closeness and conflict and the three child outcomes (externalizing behavior, social competence, and academic achievement) differed significantly for boys and girls at first, third, and fifth grade (see Figure 8). In first grade (see Figure 9 for boys and Figure 10 for girls), model fit was at $\chi^2 (3, n=682) = 20.9, p<.001$. The CFI and NFI were both good at .98. The RMSEA indicated mediocre fit at .09 with a confidence interval of 0.058 to 0.138. For boys, closeness was associated with more social competence ($\beta=.32, p<.001$) and conflict was significantly associated with more externalizing ($\beta=.73, p<.001$), less social competence ($\beta=-.50, p<.001$), and lower academic achievement ($\beta=-.19, p<.001$). For girls, closeness was associated with significantly more social competence ($\beta=.40, p<.001$) and higher academic achievement ($\beta=.13, p<.001$); conflict predicted more externalizing ($\beta=.78, p<.001$) and less social competence ($\beta=-.44, p<.001$).

The next step was to test whether the paths from closeness and conflict to the child outcomes were the same for boys and girls. When all the paths were constrained to be equal, AMOS reported the parameter constraints to be implausible and a $\chi^2 (10, n=682) = 4038.4, p<.001$, indicating that clearly boys and girls differed in their regression weights. To determine which associations differed significantly for boys and girls, the table of critical ratios of differences among all pairs of free parameters was used. Two significant differences were found. The association between closeness and social
competence ($z = 2.0, p < .05$) and the association between conflict and externalizing behavior ($z = 2.1, p < .05$) were stronger for girls than boys. In other words, teacher-child relationship closeness was more strongly associated with higher social competence for girls than boys. In addition, teacher-child conflict was more strongly associated with higher externalizing behavior for girls than boys.

The same analyses were conducted at third grade to see if the associations between closeness and conflict and child outcomes were the same for boys and girls (see Figure 11 for boys and Figure 12 for girls). Model fit was at $\chi^2 (3, n=682) = 33.1$, $p < .001$. The CFI was .98 and NFI was .97. The RMSEA was .12 with a confidence interval of .086 to .160. For boys, closeness was associated with more externalizing behavior ($\beta = .08, p < .05$) and higher social competence ($\beta = .33, p < .001$). Conflict was significantly associated with more externalizing behavior ($\beta = .74, p < .001$), less social competence ($\beta = -.52, p < .001$), and lower academic achievement ($\beta = -.23, p < .001$).

Similar patterns were found for girls. Closeness was associated with more externalizing behavior ($\beta = .08, p < .05$) and more social competence ($\beta = .35, p < .001$). Conflict was associated with more externalizing behavior ($\beta = .82, p < .001$), lower social competence ($\beta = -.44, p < .001$), and lower academic achievement ($\beta = -.26, p < .001$).

Next, paths were constrained to be equal to test for gender differences and AMOS deemed the parameter constraints implausible. The table of critical ratios of differences among all pairs of free parameters was once again used to assess which parameters differed significantly for boys and girls with respect to the associations between relationship quality and child outcomes. One difference was found; the association
between conflict and externalizing behavior ($z = 3.8$, $p < .01$) was stronger for girls than boys.

The same analyses were conducted at fifth grade (see Figure 13 for boys and Figure 14 for girls). Model fit was $\chi^2 (3, n=682) = 20.1$, $p < .001$. The NFI was .98 and the CFI was .99. The RMSEA was mediocre at .092 with a confidence interval of 0.056 to 0.130. For boys, closeness predicted greater social competence ($\beta = .28$, $p < .001$) while conflict was associated with more externalizing behavior ($\beta = .75$, $p < .001$), lower social competence ($\beta = -.54$, $p < .001$) and lower academic achievement ($\beta = -.22$, $p < .001$). For girls, closeness was associated with more externalizing behavior ($\beta = .10$, $p < .01$) and more social competence ($\beta = .37$, $p < .001$). Conflict was associated with more externalizing behavior ($\beta = .80$, $p < .001$), less social competence ($\beta = -.47$, $p < .001$), and lower academic achievement ($\beta = -.21$, $p < .001$).

Next, paths were constrained to be equal to test for gender differences, and AMOS deemed the parameter constraints implausible. The table of critical ratios of differences among all pairs of free parameters was once again used to assess which parameters differed significantly for boys and girls with respect to the associations between relationship quality and child outcomes. Two significant differences were found; the association between closeness and social competence ($z = 2.3$, $p < .05$) was stronger for girls than boys and the association between conflict and externalizing behavior ($z = 2.2$, $p < .05$) was stronger for girls than boys.

**Research question #4b: Preliminary analyses.** Before gender moderation was tested across elementary school grades, stability of externalizing behaviors, social
competence, and academic achievement was explored (see Figure 15). Initially, boys and girls were treated as two separate groups. Model fit was at $\chi^2 (30, n=682) = 97.56, p=.00$. The CFI and NFI both indicated good model fit at .98 and .97 respectively. The RMSEA signified acceptable model fit at .058 with a confidence interval of 0.045-.0.070.

To test whether the model differed for boys and girls, the paths between child outcome variables (externalizing behavior, social competence, and academic achievement) over time were constrained to be equal for both genders. The resulting model (see Figure 16) was at $\chi^2 (39, n=682) = 101.07, p=.00$. Model fit indices were good with the CFI at .98 and the NFI at .97. The RMSEA was .048 with a confidence interval of 0.037-.0.060. A chi-square change test was then conducted to test if the constrained model differed significantly from the unconstrained model, $\Delta \chi^2 (9) = 3.52, ns$. It did not; therefore, boys and girls did not differ significantly in regards to regression weights between child outcome variables over time. In the constrained model, externalizing in first grade predicted externalizing in third grade ($\beta=.50, p<.001$) and fifth grade ($\beta=.24, p<.001$); externalizing in third grade predicted fifth grade externalizing ($\beta=.36, p<.001$). Similar patterns were found for social competence. Social competence in first grade predicted social competence in third grade ($\beta=.37, p<.001$) and fifth grade ($\beta=.17, p<.001$); social competence in third grade predicted fifth grade social competence ($\beta=.42, p<.001$). For academic achievement, achievement in first grade predicted third grade achievement ($\beta=.84, p<.001$) and third grade achievement predicted fifth ($\beta=1.2, p<.01$), but the link between first grade and fifth grade academic achievement was not significant.
Research question #4b: Gender moderation over time. Analyses were then conducted to test if gender moderated the associations between relationship quality and child outcomes over time (see Figure 17). Separate analyses were conducted for each of the three child outcome variables (externalizing behavior, social competence, and academic achievement). First analyses were conducted separately for boys and girls and then the paths were constrained to be equal to test for gender moderation.

First, boys and girls were treated as two separate groups. For externalizing behavior, model fit was $\chi^2 (24, n=682) = 78.5, p<.001$. The NFI was .97 and the CFI was .98. The RMSEA was .058 with a confidence interval of .044 to .072. Next, the paths between closeness and conflict and externalizing behavior were constrained to be equal for both genders in order to test whether the associations differed for boys and girls. The resulting model (see Figure 18) had good model fit at $\chi^2 (30, n=682) = 85.2, p=.00$. The CFI was .98; NFI was .97. The RMSEA was .052 with a confidence interval of 0.039-.0.065. A chi-square change test was then conducted to test whether the constrained model was significantly different from the unconstrained model, $\Delta \chi^2 (6) = 6.77, ns$. Since the models were not significantly different, gender did not moderate the links between closeness and conflict and externalizing behavior over time. In the constrained model, conflict at first grade significantly predicted more externalizing behavior at third grade ($\beta=.33, p<.001$) and at fifth grade ($\beta=.22, p<.001$), and conflict at third grade predicted more externalizing behavior at fifth grade ($\beta=.18, p<.001$); closeness in first grade also predicted more externalizing behavior at third grade ($\beta=.05, p<.05$).

Analyses were next conducted for school social competence. Once again, boys
and girls were first treated as two separate groups. For social competence, model fit was $\chi^2 (24, n=682) = 40.1, p=.02$. The NFI was .98 and the CFI was .99. The RMSEA was .031 with a confidence interval of .012 to .048. Next, the paths between closeness and conflict and social competence were constrained to be equal for girls and boys in order to test whether the associations differed by gender. The resulting model (see Figure 19) had good model fit at $\chi^2 (30, n=682) = 46.3, p=.029$. The CFI was .99; the NFI was .98. The RMSEA was .028 with a confidence interval of 0.009-.0.044. A chi-square change test was then conducted to test whether the constrained model was significantly different from the unconstrained model, $\Delta \chi^2 (6) = 6.12, ns$. Since the models were not significantly different, gender did not moderate the links between closeness and conflict and social competence over time. In the constrained model, conflict at first grade significantly predicted less social competence at third grade ($\beta=-.18, p<.001$) and at fifth grade ($\beta=-.12, p<.01$), and conflict at third grade predicted less social competence at fifth grade ($\beta=-.12, p<.01$).

Next, analyses were conducted for academic achievement. In the model where boys and girls were treated as two separate groups, model fit was $\chi^2 (24, n=682) = 34.9, p=.07$. The NFI was .99 and the CFI was 1.0. The RMSEA was .026 with a confidence interval of .000 to .043. Next, the paths between closeness and conflict and academic achievement were constrained to be equal for both genders in order to test whether the associations differed for girls and boys. The resulting model had good model fit at $\chi^2 (30, n=682) = 45.3, p=.037$. The CFI was .99; NFI was .98. The RMSEA was .027 with a confidence interval of 0.007-.0.043. A chi-square change test was then conducted to test
whether the constrained model was significantly different from the unconstrained model, \( \Delta \chi^2(6) = 10.36, \text{ns} \). Since the models were not significantly different, gender did not moderate the links between closeness and conflict and academic achievement over time. In the constrained model, none of the paths were significant.

Research Question #5: Teacher Gender, Child Gender, and Teacher-Child Gender Match

This question explored the influence of teacher gender, child gender, and teacher-child gender match on teacher-child relationship quality. Two 2X2 factorial ANOVAs were employed to assess these influences on teacher-child closeness and conflict at fifth grade.

First, means and standard deviations were computed for closeness (see Table 6) and conflict (see Table 7) by teacher gender and child gender. Next, a 2X2 factorial ANOVA was run on teacher gender (male, female) and child gender (male, female) with closeness as the dependent variable. Teacher gender had a significant main effect on closeness, \( F(31,673) = 13.7, p < .001 \). The effect size (in terms of eta-squared) was .020. Female teachers (\( M = 32.1, SD = 5.2 \)) rated children significantly higher in closeness than male teachers (\( M = 30.0, SD = 5.6 \)). There was no significant main effect for child gender. A significant two-way interaction was also found (see Figure 20). Amount of teacher-child relationship closeness was dependent on teacher gender and child gender, \( F(1,673) = 11.3, p < .01 \). For girls but not boys, closeness was greater when the teacher was female. Effect size for the interaction was .017.

Next, a 2X2 factorial ANOVA was run on teacher gender (male, female) and
child gender (male, female) with conflict as the dependent variable. A main effect for child gender was found, $F(1, 673) = 5.7, p < .05$. Boys ($M = 11.7, SD = 5.3$) were rated significantly higher in conflict than girls ($M = 11.1, SD = 5.8$). Effect size (in terms of eta squared) was .008. There was no main effect for teacher gender. In addition, the interaction between teacher gender and child gender was not significant.
CHAPTER 5: DISCUSSION

The current study explored gender differences in teacher-child relationship quality across the elementary school grades. While a handful of past studies have examined gender differences in relationship quality, the present study made several new and significant contributions to the existing literature by examining teacher-child relationship quality and gender differences beyond the early elementary school grades, exploring possible mechanisms through which gender influences relationship quality, testing whether the associations between relationship quality and child outcomes differed for boys and girls, and examining the roles of teacher gender and teacher-child gender match in determining relationship quality.

First, stability of teacher-child relationship quality across the elementary school grades at first, third, and fifth grade and whether stability differed for boys and girls was explored. Next, gender differences in closeness and conflict at first, third, and fifth grade were examined. This was followed by the testing of three possible mediators for the association between child gender and teacher-child relationship quality. Next, gender was explored as a moderator of the associations between relationship quality and child outcomes at first, third, and fifth grade both concurrently within grade and prospectively over time. Finally, this study examined the influence of teacher gender and teacher-child gender match on relationship quality.

Findings

Stability of Teacher-Child Relationship Quality across Time

The first research question dealt with the stability of teacher-child relationship
closeness and conflict from first to third to fifth grade. Previous work on relationship
stability primarily focused on the early grades (e.g., O’Connor & McCartney, 2006), so
the present study aimed to determine whether early teacher-child relationship quality
predicts relationship quality in the later elementary school grades. Support was found for
the hypothesis that relative stability would be found across all the time points. As
expected, analyses revealed no gender differences in the stability of closeness and
conflict over time. Closeness and conflict at first grade significantly predicted
relationship quality at third and fifth grade. Third grade closeness and conflict
significantly predicted fifth grade closeness and conflict as well. The link between first
and fifth grade relationship quality was significant even when controlling for the pathway
between third and fifth grade.

The relative stability found in teacher-child relationship quality lends support to
the idea that children form internal working models with regards to their teacher-child
relationships. An internal working model is a generalized set of expectations for
relationships (Shaw & Dallos, 2005); in this case, the child develops certain expectations
for herself/himself and the teacher in their relationship. However, internal working
models are subject to change as the child and the context change and develop, so only
relative stability was expected. This is supported by the data showing significant beta
weights ranging from 0.18 to 0.45. Stability of teacher-child relationship quality across
grade level is also consistent with past research findings (e.g., Howes et al., 2000).

Another finding of note was that first grade closeness and conflict significantly
predicted fifth grade closeness and conflict even when controlling for the association
between first and third grade relationship quality. The impact of first grade relationship quality on later grades lends further support to the notion of a critical period in the early elementary school grades (Entwisle & Alexander, 1993). Due to the important academic, behavioral, social, and cognitive transitions children go through in these early grades, children’s experiences in these grades have a lasting impact on their later school outcomes. During the early school years, children enter a new social world, are launched down academic trajectories, and are sorted by ability. Significant others in children’s lives also form expectations about children’s abilities and children develop school-based reputations. The findings here seem to suggest that these early reputations children form impact their teacher-child relationship quality in the later grades. Therefore, it may be particularly important that children develop positive relationships in the early grades.

**Gender Differences in Teacher-Child Relationship Quality across Time**

Past studies have established consistent patterns of gender differences in teachers’ reports of relationship quality. Teachers consistently rate girls higher in closeness and boys higher in conflict (e.g., Silver et al., 2005). However, these studies have primarily focused on the early school grades (kindergarten through second grade). The second research question explored gender differences in closeness and conflict beyond early elementary school at first, third, and fifth grade. It was hypothesized that gender differences would be present at all three grade levels, with girls being rated higher in closeness and boys higher in conflict.

The hypothesis was supported; girls remained consistently higher on closeness and consistently lower on conflict than boys across the elementary school grades.
Evidence was also found to suggest that closeness decreases significantly over grade level. There were no interactions between gender and grade level. These findings suggest that even through developmental and contextual changes, girls are being rated significantly higher in closeness and lower in conflict. The decrease in closeness over time could be attributed to the changes in the teacher’s role across grade level. The role of the teacher as a caregiver and nurturer is emphasized more in the early grades than the later grades. However, this decline in closeness over time needs to be interpreted carefully. O’Connor and McCartney (2007), using the NICHD SECCYD, found an overall decline in closeness from first to third grade despite the fact that most children actually showed increases in relationship quality. Their results indicated that the decline was driven by a small number of students who experienced dramatic drops in closeness. Whether this pattern holds true through fifth grade needs to be examined.

Mechanisms that Influence the Link between Gender and Teacher-Child Relationship Quality

The third research question dealt with exploring three possible mediators between child gender and teacher-child relationship quality. In past studies, girls have consistently been rated higher in closeness and boys higher in conflict, as they were in this study. However, there is a lack of research on possible reasons for these gender differences. Although a multitude of factors likely contribute, this study focused on three mechanisms derived from gender socialization/gender schema theory perspectives. Specifically, children’s teacher affiliations and positive and negative peer orientations towards school were tested as mediators. Based on gender schema theory and past
empirical research, it was hypothesized that girls would experience greater teacher affiliation and would have more positive peer group orientations towards school while boys would be less inclined to affiliate with the teacher and would have more negative peer group school orientations. These gender differences were expected to at least partially mediate the associations between gender and teacher-child relationship quality.

Support for this hypothesis was only found for teacher affiliation. While gender predicted teacher affiliations and both positive and negative peer group orientations, only teacher affiliations predicted closeness and conflict, so that girls had greater teacher affiliation and in turn more closeness and less conflict with their teachers. Negative peer orientations toward school predicted more conflict, but this pathway was no longer significant when the direct path between gender and teacher-child relationship conflict was included in the analysis.

A possible explanation why teacher affiliation may have been significant and not positive and negative peer orientations is that teacher affiliation directly measured children’s attitudes about their teachers, while the peer orientations toward school measure examined general attitudes about school, not specifically about the teacher. Possibly a more suitable measure would have asked children about their peer groups’ specific feelings and attitudes towards the teacher. Questions could have included items such as did the child’s peer group find it acceptable to like the teacher. It is possible that peer group orientations towards school are better predictors of other child outcomes, such as academic achievement, than teacher-child relationship quality. Another explanation could be that teacher affiliations fit better with gender schema theory for the measure
encompassed children’s feelings of identification with the teacher.

**Gender as a Moderator**

The fourth research question addressed gender as a moderator for the association between teacher-child relationship closeness and conflict and children’s externalizing behaviors, school social competence, and academic achievement at first, third, and fifth grade both concurrently and over time. Past research that has examined the role of gender as a moderator has found evidence to suggest that girls benefit more from close relationships, and boys suffer more from conflictual ones (Baker, 2006; Ewing & Taylor, 2009). The present study moved this field of study forward by exploring gender as a moderator across the elementary school grades both concurrently within grade and prospectively over time.

Analyses revealed gender differences at first, third, and fifth grade. At first grade, gender moderated the link between closeness and social competence, such that closeness was more predictive of greater social competence for girls than boys. This finding is consistent with past research (e.g., Ewing & Taylor, 2009) and supports work on gender socialization that implies that girls benefit more when the quality of the teacher-child relationship is consistent with traditional gender-based relational styles and gender role norms and expectations. Gender moderation for this association was not found at third grade, but was found again at fifth grade, suggesting that the effects of gender role socialization last beyond the early elementary school grades.

Gender was also found to moderate the association between teacher-child relationship conflict and children’s externalizing behaviors. Conflict was a stronger
predictor of externalizing behavior for girls than boys, and this difference was found at first, third, and fifth grade. This finding is contradictory to past studies that suggest that conflict is more harmful for boys than girls (e.g., Ewing & Taylor, 2009). The present finding, that conflict is associated with more negative outcomes for girls than boys, however, is complementary with gender socialization work. Since conflict in the teacher-child relationship is at odds with girls’ traditional gender role expectations, it may be expected that when girls do experience conflict, there would be more negative consequences for it. On the other hand, conflict may not be as harmful for boys because interpersonal conflict is associated with traditional male traits of aggression and power and is more consistent with boys’ social relational styles. The consistency of this gender moderation across the elementary school grades is also noteworthy.

Analyses were also conducted to test if gender moderated the links between relationship quality and child outcomes over time. Despite the evidence of gender moderation within grade, no gender moderation was found across grade level. This lack of gender moderation may be due to the lack of strong links between relationship quality and child outcomes. Within grade, there was significant gender moderation for closeness and social competence, but these pathways weren’t significant across grade level. For girls and boys, conflict predicted more externalizing behavior and less social competence across grade level, but closeness was not associated with any later school outcomes with one unusual exception. Closeness at first grade was associated with more externalizing at third grade. This finding is contradictory to all other empirical or theoretical work. As for the lasting impact of conflict but not closeness, this supports the idea that conflict is
more driven by child characteristics (like temperament) while closeness is largely influenced by the current relationship. Therefore, although relative stability was found for closeness, past studies have found closeness to be less stable and more subject to change (e.g., Pianta & Stuhlman, 2004). More work needs be done on the links between relationship quality and child outcomes over time.

*Teacher Gender, Child Gender, and Teacher-Child Gender Match*

The fifth and last research question dealt with the possible influences of teacher gender, child gender, and teacher-child gender match on relationship quality. Girls are consistently rated higher in closeness and boys higher in conflict (and the present study was no exception), but no research to date has examined how these findings may be influenced by the fact that over 90% of elementary school teachers are female (Blakemore et al., 2009). Several different hypotheses were made in regards to these various influences. One hypothesis proposed that teachers and children would identify more with one another if they were of the same gender, and teachers would be more invested in their same-gender pupils, thus reporting more positive relationships with them. From this perspective, relationship quality differences would be driven by the interaction between teacher gender and child gender. Another hypothesis, based on past work, was that girls would be rated higher in teacher-child relationship closeness and lower in conflict regardless of the teacher’s gender. Based on this hypothesis, the main effect of child gender would be the driving force of relationship differences. Yet another hypothesis was that male teachers would be more influenced by gender than female teachers; here, teacher gender would be a significant main effect.
In regards to main effects, teacher gender predicted closeness, and child gender predicted conflict. However, the main effect of teacher gender on closeness was negated by a significant interaction between teacher and child gender. Girls were rated higher in closeness when they had a female teacher. On the other hand, male students, regardless of teacher gender, were rated higher on conflict and no significant interactions were found for conflict. With regards to teacher-child gender match, these findings suggest that gender match may be especially beneficial for girls in promoting a close teacher-child relationship, but not for boys. This could in part be due to girls’ greater relational socialization. Female teachers and female students are socialized to be more relational and are reinforced for forming close relationships. Boys, on the other hand, may be socialized to be more independent and less relationship oriented, so even with male teachers, they may not be forming close relationships.

Past researchers have suggested that conflict is more attributed to child characteristics while closeness is more influenced by goodness-of-fit between teacher and child (Pianta et al., 2003). This could help explain the finding that conflict is driven by child gender. Since boys, on average, display more hyperactivity, aggression, and externalizing behaviors in the classroom (e.g., Blakemore et al., 2009), these behaviors influence them to be rated higher in conflict, regardless of the teacher’s gender or teacher-child gender match. On the other hand, closeness is more influenced by an interaction between teacher and child, so it may be that female teachers, socialized to be more relational, work harder to cultivate close relationships with their students, particularly their female students, who in turn may be more responsive to their overtures.
Conclusions

The present study made substantial contributions to the field of research on teacher-child relationship quality by highlighting important ways in which gender influences relationship quality across elementary school grades. Stability in teacher-child relationship closeness and conflict was found across the elementary school grades, emphasizing the lasting impact of early relationship quality. Girls were rated higher in closeness and boys higher in conflict across first, third, and fifth grade. Students’ own affiliations with their teachers were found to partially mediate the link between child gender and teacher-child relationship closeness and conflict, highlighting the significance of children’s relational styles in determining relationship quality. Gender moderation was found at all three time points. Gender moderated the link between closeness and social competence and conflict and externalizing problems, such that girls benefited more than boys from close relationships and experienced more negative outcomes from conflict with their teachers. Both these findings support work from the gender socialization perspective. These findings however were contradictory to past research that found conflict to be associated with more negative outcomes for boys than girls. More work needs to be done to explore these different findings, although the take home message may be that teacher-child relationship conflict is harmful for both boys and girls.

The present study sheds new light on the finding that girls tend to benefit more from a positive teacher relationship than boys by finding this difference to exist at fifth grade. This finding supports the notion that due to relational styles and gender socialization, girls are more attuned and in a better position to benefit from close, warm
relationships with their teachers. Gender schema theory also purports that children will identify more with what they label as gender appropriate.

Since most elementary school teachers are females, the question has been raised as to the effects of teacher gender, child gender, and teacher-child gender match on relationship quality. This has been a difficult question to study given the preponderance of female teachers in elementary school. The present study took the first step in answering this question by examining the extent to which teacher-child relationship closeness and conflict differed according to these three factors. Closeness was found to be influenced by an interaction between teacher and child gender and conflict by child gender. Male students were rated higher in conflict regardless of teacher gender. Closeness was influenced by a significant interaction between teacher and child gender, such that girls were rated higher in closeness when they had a female teacher. These findings have important implications for children’s school adjustment and success.

Given consistent research that demonstrates links between teacher-child relationship quality and children’s school outcomes, boys may be at a distinctive disadvantage in the classroom while it may not be surprising that girls are succeeding more in the early school classroom given the benefits they reap from their relationships with their female teachers.

*Study Limitations*

As with all studies, this one had several key limitations. First, the research questions were addressed using secondary data. Although the NICHD SECCYD is an excellent longitudinal and comprehensive data set, measures could not be designed
specifically to address this study’s research questions. For example, the measures for
teacher affiliation and peer orientations towards school may not have been ideal for
addressing the questions at hand. More suitable measures may have directly assessed
children’s feelings of identification with their teachers and their peer group attitudes
towards positive and negative teacher-child relationships.

In addition, not all measures were found at all time points. In terms of the child
relational mechanisms, the mediation model could only be tested at fifth grade because
the children’s teacher affiliations and positive and negative peer group orientations
towards school were only assessed at fifth grade. In addition, since male teachers are
very rare in the early elementary school grades, questions surrounding teacher-child
gender match and teacher gender could also only be evaluated at fifth grade. This lack of
male teachers in the early grades is by no means an issue only with this particular data set
and remains a challenge to this field of research.

As with all longitudinal studies, non-random attrition was an issue. Children who
had teacher-child relationship data at all three time points differed in several ways from
children who did not. More boys and non-White children did not have relationship data
at all the time points. Since the main focus of this study was on gender, it is possibly
problematic that more boys than girls had incomplete data. It is possible that boys with
the most problematic teacher-child relationships were not included in these analyses;
whether this has any effect on questions of gender moderation is not known.

In addition, a different data analytic strategy may have been better for examining
the links between teacher-child relationship quality and child outcomes across time. This
question should be addressed in the future using latent growth curve modeling. Latent growth curve modeling allows for better study of growth and change over time. Also, while this study only focused on relationship quality predicting child outcomes, it is likely that this is a bidirectional relationship and should be modeled as one in the future.

**Recommendations for Future Research**

This study illuminated several new and important findings on teacher-child relationship quality by exploring gender differences across the elementary school grades, examining possible mediators of the association between gender and relationship quality, exploring gender as a moderator of these associations over time, and examining the roles of teacher gender and teacher-child gender match on relationship quality. While answering some important questions, this study introduced some new queries that need to be addressed in future research. First, future studies should reexamine the associations between teacher-child relationship quality and children’s school outcomes across time using latent growth curve modeling and account for the bidirectional paths between relationship quality and child outcomes.

Second, future studies should explore different potential mediators for the link between child gender and teacher-child relationship quality. This study only included mechanisms regarding children’s teacher affiliations and peer group attitudes about school, but future models should explore children’s behavioral and cognitive dispositions as well as various teacher characteristics, including teachers’ attitudes about children based on gender. Also, although this study did not find a link between children’s peer group orientations towards school and teacher-child relationship quality, past work
suggests that peer group school attitudes may play an important role in helping to explain gender differences in the classroom and should be explored further in future studies.

Finally, future studies should continue to explore the influences of teacher gender and teacher-child gender match on relationship quality. Future studies need to explore whether the associations between teacher-child relationship quality and child outcomes differ by teacher-child gender match. For example, would girls continue to benefit more from close relationships if only gender matched pairs were included in the analyses? Future research should also examine teachers’ own attitudes about their students based on their gender. Do teachers identify more with students of their same gender? The answers to these questions will help to illuminate the roles of teacher-child gender match, teacher gender, and child gender in teacher-child relationship quality.

*Implications for Practice*

All children deserve to be successful academically, socially, and behaviorally in the classroom. Although a multitude of factors contribute to children’s school adjustment and success, this study highlights one of these important dimensions: the teacher-child relationship. The present study lends support to an ever growing body of research on the salience of this relationship in children’s school adjustment and success. Teacher education programs should emphasize this importance and include specific training on how teachers can enhance their relationships with all their students. Teachers need to work on not only improving closeness, but decreasing conflict, especially given the stability of conflict and its potential long term effects. Given the lasting impact of first grade relationship quality on later elementary school grades, it may be particularly
important to cultivate warm, non-conflictual early teacher-child relationships.

Another key component of this study was gender differences in relationship quality. Given the evidence that girls are consistently rated higher in closeness and lower in conflict across elementary school and that girls seem to benefit more from these close relationships, teachers need to be particularly cognizant of the disadvantages these differences may present for boys. Teachers need also to examine their own biases in order to best accommodate the needs of boys and girls and help all children reach their highest potential.
APPENDIX A: TABLES
Table 1
*Means, Standard Deviations, and t-Test Results by Gender*

<table>
<thead>
<tr>
<th></th>
<th>First Grade</th>
<th>Third Grade</th>
<th>Fifth Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>t-tests</td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>SD</td>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td><strong>t</strong></td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>STRS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closeness</td>
<td>33.2</td>
<td>4.9</td>
<td>34.7</td>
</tr>
<tr>
<td>Conflict</td>
<td>11.7</td>
<td>5.5</td>
<td>9.9</td>
</tr>
<tr>
<td>Mechanisms</td>
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<td></td>
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</tr>
<tr>
<td>Affiliations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pos. Emotion</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pos. Peer Orientations</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Neg. Peer Orientations</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>School Outcomes</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Achievement</td>
<td>110.1</td>
<td>14.1</td>
<td>111.0</td>
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<tr>
<td>Social Competence</td>
<td>103.8</td>
<td>13.2</td>
<td>102.6</td>
</tr>
<tr>
<td>Externalizing</td>
<td>50.5</td>
<td>8.8</td>
<td>50.1</td>
</tr>
</tbody>
</table>

**p<.01  N= 644-682**
Table 2  
*Means and Standard Deviations of Teacher-Child Closeness by Child Gender and Grade Level*

<table>
<thead>
<tr>
<th></th>
<th>First Grade</th>
<th></th>
<th>Third Grade</th>
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<th>Fifth Grade</th>
<th></th>
<th>Total (Child Gender)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><em>M</em></td>
<td><em>SD</em></td>
<td><em>M</em></td>
<td><em>SD</em></td>
<td><em>M</em></td>
<td><em>SD</em></td>
<td><em>M</em></td>
<td><em>SD</em></td>
</tr>
<tr>
<td>Male Child</td>
<td>33.2</td>
<td>4.9</td>
<td>32.0</td>
<td>5.5</td>
<td>31.0</td>
<td>5.3</td>
<td>32.1</td>
<td>3.8</td>
</tr>
<tr>
<td>Female Child</td>
<td>34.8</td>
<td>4.8</td>
<td>34.1</td>
<td>4.7</td>
<td>32.7</td>
<td>5.2</td>
<td>33.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Total (Grade Level)</td>
<td>34.0</td>
<td>3.4</td>
<td>33.1</td>
<td>3.6</td>
<td>31.9</td>
<td>3.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N= 333 boys, 333 girls
Table 3
*Means and Standard Deviations of Teacher-Child Conflict by Child Gender and Grade Level*

<table>
<thead>
<tr>
<th></th>
<th>First Grade</th>
<th>Third Grade</th>
<th>Fifth Grade</th>
<th>Total (Child Gender)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Male Child</td>
<td>11.7</td>
<td>5.5</td>
<td>12.5</td>
<td>6.2</td>
</tr>
<tr>
<td>Female Child</td>
<td>9.9</td>
<td>4.3</td>
<td>10.2</td>
<td>5.0</td>
</tr>
<tr>
<td>Total (Grade Level)</td>
<td>10.8</td>
<td>3.5</td>
<td>11.3</td>
<td>4.2</td>
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</table>

N= 333 boys, 333 girls
Table 4
Bivariate Correlations between Gender, Child Mechanisms, and Teacher-Child Relationship Quality

<table>
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<tr>
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<th>2</th>
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<th>4</th>
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<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>1. Gender</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. Closeness</td>
<td>.15**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Conflict</td>
<td>-.18**</td>
<td>-.32**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Security in Relationship</td>
<td>.12**</td>
<td>.14**</td>
<td>-.27**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Emotional Quality</td>
<td>.13**</td>
<td>.12**</td>
<td>-.23**</td>
<td>.75**</td>
<td>-</td>
<td></td>
<td></td>
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<tr>
<td>6. Positive Peer Orientations towards School</td>
<td>.15**</td>
<td>.06</td>
<td>-.20**</td>
<td>.28**</td>
<td>.38**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7. Negative Peer Orientations Towards School</td>
<td>-.22**</td>
<td>-.04</td>
<td>.23**</td>
<td>-.34**</td>
<td>-.40**</td>
<td>-.58**</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* Gender dummy coded; boys = 0, girls = 1  
** *p* < .01  
N = 639 to 682
Table 5

**Intercorrelations among Teacher-Child Relationship Quality and Child Outcomes by Gender**

<table>
<thead>
<tr>
<th></th>
<th>First Grade</th>
<th>Third Grade</th>
<th>Fifth Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1  2  3  4  5  6  7  8  9  10  11  12  13  14  15</td>
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<td></td>
</tr>
<tr>
<td>First Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Closeness</td>
<td>- .29* .15* .52* -.21* .33* -.18* .12* .18* -.10 .23* -.10 .12* .17* -.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Conflict</td>
<td>-.20* - .13* -.51* .74* -.16* .48* -.17* -.34* .46* -.04 .38* - .10 -.28* .42*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Achievement</td>
<td>.15* -.23* - .32* -.17* .08 -.16* .85* .25* -.17* .04 - .15* .77* .27* -.15*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Social Competence</td>
<td>.42* -.60* .36* - .57* .25* -.36* .33* .43* -.32 .11* -.26* .32* .36* -.32*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Externalizing</td>
<td>-.08 .76* -.24* -.60* - -.20* .49* -.24* -.34* .51* -.08 .40* -.21* -.32* .47*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Closeness</td>
<td>.30* -.04 .11 .20* .00 - -.38* .12* .48* -.23* .33* -.13* .15* .24* -.11*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Conflict</td>
<td>-.04 .43* -.27* -.35* .45* -.32* - -.25* -.56* .77* -.07 .36* -.25* -.32* .41*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Achievement</td>
<td>.14* -.20* .84* .36* -.24* .07 -.26* - .27* -.24* .03 -.17* .85* .31* -.23*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Social Competence</td>
<td>.14* -.29* .37* .42* -.32* .50* -.67* .34* - -.57* .08 -.30* .29* .36* -.29*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Externalizing</td>
<td>-.01 .45* -.25* -.39* .55* -.18* .77* -.26* -.57* - -.01 .38* -.25* .46* -.28*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fifth Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Closeness</td>
<td>.26* -.03 -.03 .07 -.03 .28* -.10 -.01 .17* -.09 - .27* .03 .50* -.10</td>
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<td></td>
</tr>
<tr>
<td>12. Conflict</td>
<td>-.09 .41* -.14* -.33* .42* -.14* .43* -.17* -.34* .46* -.32* - -.19* -.55* .73*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Achievement</td>
<td>.15* -.19* .78* .37* -.26* .05 -.24* .87* .35* -.25* .03 -.23* - .29* -.20*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Social Competence</td>
<td>.20* -.32* .28* .39* -.33* .23* -.34* .28* .41* -.37* .46* -.67* .35* - -.56*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Externalizing</td>
<td>-.06 .43* -.15* -.35* .48* -.11* .44* -.15* -.34* .54* -.22* .78* -.19* -.66* -</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. Boys are below the diagonal; girls are above the diagonal. *p<.05*  
N = 644-682
Table 6
*Means and Standard Deviations of Teacher-Child Closeness by Teacher Gender and Child Gender*

<table>
<thead>
<tr>
<th></th>
<th>Male Teacher</th>
<th>Female Teacher</th>
<th>Total (Child Gender)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
</tr>
<tr>
<td>Male Child</td>
<td>30.9</td>
<td>5.8</td>
<td>31.1</td>
</tr>
<tr>
<td>Female Child</td>
<td>29.3</td>
<td>5.3</td>
<td>33.2</td>
</tr>
<tr>
<td>Total (Teacher Gender)</td>
<td>30.0</td>
<td>5.6</td>
<td>32.1</td>
</tr>
</tbody>
</table>

N = 45 male child/male teacher, 286 male child/female teacher, 58 female child/male teacher, 288 female child/female teacher
Table 7
 Means and Standard Deviations of Teacher-Child Conflict by Teacher Gender and Child Gender

<table>
<thead>
<tr>
<th></th>
<th>Male Teacher</th>
<th>Female Teacher</th>
<th>Total (Child Gender)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Male Child</td>
<td>12.0</td>
<td>5.9</td>
<td>12.3</td>
</tr>
<tr>
<td>Female Child</td>
<td>11.6</td>
<td>4.9</td>
<td>9.9</td>
</tr>
<tr>
<td>Total (Teacher Gender)</td>
<td>11.8</td>
<td>5.3</td>
<td>11.1</td>
</tr>
</tbody>
</table>

N = 45 male child/male teacher, 286 male child/female teacher, 58 female child/male teacher, 288 female child/female teacher
APPENDIX B: FIGURES
Figure 1. Initial path analytic model: Stability of teacher-child relationship closeness and conflict across first, third, and fifth grade.
Figure 2. Boys and girls constrained to be equal path analytic model: Stability of teacher-child relationship closeness and conflict across first, third, and fifth grades. Solid lines are significant at \( p < .05 \).

\[ \chi^2 (8, n=682) = 8.0, \ p = .89 \]
Figure 3. Boys’ and girls’ levels of closeness across first, third, and fifth grade.

Note: 1 = Boys; 2 = Girls
Figure 4. Boys’ and girls’ conflict levels across first, third, and fifth grade.

Note: 1 = Boys; 2 = Girls
Figure 5. Proposed mediation pathway: Positive and negative peer orientations towards school and teacher affiliations mediate the link between gender and closeness and conflict.
Figure 6. Direct paths from gender to teacher-child relationship quality constrained to zero: Path model of gender predicting to positive peer orientations toward school, negative peer orientations toward school and teacher affiliations, and these three mechanisms predicting to teacher-child relationship closeness and conflict. Significant pathways are reported, $p < .05$. Dotted lines are not significant.

$\chi^2 (6, n=682) = 33.26, p < .001$
Figure 7. All parameters freely estimated: Path model of gender predicting to positive peer orientations toward school, negative peer orientations toward school and teacher affiliations, and these three mechanisms predicting to teacher-child relationship closeness and conflict. Significant pathways are reported at $p < .05$. Dotted lines are not significant.

$$
\chi^2 (4, n=682) = 14.53, p<.01
$$
Figure 8. Initial path analytic model: The influence of teacher-child relationship closeness and conflict on children’s externalizing, social competence, and academic achievement within grade.
Figure 9. Boys’ first grade path analytic model: The influence of teacher-child relationship closeness and conflict on children’s externalizing, social competence, and academic achievement. Solid lines are significant at $p < .05$. Dotted lines are not significant.

$\chi^2 (3, n=682) = 20.9, p < .001$
Figure 10. Girls’ first grade path analytic model: The influence of teacher-child relationship closeness and conflict on children’s externalizing, social competence, and academic achievement. Solid lines are significant at $p < .05$. Dotted lines are not significant.

$\chi^2 (3, n=682) = 20.9, p < .001$
Figure 11. Boys’ third grade path analytic model: The influence of teacher-child relationship closeness and conflict on children’s externalizing, social competence, and academic achievement. Solid lines are significant at $p < .05$. Dotted lines are not significant.

$\chi^2 (3, n=682) = 33.1, p < .001$
Figure 12. Girls’ third grade path analytic model: The influence of teacher-child relationship closeness and conflict on children’s externalizing, social competence, and academic achievement. Solid lines are significant at $p < .05$. Dotted lines are not significant.

\[ \chi^2 (3, n=682) = 33.1, p < .001 \]
Figure 13. Boys’ fifth grade path analytic model: The influence of teacher-child relationship closeness and conflict on children’s externalizing, social competence, and academic achievement. Solid lines are significant at $p < .05$.

$\chi^2 (3, n=682) = 20.1, p < .001$
Figure 14. Girls’ fifth grade path analytic model: The influence of teacher-child relationship closeness and conflict on children’s externalizing, social competence, and academic achievement. Solid lines are significant at $p < .05$. Dotted lines are not significant.

$\chi^2 (3, n=682) = 20.1, p < .001$
Figure 15. Initial path analytic model: The stability of child outcomes (externalizing, social competence, and academic achievement) across first, third, and fifth grade.
Figure 16. Girls’ and boys’ path analytic model constrained to be equal: The stability of child outcomes (externalizing behavior, social competence, and academic achievement) across first, third, and fifth grade. Solid lines are significant at \( p < .05 \). Dotted lines are not significant.

\[ \chi^2 (39, n=682) = 101.07, \ p=.0 \]
Figure 17. Initial path model: gender moderation over time.
Figure 18. Boys and girls constrained to be equal path analytic model: Closeness and conflict predicting to externalizing behavior over time. Only significant paths are shown at $p < .05$.

\[ \chi^2 (30, n=682) = 85.24, p=.00 \]
Figure 19. Boys and girls constrained to be equal path analytic model: Closeness and conflict predicting to social competence over time. Only significant paths are shown at $p < .05$.

\[ \chi^2 (30, n=682) = 46.27, p=.029 \]
Figure 20. Significant interaction between teacher gender and child gender for closeness.
REFERENCES


