



Theses and Dissertations

2013-03-12

Parental Involvement, Parent-Child Warmth and School Engagement as Mediated by Self-Regulation

Jeffrey James Bentley
Brigham Young University - Provo

Follow this and additional works at: <https://scholarsarchive.byu.edu/etd>



Part of the [Family, Life Course, and Society Commons](#)

BYU ScholarsArchive Citation

Bentley, Jeffrey James, "Parental Involvement, Parent-Child Warmth and School Engagement as Mediated by Self-Regulation" (2013). *Theses and Dissertations*. 3866.
<https://scholarsarchive.byu.edu/etd/3866>

This Thesis is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of BYU ScholarsArchive. For more information, please contact scholarsarchive@byu.edu, ellen_amatangelo@byu.edu.

Parental Involvement, Parent-Child Warmth and
School Engagement as Mediated by
Self-Regulation

Jeffrey J. Bentley

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Master of Science

James M. Harper, Chair
Roy Bean
Laura Walker

School of Family Life
Brigham Young University

March 2013

Copyright © 2013 Jeffrey J. Bentley

All Rights Reserved

ABSTRACT

Parental Involvement, Parent-Child Warmth and School Engagement as Mediated by Self-Regulation

Jeffrey J. Bentley
School of Family Life, BYU
Master of Science

Using both observational and questionnaire self-report data, this study examined preadolescent self-regulation as a potential mediator of the relationship between parental involvement, parent-child warmth and school engagement in a two wave panel design. Data was taken from two parent families in waves two and three of the Flourishing Families project which included 335 families with children between the ages of 12 and 14. Findings showed that parental, especially paternal involvement, was directly correlated to child's school engagement. Parental involvement and parent-child warmth were also shown to have an indirect effect on school engagement via child's self-regulation. Educators and therapists should be mindful of the parent-child relationship when dealing with students struggling in the academic setting.

Keywords: parental warmth, parental involvement, self-regulation, school engagement, observation

ACKNOWLEDGEMENTS

Totally nailed it. Using only a page to thank the necessary people will be difficult. I'd like to thank several people for their unwavering love and support throughout this master's thesis journey. First and foremost, I'd like to thank my mother and father. At the beginning of my master's program my mother jokingly asked whether or not I'd still love the family after obtaining a master's degree in Marriage and Family Therapy. The answer is I love you even more! You both have also been a constant emotional and financial support that has enabled me to pursue an education beyond the bachelor's degree level. You both have always believed in me and are always willing to invest in me. You both are wonderful parents.

Thank you, Jen and Nate. You are my best friends. You have always been there for me and kept encouraging me when things got difficult. You won't ever know how much I needed your support. Jen, all of your edits have made me the writer I am today. Oh, and thanks for naming your child after me. Now I have to make something of myself!

Next, I'd like to thank Joriann because she'll get mad at me if I don't specifically mention her name. I love making you laugh, as evidenced by the first line of this paragraph. But all joking aside, you are such a giving and loving friend. You have always believed in me. You embody what it means to be a true friend. Thank you.

I'd also like to thank my faculty chair Jim Harper. Thanks for not laughing at me when I sent you my first draft of my thesis. I believe you certainly would have been justified in doing so. I never feared sending you a draft because I knew you'd always be supportive. Thank you for all your support. I'd also like to thank Roy Bean and Laura Padilla-Walker. You both provided timely and productive feedback and encouragement.

TABLE OF CONTENTS

Title Page	i
Abstract	ii
Acknowledgements	iii
List of Tables	vi
List of Figures	vi
Introduction.....	1
Literature Review.....	3
School Engagement.....	3
Family and School.....	4
Parent-Child Warmth	5
Parental Involvement.....	8
Self-Regulation as a Potential Mediator.....	10
Self-Regulation and School Outcomes.....	12
Control Variables	13
Purpose Statement.....	14
Hypotheses	14
Method	14
Participants	14
Procedure.....	16

Measures.....	17
Parent-child warmth.....	17
Parental involvement.....	19
School engagement.....	20
Self-regulation.....	21
Proposed Analysis.....	22
Results.....	22
SEM Direct Effects.....	25
Mediation Effects.....	25
Discussion.....	27
Hypothesis 1: Parental Involvement and School Engagement.....	28
Hypothesis 2: Observed Parental Warmth and School Engagement.....	30
Hypothesis 3: Child Self-regulation as a Potential Mediating Variable.....	30
Implications for Family Intervention.....	31
Limitations.....	33
Conclusion.....	34
References.....	35

LIST OF TABLES

Table 1 49

Table 2 51

LIST OF FIGURES

Figure 1 52

Figure 2 53

Introduction

School engagement is receiving increasing attention among researchers because of its link to positive child and adolescent outcomes such as better grades, higher scores on achievement tests, lower dropout rates and fewer discipline problems in the school setting (Fredricks, Blumenfeld & Paris, 2004). Most studies involving school engagement have examined precursor variables such as peer relationships or characteristics of the school system or teachers (e.g., Eccles, Flanagan, Lord, & Midgley, 1996; Fredricks et al., 2004). In contrast, few studies have investigated how family characteristics, specifically parent-child relationships and parenting behavior, might be related to a child's engagement in school.

According to self-determination theory, parent-child relationships may make a significant contribution to preadolescents' school engagement. Deci and Ryan (2000) claimed that self-determination theory posits that the fulfillment of psychological needs for competence, autonomy and relatedness fosters the development of intrinsic motivation, performance and well-being. The authors elaborated that the relatedness need refers to the innate drive to seek out social connectedness and the degree to which this need is satisfied, as well as competency and autonomy needs, impacts an individual's development of intrinsic motivation and positive self-directed behaviors, such as school engagement.

Two aspects of preadolescents' relatedness need that is likely to be related to school engagement are parent-child warmth and parental involvement. Parent-child warmth, as defined here, refers to parents' verbalizations that are warm, supportive and encouraging. Parental involvement refers to the parents' overall involvement in the child's life, not limited solely to the child's schooling. Behaviors indicative of parental involvement include time well spent with one's child as opposed to superficial involvement. These parenting behaviors are thought to be

related to preadolescents' relatedness needs because they have been found to characterize strong parent-child connections (DeVore & Ginsburg, 2005).

Extensive research has been conducted on how parental warmth and parental involvement impact young adolescents (Williams & Kelly, 2005; Hawkins, Bradford, Palkovitz, & Christiansen 2002; Day & Padilla-Walker, 2009; Masche & Barber, 2001; Lee, Draper, & Lee, 2001.) Parent-child warmth has been associated with emotional well-being, positive self-evaluation, and lower levels of anxiety and depression (Masche & Barker, 2001; Lee et al., 2001). Similarly, parental involvement has been associated with a variety of youth outcomes including fewer adolescent suicide attempts, and increased psychological well-being, self-esteem and self-evaluation (Williams & Kelly, 2005; Flouri, & Buchanan, 2003; Amato, 1994; Amato & Ochiltree, 1986). Additionally, researchers have found a variety of ways in which parents can impact their youth's academic performance, such as grade point average, but less is known about how parents' relationships with their youth can impact school engagement. Considering that school engagement is thought to be a more pervasive outcome variable than grade point average, in so much that it is a concept connected with the student's overall well-being and learning experience (Dotterer & Lowe, 2011); additional research is needed to explore potential links between parent-child relationships and school engagement.

Despite numerous studies establishing the importance of family relationships on academic outcomes, it is not likely that these relationships completely explain school engagement. Self-regulation, the ability to self-initiate emotions, cognitions and behavior to accomplish a task, develops within the context of family relationships (Diaz, Neal, & Vachio, 1991) and is thought to contribute to school engagement (Sun & Rueda, 2012; Lichtinger & Kaplan, 2011; Butler, Cartier, Schnellert, Gagnon, & Giammarino, 2011). However, no studies

could be found that examined parent-child relationships, self-regulation and school engagement. The purpose of this study is to examine how parent-child warmth and parental involvement are related to preadolescent school engagement with self-regulation as a possible mediating variable. More specifically, this study will examine how self-reported involvement by mother, father and target child (each reported separately) and observed parent-child warmth are related to school engagement with self-reported self-regulation as a possible mediating variable.

Literature Review

School Engagement

Researchers have not always been clear on school engagement's name or definition. School engagement is a construct that has also been called student engagement, bonding, attachment, warmth, involvement and commitment (O'Farrell & Morrison, 2003). However, Fredericks et al. (2004) conducted a review of the school engagement literature and noted that school engagement is largely defined as a multifaceted construct comprised of behavioral, emotional and cognitive aspects. Behavioral engagement was mostly defined as a measure of a student's positive conduct, involvement in learning tasks and participation in school related activities; emotional engagement as a measure of a student's emotional reactions to the school and teacher; and cognitive engagement as a measure of the student's psychological effort and strategic learning.

School engagement literature has become increasingly important as it has been found to be linked to a variety of positive outcomes for students. For instance, school engagement has been linked to lower dropout rates and increased academic resilience (Finn & Rock, 1997), lower substance abuse (Bond et al., 2007), positive academic outcomes (Marks 2000; Patrick, Ryan, &

Kaplan, 2007; Wang & Holcombe, 2010), and higher scores on standardized tests (Connell, Spencer, & Aber, 1994).

Most importantly, school engagement has been presumed to be malleable (Connell, 1990; Finn & Rock, 1997); consequently, researchers have attempted to discover what factors increase it. A review of the literature reveals that school engagement has typically been studied in connection with school variables such as classroom instruction (Newmann, 1991), parent-teacher relationships (Murray, 2009), classroom context (Dotterer & Lowe, 2011), student's school satisfaction, (Reschly, Huebner, Appleton, & Antaramian, 2008), and the teacher-student relationship (Ladd, Buhs, & Seid, 2000). Surprisingly, one factor that has received far less attention in the research is familial relationships. However, within the last decade, there have been a growing number of articles that have suggested the existence of a link between family processes and school engagement (Spoth, Randall, & Shin, 2008; Simons-Morton & Chen, 2009; Simons-Morton & Crump, 2003; Mo & Singh, 2008; Garcia-Reid, Reid & Peterson, 2005).

With a few exceptions (see Kim & Rohner, 2002; Mo & Singh, 2008) the family processes and school engagement research has not focused on specific contributions of mothers and fathers within two-parent families. However, the little research that has been done has shown that both mother's and father's relationships and their respective involvement with their preadolescents have a similar significant impact on the child's school engagement despite reports that mothers were significantly warmer than fathers.

Family and School

There are numerous studies that have examined how familial relationships can impact adolescents' performance in the academic setting. These studies have examined such variables as Baumrind's parenting styles (Baumrind, 1967; Baumrind, 1968; Dornbusch, Ritter, Leiderman,

Roberts, & Fraleigh, 1987; Steinberg, Mounts, Lamborn, & Dornbush, 1991), parental support and behavioral control (Gray & Steinberg, 1999; Farkas & Grolnick, 2010) and parental expectations (Paulson, 1994), among many others. In general, this research has found that parenting described as supportive, responsive, clear on expectations, involved and directive is linked to academic benefits, like higher grade point averages.

Additionally, the existing research indicates that few studies have examined both parents in two-parent families to better understand how each parent contributes to academic outcomes. It is possible that mothers and fathers exhibit different effects on academic outcomes given that differences exist between mother's and father's relationships with their adolescents (Lamb, 1997). For example, studies have shown mothers to tend to spend more time with their children (Phares, Fields, & Kamboukos, 2008; Day & Lamb, 2004) and adolescents report feeling closer to their mothers than fathers (Hosley & Montemoyor, 1997; Langford, Lewis, Solomon, & Warin, 2001; Lewis & Lamb, 2003). Whether mothers exhibit a greater influence on preadolescents' school engagement than fathers is currently missing from the literature. Consequently, this study will attempt to contribute to the literature by examining both mother's and father's warmth and involvement and the youth's school engagement and determine whether maternal or paternal parenting behaviors exhibit a greater influence on the child's school engagement.

Parent-Child Warmth

Parental warmth is characterized by positive and supportive verbalizations towards the child. Positive benefits of parental warmth have been linked to emotional well-being, positive self-evaluation in preadolescents (Field, Diego, & Sanders, 2001; Doll & Lyon, 1998; Masche & Barker, 2001) and prosocial behaviors (Lindsey, Colwell, Frabutt, Chambers, & MacKinnon-

Lewis, 2008). The lack of parental warmth has also been linked with external and internal problems such as anxiety, anger, depression and low self-esteem, feeling misunderstood by others, lack of desire to be in social settings, and difficulty relating with others (Lee et al., 2001).

The parent-child warmth research examining academic outcomes is founded on attachment theory. Parent-child relationships that are warm and supportive create a safe haven for the child in times of distress and this allows the child to explore his environment outside the parent-child relationship (Bowlby, 1969, 1988). Numerous studies have documented the positive impact of parent-child warmth on social, emotional and behavioral development (see Cassidy & Shaver, 1999). Additionally, a number of studies have examined parent-child warmth and academic outcomes. These studies have found that strong parent-child warmth has been linked to cognitive development (DeVore & Ginsburg, 2005), higher grade point averages (Kim & Rohner 2002), youth's commitment to learn (Falkenstein, 2010), school connection (Schochet, Smyth, & Homel, 2007), less anxiety regarding middle school transition (Duchesne, Ratelle, & Poitras, 2009), emotional, social and behavioral competence (Furrer & Skinner, 2003; Cassidy & Shaver, 1999; Sameroff, Bartko, Baldwin, Baldwin, & Seifer, 1998; Sroufe, 1983; Pianta, 1999) and adaptive school behaviors (Lyons-Ruth, Alpern, Rapacholi, 1993).

Parent-child warmth is thought to be one of the most important parenting constructs for positive academic outcomes. Several studies have examined Baumrind's parenting styles and how they are related to grade point average (Dawson, 1996; Steinberg et al., 1991; Dornbusch et al., 1987). Subsequent studies have attempted to deconstruct the parenting typologies to better understand the specific parenting behaviors that influence grades (Cheung & Pomerantz, 2011; Kim & Rohner, 2002). Among the findings from these studies is that parental warmth was a better predictor of GPA when compared to parental control and involvement. Additionally, Kim

and Rohner (2002) deconstructed parental warmth into maternal and paternal warmth. Their findings indicated that girls reported their parents to be warmer than what boys reported their parents to be, boys and girls reported that their mothers were slightly warmer than their fathers and both parents' warmth had an independent influence on their child's grade point average. However, it is important to note that this study may not be generalizable to all populations since it was conducted with Korean American adolescents.

Only a few studies examining parent-child warmth and school engagement were found. These studies examined the relationship between parent-child warmth and school engagement using a variety of conceptualizations, which include parent-child warmth as a mediator between environmental factors and school engagement (Garcia-Reid et al., 2005; Morrison, Robertson, Laurie, & Kelly, 2002), parent-child relationships characterized by warmth and support as a predictor of school engagement (Murray, 2009), examining whether school assets predicted more variance than family functioning (e.g. supportive) for school engagement (Sharkey, You, & Schnoebelen, 2008) and parent-child warmth and school performance with school engagement as a mediator (Mo & Singh, 2008; Sirin & Rogers-Sirin, 2004). These studies indicated that warm parent-child relationships continue to be a salient factor for preadolescents and adolescents. These studies indicated that warm parent-child relationships continue to be a salient factor for preadolescents and adolescents. Each study found that parental warmth either directly or indirectly influenced school engagement. Conversely, family relationships characterized as negative and non-supportive accounted for low levels of school engagement even with the existence of warm and supportive student-teacher relationships (Sharkey et al., 2008). These studies also indicated that parental warmth is often the only parent-child construct used when examining family variables and school engagement. Only Mo and Singh (2008) and Murray

(2009) used additional family variables when examining parental warmth and school engagement. Their studies suggested that other familial variables, such as involvement and parental aspirations, were also correlated with school engagement, yet parental warmth had the highest correlation to school engagement amongst all of the other familial variables used in their studies.

A review of these studies also indicates that differences in maternal and paternal warmth have not been examined. This could potentially be a significant gap in the literature because other familial variables, similar to parental warmth, have shown gender differences between mothers and fathers. For example, Day and Padilla-Walker (2009) examined maternal and paternal connection, defined as feeling close with parents, and school engagement. They found that only the mother's reported connection with the child was directly linked to the child's school engagement.

In summary, few studies have examined how the parent-child relationship is related to school engagement and none have examined maternal and paternal warmth with pre-adolescents. Furthermore, no studies were found that used observed data of parent-child relationships and how they are related to school engagement. One of the unique aspects of this study is the use of multiple respondents in the family to measure school engagement and the use of observational data for parent-child warmth.

Parental Involvement

Parental involvement can be defined as the amount of time spent with one's offspring (Harris, Furstenberg, & Marmer, 1998) and has been suggested to be one of the central components to parenting for both fathers and mothers (Pleck & Masciadrelli, 2004). The

construct has been linked to adolescent psychological well-being, self-esteem and self-evaluation (Flouri & Buchanan, 2003; Gibson & Jefferson, 2006; Roberts & Bengtson, 1993).

Much like parental warmth, parents spending time with their children bodes well for their child's academic success. Parental involvement has been linked to better grades, positive school attitudes (Flouri, Buchanan, & Bream, 2002), academic success (Hoover-Dempsey, & Sadler 1997), attendance, educational aspirations (Greenwood & Hickman, 1991) and fewer internalizing and externalizing problems (Williams & Kelly, 2005).

However, only a few studies examining parental involvement and school engagement were found. These studies examined parental involvement and school engagement in a variety of conceptualizations, which included parental involvement and school engagement with school adjustment and peers as mediators (Simons-Morton & Chen, 2009), parental involvement as a predictor of school engagement (Simons-Morton & Crump 2003; Fan & Williams, 2010) and parental involvement and academic success with school engagement as a mediating variable (Spath, Randall, & Shin, 2008). This body of research indicated that parental involvement is directly related to school engagement, and is even the most predictive of school engagement when compared to other parenting variables such as parental monitoring and expectations. The research also showed that despite the link between parental involvement and school engagement, that parental involvement tends to decline, as well as school engagement, during the transition from elementary to middle school. A time when preadolescents are faced with increased amounts of stress resulting from the transition of schools and peer influences. Given the fact that school engagement tends to decline during this time period, Spoth, et al. (2008) sought to increase academic success over a seven week span by increasing parental involvement. They found that as they increased parental involvement, academic success increased via school engagement.

Even though parental involvement has been linked to school engagement, no studies could be found which deconstructed parental involvement into father and mother involvement, even though each parent's involvement may exert an individual influence on school engagement.

Fan and Williams (2010) speculated that parental involvement increases the child's school engagement through strengthening the parent-child attachment, claiming that time spent with the child communicated to them how important they were. If parental involvement is a means of strengthening the parent-child connection, then it is possible that fathers or mothers could exert independent influences on school engagement, depending on the strength of each connection.

Research has attempted to examine the influence of fathers and mothers on adolescents; however, the amount of research outlining how each parent matters in unique ways is small (Hastings, McShane, Parker, & Ladha, 2007). Parental involvement research has shown mothers and fathers have different types of interaction and amount of time spent with their children (Lamb, 1997), but much less is known about parental involvement during preadolescence (Hofferth et al., 2002; Pleck & Masciadrelli, 2004). This study will attempt to add to the literature regarding parental involvement during preadolescence, and school engagement by examining both maternal and paternal involvement. No such studies were found regarding parental involvement and school engagement.

Self-Regulation as a Potential Mediator

Self-regulation is rarely used as a mediator with adolescent outcomes (for exceptions, see Padilla-Walker, Harper, & Jensen, 2010; Moilanen, Shaw, & Fitzpatrick, 2010); however, it could potentially explain how parental involvement and parental warmth is associated with child school engagement. Self-regulation is defined as one's capacity to self-initiate cognitive,

behavioral and emotional capacities to accomplish a task (Grolnick & Farkas, 2002) and is considered key to competent functioning (Vazsonyi & Huang, 2010). In regards to this study, it will be used as a potential mediator because it is thought to develop as a result of parent-child interactions (Diaz, Neal, & Vachio, 1991) and has been linked with various school outcomes, such as successful adaptation to school, achievement test scores, greater motivation, school adjustment and literacy and math tests (Purdie, Carroll, & Roche, 2004; Neuenschwander, Rothlisberger, Cimeli, & Robebers, 2011; Grolnick & Ryan 1989; Gustavo et al., 2012; Ryan, Connell, & Deci, 1985).

One of the key characteristics attributed to influence the development of self-regulation is socialization (Moilanen, Shaw, & Fitzpatrick, 2010). Socialization is described as the process through which individuals accept and internalize other's beliefs, perspectives and behaviors (Jones & Gerard, 1967). Since parents are primarily responsible for socializing their children, self-regulation research has examined characteristics of parenting practices and parent-child relationships and how they influence the development of self-regulation; however, the focus has primarily been on parenting practices, as opposed to the parent-child relationship (Moilanen et al., 2010). Despite this, the research that has focused on characteristics of the parent-child relationship has indicated that parental involvement and warm, supportive, and sensitive behaviors from parents toward their child foster the development of self-regulation (Eisenberg et al., 2005; Maccoby, 2000; Rothbaum & Weisz, 1994; Purdie, Carroll, Roche, 2004). The research has also speculated that high levels of parental warmth, coupled with parental monitoring and school involvement, is essential for development self-regulation in early adolescents (Bowers et al., 2011).

Few studies could be found that examined both fathers and mothers relationships with their child and the child's self-regulation, however, the first of which was conducted by Brody and Ge (2001). Their study coupled observational data and reports from early adolescents regarding their relationships with both their parents. They found that fathers and mothers described as nurturing and responsive exerted a direct effect on their adolescent's self-regulation. The other two studies examined self-regulation as a mediator between parent-child relationships and adolescent outcomes (Padilla-Walker & Christensen, 2011; Padilla-Walker et al., 2010). These two studies are of particular note because both examined self-regulation as a mediator between parent-child connection and preadolescent outcomes, but only one included parental involvement. The study that accounted for parental involvement found a self-regulation mediating effect for the father's and mother's relationship with their child and positive preadolescent outcomes, whereas the study that did not include parental involvement found that self-regulation only mediated mother-child relationship and positive adolescent outcomes. The current study will attempt to better understand the mediating role of self-regulation between parental involvement and positive preadolescent outcomes.

Self-regulation and school outcomes. Self-regulation was thought to be a potential mediator for student engagement for a few reasons. As stated previously, self-regulation has been associated with achievement test scores, school motivation and adjustment (Purdie et al., 2004; Neuenschwander et al., 2011; Grolnick & Ryan, 1989; Gustavo et al., 2012; Ryan et al., 1985). Additionally, Eisenberg, Valiente and Eggum (2010) speculated that children that are capable of regulating their experiences are likely to act appropriately within the school setting and participate, yet they also stated that there are not very many studies to support this speculation.

The research that does exist has shown that self-regulation in children is related to various aspects of school engagement. For example, self-regulation has been linked to classroom participation for kindergartners (Valiente, Lemery-Chalfant, & Swanson, 2010), enjoying school for early adolescents (Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008) and ability to learn through reading in early adolescents (Butler et al., 2011). Additionally, self-regulation has been found to be related to school engagement for college students experiencing anxiety over taking an online course for the first time (Sun & Rueda, 2012).

An examination of the self-regulation research provides sufficient reason to examine self-regulation as a mediating variable between parental warmth, involvement and school engagement. This study will attempt to contribute to literature by examining fathers and mothers separately to capture their individual influences on adolescent outcomes and the mediating effects of self-regulation and by examining both parental warmth and involvement and their relation to self-regulation.

Control Variables

Beyond parental involvement, warmth and the child's self-regulation this study will also control for the child's age, race, and the household income. School engagement has been found to decrease over time as students' age (Simons-Morton & Crump, 2003; Simons-Morton & Chen, 2009) and lower levels of school engagement have been linked to family income and race (Li & Lerner, 2011; Li, Lynch, Calvin, Liu & Lerner, 2011; Perdue, Manzeske, & Estell, 2009). Because previous studies have found that age, race, and household income have been linked to school engagement, they will be controlled for in this study.

Purpose Statement

As stated earlier, the purpose of this study was to identify how observed parent-child warmth and reported parental involvement are related to parent and child reported school engagement, with self-regulation as a mediating variable.

Hypotheses

The following hypotheses were tested:

- 1) Parental involvement (mother involvement and father involvement) will be positively related to school engagement.
- 2) Observed parent warmth (mother warmth and father warmth) will be positively related to school engagement.
- 3) Self-regulation will partially mediate the relationship between the parent-child warmth, parental involvement and school engagement.

Method

Participants

The participants for this study were taken from Waves 2 and 3 of the *Flourishing Families Project* (FFP). The exogenous variables of parental involvement, parent-child warmth, and child self-regulation were taken from Wave 2, and the endogenous variable, child school engagement was taken from Wave 3 with Wave 2 school engagement used as a control variable. Wave 1 data was not used because it did not include child, mother, and father reports for all constructs used in this study. The FFP is an ongoing, longitudinal study of inner family life involving 500 families (163 single-parent, 337 two-parent) with children between the ages of 10 and 14 at the initial wave. Ninety-four percent of participants from Wave 1 also completed the

data for Wave 3 2 (N = 478, 141 single parent and 335 two-parent families). Only the 335 two parent families were used in this study.

Average number of children in these families was 2.48 (SD=1.13) for families with a girl as the target child and 2.41 (SD=.91) for families with a boy as the target. The average age of target children in Wave 3 was 13.25 (SD=1.01) for girls and 13.30 years (SD=.99) for boys, and the average age of mothers was 45.40 (SD=5.67) and of fathers was 47.34 (SD=5.98). Seventy-six percent of the girls and 79.6% of the boys were Caucasian; 5.4% and 3.6% respectively were African-American; 1.8% and 0.6% respectively were Hispanic; 4.2% and 3.6% respectively were Asian-American, and 12.5% and 12.5% respectively were multi-ethnic. The remaining 12.5% of girls and 12.6% of boys did not report ethnicity. In terms of school grade level at Wave 3, 40.5% of girls and 36.5% of boys were in the 7th grade; 29.2% and 30.0% were in the 8th grade, and 24.6% of girls and 20.1% of boys were in the 9th grade. The remaining 5.7% of girls and 8.4% of boys did not report what grade they were in. (Approximately 75 of families of girls and 6.6% of families of boys reported an income less than \$39,999 per year (all percentages for families of girls are reported first); 7.8% and 4.8% made between \$40,000 and \$59,999; 14.3% and 15.0% made between \$60,000 and \$79,999; 16% and 15% made between \$80,000 and \$99,999; 12.5% and 16.2% made between \$100,000 and \$119,999; 14.9% and 15.6% made between \$120,000 and \$149,999; and 15.4% and 27% made more than \$150,000. For boys approximately 12% of income data was missing (14.8% for girls).. In terms of education, 60% of mothers and 70% of fathers reported having a bachelor's degree or higher.

Families were interviewed in their homes, with each interview consisting of a one-hour video and a one-and-one half hour self-administered questionnaire for each family member. The one-hour video was coded using the Iowa Family Interaction Rating Scales (IFIRS). For this

study, survey data, as well as, observational coding data were utilized, as provided by all family members (child, mother, and father).

Procedure

Participant families for the FFP were selected from a large northwestern city and were interviewed in 2008 and approximately one year later for Wave 3. Families were primarily recruited using a purchased national telephone survey database (Polk Directories/InfoUSA). This database claimed to contain 82 million households across the United States and had detailed information about each household, including presence and age of children. Families identified using the Polk Directory were randomly selected from targeted census tracts that mirrored the socio-economic and racial stratification of reports of local school districts. All families with a child between the ages of 10 and 14 living within target census tracts were deemed eligible to participate in the FFP. Of the 692 eligible families contacted, 423 agreed to participate, resulting in a 61% response rate for the first wave. However, the Polk Directory national database was generated using telephone, magazine, and internet subscription reports; so families of lower socio-economic status were under-represented. Therefore, in an attempt to more closely mirror the demographics of the local area, a limited number of families were recruited into the study through other means (e.g., referrals, fliers; $n = 77$, 15%). By broadening our approach, we were able to significantly increase the social-economic and ethnic diversity of the sample.

All families were contacted directly using a multi-stage recruitment protocol. First, a letter of introduction was sent to potentially eligible families. Second, interviewers made home visits and phone calls to confirm eligibility and willingness to participate in the study. Once eligibility and consent were established, interviewers made an appointment to come to the family's home to conduct an assessment interview that included video-taped interactions (not

used in current study), as well as, questionnaires that were completed in the home. The most frequent reasons cited by families for not wanting to participate in the study were lack of time and concerns about privacy. It is important to note that there were very little missing data. As interviewers collected each segment of the in-home interview, questionnaires were screened for missing answers and double marking.

Measures

Parent-child warmth. Two latent variables, Father-child Warmth and Mother-child Warmth were created using codes from behavioral observation for the Iowa Family Interaction Rating Scales, IFIRS (Melby & Conger, 1998) (See Appendix). This coding system is a global or macro-level observational coding system meaning that the focals (or the primary person of interest in the video task) are coded according to their overall characteristics. This coding system measures behavioral and emotional characteristics of individuals, as well as, relationship processes in both discussion-based and activity-based interactions. Behaviors are coded at the following two levels: Individual Characteristics Scales and Dyadic Interaction Scales. The Iowa Family Interaction Rating Scales were initially developed to code behavioral processes in discussion and problem-solving interactions in families with adolescents (Lorenz & Melby, 1994). This system has been used extensively to score interaction in young-adult dyads and was recently adapted for scoring behaviors of parents and young children (2-8 years of age) engaged in activity-based interactions (Melby & Conger, 1998). This coding system has also been used successfully when scoring interactions in Native-American and African-American families (Melby & Conger, 1998).

Parent-child interaction tasks are coded using 39 behavior scales for each individual. These scales include: Individual Characteristics Scales, Dyadic Interaction Scales, Dyadic

Relationship Scales, Group Interaction Scales, Parenting Scales, Individual Problem-Solving Scales and Group Problem-Solving Scales.

Flourishing Families coders were trained to provide a macro level rating from 1 to 9 on each behavior scale. The coders received over 90 hours of training which included tests over content of scales, as well as, practice coding couples and families with feedback from certified coders. Coders had to code at least one criterion couple task that had also been coded by certified coders at the Iowa Behavioral and Social Science Research Institute and reach a minimum of 80% inter-rater agreement in order to become a certified coder. The coding manual provided extensive descriptions of each scale, as well as, examples and non-examples of the codes. Once a coder became certified, 25% of their coded tasks were then blindly assigned to a second coder. Assignments for reliability coding were made in such a way that coders were unaware which of their tasks would be coded by two people.

Parent-child warmth variables will be created by using summed totals of the following observational dyadic codes as indicators: warmth/support, escalate warmth and listener responsiveness.

According to IFIRS, Warmth/Support is defined as “the degree to which the focal expresses liking, appreciation, praise, care, concern, or support for the other person. Take into account three types of behavior: nonverbal communication, such as affectionate touching, kissing, and loving smiles; supportiveness, such as showing concern for the other’s welfare, offering encouragement, and praise; and content, such as statements of affirmation, empathy, liking, appreciation, care and concern. In general, rate how much the focal demonstrates care and support for the other. In scoring warmth/support, look for combinations of behaviors and weigh

affect and nonverbal behaviors more heavily than content of statements” (Melby, et al., 1998, P.101).

According to IFRS, Escalate Warmth is defined as “the focal’s tendency to escalate his/her own and/or supportive behaviors directed toward another interactor. Escalate warmth/support is coded if the focal follows one warm/supportive behavior with another such behavior or if the original behavior has intensified. Include all behaviors coded as warmth/support (e.g., praise, caress, affirm, approve, empathize, admire, etc.), including Endearment and Physical Affection” (Melby, et al., 1998, P.113).

According to IFIRS, Listener Responsiveness is defined as a scale which measures the behaviors of the focal as a listener. It assess the degree to which the focal attends to, shows interest in, acknowledges, and validates the verbalizations of the other person through the use of nonverbal backchannels and verbal assents. A responsive listener is oriented to the speaker and makes the speaker feel that he/she is being listened to rather than feeling like he/she is talking to a blank wall. the listener conveys to the speaker that he/she is interested in what the speaker has to say" (Melby, et al., 1998, P.125).

Parental involvement. Two latent variables, mother involvement and father involvement, will be created using self and other-report from mother, father and child collected at Time 2 of the Flourishing Families Project (See Appendices). Mothers and Fathers responded to 16 questions based on a 5-point Likert scale ranging from 1 (never) to 5 (always). Eight questions were regarding the respondent, and the other eight were questions regarding the respondent’s partner. Sample questions include, “Help your child with homework?” and “Read books or magazines with your child?” A higher the score indicates a greater the degree of mother or father involvement in the child’s life. Children’s reports were attained using an 8-item

modified version of Inventory for Father Involvement (Hawkins, Bradford, Palkovitz, Day, Christiansen, & Call, 2002). Responses ranged from 1 (never) to 5 (very often) with sample items such as “give you encouragement” and “act as a friend to you”. Children answered items for each parent respectively. Higher scores indicate higher level of parental involvement. The latent variables of mother and father involvement will be created using three indicators (child, mother, and father report using the mean score of items in these scales).

The alpha reliability coefficients for Wave 2 “mother involvement” were .83 for child’s report, .64 for mother’s report, and .67 for father’s report. The reliability coefficients for “father involvement” were .83 for child report, .74 for father report, and .81 for mother report.

School engagement. School engagement was assessed using Fredericks, Blemenfield, and Paris’ School Engagement Scale (2004) which includes cognitive, behavioral and emotional subscales. At Times 2 and 3 child, mother, and father report were collected. Respondents were asked the extent to which they agreed/disagreed with items such as “pays attention in class”, “feels happy at school”, and “feels support from his or her teachers at school.” Responses ranged from 1 (strongly disagree) to 5 (strongly agree), with higher scores reflecting greater ability to engage in prosocial behavior and focus at school. Given that the measure was originally designed as a child self-report scale, wording changes were made in order for the parents to serve as respondents about their child’s level of school engagement.

The overall reliability in the Fredericks’ et al. study was .75 and the alpha coefficients for this sample were .83 for time 2, and .82 at time 3. Previous reliability estimates are unavailable, given that the measure was adapted for this study specifically. For mothers, reliability coefficients were .89 at time 2 and .88 at time 3. For fathers, the coefficients were .87 at time 2 and .86 at time 3. A latent variable of school engagement at time 2 was created with the child’s,

mother's, and father's report as three indicators. The same was done for school engagement at time 3.

Self-regulation. To create a latent variable for child self-regulation a 13-item version of the Novak and Clayton (2001) self-regulation measure was used. The child completed these items, and both parents answered the items creating a child self-report, mother report and father report were used as indicators of the latent variable. In the parental version, parents responded to how much they agreed or disagreed with statements about their child, such as “my child has difficulty controlling his/her temper,” “my child gets distracted by little things,” and “my child slams doors when she/he is mad.” Responses ranged from 1 (never true) to 4 (always true) with higher scores indicating that the child is better able to regulate his/her emotions, behavior, and cognitions. Cronbach's Alphas in the original study were .88 (overall), .88 (emotional subscale), .81 (cognitive subscale), and .79 (behavioral subscale). The alpha coefficients in the sample reported in this study were .80-child, .88-mother, and .87-father for the overall scale.

The child version also included a 13-item questionnaire with the same 1-4 Likert scale as described in the parent version. Children responded to items about their own ability to set goals, regulate negative emotions, and disruptive behavior. Sample items included: “I have a hard time controlling my temper” and “I get distracted by little things.” Novak and Clayton (2001) found reliability coefficients to be .95 (emotional subscale), .96 (cognitive subscale), and .94 (behavioral subscale).

The questionnaire on self-regulation has been shown to have predictive validity in that it has a negative association with substance use, and respondents with lower levels of self-regulation were more likely to transition into more serious drug use. Confirmatory factor analysis showed that the items loaded into a three-factor structure with loadings ranging from .87 to .92.

The factor loadings specific to this study were .57 for the child self-report, .85 for mothers, and .78 for fathers.

Proposed Analysis

The analysis will proceed through several steps. First, means, standard deviations, and correlations were be calculated for all variables. Second, Confirmatory factor analysis was used to test how well the indicators load onto each latent variable. MPlus (Muthen & Muthen, 2012) was be used to analyze the beta coefficients for the structural paths represented in Figure 1 with mother and father parental involvement and mother and father warmth at Time 2 predicting school engagement at Time 3 with child self-regulation at Time 2 as a potential mediating variable. Group comparison was used to compare differences in the paths by gender of child. A full constrained model was compared with a fully unconstrained model, and a Chi-square difference test was used to determine if the two models were different which they were. There were very few missing data at either time point (less than 2%). As interviewers collected each segment of the in-home interview, questionnaires were screened for missing answers and double marking. Full Information Maximum Likelihood was used to handle missing data,

Results

The correlations, means and standard deviations for all measured variables are shown in Table 1. All three reporters' mean scores for mother involvement were significantly higher than the means score for father involvement, and this was true for both sons (child report- \bar{X} =3.94, SD = .63 vs. \bar{X} =3.86, SD =.63, t =2.54, df =166, p <.05; mother report- \bar{X} =4.06, SD =.44 vs. \bar{X} 3.81, SD =.56, t =6.02, df =166. p <.001; father report- \bar{X} =4.09, SD =.48 vs. \bar{X} =3.85, SD =.41, t =6.43, df =166, p <.001) and daughters (child report- \bar{X} =4.03, SD =.60 vs. \bar{X} =3.88, SD =.68, t =4.24,

$df=167, p<.001$; mother report- \bar{X} 4.08, $SD=43$ vs. \bar{X} =3.84, $SD=55, t=6.70, df=167, p<.001$;
father report- \bar{X} =4.09, $SD=.50$ vs. \bar{X} =3.90, $SD=42, t=5.38, df=167, p<.001$).

For warmth toward sons, only the mean scores for observed warmth and listener responsiveness were significantly higher for mothers compared to fathers (warmth- \bar{X} =4.92, $SD=1.31$ vs \bar{X} =4.60, $SD=1.14, t=2.56, df=166, p<.01$, escalate warmth- \bar{X} =3.16, $SD=1.34$ vs. \bar{X} =3.07, $SD=1.36, t=.68, df=166, p=.50$; listener responsiveness- \bar{X} =6.44, $SD=1.07$ vs. \bar{X} =5.98, $SD=1.12, t=4.35, df=166, p<.001$). None of the mean scores for mother warmth toward daughters were significantly different from scores for father warmth toward daughters (warmth- \bar{X} =4.94, $SD=1.31$ vs. \bar{X} =4.79, $SD=1.36, t=1.15, df=167, p=.25$; escalate warmth- \bar{X} =3.41, $SD=1.45$ vs. \bar{X} =3.23, $SD=1.28, t=1.39, df=167, p=.17$; listener responsiveness- \bar{X} =6.50, $SD=1.02$ vs. \bar{X} =6.28, $SD=1.24, t=1.88, df=167, p=.06$).

Regarding gender differences in self-reported self-regulation, sons' and daughters' mean scores for self-regulation were not significantly different from each other ($\chi=2.84, SD=.44$ and $\chi=2.84, SD=.46, F=.001, df=1, 333, p=.98$); however, both mothers and fathers reported their daughters to be more self-regulated than sons (mother report for daughters- $\chi=2.96, SD=.48$ vs. for sons- \bar{X} = 2.80, $SD=.49, F=2.41, df=1, 333, p<.01$; father report for daughters- \bar{X} =2.95, $SD=.45$ vs. for sons \bar{X} =2.80, $SD=.46, F=9.11, df=1, 333, p<.001$). There were statistically significant differences across gender for school engagement at Time 3 with girls demonstrating higher school engagement than boys (girls' report- \bar{X} =3.74, $SD=.60$ vs. boys' report \bar{X} =3.54, $SD=.57, F=8.92, df=1, 333, p<.001$; mothers' report for girls- \bar{X} =3.95, $SD=.56$ vs mothers' report for boys- \bar{X} =3.64, $SD=.66, F=21.29, df=1, 333, p<.001$, fathers' report for girls- \bar{X} =3.87, $SD=.57$ vs fathers' report for boys- \bar{X} =3.64, $SD=.59, F=13.91, df=1, 333, p<.001$).

As seen in Table 1, the correlations between the reports of mother involvement and the three observed warmth codes, while statistically significant, were small (.15, $p < .05$ for maternal warmth and involvement for sons, .15, $p < .05$ for maternal escalate warmth and involvement for sons, .18, $p < .05$ maternal listener responsiveness and involvement for sons, .17, $p < .05$ maternal warmth and involvement for daughters, .11, $p < .05$ maternal escalate warmth and involvement for daughters and .27, $p < .05$ for maternal listener responsiveness and involvement for daughters). None of the reports of father involvement were significantly correlated with the father warmth codes. Since these low correlations posed no problems in regards to multicollinearity, we could proceed with analyzing the model as it was hypothesized without combining parental involvement and observed parental warmth variables.

The correlations for the indicators of the mother and father involvement reports with the report of school engagement at Time 3 were in the hypothesized directions (mother involvement with school engagement— $r = .33$, $p < .001$ for son's report, $r = .15$, $p < .05$ for mother's report, $r = .38$, $p < .001$ for daughters report, $r = .24$, $p < .01$ for mother's report; father involvement with school engagement— $r = .30$, $p < .001$ for son's report, $r = .18$, $p < .05$ for mother's report, $r = .42$, $p < .001$ for daughter's report, $r = .24$, $p < .01$ for mother's report and $r = .22$, $p < .01$) for father's report.

Most of the correlations of indicators for mother warmth were not significantly correlated with indicators of child school engagement at Time 3. Mother warmth was only significantly correlated with mother report and father report of school engagement ($r = .15$, $p < .05$ and $r = .17$, $p < .05$), and none of the indicators for father warmth were significantly correlated with school engagement at Time 3. Correlations between other variables are shown in Table 1.

SEM Direct Effects

None of the control variables (child age, race, and number of siblings or monthly household income) were significantly related to school engagement at Time 3 for sons or daughters, so all were dropped from the model and are not shown in figure 2. This was a two wave panel study so school engagement at Time 2 was controlled for by including it in the model as an exogenous variable. Mother involvement Time 2 was positively associated with school engagement at Time 3 for sons and daughters (sons- $\beta = .17, p < .05$; daughters- $\beta = .23, p < .01$). Father involvement at Time 2 was also positively associated with school engagement at Time 3 for sons and daughters ($\beta = .16, p < .05$ and $\beta = .29, p < .001$). Neither observed mother or father warmth were significantly related to school engagement at Time 3 (mother warmth- $\beta = .05$ for sons, $\beta = .05$ for daughters; father warmth- $\beta = .04$ for sons, $\beta = .05$ for daughters).

Mediation Effects

Mother involvement at Time 2 was positively related to child self-regulation at Time 2 for sons and for daughters ($\beta = .19, p < .05$ for sons and $\beta = .25, p < .01$ for daughters). Father involvement at Time 2 was also positively related to child self-regulation at Time 2 for sons and daughters ($\beta = .21, p < .01$ for sons and $\beta = .37, p < .001$ for daughters). Observed mother warmth at Time 2 was positively related to child self-regulation at Time 2 for both sons and daughters ($\beta = .19, p < .05$ for sons and $\beta = .17, p < .05$ for daughters). Observed father warmth at Time 2 was positively related to child self-regulation at Time 2 for sons ($\beta = .16, p < .05$) but not daughters ($\beta = .15, p = n.s.$). Child self-regulation at Time 2 was positively associated with school engagement at Time 3 for both sons and daughters ($\beta = .54, p < .001$ for sons, $\beta = .59, p < .001$ for daughters).

Since observed parental warmth for either parent was not related to school engagement, I analyzed a model using self-report questionnaire data for parental warmth with mother, father,

and child reports. Similarly to the model using observed data, the paths between mother warmth and school engagement and father warmth and school engagement were not significant using questionnaire data.

To test whether the paths in the model were significantly different for boys and girls, a fully unconstrained model was compared to a fully constrained model, and then an X^2 difference test was calculated. The results indicated that the models were significantly different from each other ($349.22-291.29=57.93$, $df=279-240=39$, $p<.05$). To determine which paths were different for boys and girls, one path was constrained at a time until subsequent model fit indicated which model best fit the data. The results indicated that the path from father involvement at Time 2 to Child self-regulation at Time 2 was stronger for girls than for boys, and the path from father involvement at Time 2 to child school engagement at Time 3 was also stronger for girls than for boys. None of the other paths were statistically different in terms of gender of child.

The model fit indices indicated that the model adequately fit the data with X^2 being non-significant ($X^2=326.23$, $df=288$, $p=.06$), the conditional fit index greater than .95 ($CFI=.970$), and $RMSEA$ and $SRMR$ lower than .05 (.030 and .048 respectively) (Kline, 2011). The model explained 52% of the variance in school engagement at Time 3 for boys and 67% for girls.

To test whether child self-regulation significantly mediated relationships in the model, Sobel tests (Sobel, 1982) were conducted for each set of indirect paths. The results are shown in Table 2. Child self-regulation at Time 2 was a significant mediator for mother involvement at Time 2 and school engagement at Time 3 for sons and daughters (Sobel=2.25, $p<.05$ for sons, Sobel=2.14, $p<.05$ for daughters). Child self-regulation at Time 2 was a significant mediator for father involvement at Time 2 and school engagement at Time 3 for sons and daughters (Sobel=2.22, $p<.05$ for sons, Sobel=2.71, $p<.005$ for daughters). Child self-regulation at Time 2

was a significant mediator for observed mother warmth at Time 2 and school engagement at Time 3 for sons and daughters (Sobel=2.49, $p < .005$ for sons, Sobel=2.24, $p < .05$ for daughters). Child self-regulation at Time 2 was a significant mediator for observed father warmth at Time 2 and school engagement at Time 3 for sons and daughters (Sobel=2.25, $p < .05$ for sons, Sobel=2.25, $p < .05$ for daughters).

In summary, the results supported hypothesis 1 and 3 (see figure 2). Hypothesis 2 was not supported because no significant pathways were found between observed maternal and paternal warmth for sons or daughters and school engagement (mother warmth- $\beta = .05$ for sons, $\beta = .05$ for daughters; father warmth- $\beta = .04$ for sons, $\beta = .05$ for daughters, see figure 2).

Discussion

The purpose of the current study was to determine whether parental involvement and parent-child warmth would be directly related to school engagement and to examine child self-regulation as a potential mediator. Additionally, the study attempted to explore whether any differences exist between mother's and father's influence on their child's school engagement via involvement and warmth with child self-regulation as a mediator. Hypotheses 1 and 3 were supported while hypothesis 2 was not.

None of the control variables were correlated with school engagement. This was unexpected in that school engagement has been found to be correlated with race, age and family income (Simons-Morton & Crump, 2003; Liu et al., 2011; Perdue et al., 2009). However, it is important to note that the sample used in this study had a higher average monthly income than average and racial diversity was under represented in comparison to studies that have found links between these variables and school engagement. Additionally, studies that have found

correlations between age and school engagement examined the relationship over the course of several years, whereas this study did not (Simons-Morton & Chen, 2009).

Hypothesis 1: Parental Involvement and School Engagement

Mother and father involvement will be positively related to school engagement (hypothesis 1) was supported. The results indicated that maternal and paternal involvement at time 2 were related to girl's and boy's school engagement at time 3. This was expected as parental involvement has previously been linked to school engagement (Simons-Morton & Crump, 2003; Fan & Williams, 2010). This study makes a unique contribution inasmuch that is the first study, according to the author's knowledge, that examines both paternal and maternal involvement in two-parent families and its' impact on the child's school engagement. Examining both fathers and mothers in the same study revealed that father's involvement with daughters was more highly correlated with school engagement than the mother's involvement. Additionally, both maternal and paternal involvement were more highly correlated with school engagement for daughters than sons. This was not entirely unexpected in that previous research has shown that girls during this age exhibit more school engagement than boys (Simons-Morton & Chen 2009). However, these findings raise a few important questions, namely, why are boys not as engaged in school as girls are, and why was father's involvement more important than mother involvement for girls?

These questions can be answered with a self-determinism theory lens. Ryan and Deci, (2000) stated that self-determinism theory posits that there are three innate psychological needs: competency, autonomy and relatedness. The fulfillment of these needs enables the child to develop intrinsic motivation which enables the child to direct their thoughts, emotions and behaviors towards accomplishing goals that they are self-driven towards. While this study

examined relatedness needs it did not account for competency or autonomy needs of the preadolescents. Recent research suggests that boys and girls are treated differently in the school setting. Cornwell, Mustard and Parys (2012) found that boys are more likely to be stereotyped as problem children because they tend to have more externalizing behaviors compared to girls. Such labels may detract from any sense of competency preadolescent boys may have. With a lack of competency, boys would have less desire to use their behavioral, emotional and cognitive capacities to engage in the school setting.

In regards to why father involvement was more highly correlated with daughter's school engagement than the mother's involvement, research shows that the transition from elementary to middle school is an emotionally vexing time for preadolescents as it has been linked to anxiety (Tobbell, 2003; Zeedyk et al., 2003; West, Sweeting, & Young, 2010). Additionally, this age is associated with higher levels of mother-daughter conflict, above and beyond what sons experience with fathers or mothers (Garber, Archibald, & Brooks-Gunn, 1999; Robin & Foster, 1989). It is possible that the preadolescent girls in this study were experiencing greater disruptions in their relatedness with their mothers and therefore relied more heavily on their relationships with their fathers, making that relationship more highly correlated with school engagement.

One caveat to the finding that father's involvement was highly correlated with school engagement was that the parental involvement measure used in this study, Inventory for Father Involvement (Hawkins et al. 2002), was originally created to measure paternal involvement and not maternal involvement. It is possible that the measure captures paternal involvement better than maternal involvement.

Hypothesis 2: Observed Parental Warmth and School Engagement

Observed parent warmth (mother and father warmth) will be positively related to school engagement (hypothesis 2) was not supported. This was unexpected because previous studies have found that parental warmth is associated with school engagement (Murray, 2009; Mo & Singh, 2008; Sirin & Rogers-Sirin, 2004). One potential explanation is that the current study used parental warmth observational data, which is not based on report of the behavior but the presence of it within the roughly nine minute video segment. Consequently, the observational data is only a small slice in time and is different than the broader parental warmth concept used in the aforementioned studies. For example, Garcia-Reid, Reid, and Peterson (2004) assessed for parental warmth by asking participants how often their parents had given encouragement within the past 30 days. Additionally, Murray's (2009) study which found a link between parental warmth and school engagement used a broader measure of parental warmth which included not only parental warmth, but also parental involvement.

The current study adds to the existing literature in that it shows that parental warmth and involvement may have a different impact on preadolescents' school engagement. Future research should account for the potential difference between these constructs to better understand how they are related to school engagement for preadolescents. Additionally, future research should examine parent-child warmth and parental involvement using self-report for both constructs to see if the lack of correlation between observed warmth and school engagement in this study was due to observational measures of parental warmth.

Hypothesis 3: Child Self-regulation as a Potential Mediating Variable

Child's self-regulation will partially mediate the relationship between parent-child warmth, parental involvement and school engagement (hypothesis 3) was supported. This was

expected. This finding contributes to the scant research on preadolescent self-regulation as a mediator and coincides with what these studies have found, that preadolescents' self-regulation mediates the relationship between parent-child relationships and preadolescent self-directed behaviors (Padilla-Walker et al., 2010; Moilanen et al., 2010; Padilla-Walker & Hardy, 2010). The unique contribution from this study is that both parents' relationships and involvement with the child is linked to the child's self-regulation.

These results can be explained in light of self-determinism theory. As stated previously, self-determinism theory posits that the fulfillment of relatedness needs fosters the development of intrinsic motivation and exploratory behaviors (Deci & Ryan, 2000; Ryan & La Guardia, 2000). This concept borrows from attachment theory in that secure and responsive relationships enable the child to explore his or her surroundings (Bowlby, 1979). When the child's innate need of relatedness is not fulfilled the child is less likely to engage in self-directed behaviors and ability to use self-regulating behaviors (Ainsworth, Blehar, Waters, & Wall, 1978; Kopp, 1989). In regards to the current study, preadolescents that received parental warmth and involvement were more likely to self-direct their mental, emotional and behavioral capacities in the school setting.

Implications for Family Intervention

The findings of this study suggest that couple and family therapists as well as teachers examine various possibilities for reasons behind why some preadolescents are struggling to engage in school. It is possible that the school environment is the place where unmet parent-child attachment needs are manifested through behavioral, emotional or cognitive problems. Intervening in the parent-child relationship is especially important during this time period because preadolescents are beginning to assert their independence. Assertions for independence

can be hard for parents to understand and adapt to; consequently, this could result in attachment injuries or unmet needs within the parent-child relationship.

Intervening with the family through an Attachment-Based Family Therapy (ABFT) lens can help address these attachment issues. ABFT is a family therapy approach based on attachment, adolescent development and parenting research (Diamond et al., 2012) and has been found to be effective with adolescent depression and suicide (Diamond, Reis, Diamond, Siqueland, & Isaacs, 2002). Therapists with an ABFT lens would view preadolescent problems in school as a symptom of an insecure parent-child attachment. For example, this therapeutic approach would view adolescents that are emotionally disengaged, acting out or unable to focus on school work as symptoms of a parent-child relationship that is not meeting the adolescent's needs.

Therapists employing this therapeutic approach would encourage the parent-child dyad to discuss apparent attachment injuries. It's possible that the dyad is experiencing difficulties related to the preadolescent's desire for greater independence, which is commonly associated with this age group (Collins, Gleason, Sesma, 1997). This transition is likely to be difficult for many parents and some may respond by asserting more control or even disengage from the child, either of which would result in an attachment injury. After identifying and discussing these attachment injuries, the therapist then helps strengthen the parent-child attachment by helping the dyad establish trust, safety and finding ways the parent can meet the child's needs. Findings from this current study would suggest that therapists include both parents, if possible, in treatment because the relationship with each was found to be related to positive outcomes.

Limitations

This study had some sample, measurement and statistical limitations that should be considered when interpreting the results. The sample used for this study was from the Metropolitan area of Seattle, Washington, which may not be generalizable to other areas of the United States. Additionally, the sample had a higher average monthly income and underrepresented racial diversity compared to national averages. These sample limitations jeopardize the generalizability of the results of this study. Also, the study also cannot determine direction of effects. It is possible that children that are more capable of regulating their thoughts, feelings and behaviors are liked more by their parents and thus receive more of their parents' time.

Potential measurement limitations include the measure used for parental involvement and parental warmth. As previously stated, the parental involvement in this study was originally developed for paternal involvement. The Flourishing Families Project adapted the measure to assess for maternal involvement. It is possible that maternal involvement consists of different types of involvement behaviors that were not captured by the measure. Additionally, this study used observational data which may have confounded the results for a couple of reasons. First, it is possible that parental warmth observational data is a different construct than self-report measures used to assess parent-child relationships. For example, the Parent Child Social Connectedness Scale (Lee et al., 2001) self-report assess the strength of the parent-child bond with questions such as "I am able to relate to my child" and "I feel close to my child" and Iowa Family Interaction Rating Scales assess for the existence of any warm and supportive statements and not necessarily feelings of connectedness with the child (Melby, et al. 1998). The second potential reason why observational data may have confounded the results was because the video

segments used in the study were only nine minutes long. A short video segment may not provide ample opportunity for the parent-child dyad to express warm and supportive statements. Nine minutes is a small slice in time, a longer video segment may be a more accurate portrayal of parental-warmth.

Conclusion

This study highlights the importance of parent-child relationships for preadolescents. Parental involvement and warmth continue to be important, whether directly or indirectly through self-regulation for preadolescent's school engagement. Future research should attempt to answer why father's involvement is so highly correlated with daughter's self-regulation and school engagement and why is parental involvement more highly correlated than parental warmth with self-regulation and school engagement. Additionally, this current study creates questions regarding single-parent families. How would having only one parent affect the self-regulation and school engagement for preadolescents, especially in cases of daughters without fathers.

References

- Ainsworth, M. S., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of attachment: Assessed in the strange situation and at home*. Hillsdale, NJ: Lawrence Erlbaum.
- Amato, P. R. (1994). Father-child relations, mother-child relations, and offspring psychological well-being in early adulthood. *Journal of Marriage and Family*, *56*, 1031–1042.
- Amato, P. R., & Ochiltree, G. (1986). Family resources and the development of child competence. *Journal of Marriage and Family*, *48*, 47–56.
- Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs*, *75*, 43-88.
- Baumrind, D. (1968). Authoritarian vs. authoritative parental control. *Adolescence*, *3*, 255-272.
- Bond, L., Butler, H., Thomas, L., Carlin, J., Glover, S., Bowes, G., & Patton, G. (2007). Social and school connectedness in early secondary school as predictors of late teenage substance use, mental health, and academic outcomes. *Journal of Adolescent Health*, *40*(4), e9-e18.
- Bowlby, J. (1969). *Attachment and loss: Vol. I. Attachment*. New York: Basic Books.
- Bowlby, J. (1979). *The making and breaking of affectional bonds*. London: Tavistock.
- Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. New York: Basic Books.
- Bowers, E.P., Gestsdottir, S., Geldhof, G.J., Nikitin, J., Eye, A.V., & Lerner, R.M. (2011). Developmental trajectories of intentional self-regulation in adolescence: The role of parenting and implications of positive and problematic outcomes among diverse youth. *Journal of Adolescence*, *34*, 1193-1206.

- Brody, G.H., & Ge, X. (2001). Linking parenting processes and self-regulation to psychological functioning and alcohol use during early adolescence. *Journal of Family Psychology, 15*(1), 82-94.
- Bureau of Labor Statistics. (2009). United States Department of Labor. Retrieved from <http://www.bls.gov/>.
- Butler, D. L., Cartier, S.C., Schnellert, L., Gagnon, F., & Giammarino, M. (2011). Secondary students' self-regulated engagement in reading: Researching self-regulation as situated in context. *Psychological Test and Assessment Modeling, 53*, 1, 73-105.
- Cassidy, J., & Shaver, P. R. (1999). *Handbook of attachment: Theory, research, and clinical implications*. New York: Guilford.
- Cheung, C. S., & Pomerantz, E. M. (2011). Parents' involvement in children's learning in the United States and China: Implications for children's academic and emotional adjustment. *Child Development, 82*(3), 932-950.
- Collins, W. A., Gleason, T., & Sesma, A., Jr. (1997). Internalization, autonomy, and relationships: Development during adolescence. In J. E. Grusec & L. Kuczynski (Eds.), *Parenting and children's internalization of values* (pp. 78-99). New York, NY: Wiley.
- Connell, J.P. (1990). Context, self, and action: A motivational analysis of self-system processes across the life span. In D. Cicchetti & M. Beeghly (Eds.), *The self in transition: Infancy to childhood* (pp. 61-97). Chicago: University of Chicago Press.
- Connell, J. P., Spencer, M. B., & Aber, J. L. (1994). Educational risk and resilience in African American youth: Context, self, action, and outcomes in school. *Child Development, 65*, 493-506.

- Cornwell, C.M., Mustard, D.B., & Parys, J.V. (2012). Non-cognitive skills and the gender disparities in test scores and teacher assessments: Evidence from primary school. *The Journal of Human Resources*, 48(1), 236-264.
- Day, R. D., & Lamb, M. E. (Eds.). (2004). *Conceptualizing and measuring father involvement*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Day, R. D., & Padilla-Walker, L. M. (2009). Mother and father connectedness and involvement during early adolescence. *Journal of Family Psychology*, 23(6), 900-904.
- Dawson, M. (1996). Parenting style, education specific parenting practices, and adolescent achievement and achievement related factors. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 57, (7-A), 2852.
- Deci, E.L., & Ryan, R.M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry* 11, 4, 227-268.
- Devore, E.R., & Ginsburg, K.R. (2005). The protective effects of good parenting on adolescents. *Current Opinion*, 17, 460-465.
- Diamond, G.M., Diamond, G.S., Levy, S., Closs, C., Tonya, L., & Siqueland, L. (2012). Attachment-based family therapy for suicidal lesbian, gay, and bisexual adolescents: A treatment development study and open trial with preliminary findings. *Psychotherapy*, 49(1), 62-71.
- Diamond, G. S., Reis, B. F., Diamond, G. M., Siqueland, L., & Isaacs, L. (2002). Attachment-based family therapy for depressed adolescents: A treatment development study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 41, 1190–1196.

- Diaz, R.M., Neal, C.J., & Vachio, A. (1991). Maternal teaching in the zone of proximal development: A comparison of low- and high-risk dyads. *Merrill-Palmer Quarterly*, 37, 83-107.
- Doll, B., & Lyon, M. (1998). Risk and resilience: Implications for the practice of school psychology. *School Psychology Review*, 27, 348-363.
- Dotterer, A. M., & Lowe, K. (2011). Classroom, context, school engagement, and academic achievement in early adolescence. *Journal of Youth Adolescence*, 40, 1649-1660.
- Dornbusch, S. M., Ritter, P.L., Leiderman, P.H., Roberts, D.F., & Fraleigh, M.J. (1987). The relation of parenting style to adolescent school performance. *Child Development*, 58, 1244-1257.
- Duchesne, S., Ratelle, C. F., Poitras, S. C., & Drouin, E. (2009). Early adolescent attachment to parents, emotional problems, and teacher-academic worries about the middle school transition. *Journal of Early Adolescence*, 29(5), 743-766.
- Eccles, J. S., Flanagan, C. A., Lord, S., & Midgley, C. (1996). Schools, families, and early adolescents: What are we doing wrong and what can we do instead? *Journal of Developmental and Behavioral Pediatrics*, 1, 267-276.
- Eisenberg, N., Valiente, C., & Eggum, N.D. (2010). Self-regulation and school readiness. *Early Education and Development*, 21(5), 681-698.
- Eisenberg, N., Zhou, Q., Spinrad, T.L., Valiente, C., Fabes, R.A., & Liew, J. (2005). Relations among positive parenting and children's effortful control and externalizing problems. *Child Development*, 76, 1055-1071.

- Falkenstein, C.A. (2010). *Parent-child relationships as predictors of change in teacher-child relationships and school connectedness during early adolescence*. Retrieved from University of Oregon Libraries. (<http://hdl.handle.net/1794/11151>)
- Fan, W., & Williams, C.M. (2009). The effects of parental involvement on students' academic self-efficacy, engagement and intrinsic motivation. *Educational Psychology, 30*(1), 53-74.
- Farkas, M. S., & Grolnick, W. S. (2010). Examining the components and concomitants of parental structure in the academic domain. *Motivation and Emotions, 34*, 266-279.
- Field, T., Diego, M., & Sanders, C. (2001). Adolescent depression and risk factors. *Adolescence, 36*, 491-498.
- Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology, 82*(2), 221-234.
- Flouri, E., & Buchanan, A. (2003). The role of father involvement and mother involvement in adolescents' psychological well-being. *British Journal of Social Work, 33*, 399-406.
- Flouri, E., Buchanan, A., & Bream, V. (2002). Adolescents' perceptions of their fathers involvement: Significance to school attitudes. *Psychology in the Schools, 39*, 575-582.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept state of the evidence. *Review of Educational Research, 74*(1), 59-109.
- Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology, 95*, 148-162.
- Garber, J.A., Archibald, A.B., & Brooks-Gunn, J. (1999). The role of parents in the emergence, maintenance, and prevention of eating problems and disorders. In N. Piran, M.P., Levine

- & C. Steiner-Adair (Eds.), *Preventing eating disorders: A handbook of interventions and special challenges* (pp.44-62). Pennsylvania: Brunner/Mazel.
- Garcia-Reid, P., Reid, R. J., & Peterson, N. A. (2005). School engagement among Latino youth in an urban middle school context. *Education and Urban Society, 37*(3), 257-275.
- Gibson, D. M., & Jefferson, R. N. (2006). The effect of perceived parental involvement and the use of growth-fostering relationships on self-concept in adolescents participating in GEAR UP. *Adolescence, 41*, 111-125.
- Gray, M. R., & Steinberg, L. (1999). Unpacking authoritative parenting: Reassessing multidimensional construct. *Journal of Marriage and the Family, 61*, 574–587.
- Greenwood, G. E., & Hickman, C. W. (1991). Research and practice in parent involvement: Implications for teacher education. *Elementary School Journal, 91*(3), 279–288.
- Grolnick, W. S., & Farkas, M. (2002). Parenting and the development of children's self regulation. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 5: practical issues in parenting* (2nd ed.) (pp. 89–110). Mahwah, NJ: Lawrence Erlbaum Associates.
- Grolnick, W.S., & Ryan, R.M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology, 81*(2), 143-154.
- Gustavo, G., Crockett, L.J., Wolff, J.M., & Beal, S.J. (2012). The role of emotional reactivity self-regulation, and puberty in adolescents' prosocial behaviors. *Social Development, 21*(4), 667-685.
- Harris, K. M., Furstenberg, F. F., & Marer, J. K. (1998). Paternal involvement with adolescents in intact families: The influence of fathers over the life course. *Demography, 35*(2), 201-216.
- Hastings, P., McShane, K., Parker, R., & Ladha, F. (2007). Ready to make nice: Parental

- socialization of young sons' and daughters' prosocial behaviors with peers. *Journal of Genetic Psychology*, 168, 177-200.
- Hawkins, A. J., Bradford, K. P., Palkovitz, R., Christiansen, S. L., Day, R. D., & Call, R. A. (2002). The inventory of father involvement: A pilot study of a new measure of father involvement. *The Journal of Men's Studies*, 10(2), 183-196.
- Hofferth, S. L., Cabrera, N., Carlson, M., Coley, R. L., Day, R., & Schindler, H. (2007). Resident father involvement and social fathering. In S. L. Hofferth & L. M. Casper (Eds.), *Handbook of measurement issues in family research* (pp. 335–374). Mahwah, NJ: Erlbaum.
- Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research*, 67(1): 3-42.
- Hosley, C. A., & Montemoyor, R. (1997). Fathers and adolescents. In M. E. Lamb (Ed.), *The role of the father in child development* (3rd ed.) (pp. 162-178). New York: Wiley.
- Jones, E. E., & Gerard, H. B. (1967). *Foundations of social psychology*. New York: Wiley.
- Kim, K., & Rohner, R.P. (2002). Parental warmth, control, and involvement in schooling: Predicting academic achievement among Korean American adolescents. *Journal of Cross-Cultural Psychology*, 33, 2, 127-140.
- Kopp, C. B. (1989). Regulation of distress and negative emotions: a developmental view. *Development Psychology*, 25, 343-354.
- Ladd, G. W., Buhs, E. S., & Seid, M. (2000). Children's initial sentiments about kindergarten: Is school liking an antecedent of early classroom participation and achievement? *Merrill-Palmer Quarterly*, 46, 255-279.
- Lamb, M. E. (Ed.) (1997). *The role of the father in child development* (Third edition). New

- York: Wiley.
- Langford, W., Lewis, C., Solomon, Y., & Warin, J. (2001). *Family understandings: Closeness and authority in families with a teenage child*. London: Family Policy Studies Centre.
- Lee, R. M., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. *Journal of Counseling Psychology, 48*, 310-318.
- Lewis, C., & Lamb, M. E. (2003). Fathers' influences on children's development: The evidence from two-parent families. *European Journal of Psychology of Education, 18*, 211–228.
- Li, Y., & Lerner, R.M. (2011). Trajectories of school engagement during adolescence: Implications for grades, depression, delinquency, and substance use. *Developmental Psychology, 47*(1), 233-247.
- Li, Y., Lynch, A.D., Kalvin, C., Liu, J., & Lerner, R.M. (2011). Peer relationships as a context for the development of school engagement during early adolescence. *International Journal of Behavioral Development, 35*(4), 329-342.
- Lichtinger, E., Kaplan, A. (2011). *Purpose of engagement in academic self-regulation*. Wiley Online Library, 126. Retrieved from <http://dx.doi.org/10.1002/tl.440>
- Lindsey, E. W., Colwell, M. J., Frabutt, J. M., Chambers, J. C., & MacKinnon-Lewis, C. (2008). Mother-child dyadic synchrony in European American and African American families during early adolescence. *Merrill Palmer Quarterly, 54*, 289 – 315.
- Lorenz, F.O. & Melby, J.N. (1994). Analyzing family stress and adaptation: Methods of study. In R.D. Conger & G.H. Elder, Jr. (Eds.), *Families in troubled times: Adapting to change in rural America* (pp. 21-54). Hawthorne New York: Aldine.
- Lyons-Ruth, K., Alpern, L., & Rapacholi, B. (1993). Disorganized infant attachment

- classification and maternal psych-social problems as predictors of hostile-aggressive behavior in the preschool classroom. *Child Development*, 64, 572-585.
- Maccoby, E.E. (2000). Parenting and its effects on children. *Annual Review of Psychology*, 51, 1-27.
- Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle, and high school years. *American Educational Research Journal*, 37, 153-184.
- Masche, J.G., & Barber, B.K. (2001). *Connectedness and separation in parent-adolescent relationships: Indicators of a successful identity development?* Retrieved from <http://www.eric.ed.gov/PDFS/ED451962.pdf>
- Melby, J. N., Conger, R., Book, R., Rueter, M., Lucy, L., Repinski, D., Rogers, S., Rogers, B., & Scaramella, L. (1998). *The Iowa Family Interaction Rating Scales* (5th Ed.). Ames, IA: Iowa State University Institute for Social and Behavioral Research.
- Mo, Y., & Singh, K. (2008). Parents' relationship and involvement: Effects on students' school engagement and performance. *Research in Middle Level Education*, 31, (10), Retrieved from <http://www.nmsa.org/Publications/RMLEOnline/Articles/tabid/101/Default.aspx>
- Moilanen, K.L., Shaw, D.S., & Fitzpatrick, A. (2010). Self-regulation in early adolescence: Relations with mother-son relationship quality and maternal regulatory support and antagonism. *Journal of Youth Adolescence*, 39, 1357-1367.
- Morrison, G. M., Robertson, L., Laurie, B., & Kelly, J. (2002). Protective factors related to antisocial behavior trajectories. *Journal of Clinical Psychology*, 58, 277-290.
- Murray, C. (2009). Parent and teacher relationships as predictors of school engagement and functioning among low-income urban youth. *Journal of Early Adolescence* 29(3), 379-404.

- Neuenschwander, R., Rothlisberger, M., Cimeli, P., & Roebbers, C.M. (2012). How do different aspects of self-regulation predict successful adaptation to school? *Journal of Experimental Child Psychology, 113*, 353-371.
- Newmann, F. (1991). Student engagement in academic work: Expanding the perspective on secondary school effectiveness. In J. R. Bliss & W. A. Firestone (Eds.), *Rethinking effective schools: Research and practice* (pp. 58-76). Englewood Cliffs, NJ: Prentice-Hall.
- Novak, S. P., & Clayton, R. R. (2001). The influence of school environment and self-regulation on transitions between stages of cigarette smoking: A multilevel analysis. *Health Psychology, 20*, 196- 207.
- O'Farrell, S. L., & Morrison, G. M. (2003). A factor analysis exploring school bonding and related constructs among upper elementary students. *California School Psychologist, 8*, 53-72.
- Padilla-Walker, L.M., & Christensen, K.J. (2010). Empathy and self-regulation as mediators between parenting and adolescents' prosocial behavior toward strangers, friends, and family. *Journal of Research on Adolescence, 21*(3), 545-551.
- Padillia-Walker, L.M., Harper, J.M., & Jensen, A.C. (2010). Self-regulation as a mediator between sibling relationship quality and early adolescents' positive and negative outcomes. *Journal of Family Psychology, 24*(4), 419-428.
- Patrick, H., Ryan, A. M., & Kaplan, A. (2007). Early adolescents' perceptions of the classroom social environment, motivational beliefs, and engagement. *Journal of Educational Psychology, 99*, 83-98.
- Paulson, S. E. (1994). Relations of parenting style and parental involvement with ninth-grade

- students' achievement. *The Journal of Early Adolescence*, 14(2), 250-267.
- Perdue, N.H., Manzeske, D.P., & Estell, D.B. (2009). Early predictors of school engagement: Exploring the role of peer relationships. *Psychology in the Schools*, 46(10), 1084-1097.
- Phares, V., Fields, S., & Kamboukos, D. (2008). Fathers' and mothers' involvement with their adolescents. *Journal of Family Studies*, 18, 1-9.
- Pianta, R. C. (1999). *Enhancing relationships between children and teachers*. Washington, DC: American Psychological Association.
- Pleck, J. H., & Masciadrelli, B. P. (2004). Paternal involvement by U.S. residential fathers. In M. E. Lamb (Ed.), *The role of the father in child development* (pp. 222-271). New York: Wiley.
- Purdie, N., Carroll, A., & Roche, L. (2004). Parenting and adolescent self-regulation. *Journal of Adolescence*, 27, 663-676.
- Reschly, A., Huebner, E. S., Appleton, J. J., & Antaramian, S. (2008). Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and learning. *Psychology in the Schools*, 45, 419-431.
- Roberts, R. E. L., & Bengtson, V. L. (1993). Relationships with parents, self-esteem, and psychological well-being in young adulthood. *Social Psychology Quarterly*, 56, 263-277.
- Robin, A.L., & Foster, S.L. (1989). *Negotiating parent-adolescent conflict*. New York: The Guilford Press.
- Rothbaum, F., & Weisz, J.R. (1994). Parental caregiving and child externalizing behavior in nonclinical samples: A meta-analysis. *Psychological Bulletin*, 116, 55-74.
- Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.

- Ryan, R. M., Connell, J. P., & Deci, E. L. (1985). A motivational analysis of self-determination in education. In C. Ames & R. E. Ames (Eds.), *Research on motivation in education: The classroom milieu* (pp. 13-52). New York: Academic Press.
- Ryan, R. M., & La Guardia, J. G. (2000). What is being optimized over development?: A self-determination theory perspective on basic psychological needs across the life span. In S. Qualls & R. Abeles (Eds.), *Dialogues on Psychology and Aging* (pp. 145-172). Washington, DC: American Psychological Association.
- Sameroff, A. J., Bartko, W. T., Baldwin, A., Baldwin, C., & Seifer, R. (1998). Family and social influences on the development of child competence. In M. Lewis & C. Feiring (Eds.), *Families, risk, and competence* (pp. 161-205). Mahwah, NJ: Lawrence Erlbaum.
- Schochet, L. M., Smyth, T., & Homel, R. (2007). The impact of parental attachment on adolescent perception of the school environment and school connectedness. *Australian & New Zealand Journal of Family Therapy*, 28(2), 109-118.
- Sharkey, J.D., You, S., & Schnoebelen, K. (2008). Relations among school assets, individual resilience, and student engagement for youth grouped by level of family functioning. *Psychology in the Schools*, 45(5). Retrieved from www.interscience.wiley.com
- Simons-Morton, B., & Chen, R. (2009). Peer and parent influences on school engagement among early adolescents. *Youth & Society*, 41(1), 3-25.
- Simons-Morton, B.G., & Crump, A.D. (2003). Associations of parental involvement and social competence with school adjustment and engagement among sixth graders. *Journal of School Health*, 73(3), 121-126.
- Sirin, S. R., & Rogers-Sirin, L. (2004). Exploring school engagement of middle-class African American adolescents. *Youth and Society*, 35(3), 323-340.

- Spoth, R., Randall, G.K., & Shin, C. (2008). Experimental support for a model of partnership-based family intervention effects on long term academic success. *School Psychology Quarterly, 23*, 70-89.
- Sroufe, L. A. (1983). Infant-caregiver attachment and patterns of adaptation in preschool: The roots of maladaptation and competence. In M. Perlmutter (Ed.), *The Minnesota symposium on child psychology (Vol. 16)*. Hillsdale, NJ: Erlbaum.
- Steinberg, L., Mounts, N.S., Lamborn, S.D., & Dornbusch, S.M. (1991). Authoritative parenting and adolescent adjustment across varied ecological niches. *Journal of Research on Adolescence, 1*, (1), 19-36.
- Sun, J. C., & Rueda, R. (2012). Situational interest, computer self-efficacy and self-regulation: Their impact on student engagement in distance education. *British Journal of Educational Technology, 43*, 2, 191-204.
- Tobbell, J. (2003). Students' experiences of the transition from primary to secondary school. *Educational and Child Psychology, 20*(4), 4-14.
- Valiente, C. V., Lemery-Chalfant, K., & Swanson, J. (2010). Prediction of kindergartners' academic achievement from their effortful control and emotionality: Evidence for direct and moderated relations. *Journal of Educational Psychology, 102*(3), 550-560.
- Valiente, C. V., Lemery-Chalfant, K., Swanson, J., & Reiser, M. (2008). Prediction of children's academic competence from their effortful control, relationships, and classroom participation. *Journal of Educational Psychology, 100*(1), 67-77.
- Vazsonyi, A. T., & Huang, L. (2010). Where self-control comes from: On the development of self-control and its relationship to deviance over time. *Developmental Psychology, 46*, 245-257.

- Wang, M., & Holcombe, R. (2010). Adolescents' perceptions of school environment, engagement, and academic achievement in middle school. *American Educational Research Journal, 47*(3), 633-662.
- West, P., Sweeting, H., & Young, R. (2010). Transition matters: Pupils' experiences of the primary–secondary school transition in the west of Scotland and consequences for well-being and attainment. *Research Papers in Education, 25*(1), 21-50.
- Williams, S. K., & Kelly, F. D. (2005). Relationships among involvement, attachment, and behavioral problems in adolescence: Examining father's influence. *Journal of Early Adolescence, 25*, 168-196.
- Zeedyk, M. S., Gallacher, J., Henderson, M., Hope, G., Husband, B., & Lindsay, K. (2003). Negotiating the transition from primary to secondary school: Perceptions of pupils, parents and teachers. *School Psychology International, 24*, 67-79.

Table 1. Correlations, Means, and Standard Deviations for Measured Variables (335 families; 335 mothers; 335 fathers; 168 daughters; 167 sons). N

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mother Involvement T2															
1.Child Report	1.0	.36***	.29***	.77***	.17*	.20**	.17*	.11	.27***	.19*	.14	.02	.37***	.21**	.16*
2.Mother Self Report	.10	1.0	.24**	.28***	.21**	.58***	.16*	.07	.09	-.02	.01	-.03	.25**	.27***	.17*
3.Father Report on Mother	.28***	.24***	1.0	.14	.50***	.07	.01	.05	-.13	-.07	.02	.04	.18*	.17*	.13
Father Involvement T2															
4.Child Report	.78***	.06	.13	1.0	.25**	.37***	.22**	.11	.22**	.25***	.17	.11	.42***	.25**	.17*
5.Father Self Report	.31***	.25***	.40***	.38***	1.0	.00	-.01	-.03	.03	.01	.09	.01	.21**	.26***	.34***
6.Mother Report on Father	.06	.44***	-.06	.25***	.39***	1.0	.17*	.04	.10	.09	.15*	.14	.30***	.33***	.30***
Moth. Observed Warmth T2															
7.Warmth	.15*	.18*	.05	.09	.10	.10	1.0	.59***	.36***	.20**	.13	.15*	.21**	.14	.15*
8.Escalate Warmth	.15*	.15*	.05	.13	.13	.14	.64***	1.0	.34***	.23**	.21**	.19*	.13	.12	.11
9.Listener Responsiveness	.18*	.09	.03	.16*	.04	.04	.30***	.25***	1.0	.19*	.08	.09	.14	.13	.08
Fath. Observed Warmth T2															
10.Warmth	.10	.24**	.08	.13	.22**	.14	.15*	.04	.02	1.0	.60***	.42***	.15*	.12	.12
11.Escalate Warmth	.12	.11	.05	.11	.14	.12	.21**	.15	.03	.50***	1.0	.23**	.11	.19*	.15*
12.Listener Responsiveness	.14	.18*	.20**	.13	.16*	.12	.08	-.04	.20**	.36***	.18*	1.0	.12	.17*	.16*
Child Self-Regulation T2															
13.Child Self Report	.23**	.18*	.16*	.30***	.11	.15*	.05	.10	-.01	.18*	.15*	.18*	1.0	.44***	.38***
14.Mother Report on Child	.20**	.24**	.13	.15*	.14	.19*	.12	.09	.08	.14	.14	-.16*	.45***	1.0	.59***
15.Father Report on Child	.18*	.16*	.15*	.18*	.19*	.17*	.12	.11	.09	.22***	.21**	.13	.41***	.69***	1.0
School Engagement T3															
16.Child Self Report	.33***	.13	.17*	.30***	.15*	.17*	.09	.02	.08	-.03	.03	-.02	.33***	.24**	.19*
17.Mother Report on Child	.15*	.11	.14	.11	.06	.18*	.15*	.09	.11	.02	-.02	-.07	.38***	.52***	.52***
18.Father Report on Child	.18*	.15*	.15*	.14	.06	.14	.17*	.13	.03	.05	.02	-.10	.30***	.40***	.53***
19.Child Age	-.16*	-.10	*.01	-.22**	-.08	.06	-.12	-.10	-.09	-.07	-.09	-.10	-.01	.13	.02
20.Child Race	-.18*	.06	-.11	-.14	-.03	.18*	-.23*	-.17*	-.20**	-.15	-.14	.07	-.07	-.11	-.14
21.Number Siblings	.04	.03	-.01	.08	.06	.12	-.01	-.01	-.07	.08	.09	-.01	.04	.10	.06
22.Household Income (Monthly)	.02	-.07	-.07	.09	-.03	-.02	.14	.24**	.02	.08	.09	-.07	.11	.14	.14
Mean Boys	3.94	4.06	4.09	3.86	3.85	3.81	4.92	3.16	6.44	4.60	3.07	5.98	2.84	2.80	2.80
S.D. Boys	.63	.44	.48	.63	.42	.56	1.31	1.34	1.07	1.14	1.36	1.12	.44	.49	.46
Mean Girls	4.03	4.08	4.09	3.88	3.90	3.84	4.94	3.41	6.50	4.79	3.23	6.28	2.84	2.96	2.95
S.D. Girls	.60	.43	.50	.68	.42	.55	1.31	1.45	1.02	1.36	1.28	1.24	.46	.48	.45

Table 1 continuation

Variables	16	17	18	19	20	21	22
Mother Involvement T2							
1.Child Report	.38***	.27***	.28***	-.23**	-.15*	-.08	-.03
2.Mother Self Report	.16*	.24**	.18*	-.13	-.05	-.10	-.13
3.Father Report on Mother	.04	.05	.06	-.20**	.01	-.05	.04
Father Involvement T2							
4.Child Report	.42***	.30***	.25**	-.21**	.08	-.23**	-.08
5.Father Self Report	.15*	.12	.22**	-.15*	.11	-.23**	.01
6.Mother Report on Father	.17*	.24**	.14	-.13	.10	-.26***	-.06
Moth. Observed Warmth T2							
7.Warmth	.11	.14	.12	-.09	-.10	-.01	-.06
8.Escalate Warmth	.15*	.16*	.16*	.04	-.19*	.01	-.09
9.Listener Responsiveness	.10	.08	.08	-.04	-.08	.03	-.08
Fath. Observed Warmth T2							
10.Warmth	.11	.10	.12	.05	-.05	-.10	.01
11.Escalate Warmth	.09	.08	.11	.01	-.03	-.10	-.04
12.Listener Responsiveness	.03	.03	.08	.08	.02	-.13	-.05
Child Self-Regulation T2							
13.Child Self Report	.40***	.34***	.29***	-.07	-.03	-.13	.02
14.Mother Report on Child	.30***	.53***	.46***	.05	.02	-.10	-.02
15.Father Report on Child	.31***	.30***	.49***	.04	.07	-.12	.02
School Engagement T3							
16.Child Self Report	1.0	.58***	.56***	-.10	-.01	-.04	.10
17.Mother Report on Child	.58***	1.0	.73***	-.08	-.02	-.14	.02
18.Father Report on Child	.57***	.73***	1.0	-.07	-.07	-.08	.04
19.Child Age	-.01	-.06	-.05	1.0	.01	.03	.08
20.Child Race	.02	.03	-.09	.01	1.0	-.03	-.01
21.Number Siblings	.06	-.00	.04	-.14	.12	1.0	-.02
22.Household Income (Monthly)	.09	.10	.11	.05	-.11	.02	1.0
Mean Boys	3.54	3.64	3.64		N/A	2.40	\$7007.33
S.D. Boys	.57	.66	.59		N/A	.91	\$6150.93
Mean Girls	3.74	3.95	3.87		N/A	2.58	\$7040.94
S.D. Girls	.60	.56	.57		N/A	1.13	\$4435.65

Table 2. Results of Sobel Tests for Child Self-Regulation as a Mediating Variable.

Mediation Paths	Boys	Girls
Mother involvement at Time 2 through child self-regulation at Time 2 to school engagement at Time 3	2.25*	2.14*
Father involvement at Time 2 through child self-regulation at Time 2 to school engagement at Time 3	2.22*	2.71**
Observed maternal warmth at Time 2 through child self-regulation at Time 2 to school engagement at Time 3	2.49**	2.24*
Observed paternal warmth at Time 2 through child self-regulation at Time 2 to school engagement at Time 3	2.25*	2.38*

* $p < .05$, ** $p < .01$

Figure 1. Proposed Model Illustrating Measurement and Structural Paths

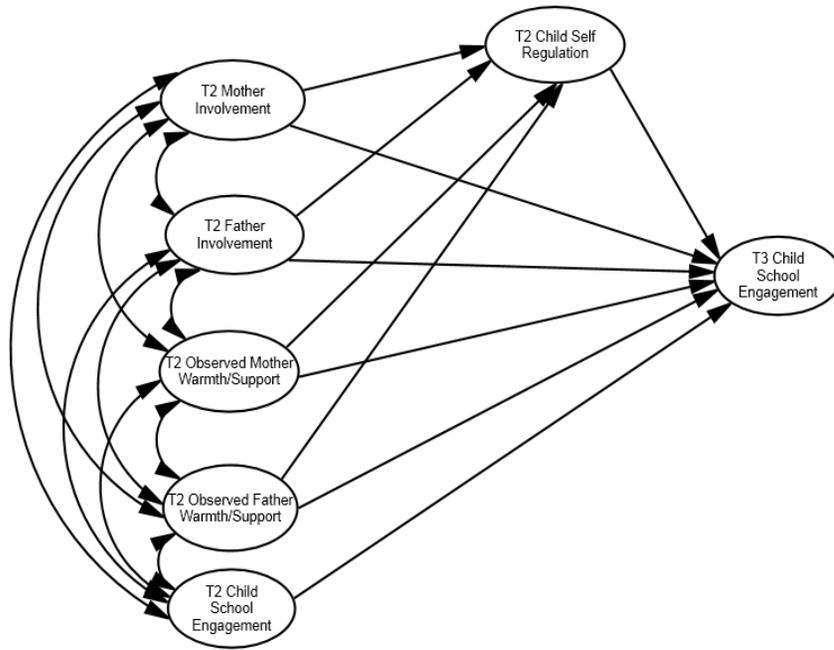
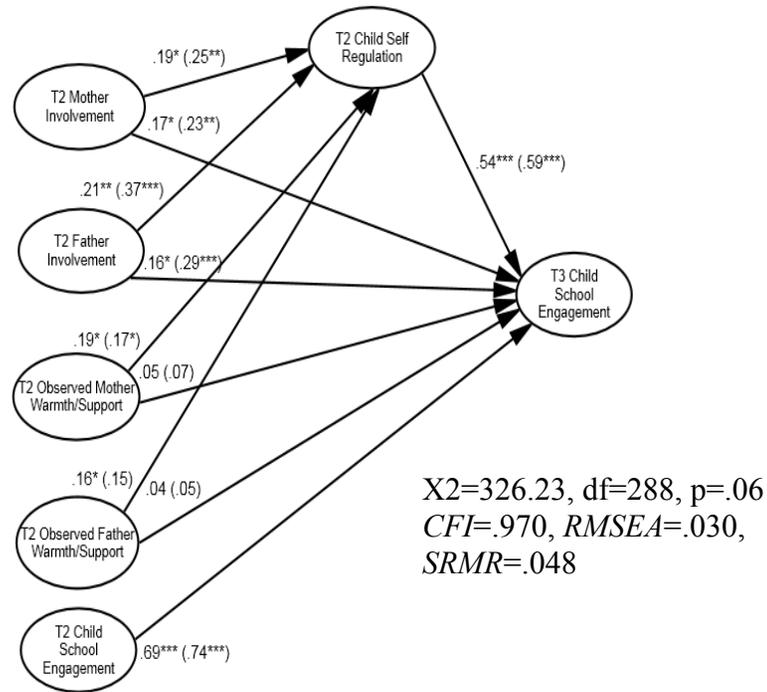


Figure 2. SEM Results for Group Comparison between Boys and Girls.



* $p < .05$, ** $p < .01$, *** $p < .001$

NOTE: Beta Coefficients for boys are reported first followed by coefficients for girls in parenthesis. Child age, Child race, Number of Siblings, and Household Income were included as control variables, but since none of them were significant predictors, we did not show the paths in this model