

**THE EFFECT OF PARENT SCHOOL INVOLVEMENT AND PARENT  
PERCEPTIONS ABOUT SCHOOL ON CHILDREN'S PERCEIVED  
ACADEMIC COMPETENCE AND BEHAVIORAL ENGAGEMENT: A  
MEDIATIONAL MODEL**

A Dissertation

by

BRANDY TAYLOR DEDE

Submitted to the Office of Graduate and Professional Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Chair of Committee,	Jan N. Hughes
Committee Members,	Jeffrey Liew
	Lisa Bowman-Perrott
	Mary Shaw-Ridley
Head of Department,	Victor Willson

August 2015

Major Subject: Educational Psychology

Copyright 2015 Brandy Taylor Dede

## **ABSTRACT**

Behavioral engagement at school has been cited as an avenue for improving low academic performance and decreasing boredom and disaffection among students and dropout rate. What we don't know is how dimensions of parent involvement and students' perceived academic competence contribute to behavioral engagement at school. Specifically, the present study contributed to the limited research on the mechanisms responsible for the influences of the aforementioned variables on students' academic related outcomes.

Participants consisted of a sample of 637 elementary students from a larger sample of 784 academically at-risk and ethnically and linguistically diverse first grade students recruited from three school districts (i.e., two rural and one urban) for a longitudinal study focused on the impact of grade retention on academic achievement. Participants' behavioral engagement, parent school-based involvement, and parents' perceptions about the school were rated by their teachers and parents. Three separate Structural Equation Model (SEM) analyses were conducted, one for each dimension of parent involvement. Results suggest that perceived academic competence does not mediate the relationship between these dimensions of parent involvement and behavioral engagement. However, there were expected within-wave associations between study variables, further supporting concurrent relationships between dimensions of parent involvement, academic competence, and behavioral engagement. Findings have

implications for researching more indirect forms of parent involvement and their impact on children's academic competence and behavioral engagement.

## **DEDICATION**

I dedicate this dissertation work to my family who walked this challenging, yet rewarding, journey with me. Your prayers, words of encouragement, and inspiration strengthened me throughout this journey. Much love to all of you.

## ACKNOWLEDGEMENTS

I extend my gratitude and appreciation to my adviser and committee chair, Dr. Hughes, for granting me access to the participants' data used in this study. Additionally, I thank my committee members, Dr. Liew, Dr. Bowman-Perrott, Dr. Shaw-Ridley, for their guidance and support throughout this dissertation process.

To God be the glory for the great things He has done. This journey would have been meaningless without God's presence sustaining me and calling me to greater opportunities.

To my husband, Harold, and daughter, Virginia Colette, I am thankful for your love, support, and prayers during this journey. I especially thank you for being so willing to uproot your lives in order for me to complete my education.

To my parents, I'm forever grateful and blessed that you instilled in me the importance of education and fulfilling my purpose in life. You exemplify this in your daily lives.

To my in-laws, I'm blessed that you believe in me and support my dreams. You truly have a heart of gold.

To my family and friends, the phone calls, letters, encouragement and quiet venues to write my dissertation were much appreciated. I am blessed for all you gave to help me accomplish my goals.

To my classmates and the department faculty and staff, I thank you for making my time at Texas A&M University a memorable experience and preparing me for what lies ahead.

I am truly a better person for having each of you in my life. You will never fully know the impact of your kindness and generosity towards me. Again, thank you.

## TABLE OF CONTENTS

	Page
ABSTRACT .....	ii
DEDICATION .....	iv
ACKNOWLEDGEMENTS .....	v
TABLE OF CONTENTS .....	vii
LIST OF TABLES .....	ix
1. INTRODUCTION.....	1
2. REVIEW OF THE LITERATURE.....	3
2.1 Conceptualization of Behavioral Engagement.....	3
2.1.1 Behavioral engagement and academic outcomes.....	5
2.1.2 Measurement of behavioral engagement.....	5
2.2 Factors that Contribute to Behavioral Engagement .....	6
2.2.1 School context .....	6
2.2.2 Child level factors .....	7
2.2.3 Home-context .....	9
2.2.4 Home-school mesosystem and parent involvement in school .....	10
2.3 Selection of Covariates in Model .....	14
3. THE PRESENT STUDY .....	15
3.1 Purpose and Significance of this Study.....	15
3.2 Research Questions and Hypotheses.....	16
3.3 Methods.....	18
3.3.1 Participants .....	18
3.3.2 Measures.....	21
3.3.3 Data analysis .....	24
3.4 Results .....	24
3.4.1 Preliminary analyses .....	24
3.4.2 Results of SEM.....	27
4. DISCUSSION .....	30

	Page
4.1 Parent Involvement Dimensions and Behavioral Engagement .....	30
4.2 Academic Competence and Behavioral Engagement .....	33
4.3 Parent Involvement Dimensions and Academic Competence .....	34
4.4 Study Limitations and Implications for Future Research and Practice .....	35
5. CONCLUSIONS .....	37
REFERENCES .....	38
APPENDIX A .....	51
APPENDIX B .....	52
APPENDIX C .....	53
APPENDIX D .....	54
APPENDIX E .....	55



## LIST OF TABLES

TABLE		Page
1	Participant Characteristics as a Percentage of the Sample .....	20
2	Descriptive Statistics and Bivariate Correlations Between Study Variables .....	26
3	Standardized Parameter Estimates for Direct and Indirect Effect of Teacher Rated Parent Involvement in the Meditational.....	29

## **1. INTRODUCTION**

Children's behavioral engagement in school is essential to academic success (Fredricks, Blumenfeld, & Paris, 2004). Behavioral engagement in school predicts academic outcomes, such as Grade Point Average (GPA) and test scores, future behavioral engagement, and high school completion (Blumenfeld et al., 2005). The school environment is demanding and requires a certain amount and quality of engagement in order for students to be competent, both academically and socially. As a result of these demands, researchers have invested time and resources into defining and measuring the construct of engagement in school settings. School engagement has been identified as an avenue for improving low academic performance and decreasing boredom and disaffection among students and dropout rates (Barry & Reschly, 2012; Finn, 1989). Elements of school engagement have been described in the literature as early as the late 1970s. In recent years, researchers have investigated the multi-dimensional nature of school engagement, thereby leading to advances in our understanding and measurement of this important factor in school achievement.

Evidence of the importance of school engagement to academic outcomes has prompted research on factors that promote engagement. This literature supports the view that not only is engagement multi-dimensional, but it is also influenced by multiple causes, including the school environment, home environment, and child characteristics. The focus of the current investigation is on the interface, or transactions, between the home and school environments and the implications of these transactions for children's behavioral engagement. In the following review, I first summarize literature on the

conceptualization of school engagement, with a particular focus on the dimension of behavioral engagement. Second, I describe the effects of behavioral engagement on academic-related outcomes. Third, I review literature on the effects of various dimensions of the home-school relationship on children's school success.

## **2. REVIEW OF THE LITERATURE**

### **2.1 Conceptualization of Behavioral Engagement**

Early writings conceptualized engagement as having two components: behavioral engagement and emotional, or affective engagement (Finn, 1989; Finn & Voelkl, 1993). Behavioral engagement is viewed as participation in the classroom (e.g., school attendance, paying attention to the teacher) and school activities (e.g., involvement in academic clubs or community activities). Emotional engagement is viewed as one's liking for school and sense of being accepted and valued in the school environment. As the construct of engagement garnered more attention in the educational community, researchers conceptualized engagement as including cognitive engagement (e.g., valuing education, regulating one's own learning through goal setting and monitoring one's performance) (Fredricks et al., 2004; Jimerson, Campos, & Grief, 2003). As these changes occurred, researchers assigned different labels to similar constructs (e.g., emotional engagement versus affective engagement; prosocial and antisocial forms of behavioral engagement) (Jimerson et al., 2003). The proliferation of dimensions of school engagement and varying terms used to refer to similar forms of engagement has presented as a barrier to integrating findings across studies. Currently, most researchers adopt the conceptual framework articulated by Fredricks et al. (2004) that groups various definitions of engagement within three broad dimensions (i.e., cognitive, behavioral, and emotional or affective).

Behavioral engagement refers to positive conduct (e.g., adhering to the rules), involvement in learning and academic tasks (e.g., effort, persistence), and participation

in extracurricular activities (e.g., student council, sports) (Finn & Voelkl, 1993; Fredricks et al., 2004; Jimerson et al., 2003). Emotional or affective engagement refers to students' affective reactions in the classroom (e.g., interest), which overlaps with constructs used in the motivational literature (Connell & Wellborn, 1991). Cognitive engagement refers to less observable behaviors in the classroom (e.g., self-regulation, value of learning), which also overlaps with constructs used in the motivational literature and theories that promote autonomy, competence, and relatedness (Appleton, Christenson, & Furlong, 2008; Appleton, Christenson, Kim, & Reschley, 2006; Pintrich, 2000).

Moderate correlations have been found between the three dimensions of engagement, suggesting reciprocal relationships between them (Blumenfeld et al., 2005; Wang, Willett, & Eccles, 2011). Researchers have suggested that cognitive and affective aspects of engagement are best viewed as motivational constructs that drive behavioral engagement (Brophy, 1987). Connell and Wellborn's (1991) conceptual model referred to these motivational constructs as self-system processes, which help learners regulate their involvement in school. Although each type of engagement is associated with achievement (Greene, Miller, Crowson, Duke, & Akey, 2004; Hughes & Kwok, 2007; Reyes, Brackett, Rivers, White, & Salovey, 2012), behavioral engagement is most consistently predictive of future achievement (Dotterer & Lowe, 2011; Hughes & Kwok, 2007; Hughes, Luo, Kwok, & Loyd, 2008). Thus, the current study focuses on behavioral engagement, which is defined as effort, attention, persistence, and cooperative participation in learning.

### **2.1.1 Behavioral engagement and academic outcomes**

Teacher and student reports of behavioral engagement have been linked to academic outcomes such as achievement test scores (Bodovski & Farkas, 2007; Fitzpatrick & Pagani, 2013), GPA (Lucio, Hunt, Bornovalova, 2012; Wang & Eccles, 2012), and high school completion (Barry & Reschly, 2012; Fredricks et al., 2004). For example, in a study of low-achieving first graders, teacher-reported classroom behavioral engagement mediated the association between student-teacher and parent-teacher relatedness and achievement in math and reading, when controlling for baseline reading and math scores (Hughes & Kwok, 2007).

### **2.1.2 Measurement of behavioral engagement**

Behavioral engagement has been measured using student self-reports, teacher reports, experience sampling, interviews, and observations (Fredricks & McColskey, 2012). Both teacher (Hughes & Kwok, 2007; Ladd & Dinella, 2009) and student (Klem & Connell, 2004; Measelle, John, Ablow, Cowan, & Cowan, 2005) reports are commonly used when investigating children's behavioral engagement. Although both student- and teacher-reports are predictive of student academic functioning, during the elementary grades, teacher- and student-reports of behavioral engagement show only a modest degree of convergence (Skinner, Kindermann, & Furrer, 2009). When measuring behavioral engagement in elementary aged students, only teacher reports have consistently demonstrated good reliability and predictive validity (Hughes & Kwok, 2007; Hughes, Wu, Kwok, Villarreal, and Johnson, 2011; Klem & Connell, 2004).

## **2.2 Factors that Contribute to Behavioral Engagement**

Among the most frequently studied determinants of classroom engagement are the educational context, home context, and children's personal attributes (Connell & Wellborn, 1991; Skinner, Wellborn, & Connell, 1990; Zhan, 2006). First, school context factors associated with engagement will be discussed, followed by a discussion of the influence of children's intraindividual factors on engagement. Finally, the influence of home and parenting factors and their association with engagement will be discussed.

### **2.2.1 School context**

During the school year, many children spend as much time in the school environment as they do in the home environment. The interpersonal transactions that occur at school are likely to influence children's engagement within the classroom. Positive student-teacher interactions (Dotterer & Lowe, 2011; Hughes & Kwok, 2007; Wu, Hughes, & Kwok, 2010) and peer interactions (Buhs, Ladd, & Herald, 2006; Hughes, Dyer, Luo, & Kwok, 2009; Perdue, Manzeske, & Estell, 2009) increase students' behavioral engagement in the classroom. For example, in a study using a diverse sample of first grade students, Hughes and Kwok (2007) found that the quality of the student-teacher relationship was positively associated with students' effort, persistence, and cooperative participation in learning. Among a diverse sample of third grade students, Perdue et al. (2009) found the quality of one's friendships in the classroom and available peer social support predicted students' effort and persistence above parent relationship quality, prior academic achievement, and social skills.

In addition to classroom relationships, other dimensions of the classroom context (e.g., teaching practices, organization, instructional supports) influence children's behavioral engagement (Hughes, Wu, & West, 2011; Lan et al., 2009; Ponitz, Rimm-Kaufmann, Grimm, & Curby, 2009). For example, using the same longitudinal sample as in this proposed study, in elementary classrooms in which teachers emphasized performance learning goals over mastery goals, students' behavioral engagement declined (Hughes et al., 2011). Using a low-income, rural sample of kindergarten students, Ponitz et al. (2009) found that students in classrooms with higher quality instructional processes (i.e., behavior management, productivity, and instructional learning formats) were more behaviorally engaged than children in classrooms of lower quality instructional processes. Additionally, Curby, Rudasill, Edwards, and Pérez (2011) used data from a nationally representative sample of first graders to investigate whether classroom quality would influence first graders with difficult temperaments. Results revealed that classroom organization was positively related to positive school-related behaviors (i.e., behavioral engagement).

### **2.2.2 Child level factors**

Children's personal demographics, prior achievement, and other individual characteristics play a significant role in behavioral engagement. Specifically, girls consistently display higher levels of behavioral engagement in the classroom than boys (Entwisle, Alexander, & Olson, 2007; Ready, LoGerfo, & Burkam, 2005). For example, Ready et al. (2005), using a diverse, national sample of kindergarten students, found that teachers generally reported that girls were more attentive and persistent than boys.



Regarding prior achievement, children who have less advanced academic skills tend to be less engaged in classroom learning activities, above the effect of social class and race or ethnicity on engagement (Kelly, 2008). Consistent with developmental systems theory (Lerner, Hess, & Nitz, 1991), longitudinal studies find that achievement and engagement influence each other in a reciprocal process (Hughes et al., 2009; Stipek & Miles, 2008).

Children's academic beliefs and attitudes also predict behavioral engagement. According to self-determination theory, children have psychological needs to be competent, autonomous, and positively connected to others (Deci & Ryan, 2012). When these needs are satisfied at school, children are motivated to conform to classroom rules and to identify with school (Deci & Ryan, 2012). Of particular importance to this study are children's perceptions of their academic competence, which predict children's achievement within the classroom, presumably due to the motivating role of perceived competence on engagement (Kelly, 2008; Liew, McTigue, Barrois, & Hughes, 2010; Metallidou & Vlachou, 2010; Reeve & Tseng, 2011; Valeski & Stipek, 2001).

Competence beliefs have been conceptualized as "either estimates of how good one is at a given activity, expectations for one's future performance, or self-efficacy" (Wigfield et al., 1997, p. 451). Perceived academic competence has often been operationalized in studies as participants' beliefs about their own capabilities to perform academic work (Linnenbrink & Pintrich, 2003). Children who perceive themselves as academically competent tend to be more engaged in learning tasks in the classroom (Akey, 2006; Miserandino, 1996; Valeski & Stipek, 2001). Valeski and Stipek (2001)

found among a diverse sample of first graders, students' perceived competence was positively associated with their behavioral engagement. In a study with a diverse sample of high school students, Akey (2006) used a cross-lagged correlational model to estimate the directionality of the influence between student engagement and perceived competence. This analysis was conducted because both variables, engagement and competence, are considered critical antecedents of academic achievement. They found that perceived competence is more likely to precede engagement in school than conversely. These findings are substantiated in earlier and more current studies that indicate the importance of students' beliefs about their competence to their effort and persistence (Abu-Hilal, 2000; Ryan & Pintrich, 1997; Reeve & Tseng, 2011). Students who feel that they are incapable of performing a task will undoubtedly exert little effort in that task.

### **2.2.3 Home-context**

Children's academic achievement improves as their parents attain more education, income, and assets (Lee & Bowen, 2006; Zhan, 2006; Zhan & Sherraden, 2003). Parents with more education tend to have higher expectations for their children and are more involved in their children's schooling (Overstreet, Devine, Bevans, & Efreom, 2005), thereby influencing children's academic performance (Lee & Bowen, 2006; Davis-Kean, 2005). Although parent educational level predicts children's achievement and their own school involvement, parents' educational expectations for their children and involvement in their learning predict children's academic performance above parental SES (Davis-Kean, 2005; McCoach, Goldstein, Behuniak, & Reis, 2010).

#### **2.2.4 Home-school mesosystem and parent involvement in school**

According to bioecological models of development (Bronfenbrenner & Morris, 2006), children's transactions with their environment are embedded in multiple and interactive systems, or settings. Those settings in which the individual directly interacts (e.g., family, peer group, school, neighborhoods) are referred to as microsystems, and transactions within the microsystems are considered the primary driver of development. The transactions occurring between these microsystems are referred to as mesosystems and also influence children's development. An especially important mesosystem for children's development is the relationship between the home and the school. Literature on the home-school mesosystem has focused on the quality and frequency of communication between parents and school personnel as well as parents' efforts and behaviors at school and at home that support children's learning and adjustment at school (Epstein, 1992). Kohl, Lengua, and McMahon (2000) describe six dimensions of the home-school mesosystem (which they referred to collectively as parent involvement in school): (a) parent-teacher contact (e.g., frequency of parent calls to the teacher), (b) parent involvement at school (e.g., frequency of attendance at school events), (c) quality of parent-teacher relationship (e.g., parents' feelings about their interactions with the teacher), (d) teachers' perception of parent's value of education, (e) parent involvement at home (e.g., parent reads to child), and (f) parent endorsement of the school (e.g., parents' feelings towards the school's ability to prepare child for the future).

Drawing from Kohl et al. (2000), Wong and Hughes (2006) defined parental involvement as “efforts made by parents or primary caretakers that directly support the academic success of their children or administrative needs of their children’s schools as well as perceptions of the quality of home-school interactions” (p. 649). Based on prior research indicating that parents and teachers are the most reliable informants on different dimensions of parent involvement (Barnard, 2004; Reynolds, 1992), they developed separate parent and teacher measures. Specifically, the teacher report measure of parent involvement did not assess teachers’ perceptions of parents’ home-based involvement, as teachers often have little or no direct information on parent-child interactions that occur in the home. Both the parent and teacher report measures included items pertaining to perceptions of the frequency and quality of communication between teachers and parents and parents’ participation in school-based activities. Results of exploratory and confirmatory factor analysis supported four parent-reported involvement dimensions (positive perceptions about school, communication with school, parent-teacher shared responsibility, and parent school-based involvement) and three teacher-reported dimensions of parent involvement (teacher-parent alliance, general parent involvement, and teacher initiation of involvement).

Parent report of home-based involvement (e.g., assistance with homework, reading with your child) is not consistently predictive of achievement, with some studies finding positive associations between parent-reported home-based involvement and achievement (McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004; Zhang, Hsu, Kwok, Benz, & Bowman-Perrott, 2011) and some finding no significant association

between parent-reported home-based involvement and achievement (El Nokali, Bachman, & Votruba-Drzal, 2010; Okpala, Okpala, & Smith, 2001). In a meta-analysis of 50 studies, Hill and Tyson (2009) found that, among various dimensions of parent-reported school involvement, parent-reported home-based involvement had the lowest association with academic achievement. The low predictive efficiency of parent-reported home-based involvement may be due to parents' desire to put forth a positive image when reporting on their home-based behaviors (Wong & Hughes, 2006; Nord, Lennon, Liu, & Chandler, 1999). Generally, parent and teacher reports of school involvement dimensions are only modestly correlated (Reynolds, 1991). Because parent reports of home-based involvement cannot be corroborated by teachers, these reports may be particularly susceptible to a tendency to inflate reports of involvement. Thus, the current study employed parents' reports of their school-based involvement, which can be corroborated by teachers.

**School-based involvement.** Parent involvement at school is defined as teacher- and parent-report of parents' attendance at school related events (e.g., PTA meetings, school plays), communication with teachers (e.g., teacher-parent conference, calling teacher), and involvement with academic tasks completed during school hours (e.g., sending books to class, making suggestions). Both parent- and teacher-reported school-based involvement have been found to be predictive of student engagement and achievement. Earlier studies have established a link between school-based parent involvement and academic related outcomes in elementary students (Reynolds, 1992; Reynolds, Weissberg, & Kaspro, 1992; Shumow, Vandell, & Posner, 1999; Zellman &

Waterman, 1998). Using a sample of fifth grade students Shumow, Vandell, and Posner (1999) tested the association between teacher-reported school based involvement and child-reported family emotional support, and children's reading and math achievement. They found that teacher-reported school involvement, above family characteristics, was the strongest predictor of reading and math achievement. Additionally, Dearing, Kreider, Simpkins, and Weiss (2006) found that the gap in literacy performance between children of more and less educated mothers was nonexistent if parent reported school-based involvement was high. Because both parent-reported and teacher-reported school-based involvement are predictive of student achievement, yet only moderately correlated with each other, both reports were analyzed in the present study.

**Positive perceptions about school.** Positive perceptions about school is defined as parent-reported comfort level with the teacher (e.g., feelings that teacher cares about child) and school environment (e.g., confidence in staff at school, feels welcome to visit school). The level of parental satisfaction with the school directly influences children's academic related outcomes (Epstein & Sanders, 2002; Powell, Son, File, & San Juan, 2010). Using a sample of pre-kindergarten aged children and their primary caregivers, Powell et al. (2010) investigated the association between parent-perceived teacher responsiveness (e.g., teacher is warm and affectionate towards child, parent feels welcomed by the teacher) and children's academic outcomes (i.e., mathematics skills). Parent perception of teacher responsiveness to the child was positively related to children's early reading, controlling for previous academic scores, child minority status, maternal education, parental home involvement, and quality of teacher interactions with

children. Being that perceptions are an internal process, this dimension can only be reported by the parent.

### **Selection of dimensions of parent involvement in school for current study.**

In summary, parents' and teachers' reports of school-based involvement and parents' positive perceptions about school were included as predictors of students' perceived academic competence and behavioral engagement. These dimensions were selected based on research documenting that they have been found to be most consistently linked to children's behavioral engagement (El Nokali et al., 2010; McWayne et al., 2004) and achievement (Galindo & Sheldon, 2012; Powell et al., 2010). Because these dimensions of parent involvement are only modestly correlated, each dimension is analyzed independently.

### **2.3 Selection of Covariates in Model**

Three covariates (i.e., gender, parent educational level, and economic disadvantage) were selected for this model based on research suggesting associations with parent involvement or student behavioral engagement. Specifically, boys tend to be rated by teachers as less engaged than girls (Hughes & Zang, 2011; Hughes et al., 2011). Higher SES, defined in terms of income or parent educational level is positively associated with parent involvement (Overstreet et al., 2005) and with behavioral engagement (Orthner, Akos, Rose, Jones-Sanpei, Mercado, & Woolley, 2010). In the present study, eligibility for free or reduced lunch (0 = not eligible and 1 = eligible) was used as a proxy for income. Parent education level was reported by parents and ranged from 1 (completed elementary school) to 10 (completed post-secondary education).

### **3. THE PRESENT STUDY**

#### **3.1 Purpose and Significance of this Study**

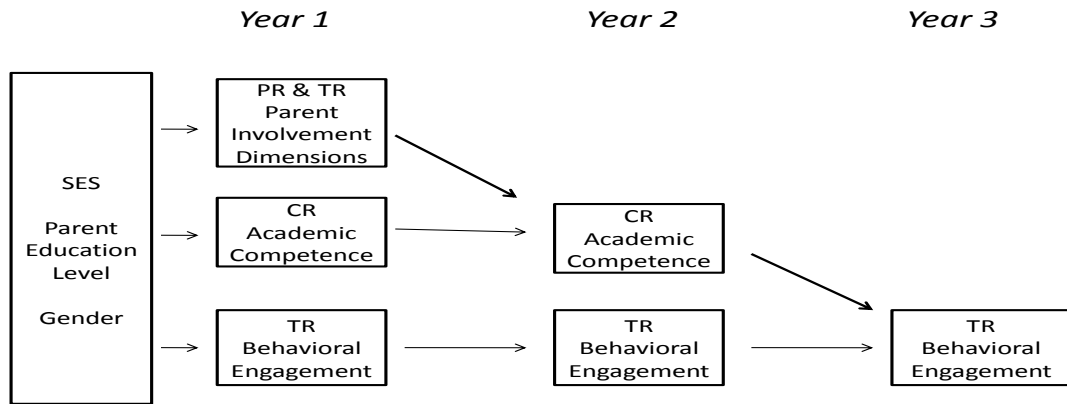
Researchers have established associations between parent school-based involvement and positive perceptions about the school, as well as their child's engagement and achievement in elementary aged children. However, there is limited information on the mechanisms responsible for the influence of these aspects of the home-school mesosystem on children's achievement. Drawing from Connell and Wellborn's (1991) model of context, self, and action and Deci and Ryan's (2012) self-determination theory, the current study addressed this gap in the literature. This study focused on investigating the effects of parent school-based involvement (as reported by teachers and parents) and parent-reported positive perceptions about school on cross-year changes in children's behavioral engagement in the classroom as well as children's perceived academic competence. As discussed above, behavioral engagement in the classroom is a proximal process that influences students' academic achievement. Perceived academic competence promotes behavioral engagement. Therefore, the current study tested a mediational model by which parent involvement influences engagement in the classroom via its effect on children's perceived academic competence. Furthermore, by investigating three dimensions of parent involvement in school (utilizing both parent and teacher reports), the current study contributes to our knowledge of the relative contributions of these aspects of parent involvement to improved behavioral engagement.



In summary, the purpose of this study was to investigate the effects of three dimensions of parental school-based involvement and positive perceptions of the school on elementary children's behavioral engagement in the classroom, and the mechanisms responsible for the effects. Specifically, the study tested a mediational model by which children's perceived academic competence mediated the effects of parental school-based involvement and positive perceptions on children's behavioral engagement. Given the fact that behavioral engagement is influenced by multiple factors, partial versus full mediation was anticipated. Although each of the effects in the mediational model has been supported by previous studies, no study has tested the complete mediational model. Understanding the mechanisms by which parenting behaviors and attitudes influence achievement has implications for parenting interventions.

### **3.2 Research Questions and Hypotheses**

Figure 1 depicts the hypothesized model. As shown, it is expected that each dimension of parent involvement at Year 1 has an effect on teacher rated student engagement at Year 3. Furthermore, it is expected that this effect is mediated via the effect of the Year 1 parent involvement dimension on Year 2 child-perceived academic competence. The model controls for the effects of relevant demographic covariates (i.e., parent education level, economic adversity, and gender) on study outcomes at Year 1. Additionally, the model controls for the effects of the aforementioned covariates on the stability of the mediator (i.e., child perceived academic competence) and the outcome (teacher-rated engagement) across years. In Figure 1, the bolded arrows represent the hypothesized mediational effect and are of greatest interest to this study.



**Figure 1. Conceptual model.** Years 1, 2, and 3 refer to grades 3, 4, and 5 respectively.

CR=Child Reported, PR=Parent Reported, TR=Teacher Reported.

### 3.3 Methods

#### 3.3.1 Participants

Participants consist of a sample of 637 elementary students from a larger sample of 784 academically at-risk and ethnically and linguistically diverse first grade students recruited from three school districts (i.e., two rural and one urban) for a longitudinal study focused on the impact of grade retention on academic achievement. In 2001 and 2002, students were recruited in first grade across two sequential cohorts. A total of 1,374 students met eligibility criteria for the original study.

In the current study, participants were selected from the body of active students and were active in the current school district or were active in an adjacent district, within 200 miles of the original school district. Data for the original study were collected during participants' third, fourth, and fifth years in the study (when most students were in grades 3, 4, and 5). The students' third, fourth, and fifth years in the study will be referred to as Year 1, Year 2, and Year 3 in the current study. Participants had to have data on parenting dimensions (positive perceptions about school, parent report of school based involvement) at Year1 or teacher dimensions (teacher rated behavioral engagement, general parent involvement) at Year1. Additionally, participants had to have at least some data on perceived academic competence at Year1 or 2 and some data on behavioral engagement at Year1, 2, or 3.

The total participants who met the inclusionary criteria were 637 of the original 784. Participant characteristics are in Table 1. Of the 637 participants, 47.1% (N=300) are female and 52.9% (N = 337) are male. The ethnic composition of the students in the

present study was 37.2% (N = 237) Hispanic, 35.2% (N = 224) Caucasian, 22.6% (N = 144) African American, and 5.1% (N = 32) Other. The mean of age at eligibility was 6.5 (SD = .38). At Year 3, 25.1% (N = 160) were in grade 2 and 74.9% (N = 477) were in grade 3. The children's cognitive ability was measured at Year 1 using the *Universal Nonverbal Intelligence Test (UNIT)* with a mean IQ of 93.44 (SD = 14.57). Only 629 participants had IQ data at Year 1. Approximately 15.1% (N = 90) indicated they were bilingual. The average reading achievement score on the *Woodcock Johnson Tests of Achievement – Third Edition* was 95.67 (SD = 14.37) and the average math achievement score was 100.80 (SD = 12.53). Out of 637 participants, 610 indicated whether they received free or reduced lunch, which was used to indicate economic disadvantage. Three hundred sixty one (56.7%) received free or reduced lunch.

An attrition analysis was conducted using t-test and Chi square analyses to determine if participants with and without complete data differed on demographic or study variables at Year 1. Attrition analyses revealed that the sample of 637 students did not differ from the 147 students who were excluded from these analyses on a number of variables at baseline, including ethnicity, IQ, SES, and parents' level of education. Therefore, the analysis sample is representative of the full sample.

Table 1  
Participant Characteristics as a Percentage of the Sample

Characteristic	Total Sample (n = 637)
<b>Gender</b>	
Male	52.9
Female	47.1
<b>Ethnicity</b>	
African-American	22.6
Hispanic	37.2
Caucasian	35.2
Others	5.1
Economically Disadvantaged	50.1
<b>Highest Parent Educational Level</b>	
8 <sup>th</sup> grade or less	9.8
High school	17.0
GED	3.3
Vocational/Trade School	5.5
Some college education	20.7
Associate Degree	4.6
Bachelor Degree	14.1
Masters Degree	5.2
Ph.D., MD, or equivalent	3.5

### 3.3.2 Measures

**Socio-demographic variables.** Child's gender, family economic disadvantage status, and parents' educational attainment were obtained from school records.

**Behavioral engagement.** Teachers rated students' level of engagement on an 11-item scale adapted from the *Wellborn Teacher Rated Student Engagement and Learning* (Skinner, Zimmer-Gembeck, & Connell, 1998) measure. The measure consists of 18 items, 11 of which measure behavioral engagement. Example items include "This student tries very hard to do well in school" and "this student only pays attention to things that interest him/her in class" (reverse coded). Two of the 11 items are phrased negatively. All items were rated using a 1 to 4 Likert-type scale, 1 being "Not true at all" and 4 being "Very true." The mean item score was analyzed with a high score indicating more effort, persistence, persistence, concentration, and interest and low score indicating less of the aforementioned behaviors.

The internal consistency for the sample used in this study is the following: .91 (Year 3), .92 (Year 4), and .92 (Year 5). Data were collected during the spring of academic years 3, 4, and 5 as part of the teacher questionnaire.

**Academic competence.** Students' perceptions of their academic competence were measured using the *Competence Beliefs and Subjective Task Values – (Wigfield et al., 1997)* questionnaire. The abbreviated form consists of 10 items which assess children's perceptions of their academic competence by asking them to rate their competence in the areas of reading and math on a scale of 1 (not at all) to 30 (very much). The competence belief items asked children the following: how good they were

in each activity, how good they were relative to other things they do, how good they were relative to other children, how well they expected to do in each activity in the future, and how good they thought they would be at learning something new in each subject domain. Example items are “If you were to list all the students in your class from the worst to the best in reading where would you put yourself?” and “How good would you be at learning something new in math?” The mean item score was analyzed with a high number indicating a belief of more competence in reading and math and low number indicating a belief of less competence in reading and math.

The internal consistency reliability at Year 3 and Year 4 for overall academic competency beliefs in the current sample was .82 and .83 respectively.

**Parent report measure of perceptions about school and school-based involvement.** Parents reported their involvement in their child’s education using *The Parent Involvement in Early Years-Parent Report (PIEY-P)*. This measure consists of 26 items adapted from the Parent-Teacher Involvement Questionnaire (PTIQ; Conduct Problems Prevention Research Group, 1995; Kohl et al., 2000) which consists of four dimensions of parent-teacher partnership: *Teacher Relationship Quality Factor, Parent Involvement, Parent’s Endorsement of School, and Parent-Teacher Contact*. The remaining 6 items were created to address parent perceived parental self-efficacy and roles. Wong and Hughes (2006), using the same longitudinal sample being used in this study, conducted an exploratory factor analysis that revealed good support for four dimensions of parent reported involvement: *Positive Perceptions about School, Communication, Parent-Teacher Shared Responsibilities, and Parent School-Based*

*Involvement*. The two scales included in this study, *Positive Perceptions about School* ( $\alpha = .93$ ) and *Parent School-Based Involvement* ( $\alpha = .72$ ), both yielded adequate internal consistency. A 5-point scale was used for frequency ratings (1 = *Never*, 2 = *Once or Twice a Year*, 3 = *Almost Every Month*, 4 = *Almost Every Week*, and 5 = *More Than Once Per Week*), general impressions of frequency (1 = *Not At All*, 2 = *A Little*, 3 = *Some*, 4 = *A Lot*, 5 = *A Great Deal*), and level of agreement with statements about school (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Not Sure*, 4 = *Agree*, 5 = *Strongly Agree*). The higher scores indicate more parental involvement and the lower scores indicate less parental involvement. The internal consistency reliabilities at Year 3 for the current sample are .92 for *Positive Perceptions about School* and .69 for *Parent School-Based Involvement*.

**Teacher report measure of parent involvement.** Teacher's reported each students' parental involvement in their child's education using *The Parent Involvement in Early Years--Teacher Report (PIEY-T)*. This measure consists of 28 items, 21 of these items adapted from the Parent-Teacher Involvement Questionnaire-Teacher Report (PTIQ-T; Conduct Problems Prevention Research Group, 1995; Kohl et al., 2000), which covers four dimensions of parent-teacher partnership: *Teacher Relationship Quality Factor*, *Parent Involvement*, *Teacher's Perception of Parent's Value of Education*, and *Parent-Teacher Contact*. The remaining 7 items were adapted from the Joining Scale of the Parent-Teacher Relationship Scale—Teacher Form (PTRS-TF; Vickers & Minke, 1995). A 5-point scale was used for frequency ratings (1 = *Never*, 2 = *Once or Twice a Year*, 3 = *Almost Every Month*, 4 = *Almost Every Week*, and 5 = *More*



Than Once Per Week), general impressions of frequency (1 = *Never*, 2 = *Once in a While*, 3 = *Sometimes*, 4 = *Frequently*, 5 = *Almost Always*), and level of agreement with statements about school (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree or Disagree*, 4 = *Agree*, 5 = *Strongly Agree*). The higher scores conclude more parental involvement. An exploratory factory analysis was conducted based on the first cohort of first grade teachers in the original study (Wong & Hughes, 2006). Results revealed good support for three factors of teacher reported parent involvement: *Alliance*, *General Parent Involvement*, and *Teacher Initiation*. The scale used in this study will be the *General Parent Involvement* ( $\alpha = .77$ ) measure, which has adequate internal consistency. The internal consistency reliability at Year 3 for the current sample is .80 for *General Parent Involvement*.

### **3.3.3 Data analysis**

All hypotheses were tested using Structural Equation Modeling (SEM). Three separate SEM analyses were conducted, one for each dimension of parent involvement. All analyses were conducted in Mplus (Múthen & Múthen, 1998-2012), and used the cluster feature to adjust the standard errors based on the nested nature of the observations. Because not all participants had complete data, missing data was handled using the full information likelihood function in Mplus.

## **3.4 Results**

### **3.4.1 Preliminary analyses**

Tests of skewness and kurtosis were included in preliminary analyses. Non-demographic study variables ranged from -0.96 to 1.13 for skewness and -1.05 to 2.61

for kurtosis. According to Curran, West, and Finch (1996), these levels meet criteria for multivariate normality. Descriptive statistics and correlations between variables are shown in Table 2. Data were examined for significant associations between demographic variables of child gender, family economic adversity, and parent education level and analysis variables. As shown in Table 2, relative to boys, girls had lower teacher-reported parent school-based involvement ( $r = .104, p \leq .05$ ) and higher behavioral engagement at each assessment wave (rs range from  $-.218$  to  $-.204, p \leq .05$ ). Economic adversity was negatively associated with teacher-rated parent school based involvement ( $r = -.168, p \leq .05$ ) and with engagement at Time 2 ( $r = -.097, p \leq .05$ ). Higher parent educational level was positively associated with teacher-rated parent school-based involvement ( $r = .222, p \leq .05$ ) and with behavioral engagement at each assessment wave (rs range from  $.096$  to  $.169, p \leq .05$ ).

Child-reported academic competence had modest 1-year stability, as reflected by the positive correlation between academic competence at Time 1 and Time 2 ( $r = .35, p \leq .01$ ). Also, children who reported higher academic competence had parents who reported more positive perceptions about school ( $r = .105, p \leq .05$ ). Teacher-rated behavioral engagement was moderately stable across time, as reflected by the positive correlation between engagement at Time 1 and Time 2 ( $r = .524, p \leq .01$ ) and between engagement at Time 2 and Time 3 ( $r = .557, p \leq .01$ ). Additionally, students who were rated by teachers as more behaviorally engaged had parents who reported more positive perceptions about school and rated themselves as being more competent in their academics at each assessment wave.

Table 2  
*Descriptive Statistics and Bivariate Correlations Between Study Variables*

	1	2	3	4	5	6	7	8	9	10	11
1. Gender	--										
2. Economic Disadvantage Status	-.004	--									
3. Parent level of education	-.016	<b>-.475</b>	--								
4. TR school based involvement	<b>.104</b>	<b>-.168</b>	<b>.222</b>	--							
5. PR school based involvement	.065	.086	-.054	<b>.240</b>	--						
6. PR positive perceptions about school	.032	-.004	-.042	.095	<b>.274</b>	--					
7. CR Competence Beliefs Time 1	.005	.049	.023	.001	.028	.085	--				
8. CR Competence Beliefs Time 2	.010	.026	.034	-.014	.084	<b>.105</b>	<b>.350</b>	--			
9. TR Behavioral Engagement Time 1	<b>-.218</b>	-.075	<b>.169</b>	<b>.160</b>	-.009	<b>.119</b>	<b>.097</b>	<b>.151</b>	--		
10. TR Behavioral Engagement Time 2	<b>-.218</b>	<b>-.097</b>	<b>.116</b>	<b>.133</b>	.034	.081	.043	<b>.143</b>	<b>.524</b>	--	
11. TR Behavioral Engagement Time 3	<b>-.204</b>	-.065	<b>.096</b>	.092	.040	.068	-.018	.066	<b>.553</b>	<b>.557</b>	--
<i>M</i>	.62	5.48	2.13	2.23	4.18	22.28	21.83	2.87	2.78	2.76	
<i>SD</i>	.49	2.45	.51	.53	.70	5.06	4.78	.67	.68	.69	

Note: TR=Teacher Report, PR=Parent Report, CR=Child Report; Bold figures represent correlations significant at  $p \leq .05$ . Gender (0=female, 1 =male); economic disadvantage status (0 = not disadvantaged, 1 = disadvantaged); parent education level (1 = elementary school, 10 = graduate or professional degree).

### 3.4.2 Results of SEM

The same mediation model as shown in Figure 1 was fit to each of the three different dimensions of parent involvement. Despite the significant overall model chi-square test, all these models fit the data adequately based on model fit statistics (Hu and Bentler, 1999). According to Hu and Bentler, a good fit is indicated by CFI of at least .90 and an RMSEA and an SRMR of less than .05.

For teacher-rated parent involvement, the model fit was good, with CFI = .96, RMSEA = .046, and SRMR = .044. As shown in Table 3, contrary to hypotheses, there was no direct effect of teacher-rated parent involvement on Year 3 behavioral engagement (Estimate=.00, SE=.042, *p* is *ns*). Neither was the effect of Year 2 child rated academic competence on Year 3 behavioral engagement significant (Estimate = -.021, SE=.042, *p* is *ns*). Finally, the hypothesized effect of teacher rated parent involvement on child academic competence was not significant (Estimate = .000, SE=.048, *p* is *ns*). Consistent with these results, the indirect effect was not significant.

For parent-rated parent involvement, the model fit was good, with CFI = .90, RMSEA = .032, and SRMR = .04. As shown in Table 3, contrary to hypotheses, there was no direct effect of teacher rated parent involvement on Year 3 behavioral engagement (Estimate = 0.049, SE=0.42, *p* is *ns*). Neither was the effect of year 4 child rated academic competence on Year 3 behavioral engagement significant (Estimate = -.03, SE=.04, *p* is *ns*). Finally, the hypothesized effect of teacher rated parent involvement on child academic competence was not significant (Estimate= .073, SE=.04, *p* is *ns*). Consistent with these results, the indirect effect was not significant.

For parent-rated positive perceptions about school, the model fit was good, with CFI = .951, RMSEA = .049, and SRMR = .046. As shown in Table 3, contrary to hypotheses, there was no direct effect of parent-rated positive perceptions about school on Year 3 behavioral engagement (Estimate = 0.002, SE=0.05, *p* is *ns*). Neither was the effect of Year 2 child rated academic competence on year 5 behavioral engagement significant (Estimate= -.021, SE=.04, *p* is *ns*). Finally, the hypothesized effect of parent rated positive perceptions about school on child academic competence was not significant (Estimate = 0.080, SE=0.04, *p* is *ns*). Consistent with these results, the indirect effect was not significant.

Table 3  
*Standardized Parameter Estimates for Direct and Indirect Effect of Teacher Rated Parent Involvement in the Mediation Model (N=637)*

			Dimensions of Parent Involvement					
Effect	Teacher rated PI		Effect	Parent rated PI		Effect	Parent Positive Perceptions	
		Estimate (SE)			Estimate (SE)			Estimate
<b>Direct Effect</b>								
	T-PI 1 → T-Eng 3	.00 (.04)		P-PI 1 → T-Eng 3	.05 (.042)		P-PPS 1 → T-Eng 3	-.00 (.05)
	T-PI 1 → C-PAC 2	.00 (.05)		P-PI 1 → C-PAC 2	.07 (.04)		P-PPS 1 → C-PAC 2	.08 (.04)
	C-PAC 2 → T-Eng 3	-.02 (.04)		C-PAC 2 → T-Eng 3	-.03 (.043)		C-PAC 2 → T-Eng 3	-.02 (.05)
Covariates on T-PI 1			Covariates on P-PI 1			Covariates on P-PPS 1		
	Gender	.12 (.05) **		Gender	.07 (.05) **		Gender	.02 (.05)
	SES	-.08 (.06)		SES	.08 (.06)		SES	-.04 (.05)
	P-Edu	.20 (.05)		P-Edu	-.00 (.06)		P-Edu	-.07 (.05)
<b>Indirect Effect</b>		-0.02 (.04)			-0.04 (.06)			-0.03 (.06)
<b>Model Fit</b>								
	CFI	0.96		CFI	0.96		CFI	0.95
	RMSEA	0.05		RMSEA	0.05		RMSEA	0.05
	SRMR	0.04		SRMR	0.04		SRMR	0.05

Note: All p values are 2-tail tests. \*\*p<.05, based on the unstandardized coefficients. Variable naming convention: The numbers at the end of each variable name refers to a year. T-Eng (Teacher-rated child behavioral engagement); T-PI (Teacher-rated school involvement); P-PI (Parent-rated school involvement); P-PPS (Parent-rated positive perceptions about school); C-PAC (Child-rated perceived academic competence).

## **4. DISCUSSION**

To the knowledge of the author, this is the first longitudinal study to investigate whether academic self-competence mediates the effect of parent involvement on children's behavioral engagement. According to the literature, parent school-based involvement, parents' positive perceptions of the school environment, and children's perceived academic competence have been positively associated with children's achievement-related outcomes. In the current study, at Year 1, parents' positive perceptions about school were positively associated with children's perceived academic competence and teacher-rated behavioral engagement. Furthermore, at Year 1 and 2, children's perceived academic competence was positively associated with teacher-rated behavioral engagement. Despite these expected within-wave associations between study variables, results did not support the hypothesized longitudinal associations. Next I discuss the results of each hypothesis and provide rationale as to why the expected results were not obtained.

### **4.1 Parent Involvement Dimensions and Behavioral Engagement**

The hypotheses for this study were developed based on Connell and Wellborn's (1991) motivational model of context, self, and action in an educational setting. The model used for this study extracted a portion of Connell and Wellborn's (1991) theory, hypothesizing that parental involvement (i.e., teacher- and parent- reported parent school based involvement and parents' positive perceptions of the school) would impact children's academic self-competence, thereby indirectly impacting children's engagement. The failure to find support for the mediational models may be due to the

study's limited measurement of context. Specifically, Connell and Wellborn's (1991) model posits that all three contexts (the provision of structure, autonomy support, and involvement) work together to influence three self-system processes (i.e., competence, autonomy, and relatedness) that will influence engagement. "An important principle underlying the model is that the experience of these three needs is simultaneous; at times complementary, at times competitive, but always a part of a single, dynamic system" (Connell & Wellborn, 1991).

Prior research used to support the hypotheses in this study established links between parent involvement (i.e., teacher- and parent-reported school involvement, positive perceptions about school) and achievement (Shumow et al., 1999; Dearing et al., 2006; Powell et al., 2010). Furthermore, prior studies also established that behavioral engagement predicts future achievement (Bodovski & Farkas, 2007; Fitzpatrick & Pagani, 2013). At the initial phase of this study, it was believed that because both parental involvement and behavioral engagement predict future achievement, parental involvement would also predict future behavioral engagement. The results did not support this notion. It is possible that had the current study employed a measure of academic achievement rather than behavioral engagement, an effect of parent involvement on achievement would have been found.

It is important to note that although no longitudinal associations were established between two dimensions of parent involvement (teacher-reported school involvement and positive perceptions about school) and behavioral engagement, concurrent associations were found at Year 1 and 2. This finding supports current literature



regarding associations between teacher-reported parent involvement and engagement within the same year. The within-year associations may reflect reciprocal influences, such that child engagement and parent positive perceptions may influence each other within the same year, or they may reflect unmeasured variables (e.g., child academic achievement, parent educational aspirations for their child) that influence both child engagement and parent positive perceptions (i.e., omitted variable bias). Also of importance is the significant and positive bivariate association between teacher-rated school involvement and behavioral engagement in both Year 2 and Year 3. The school involvement in Year 1 and teacher-rated child engagement in Year 2 is meaningful because a different teacher reported on engagement than reported on involvement, thereby removing the effect of rater bias on the association. Nevertheless, this association did not hold up in the longitudinal analyses, which controlled for children's prior level of child behavioral engagement. Thus, findings support co-variation of teacher reported parent involvement and child behavioral engagement but not a causal relationship.

Surprisingly, parent report of school-based involvement was not associated with behavioral engagement at any assessment wave. This could be interpreted a couple of ways. First, there are aspects of parental involvement that are more influential than being present at school functions. For example, in this study, parents' positive perceptions about school were concurrently associated with both behavioral engagement and competence beliefs. Ample research supports the impact of indirect parent involvement (e.g., educational aspirations) versus direct involvement (e.g., attendance at school

events) on children's academic outcomes (Hill & Tyson, 2005; Hong & Ho, 2005). Additionally, some studies show that parents' assistance at home and their emotional support drive school performance (Zhang et al., 2011). Another explanation is that at the elementary level, the quality of the student-teacher relationship may be more impactful than parent school-based involvement on engagement over time (Hughes et al., 2009). At this age, children are eager to please the adults in their lives and emulate their values.

It is important to highlight the discrepant ratings between teacher- and parent-report of school involvement. This finding is consistent with previous literature suggesting that parent report of school-based involvement is not consistently correlated with children's achievement (Jeynes, 2005). Parents' reports of their involvement at school may reflect a social desirability bias, or may be in response to children's difficulties at school. However, since we don't know the context of parent involvement at school, it is difficult to determine why there was not a link between parents' report of their school involvement and academic outcomes.

#### **4.2 Academic Competence and Behavioral Engagement**

Child-reported perceived academic competence did not predict future teacher-rated behavioral engagement. However, academic competence and behavioral engagement were positively associated within the same year. Prior studies have also established a link between academic competence and behavioral engagement at one point in time (Valeski & Stipek, 2001). One explanation for the lack of a longitudinal effect is that prior longitudinal studies used reading and math achievement scores (Liew et al., 2008) or grades (Marchant, Paulson, & Rothlisberg, 2001; Grolnick &

Slowiaczek, 1994), not behavioral engagement as the outcome. An additional explanation is that the majority of the previous studies used middle and secondary students (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Akey, 2006) to show a link between academic competence and engagement. Older students' effort appear to be more related to perceived academic competence (Akey, 2006) than younger children, who tend to display effort that is more related to their social needs for acceptance (Marchant et al., 2001).

#### **4.3 Parent Involvement Dimensions and Academic Competence**

Neither parent-report nor teacher-report of parent school-based involvement had a longitudinal effect on children's perceived academic competence. These results are inconsistent with those reported by Grolnick and Slowiaczek (1994), who found that teacher-reported school involvement was associated with child perceived academic competence. However, their findings were based on a middle school sample in a predominately middle-class Caucasian school district. The different sample used in Grolnick and Slowiaczek's (1994) study may account for the discrepant findings.

In the current study, only one parent involvement dimension, parent-reported positive perceptions about school, was found to be associated with academic competence at Year 2. This finding is consistent with research supporting the influence of indirect forms of parent involvement (e.g., educational aspirations) on students' educational aspirations (Hong & Ho, 2005). Although Hong and Ho (2005) did not establish a longitudinal association between dimensions of parent involvement and achievement via children's competence, they did establish that parents' aspirations determined children's

aspirations. Although my study investigated a different dimension of parent and child attitudes, the fact remains that parents' attitudes tend to be more impactful on children's attitudes than parent direct forms of school involvement.

#### **4.4 Study Limitations and Implications for Future Research and Practice**

The current study had several limitations. First, the children in the original study were selected on the basis of scoring below the median on a measure of literacy at entrance to first grade; therefore, caution should be taken in the interpretation and generalization of findings. Second, the study measured a limited set of parent involvement dimensions. Particularly, indirect parent involvement behaviors and attitudes, such as parents' educational aspirations for their children or valuing of education, may have been stronger predictors of children's perceived academic competence and behavioral engagement than school-based involvement or positive perceptions of the school. Third, using a measure of academic achievement rather than teacher-rated behavioral engagement would have permitted more direct comparison with prior research finding associations between parent involvement and achievement.

In terms of future research, assessing discrepancies between parent and teacher reports of parent school involvement may yield stronger results than assessing parents' and teachers' separate perceptions. Researchers have posited that several variables influence discrepant ratings between parents and teachers (Gross, Fogg, Garvey, & Julion, 2004), two being informant bias and context. In other words, informants' perspectives of the same behavior may differ based on experience, environment, and social desirability. Although researchers have provided explanations as to why raters

disagree, researchers have not established the impact these discrepant ratings have on children's behavior and related academic outcomes. Future research should include whether the discrepancy between teacher- and parent- report of school involvement is a predictor of children's perceived academic competence, behavioral engagement, and achievement.

## 5. CONCLUSIONS

Despite having not supported the study hypotheses, there are noteworthy ways in which these findings contribute to the larger body of research. First, these findings highlight that factors that influence children's success at school are more complex than the parent involvement dimensions highlighted in this study. There are several contexts (the provision of structure, autonomy support, and involvement) that work together to influence several self-system processes (i.e., competence, autonomy, and relatedness) that will influence engagement. Although study hypotheses were not supported, there were still positive bivariate associations that suggest the importance of some aspects of parent involvement-especially positive perceptions of school- on their children in children's academic outcomes and classroom behaviors.

Each year, millions of federal dollars are allocated for innovating programming that will increase school based parental involvement. The research basis necessary to guide efforts to improve parent involvement is still evolving. Future research needs to identify specific parent attitudes and behaviors that predict children's trajectories of academic engagement and achievement, the mechanisms responsible for those effects, and child and family characteristics for whom different parent practices are most beneficial.

## REFERENCES

- Abu-Hilal, M. M. (2000). A structural model for predicting mathematics achievement: Its relation with anxiety and self concept in mathematics. *Psychological Reports*, 86: 835-847.
- Akey, T. (2006). *School context, student attitudes and behavior, and academic achievement: An exploratory analysis*. Manpower Demonstration Research Corporation (MDRC).
- Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools*, 45(5), 369-386. doi: 10.1002/pits.20303
- Appleton, J. J., Christenson, S. L., Kim, D., & Reschley, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the student engagement instrument. *Journal of School Psychology*, 44, 427-445. doi: 10.1016/j.jsp.2006.04.002
- Bandura, A., Barbaranelli, C., Caprara, G.V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, 67, 1206-1222.
- Barnard, W. M. (2004). Parent involvement in elementary school and educational attainment. *Children and Youth Services Review*, 26, 39-62.
- Barry, M., & Reschly, A. L. (2012). Longitudinal predictors of high school completion. *School Psychology Quarterly*, 27(2), 74-84.

- Blumenfeld, P. C., Modell, J., Bartko, W. T., Secada, W., Fredricks, J. A., Friedel, J., & Paris, A. (2005). School engagement of inner city youth during middle childhood. In C. R. Cooper, C. T. G. Coll, W. T. Bartko, H. M. Davis, & C. Chatman (Eds.) , *Developmental Pathways Through Middle Childhood: Rethinking Contexts and Diversity as Resources*. Mahwah: Lawrence Erlbaum Associates, Inc., Publishers.
- Bodovski, K., & Farkas, G. (2007). Mathematics growth in early elementary school: The roles of beginning knowledge, student engagement, and instruction. *The Elementary School Journal*, 108(2), 115-130.
- Brofenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology, Vol. 1: Theoretical models of human development* (6<sup>th</sup> ed., pp. 793-828). New York: John Wiley.
- Brophy, J. (1987). Synthesis of research on strategies for motivating students to learn. *Educational Leadership*, 45(2), 40-48.
- Buhs, E. S., Ladd, G. W., & Herald, S. L. (2006). Peer exclusion and victimization: Processes that mediate the relation between peer group rejection and children's classroom engagement and achievement? *Journal of Educational Psychology*, 98, 1-13. doi:10.1037/0022-0663.98.1.1
- Conduct Problems Prevention Research Group. (1995). *Technical reports for the construct development for the measures for Year 2 outcome analyses*. Unpublished technical report.



- Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. Gunnar & L. A. Sroufe (Eds.), *Minnesota Symposium on Child Psychology* (Vol. 23). Chicago: University of Chicago Press.
- Curby, T. W., Rudasill, K. M., Edwards, T., & Pérez-Edgar, K. (2011). The role of classroom quality in ameliorating the academic and social risks associated with difficult temperament. *School Psychology Quarterly*, *26*(2), 175-188. doi: 10.1037/a0023042
- Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods*, *1*(1), 16-29. doi: <http://dx.doi.org/10.1037/1082-989X.1.1.16>
- Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology*, *19*(2), 294-304. doi:10.1037/0893-3200.19.2.294
- Dearing, E., Kreider, H., Simpkins, S., & Weiss, H. B. (2006). Family involvement in school and low-income children's literacy: Longitudinal associations between and within families. *Journal of Educational Psychology*, *98*(4), 653-664.
- Deci, E. L., & Ryan, R. M. (2012). Motivation, personality, and development within embedded social contexts: An overview of self-determination theory. In R.M. Ryan (Ed.) *The Oxford Handbook of Motivation* (pp. 85-107). Oxford, UK: Oxford University Press.

- Dotterer, A. M., & Lowe, K. (2011). Classroom context, school engagement, and academic achievement in early adolescence. *Journal of Youth Adolescence, 40*, 1649-1660. doi: 10.1007/s1094-011-9647-5
- El Nokali, N. E., Bachman, H. J., & Votruba-Drzal, E. (2010). Parent involvement and children's academic and social development in elementary school. *Child Development, 81*(3), 988-1005.
- Entwisle, D. R., Alexander, K. L., & Olson, L. S. (2007). Early schooling: The handicap of being poor and male. *Sociology of Education, 80*(2), 114-138.
- Epstein, J. L., & Sanders, M. G. (2002). Family, school, and community partnerships. *Handbook of parenting, 5*, 407-437.
- Finn, J. D., & Voelkl, K. E. (1993). School characteristics related to student engagement. *Journal of Negro Education, 62* (3), 249-268.
- Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117-142.
- Fitzpatrick, C., & Pagani, L. S. (2013). Task-oriented kindergarten behavior pays off in later childhood. *Journal of Developmental & Behavioral Pediatrics, 34*(2), 94-101.
- 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.
- Galindo, C., & Sheldon, S. B. (2012). School and home connections and children's kindergarten achievement gains: The mediating role of family involvement. *Early Childhood Research Quarterly, 27*, 90-103.

- Greene, B. A., Miller, R. B., Crowson, H. M., Duke, B. L., Akey, K. L. (2004). Predicting high school students' cognitive engagement and achievement: Contributions of classroom perceptions and motivation. *Contemporary Educational Psychology, 29*(4), 462-482.
- Grolnick, W.S., & Slowiaczek, M.L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development, 65*, 237-252.
- Gross, D., Fogg, L., Garvey, C., & Julion, W. (2004). Behavior problems in young children: An analysis of cross-informant agreements and disagreements. *Research in Nursing & Health, 27*, 413-425.
- Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45*(3), 740-763. doi: 10.1037/a0015362
- Hong, S., & Ho, H-Z. (2005). Direct and indirect longitudinal effects of parental involvement on student achievement: Second-order latent growth modeling across ethnic groups. *Journal of Educational Psychology, 97*(1), 32-42. doi: 10.1037/0022-0663.97.1.32
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives, *Structural Equation Modeling. A Multidisciplinary Journal, 6*(1), 1-55. doi: 10.1080/10705519909540118

- Hughes, J. N., Dyer, N., Luo, W., & Kwok, O. (2009). Effects of peer academic reputation on achievement in academically at-risk elementary students. *Journal of Applied Developmental Psychology, 30*, 182-194
- Hughes, J. N., & Kwok, O. (2007). Influence of student-teacher and parent-teacher relationships on lower achieving readers' engagement and achievement in the primary grades. *Journal of Educational Psychology, 99*, 39-51.
- Hughes, J. N., Luo, W., Kwok, O.-M., & Loyd, L. K. (2008). Teacher-student support, effortful engagement, and achievement: A 3-year longitudinal study. *Journal of Educational Psychology, 100*(1), 1-14.
- Hughes, J. N., Wu, J.-Y., Kwok, O.-M., Villarreal, V., & Johnson, A. Y. (2011). Indirect effects of child reports of teacher-student relationship on achievement. *Journal of Educational Psychology, 104*(2), 350-365doi: 10.1037/a0026339
- Hughes, J. N., Wu, W., & West, S. G. (2011). Teacher performance goal practices and elementary students' behavioral engagement: A developmental perspective. *Journal of School Psychology, 49*, 1-23.
- Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education, 40*(3), 237-269.
- Jimerson, S. R., Campos, E., & Grief, J. L. (2003). Toward an understanding of definitions and measures of school engagement and related terms. *The California School Psychologist, 8*, 7-27.

- Kelly, S. (2008). Race, social class, and student engagement in middle school English classrooms. *Social Science Research, 37*(2), 434-448.  
doi:10.1016/j.ssresearch.2007.08.003
- Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*(7), 262-273.
- Kohl, G. O., Lengua, L. J., & McMahon, R. J. (2000). Parent involvement in school conceptualizing multiple dimensions and their relations with family and demographic risk factors. *Journal of School Psychology, 38*(6), 501-523.
- Ladd, G. W., & Dinella, L. M. (2009). Continuity and change in early school engagement: Predictive of children's achievement trajectories from first to eighth grade? *Journal of Educational Psychology, 101*(1), 190-206. doi: 10.1037/a0013153
- Lan, X., Ponitz, C. C., Miller, K. F., Li, S., Cortina, K., Perry, M., Fang, G. (2009). Keeping their attention: Classroom practices associated with behavioral engagement in first grade mathematics classes in China and the United States. *Early Childhood Research Quarterly, 24*, 198-211.
- Lee, J. & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal, 43*(2), 193-218.
- Lerner, R. M., Hess, L. E., & Nitz, K. (1991). A developmental perspective on psychopathology. In M. Hersen & C. G. Last (Eds.), *Handbook of child and adult*

*psychopathology: A longitudinal perspective* (pp 9-32). Elmsford, NY: Pergamon Press.

Liew, J., McTigue, E. M., Barrois, L., & Hughes, J. N. (2008). Adaptive and effortful control and academic self-efficacy beliefs on achievement: A longitudinal study of 1<sup>st</sup> through 3<sup>rd</sup> graders. *Early Childhood Research Quarterly*, *23*, 515-526.

Linnenbrink, E. A., & Pintrich, P. R. (2003). The role of self-efficacy beliefs in student engagement and learning in the classroom. *Reading and Writing Quarterly: Overcoming Learning Difficulties*, *19*(2), 119-137.

Lucio, R., Hunt, E., & Bornovalova, M. (2012). Identifying the necessary and sufficient number of risk factors for predicting academic failure. *Developmental Psychology*, *48*(2), 422-428. doi: 10.1037/a0025939

Orthner, D. K., Akos, P., Rose, R., Jones-Sanpei, H., Mercado, M., & Woolley, M. E. (2010). CareerStart: A Middle School Student Engagement and Academic Achievement Program. *Children & Schools*, *32*(4), 223-234.

Marchant, G.J., Paulson, S.E., & Rothlisberg, B.A. (2001). Relations of middle school students' perception of family and school contexts with academic achievement. *Psychology in the Schools*, *38*(6), 505-519.

McCoach, D. B, Goldstein, J., Behuniak, P., & Reis, S. M. (2010). Examining the unexpected: Outlier analyses of factors affecting student achievement. *Journal of Advanced Academics*, *21*(3), 426-468.

McWayne, C., Hampton, V., Fantuzzo, J., Cohen, H. L., & Sekino, Y. (2004). A multivariate examination and the social and academic competencies of urban

- kindergarten children. *Psychology in Schools*, 41(3), 363-377. DOI: 10.1002/pits.10163
- Measelle, J. R., John, O. P., Ablow, J. C., Cowan, P. A., & Cowan, C. P. (2005). Can children provide coherent, stable, and valid self-reports on the Big Five dimensions? A longitudinal study from ages 5 to 7. *Journal of Personality and Social Psychology*, 89(1), 90-106. doi: 10.1037/0022-3514.89.1.90
- Metallidou, P. & Vlachou, A. (2010). Children's self-regulated learning profile in language and mathematics: The role of task value beliefs. *Psychology in the Schools*, 47(8), 776-788.
- Miserandino, M. (1996). Children who do well in school: Individual differences in perceived competence and autonomy in above-average children. *Journal of Educational Psychology*, 88, 203-214.
- Muthén, L. K., & Muthén, B. O. (1998-2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.
- Nord, C. W., Lennon, J., Liu, B. & Chandler, K. (1999). Home literacy activities and signs of children's emerging literacy. *NCES Publication 2000-026*. Washington, DC: National Center for Education Statistics.
- Okpala, C.O., Okpala, A.O., & Smith, F. E. (2001). Parental involvement, instructional expenditures, family socioeconomic attributes and student achievement. *Journal of Educational Research*, 95(2), 110-115.
- Overstreet, S., Devine, J., Bevans, K., & Efreom, Y. (2005). Predicting parental involvement in children's schooling within an economically disadvantaged

- African American sample. *Psychology in the Schools*, 42(1), 101-111. doi: 10.1002/pits.20028
- 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. doi: 10.1002/pits.20446
- Pintrich, P. R. (2000). An achievement goal theory perspective on issues in motivation terminology, theory, and research. *Contemporary Educational Psychology*, 25, 92-104.
- Ponitz, C. C., Rimm-Kaufman, S. E., Grimm, K. J., & Curby, T. W. (2009). Kindergarten classroom quality, behavioral engagement, and reading achievement. *School Psychology Review*, 38, 102-120.
- Powell, D. R., Son, S., File, N., & San Juan, R. R. (2010). Parent-school relationships and children's academic and social outcomes in public school pre-kindergarten. *Journal of School Psychology*, 48, 269-292.
- Ready, D.D., LoGerfo, L.F., Lee, V.E., & Burkam, D.T. (2005). Explaining girls' advantage in kindergarten literacy learning: Do classroom behaviors make a difference? *Elementary School Journal*, 106(1), 21-38.
- Reeve, J., & Tseng, C-M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, 36, 257-267
- Reyes, M. R., Brackett, M. A., Rivers, S. E., White, M., & Salovey, P. (2012). Classroom emotional climate, student engagement, and academic achievement. *Journal of Educational Psychology*, 104(3), 700-712. doi: 10.1037/a0027268



- Reynolds, A. J. (1991). Early schooling of children at risk. *American Educational Research Journal*, 28(2), 392-422.
- Reynolds, A. J. (1992). Comparing measures of parental involvement and their effects on academic achievement. *Early Childhood Research Quarterly*, 7, 441-462.
- Reynolds, A. J., Weissberg, R. P., & Kaspro, W. J. (1992). Prediction of early social and academic adjustment of children from the inner city. *American Journal of Community Psychology*, 20, 599-624.
- Ryan, A., & Pintrich, P. (1997). Should I ask for help? The role of motivation and attitudes in adolescents' help seeking in math class. *Journal of Educational Psychology*, 89, 329-341.
- Shumow, L., Vandell, D. L., & Kang, K. (1996). School choice, family characteristics, and home-school relations: Contributors to school achievement? *Journal of Educational Psychology*, 88, 451-460.
- Shumow, L., Vandell, D., & Posner, J. (1999). Risk and resilience in the urban neighborhood: predictors of academic performance among low-income elementary school children. *Merrill-Palmer Quarterly*, 45(2), 309-331.
- Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement*, 69(3), 493-525.
- Skinner, E. A., Zimmer-Gembeck, M., & Connell, J. P. (1998). Individual differences

- and the development of perceived control.” *Monographs of the Society for Research in Child Development* 63, 2-3: 1-220.
- Skinner, E. A., Wellborn, J. G., & Connell, J. P. (1990). What it takes to do well in school and whether I’ve got it: A process model of perceived control and children’s engagement and achievement in school. *Journal of educational psychology*, 82(1), 22-32.
- Stipek, D. & Miles, S. (2008). Effects of aggression on achievement: Does conflict with the teacher make it worse? *Child Development*, 79, 1721–1735.
- Valeski, T. N., & Stipek, D. J. (2001). Young children's feelings about school. *Child development*, 72(4), 1198-1213.
- Vickers, H. S., & Minke, K. M. (1995). Exploring parent-teacher relationships: Joining and communication to others. *School Psychology Quarterly*, 10(2), 133-50.
- Wang, M., & Eccles, J. S. (2012). Adolescent behavioral, emotional, and cognitive engagement trajectories in school and their differential relations to educational success. *Journal of Research on Adolescence*, 22(1), 31-39.
- Wang, M., Willett, J. B., Eccles, J. S. (2011). The assessment of school engagement: Examining dimensionality and measurement invariance by gender and race/ethnicity. *Journal of School Psychology*, 49, 465-480.
- Wigfield, A., Eccles, J. S., Yoon, K. S., Harold, R. D., & et al. (1997). Change in children's competence beliefs and subjective task values across the elementary school years: A 3-year study. *Journal of Educational Psychology*, 89(3), 451-469.

Wu, J-Y, Hughes, J. N., & Kwok, O-M. (2010). Teacher-student relationship quality type in elementary grades: Effects on trajectories for achievement and engagement. *Journal of School Psychology, 48*(5), 357-387.  
doi:10.1016/j.jsp.2010.06.004

Zellman, G. & Waterman, J. M. (1998). Understanding the impact of parent school involvement on children's educational outcomes. *The Journal of Educational Research, 91*(6), 370-380.

Zhan, M. (2006). Assets, parental expectations and involvement, and children's educational performance. *Children and Youth Services Review, 28*, 961-975.  
doi:10.1016/j.chilyouth.2005.10.008

Zhan, M., & Sherraden, M. (2003). Assets, expectations, and children's educational achievement in female-headed households. *Social Service Review, 77*, 191-211.  
doi: 10.1086/373905

Zhang, D., Hsu, H-Y, Kwok, O., Benz, M., & Bowman-Perrott, L. (2011). The impact of basic-level parent engagements on student achievement: Patterns associated with race/ethnicity and socioeconomic status (SES). *Journal of Disability Policy Studies, 22*(1), 28-39.

## **APPENDIX A**

### **TEACHER REPORTED BEHAVIORAL ENGAGEMENT**

1. This student tries very hard to do well in school.
2. This student only pays attention to things that interest him/her in class.
3. When this student is in class, he/she concentrates on doing his/her work.
4. When this student is in class, he/she participates in class discussion.
5. This student just wants to learn only what he/she has to in school.
6. This student does more work than he/she has to do in school.
7. When this student is in class, he/she works as hard as he/she can.
8. When this student is in class, he/she usually thinks about other things.
9. This student doesn't try very hard in school.
10. This student tries to learn as much as he/she can about his/her school project.

## **APPENDIX B**

### **STUDENT RATED PERCEIVED ACADEMIC COMPETENCE**

1. How good in math are you?
2. How good in reading are you?
3. If you were to list all the students in your class from the worst to the best in math where would you put yourself?
4. If you were to list all the students in your class from the worst to the best in reading where would you put yourself?
5. Some kids are better in one subject than in another subject. For example, you might be better in sports than in reading. Compared to most of your other school subjects, how good are you in math?
6. Some kids are better in one subject than in another subject. For example, you might be better in math than in sports. Compared to most of your other school subjects, how good are you in reading?
7. How well do you expect to do in math this year?
8. How well do you expect to do in reading this year?
9. How good would you be at learning something new in math?
10. How good would you be at learning something new in reading?

## **APPENDIX C**

### **PARENT REPORTED PERCEPTIONS ABOUT SCHOOL**

1. Parent feels child's teacher cares about child
2. Child's school is doing a good job of preparing children for their futures
3. Parent has confidence in people at child's school
4. Child's school is a good place for child to be
5. Staff at child's school is doing good things for child
6. Parents feels child's teacher pays attention to parent's suggestions
7. Parent feels comfortable talking with child's teacher about child
8. Parent enjoys talking with child's teacher
9. Parent thinks child's teacher is interested in getting to know parent
10. Parent feels welcome to visit child's school

## **APPENDIX D**

### **PARENT REPORTED SCHOOL BASED INVOLVEMENT**

1. Parent has visited child's school for a special event
2. Parent has attended a parent-teacher conference
3. Parent has been invited to attend a parent-teacher conference
4. Parent has been invited to child's school for a special event
5. Parent has attended PTA/PTO meetings
6. Parent volunteers at child's school

## **APPENDIX E**

### **TEACHER REPORTED SCHOOL BASED INVOLVEMENT**

1. How Often Parent Volunteers At School
2. Parent Stopped By To Talk To Teacher
3. Parent Has Attended PTA/PTO Meetings
4. Parent Has Called Teacher
5. Parent Has Written Teacher
6. Parent Has Been Invited To School For A Special Event
7. Parent Has Attended A Parent- Teacher Conference
8. Parent Has Been Invited To Attend PTA/PTO Meetings